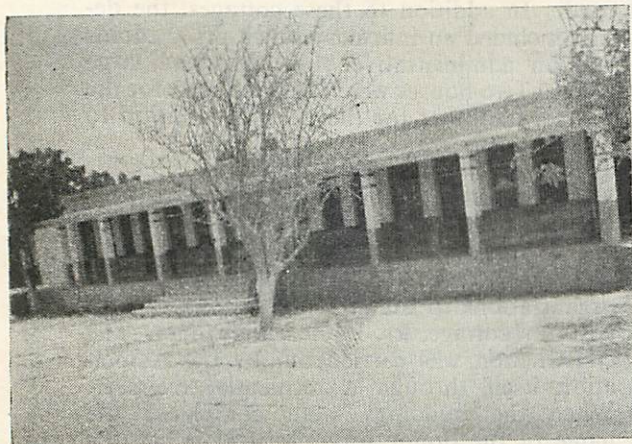


plaque and fixed prominently in the varanda of the cottage. In addition to these buildings



a recreation hall was donated and built by Mr. Doongersee Joshi, the Secretary of the Association, in memory of his wife, Poori-Bai. The block of four quarters was donated in memory of Dr. Kaikushro Spencer a Parsi business man. The Association from its own funds constructed only the Administrative block, an infirmary block of 20 rooms and a set of 30 single room staff quarters. Sir



David Sassoon the business magnate of Poona not only donated one 110 volt D.C. Electric Generator but also constructed a power house for it and bore the cost of electric installation. The construction work was started in 1937 and completed in 1939. Provision was kept for 72 cottages, of which only 64 were constructed, eight of them double-roomed.



In 1932, the Association invited applications for the post of Medical Superintendent. Dr. A. K. Shariff, a young doctor of Bangalore applied for this post, but the appointment was then deferred. It is a coincidence that on migration to Pakistan Dr. A. K. Shariff was

the first Resident Physician appointed to this Sanatorium in 1951.



Before the Sanatorium could be constructed, the Second World War was declared. Malir Cantt: which was small military station nearby, rapidly expanded into a large army base. As Ojha Sanatorium was situated at a short distance of Malir Cantt; the army requisitioned the Sanatorium in 1939 and used the premises variously, as Prisoners of War Camp, Polish Refugee Camp, War Children Refugee Camp and American Army Station. The American Army constructed a large Army Mess (now lying un-serviceable) and a few pit latrines. When the Second World War was over in 1945, the Association applied for the de-requisitioning of the buildings. This request was granted, the buildings were handed back to the Ayurvedic Tuberculosis Relief Association, early in 1946 and the Sanatorium was opened to TB patients in October, 1946. The arrangement was that TB patients desirous of admission had to make request to the Manager. They were divided in two classes, the ordinary general ward patients who paid Rs. 30/- per month and the poor patients who paid Rs. 5/- p.m. At the time of admission every patient could choose treatment either by a doctor or by an Ayurved. Later, change from one system to the other was not allowed except by the permission of

the Manager. Mr. Sukhramdas Ojha donated his services as an Honorary Manager and constructed a bungalow for himself at his own expenses for his periodic stay in the Sanatorium. The staff consisted of one Doctor, one Ayurved, two compounders (one for each system), one untrained Nurse, Sweepers, Chowkidars and Pump Driver. In the system then in force, a cottage was allotted to a patient who moved in along with his family or attendant. The cottages were used not only as hospital beds but also as housing accommodation where the patient's families also stayed, did their own cooking and used their own bed linen. Local catering contractors (one for Hindus and the other for Muslims) supplied meals at the patient's cost to those who did not want to do their own cooking. The over all supervising authority was the Ayurvedic Tuberculosis Relief Association with a Board of Trustees. Mr. Jamsheed Nussarwanji Mehta was its President, Mr. Doungarsee Joshi, the Secretary.



This life of the hospital as a Sanatorium did not last more than 5 months. By March 1947, most of the staff being Hindus migrated to India. The Sanatorium was finally closed down in April, 1947 and remained so, till December, 1949. In 1947, most of the trustees and members of the Ayurvedic

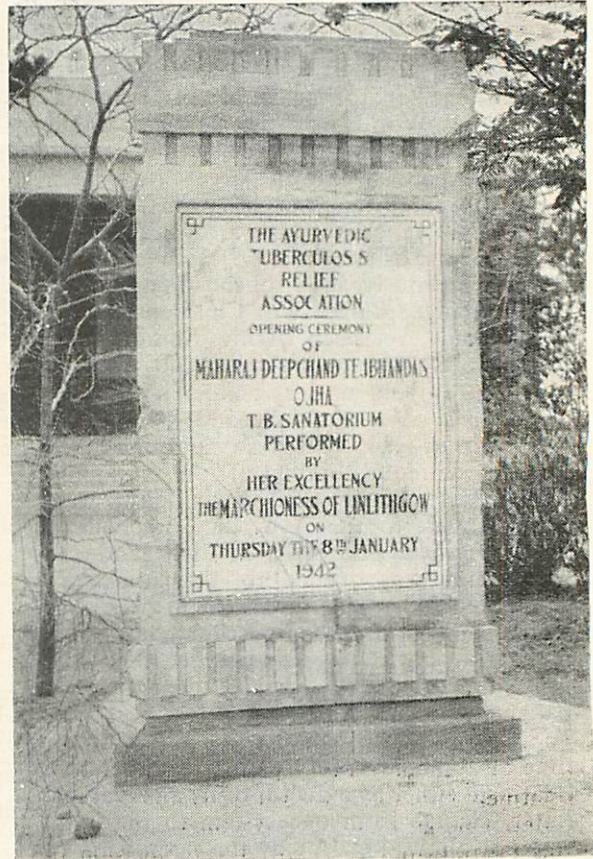
Tuberculosis Relief Association to India and the Association became defunct. Only three trustees remained in Pakistan namely Mr. Jamsheed Nussarwanji Mehta, Sardar A. K. Gabol and Mrs. Keval Ram D. S. Shahani. Only two of them are alive; Mr. Mehta died in the 1950's.

In 1949 Mr. Jamsheed Mehta approached Col. M. H. Shah, then Chief Medical Officer of Karachi, with a request to take over the Sanatorium on behalf of the Central Government. Mr. Mehta informed Col. Shah that if the Health Ministry did not take over the Sanatorium, the buildings would be acquired by the Refugees and Rehabilitation Department for settlement purposes.

Mr. Mehta placed the Sanatorium at the disposal of the Chief Medical Officer, Karachi with only one condition that the premises would be used for the T.B. patients. Col. Shah found it difficult to take over the buildings because there was no budget provision and no doctor available for running the Sanatorium. The present Director who was then the Medical Officer Incharge of T. B. Section of Jinnah Central Hospital, Karachi came to see the premises. He felt it a pity to allow the premises to be utilized for anything other than a T.B. Hospital when there was such a dearth of T. B. Hospital beds in the country. It was perhaps a case of love at first sight. He offered his services for appointment as the first Medical Officer Incharge of Ojha Sanatorium. He was entrusted with the responsibility of organising the institution afresh. Since then he has devoted his life time to the development of this institution. On 15th Dec. 1949, he moved into the Sanatorium along with a small contingent of staff consisting of a cook, a bearer, a driver and two nursing orderlies. And old Army truck was placed at his disposal. The conditions that he found at that time were most appalling. The whole place was shut up, dusty and desolate. The staff that was transferred by Mr. Mehta consisted only of four Chowkidars and a Pump Driver. On the first night when the quarters were opened for occupation, all of them were found infested with snakes, the staff kept on killing snakes every night throughout that year and also during the following two summers. Over a hundred of the snakes killed were preserved and presented to the collection of late Dr. Fazal-e-Karim who was

primarily on snakes and a Research Scholar. About half of the collection consisted of the poisonous varieties; of these, Cobras, Kraits and Vipers were indentified. Luckily no case of snake-bite occurred.

There was no equipment worth the name. The staff residential accommodation was not a fraction of the requirement. There was no kitchen, no cooking utensils, no bed linen, no ward furniture, no X-Ray Plant and no instruments. The whole area was devoid of any trees, plants or grassy plots except for two small patches of lawns, one in front of the administration block and the other in front of the recreation hall. There was a tablet on a pillar showing that this Sanatorium had been formally declared open by the Viceroy and Governor-General of India, Lord (and Lady) Linlithgow in 1942, but obviously this was a mere ceremony. Dr. Jamshed H. Wania, an Eye Specialist of Karachi who was then a boy of 11 or 12 presented a bouquet to Lady Linlithgow on that occasion.



From this point onward begins the story of the development of Ojha Sanatorium into a first class hospital in the span of about 17 years. When the Chief Medical Officer, Karachi took over this institution, budget provision for the staff or the recurring expenditure did not exist. It was decided, therefore, to run this institution as T.B. Annexe of Jinnah Central Hospital administered by the Superintendent of that hospital. This Sanatorium functioned as an annexe till December, 1957 when it became an independent hospital.

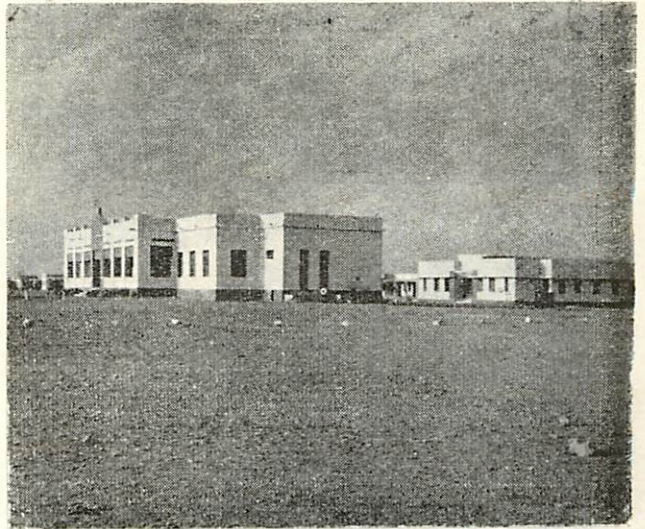
The first batch of 20 male patients was transferred from Jinnah Central Hospital on 14th Feb. 1950, the second batch of 20 female patients on the 21st March.

Begum Liaquat Ali Khan visited this Sanatorium in 1950 and donated a radio set and books for the patients.

In 1951 Dr. A. K. Shariff was appointed as Resident Physician T. B. Section, Jinnah Central Hospital and as such Technical Officer Incharge of Ojha Sanatorium. He continued in this capacity till February, 1960 except for a brief spell during 1954-55 when Professor M. A. H. Siddiqui worked as Officer Incharge of this Sanatorium. Apart from the present Director who acted as Medical Officer Incharge of the Sanatorium from 1949 to 1952 and again from 1954 to 1955, Dr. S.A. Hussain who is now Officer Incharge of T.B. Centre in Rawalpindi also had a long spell as Medical Officer from 1952 to 1954 and from 1955 to 1957.

In the first two years, the bed capacity was slowly increased to about 100 beds. The first development activity took place during 1954-55. Under the dynamic leadership of Professor M. A. H. Siddiqui, some major deficiencies were made-up under the Social Uplift Scheme. Some 80 staff quarters, a Radiology and Theatre Block, Stores and Garages were

constructed at a cost of Rs. 11 lakhs. Also



some surgical equipment was added. The electrical generator in the Sanatorium which provided 110 volts D.C. was replaced by two 220 A.C. volts Generators of 50 and 25 KW capacity. An X-Ray Plant donated



by UNICEF was installed. Major thoracic surgery was started by Prof. Siddiqui who performed about 35 thoracoplasty operations in this short period. The dry conservancy system was replaced by waterborne system so necessary for a T.B. hospital which deals with infectious material.

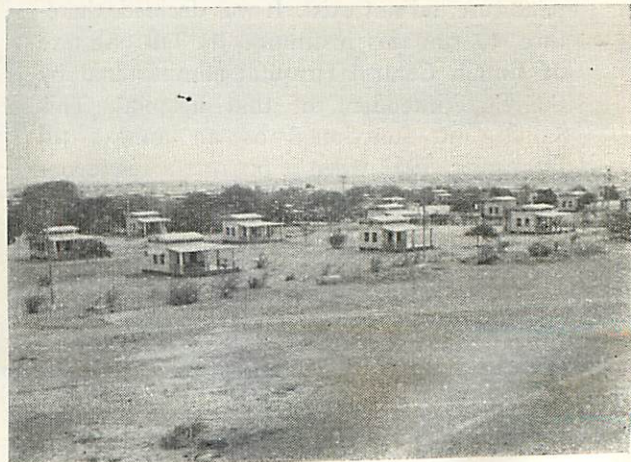


This Sanatorium expanded to its maximum capacity of 182 beds in December, 1957 (official bed strength: 200).

In 1957, this Sanatorium ceased to be a part of Jinnah Central Hospital and was made an independent hospital. Dr. A. K. Shariff, Director, T. B. Control and Training Centre, Karachi was also appointed the administrative head of this Sanatorium. This arrangement of one doctor being the head of an indoor T.B. Hospital (Ojha Sanatorium) and outdoor T.B. Clinic (T. B. Control and Training Centre) worked very well as it ensured continuity of supervision of the patients from outdoor to indoor and again from indoor to outdoor. Tuberculosis is a disease needing prolonged treatment, often over 2 years; hospital treatment is only one phase of the treatment.

Even in 1958, the conditions were far from satisfactory. The place was still without trees and plants and necessary greenery with the result that the patients and the staff were exposed to dust. Most of the roads were *kutchra*, essential equipment was lacking, staff inadequate, kitchen non-existent. One of the patient's cottage was converted into kitchen which was dirty, smokey and ill-lit. The patients were over crowded; although official bed strength was 200 beds, even with maximum over-crowding the number could never be increased beyond 190.

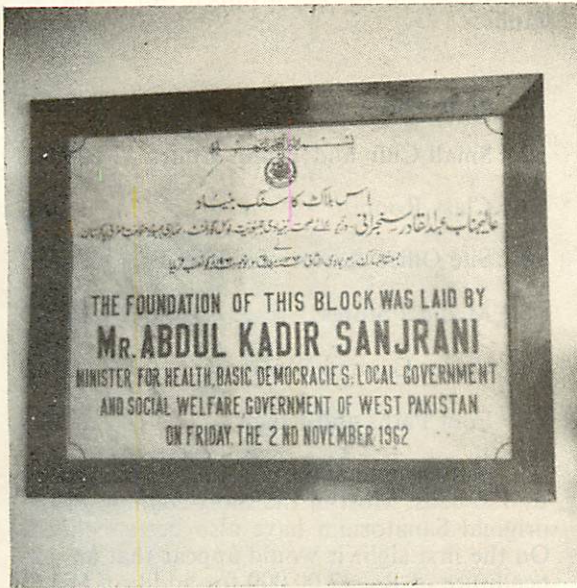
The patients were housed in cottages 80 feet apart, two patients in each cottage. This spread-out arrangement looks very pretty of first sight, giving an impression of spaciousness. But it is hard both on the patients and the Nursing Staff. Patients cannot be



nursed properly and the nurses tire out quickly moving from cottage to cottage. It also wastes their time. The design of the Sanatorium may have suited to the condition of the time when it was constructed and to the then prevailing system of turning the cottages into patients homes. But it defeats the very purpose of segregation and modern treatment. The Sanatorium also lacked all amenities of a modern hospital. It also lacked in housing accommodation, roads and paths and did not have essential accommodation for facilities like X-Ray Department, Operation Theatre, Recovery Rooms, Laboratory, Kitchen and Laundry. Government of Pakistan sanctioned a scheme in the Second Five Year Plan for the expansion and modernisation of the Sanatorium at a total cost of 47 lakh. The present Director was appointed as head of this institution on 31-8-1961, when a year had already passed since the start of the Second Five Year Plan period. He was charged with the responsibility of expeditious implementation of the scheme. Working at top speed, designs for the new integrated hospital block were prepared within one month during September 1961, tenders called in October 1961, work awarded in December 1961 and actual construction work started in April, 1962. The corner stone of the hospital block was laid by Mr. Abdul Kadir Sanjrani on

2-11-1962. The whole construction pro-

gramme was completed in 1967 two years behind schedule. The building was formally declared open by the former Minister of Health, Bengum Zahida Khaliq-uz-Zzaman on 2nd September, 1967 and is in commission since then. The work initially started by the

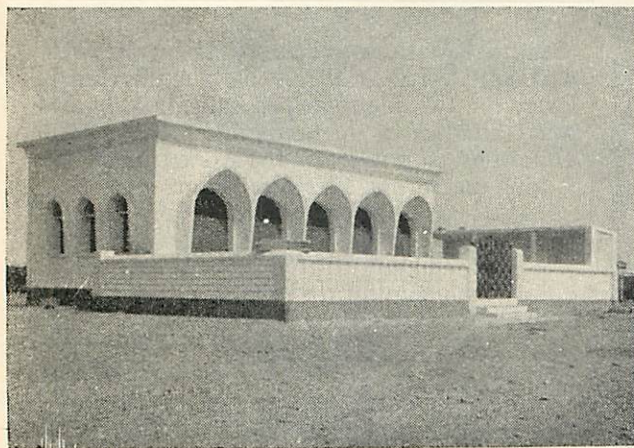


Central P.W.D., was taken over by the West Pakistan P.W.D. in 1963. Despite this change over, the work progressed satisfactorily and was completed in minimum time. The following list will show the work carried out during the Second Five Year Plan.

1. Hospital Block for 150 bes with other requirements etc.	Rs. 20,55,000
2. Kitchen for 360 beds	1,14,630
3. Incinerator ..	3,250
4. Electric sub-Station	12,400
5. Electric Lines from K.E.S.C.	11,2,400
6. Air-conditioning and Bed Lift	1,40,000
7. Water Supply and Sewage Scheme. ..	4,50,000
8. Sui Gas Installation	50,000
9. Roads and paths ..	78,000
10. Horticulture ..	10,000
11. Laundry Building and Central Sterilization ..	95,000

12. Nurses, Hostel	..	3,61,400
13. Staff Quarters	..	2,09,000
14. Equipment (including Rs. 5,00,000 in Foreign Exchange)	..	10,00,000

In addition to the construction of these buildings modern equipment has been procured at a total cost of Rs. 10 lakhs including 5 lakh in foreign exchange. On completion of this project in 1967, the number of beds in this Sanatorium increased to 350. The construction is designed to fulfil all needs of T.B. patients. This design is most modern and unique, a new venture in the field of hospital architecture. The new hospital also provides a set of most modern operation theatres, intensive post operative care department, well equipped Laboratory, X-Ray, Department, Steam Laundry and Central Sterilization Department, an automatic sputum destruction station and a spacious kitchen. In addition to the accommodation and other facilities for the hospital patients, a mosque has been



constructed by public donations at a cost of Rs. 26,000. A new nurses hostel, perhaps the best, the construction of new staff quarters housing facilities have improved, though the full requirements of housing and roads have yet to be met. In addition to the construction and equipment, the Government also sanctioned additional technical staff for proper utilization of the facilities now provided.

The following work included in the original schemes had to be dropped for want of funds:-

	Rs.
1. Shop No. 3	9,300
2. Small Club and Tennis Court	28,600
3. Class Room	15,066
4. Site Office & Store for P.W.D.	14,880
5. Medical Stores	96,140
6. Under Ground Reservoir	1,00,000
7. Foot Paths and Roads	18,500

Bed strength of the hospital has been raised by 150 beds. Most of the short-comings of the original Sanatorium have also been rectified. On the first sight it would appear that an expenditure of Rs. 47,00,000 for addition of 150 beds is on the high side. But it is not so. In fact, new accommodation for two hundred beds has been constructed and 38 bed, in the old hospital have been adjusted to overcome over-crowding. Moreover new construction also includes the share of facilities of old hospital beds which did not exist before, as for example, Kitchen, Laboratory Laundry, Nurses Mess, Dispensary, X-Ray Department and Medical Library, Committee Room, Physiotherapy Department, Sputum Sterilization etc.

Ojha Sanatorium is one of the largest tuberculosis hospitals in the country. It is also the best equipped one containing all the facilities for diagnosis and treatment of the chest diseases. It has on its staff qualified chest physicians, pathologist and anaesthetist, experienced nursing supervisor and a visiting chest surgeon. In addition to providing the diagnostic and treatment facilities it is well equipped for undertaking research. The diagnostic department consists of the most modern X-Ray equipment found anywhere in the country. There are facilities for tomography (multi cassette laminography) etc. The laboratory is equipped with respiratory physiological equipment for spirometry and blood gas examination. Pathological laboratory has sections for microbiological, clinical pathology, biochemistry and histopathology. On the treatment side a well equipped chest

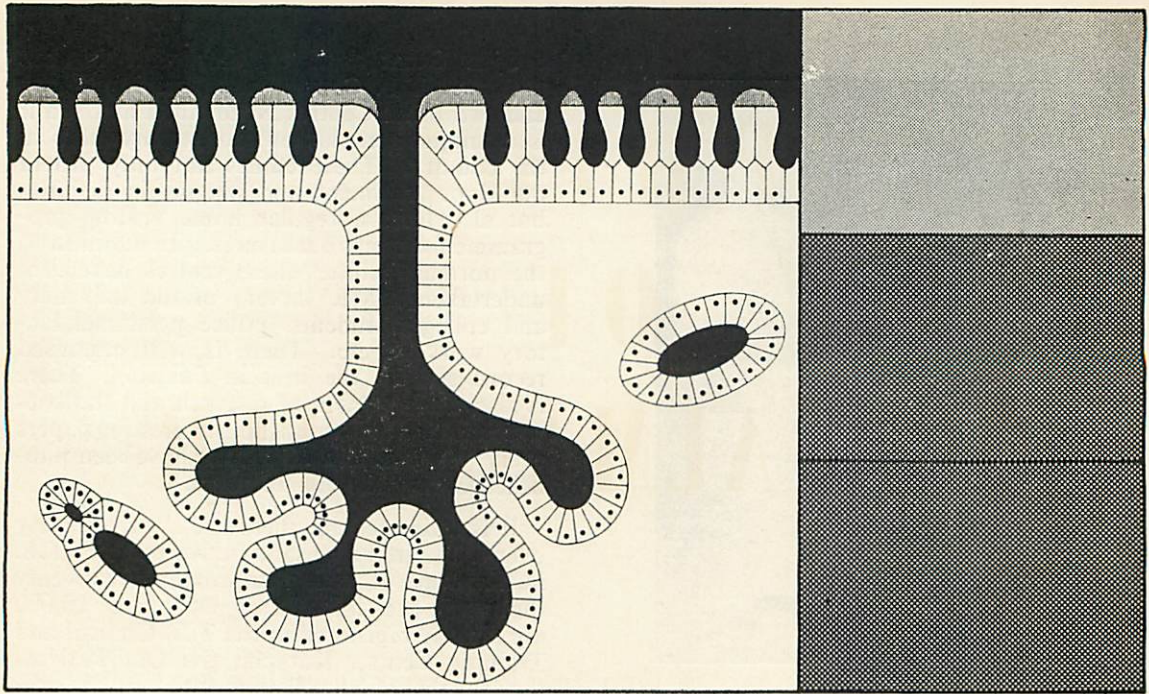


surgery unit has been provided with most modern equipment for anaesthesia; and intensive therapy unit facilities for continuous monitoring of blood pressure, respiration, cardiac rate, electrocardiography, etc. is being added. There is a medical social work unit with arrangements for counselling, economic assistance, vocational training, diversionary therapy etc. etc. In addition to pulmonary tuberculosis, concomitant disease and complications are also treated. An automatic steam laundry and special kitchen have also been provided. There is an excellent nurses hostel the best in the country and a very good house surgeon hostel where separate bed rooms and attached bath are available.

Accommodation for doctors and nurses is more than adequate. There is a regular bus service from the town; hospital has also transportation of its own. This sanatorium therefore, is a place where patients can be diagnosed well and treated in most congenial atmosphere and where doctors and nurses can receive training in tuberculosis and chest diseases. This sanatorium is recognised for doctors who intend to take up training in tuberculosis and chest abroad.

Ojha Sanatorium together with its out patients. T.B. Control and Training Centre and two other Centres Nazimabad and Malir is a unique complex not found anywhere in the country. These clinics not only provide out door treatment and diagnostic facilities but also have a regular home visiting programme for control measures. In addition to the normal facilities these centres have also undertaken MMR survey of the university and colleges students, police personnel, factory workers, etc. There is well organised record system, the best in Pakistan. There is also a department of research and statistics which is regularly publishing interesting papers every year; nearly 30 papers have been published during the last 10 years.

It is estimated that there are approximately over a hundred thousand active cases of T.B. in Karachi, of which approximately twenty thousand are infectious. Of these 10,000 are already registered in the T.B. Control and Training Centre, Karachi, the Out Patients department of the Sanatorium. It is estimated that the minimum number of hospital beds for T.B. in Karachi should be approximately two thousand, that is, one per ten infectious cases. It is also estimated that approximately eight thousand patients die of T.B. every year in Karachi. At a very conservative estimated, one bed for 4 death, international standard (1 bed per death) the minimum requirements again works out to two thousand beds. If to this are added the requirements of beds for chest diseases other than tuberculosis, Karachi should have a minimum of 2,500 beds. At present the total number of beds available at Ojha Sanatorium and other hospitals in the city is approximately 500. There is, therefore, need for increasing the bed strength for T.B. and chest disease five folds. The first phase of expansion of Ojha Sanatorium has been recently completed. It is proposed to raise the bed strength to 500. It has also been proposed to construct a 200 bedded chest hospital for factory workers. It is hoped that other hospitals will provide T.B. beds thus increasing T.B. beds by another 100 beds raising the bed strength earmarked for T.B. to one thousand. There is further scope for constructing additional hospitals for T.B. and chest diseases or vastly expanding the present ones.



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PRIDE OF OUR ALMA-MATER

“Doctor is a man of Science and Grace”, and Dow Medical College is its site.

An institution is known by quality of scholars it produces. It is here where students get admitted, learn the art of this noble Profession, and hold the torch of knowledge and lit the whole world.

On the occasion of the Silver Jubilee Year, with great pride and pleasure I take this opportunity on behalf of the Chairman, the Magazine Committee, the Editorial Board and myself to welcome and introduce our new Honourable and respected Professors and Assistant Professors, most of them who were once the students of this mother institution, to our College and students.

I hope the biographical sketches of our respected staff will inspire the budding doctors to strive for greater achievements.

OUR NEW
ADMINISTRATOR & PATRON



Professor Abdul Wahid
MS. (Anat), MS (Surg.); F.I.C.S.
Patron, Students' Union & Administrator,
Dow Medical College, Karachi.

Welcome

TO welcome Professor Abdul Wahid amongst us as an Administrator of this College and consequently as patron of the Dow Medical College Students' Union, is a privilege and honour that knows no bond.

It is indeed our good fortune that we have in him a very able and efficient administrator who is well versed with the problems and difficulties of the students, and who always goes all out in trying to solve his students' interest.

His fatherly advise and amiable nature has won him love and respect from all corners of students committee.

We hope he shall continue to guide us in the years to come for, the efforts of which we extend to him our best wishes and sincere and humble co-operation.

This year we are extremely fortunate to be the batch of the Silver Jubilee Year and above all to have Professor A. Wahid as our new Administrator of the College and subsequently patron of the Union.

Professor Abdul Wahid

M. S. (Surg.) M. S. (Anat). F.I.C.S.

Chairman College Academic Council; Administrator, Dow
Medical College, Patron, Dow Medical College
Students' Union.

PROFESSOR A. Wahid born in August 1921 in a village Sabrahad in the district of Jaunpur, U.P. India. His early education was in a *Maktab* at home. Primary education from Centennial School Lucknow-Missionary School—High school and Intermediate from Lucknow Christian College in 1935.

During College life took part almost in all compulsory games. Represented the College "A" team in Basket Ball, Secured 1st Class Certificate in Physical Fitness i.e., 100 meters in 12 sec., High jump 4'x2", Pull ups 13 and had 90% attendance in games. Was a debater and secured 1st position in Inter class debates. Appeared for Pre-Medical Examination in King George's Medical College Lucknow and was admitted in 1937 with 2 Muslims and 45 Hindus. Did his M.B.B.S. graduation in 1942, M.S. (Surgery) 1945; M.S. (Anatomy) 1946; F.I.C.S. 1952 and Training Certificate in Gross Anatomy U.S.A. 1958.

Special Remarks: Awarded Dr. Sahabzada Saiduzzafar Khan Anatomy Dissection Prize in 1938. Awarded Physiological Society Prize for Best Article read in 1938. Passed with Honour and obtained distinction in Anatomy & Physiology in April, 1939 Examination.

Awarded University Scholarship of Rs. 16/- p.m. for 1938-39.

Awarded Medal and certificate of Honour in Anatomy in 1939.

Awarded Medal and certificate of Honour in Physiology in 1939.

Awarded Dr. Sahabzada Saiduzzafar Khan Gold Medal in Anatomy in 1939.

Awarded First Prize of Books for 1st M.B.,B.S. in 1939.

Awarded University Scholarship of Rs. 20/- p.m. for 1939-40 and 1940-41.

Obtained Distinction in Pathology in—April, 1941.

Awarded Certificate of Honour in Pathology and Silver Medal in 1941.

Awarded 2nd Book Prize of Final M.B.B.S. Pt. I, Group B, in 1941.

Subsequent Addition: Awarded Pandit Suraj Narain Bahadur Gold Medal for obtaining highest aggregate marks in Physiology, Pathology and Medicine of the Professional Examinations, for the degree of M.B.,B.S., for the year 1942. Awarded Hamid Gold Medal for obtaining highest total marks in Anatomy, Pathology and Surgery in the respective professional examinations for the Degree of M.B.,B.S., for 1942.

Awarded Cash Prize of Rs. 50/- instituted by Nasrullah Khan for the best Mussalman student in Clinical and Practical Medicine. Awarded Bronze Medal and Certificate in Ophthalmology in 1942. Awarded a Certificate of Honour in Obst. and Gynaecology in 1942. Passed M.S. Examination in Surgery in 1945. Passed M.S. Examination in Anatomy in 1946.

Post-Graduate Work and Researches: Thesis for M.S. Surgery on 'Urinary Calculi' in 1945. Abstracts published in Indian Journal of Surgery in September, 1947. Lucknow University.

Thesis for M.S. Anatomy on 'Comparative Morphology of Lumbo-Sacral Plexis' 1946, Lucknow University.

Urinary calculi-A, Experimental study-Indian Journal of Surgery in 1946 Lucknow University.

'Double Headed Sartorius' Medicus November, 1950. Dow Medical College, Karachi.

'A Case of Double Ulnar Artery - Pakistan Medical Journal, July, 1951.

'Variation of Coraco-Brachialis Muscle as observed in the Dow Medical College, Karachi. (Dissection Hall).

'Anomalies of Extensor Indicis Muscle' Pakistan Medical Journal September, 1951, Dow Medical College, Karachi.

'Anatomy for Medical Students-Dowlite-1958-59, Dow Medical College, Karachi.

Teaching of Anatomy in U.S.A. Dowlite, 1958-59.

'Applied Anatomy of the Lung' Paper read before the 5th Annual Conference of the Pakistan Tuberculosis Association Medicus-December, 1960. Teaching of Gross Anatomy-Paper published in the Dowlite in 1960.

Teaching of Anatomy under the new scheme, 'The one year's course' Dowlite 1964, Dow Medical College, Karachi.

Importance of Genetics in Medicine - Presidential address in Urdu at the 6th Annual Conference of the Scientific Society of Pakistan-December, 1964.

Anatomical Aspects of Glaucoma, paper read before the Ophthalmology Society of Pakistan in 1968 and published in their Annual Report.

University Status: Member of the Faculty of Medicine Lucknow University-1946-48. Member of the Academic Council Lucknow University 1946-48. Member of the Court Lucknow University, 1946-48. Member of the Academic Council Karachi University-1952 to upto-date. Member of the Faculty of Medicine Karachi University-1952 to upto-date. Member of the Senate Karachi University-1952 to upto the end. Member of Committee of Courses for M.B.,B.S. Karachi University-1952 to upto-date.

Member of the Committee of Courses for M.Sc., Basic Medical Sciences, Karachi University 1960 to upto-date.

Member of the Examination Committee-1960 to upto-date, Karachi University. Dean Faculty of Medicine since 1st October, 1969 University of Karachi.

Appointments Held: Junior and Senior House Surgeons to the K.G. Hospital, Lucknow University from 1st July, 1942 to 30th June, 1943.

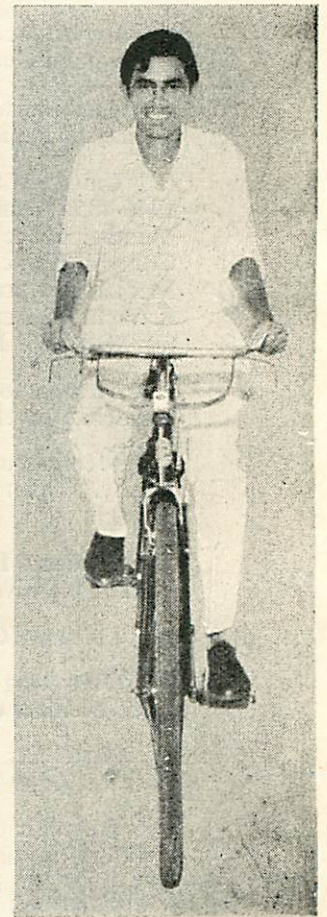
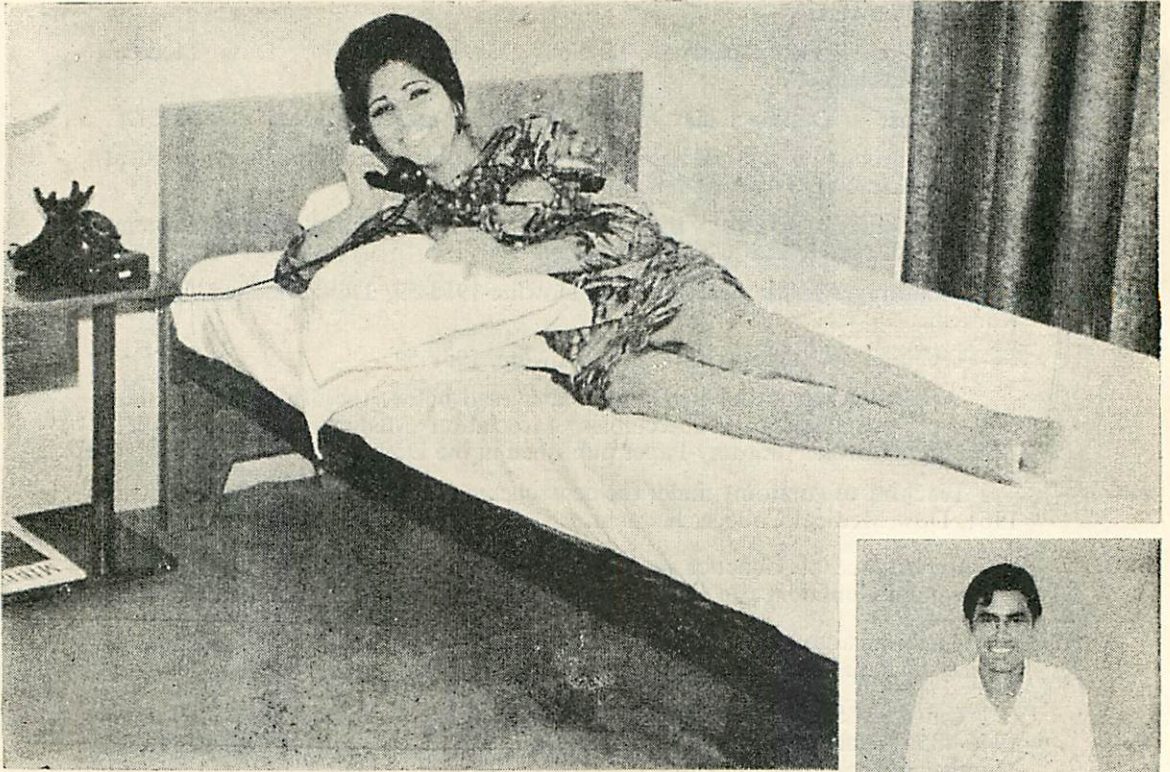
Lecturer (Grade A) in Anatomy since October, 1945 K.G. Medical College,

Officiating Reader in Anatomy since October, 1945 to December, 1948, K.G. Medical College, Lucknow.

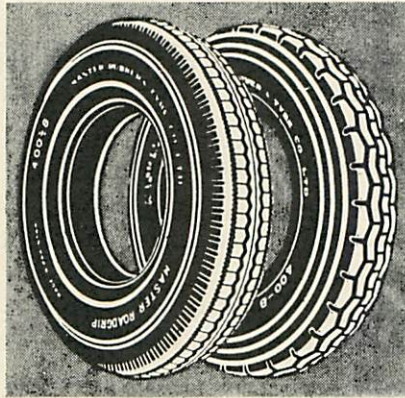
Asstt: Professor of Anatomy, Dow Medical College, Karachi, from 3rd January, 1949 to 26th January, 1949.

Professor of Anatomy, Dow Medical College, Karachi from 26th January, 1949 to upto-date.

Chairman, College Academic Council, Administrator Dow Medical College and Patron Dow Medical College Students' Union from 30th September 1969 to date.



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Professor
Dr. M. A. Qayyum
FRCS, DLO., DO., (Eng.)
FACS., FICS,
Professor of Ear, Nose and Throat
Dow Medical College
and
Civil Hospital Karachi.



Born at Jullunder (India) on 25th March 1926.

An alumnus of King Edward Medical College, Lahore, which he joined in 1943 & from where, he graduated in June 1948,

He had a bright academic career and has been a keen Tennis player, was a member of K.E. Medical College Tennis team for 5 years and its captain in his final year. His interest in Photography has been sustained ever since and is still pursued with considerable seriousness.

After graduation in 1948, worked for 2 Years as a House Surgeon in the departments of Eye & E.N.T. and Surgery, of Mayo Hospital, Lahore.

Proceeded to U.K. in 1950, where he worked at the Royal Moorfield Hospital and Royal National Ear, Nose and Throat Hospital, London and passed D.O. and D.L.O. Examinations in 1952 and 1954, from Royal College of Surgeons, England.

Subsequently worked for a year as a Registrar with the distinguished Ear, Nose & Throat Consultant Surgeon, Dr. I. Simson Hall, Passed his F.R.C.S. in 1956.

On his return to Pakistan in 1956, Dr. M.A. Qayyum was appointed as ASSOCIATE SURGEON (E.N.T.) & ASSOCIATE PROFESSOR OF SURGERY (E.N.T.), at the Civil Hospital & Dow Medical College, Karachi from 28th August 1956, with the Late Professor Shafiuddin Khan. This assignment lasted 13 Years.

In November 1969, on the demise of Prof. Safiuddin Khan, Dr. M. A. Qayyum was appointed to the post, and honoured with PROFESSORSHIP.

He was Elected F.I.C.S. in 1963 and honoured with F.A.C.S. in 1964.



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Professor,

M. M. Hasan

*M.B.,B.S.; D.M.O.S. (Lond.);
F.R.C.S. (Lon.); F.C.P.S.*

*Professor of Ophthalmology
Dow Medical College,
Civil Hospital Karachi.*

Professor M.M. Hasan born in India in 1924. Having passed his B.Sc. in 1940. from Muslim University, Aligarh, did his graduation of M.B.,B.S., in 1945. with honours and securing first position in the University.

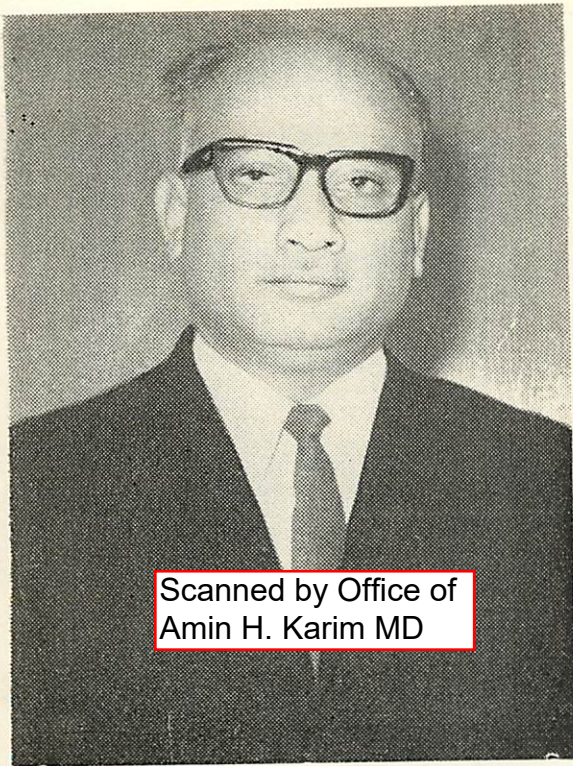
In late 1945 Proceeded to England for his Postgraduation , from where he obtained his D.O.M.S. in 1949 from London, and later in 1951 his fellowship, F.R.C.S. from Royal College of Surgeon London. While in England Prof. Hasan served as senior Clinical assistant in Moorfield Eye Hospital and subsequently was a consultant to Fulham Hospital, Battsoa Hospital and St. Audrew's Hospital.

Prof. Hasan takes the credit of being the first to obtain F.R.C.S. in ophthalmology in Indo-Pakkistan sub-continent.

On return to Pakistan he was appointed in Jan. 1954 as Professor of optalmology in Liaquat Medical College, and subsequently being the chairman Academic Council and Administrator of the same college.

Prof. Hasan was a member of Medical Council of Pakistan representing the University Sind. He was honoured with F.C.P.S. in 1960 and has been founder member of the council of College of Physicians and Surgeons, Pakistan.

He was transfered in July 1970 to Dow Medical College, Civil Hospital Karachi, as Professor of ophthalmology and Head of the department of Eye.



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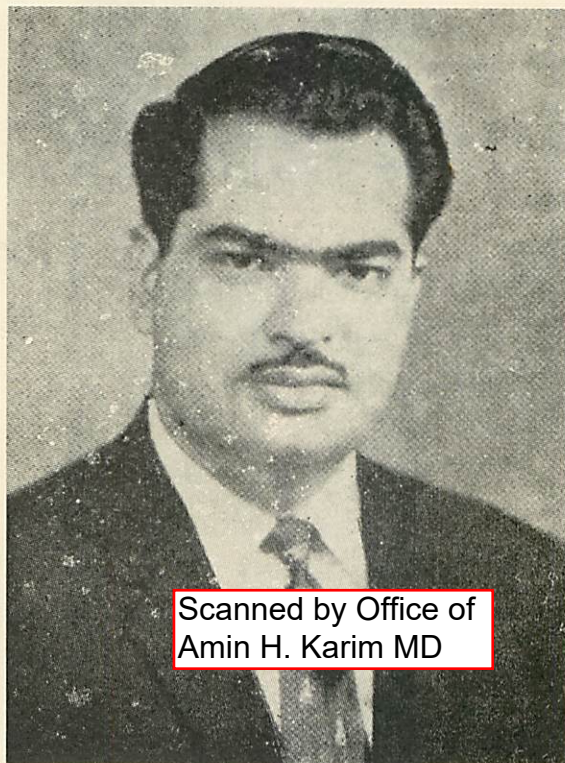
Prof. Israr Husain Jafri

M.B.,B.S., D.L.O. (London), F.R.C.S. (Eng.)
*Prof. of E. N. T. Dow Medical College, Civil Hospital
Karachi.*

PROF. JAFRI did his early education from Agra University India; thereby, he joined the Agra Medical College. After completing his 1st professional M.B.B.S. he migrated to Pakistan and joined Dow Medical College Karachi from 2nd year M.B.,B.S., and graduated in 1951; securing 2nd position from Karachi University. Worked as a house-Surgeon in E.N.T. for 2 years and then as a registrar with late Prof. Shafuiddin. Had the privilege of being the first house surgeon and registrar in E.N.T. ward of Civil Hospital Karachi. Left for U.K. where he worked in various capacities from a house surgeon to a registrar. In 1956, he got his D.L.O. and in 1957 obtained his fellowship from the Royal College of Surgeons, England. On return from England in 1957, joined Liaquat Medical College as an Assitt. Prof. and in 1961, was selected as Prof. of E.N.T. In June 1970, transferred to Dow Medical College, Civil Hospital, Karachi as senior Professor of E.N.T. Prof. Jafri has written about 14 papers which have been published in various journals. As a teacher he takes keen interest in his students. In L.M.C. he made a very good demonstration room and a museum. He intends to make similar things in Dow Medical College. As a sportsman, his favourite sports are hockey and cricket.

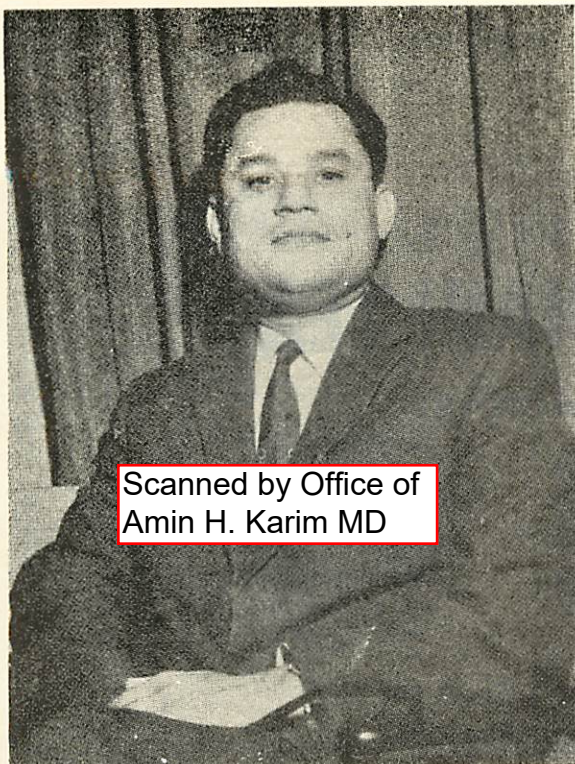
**Professor
Naseer Shaikh**

M.B.,B.S., F.R.C.S. (London)
*Surgical Unit-III, Civil Hospital
Karachi.*



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BORN at Mirpurkhas in Sind 1934, early education from Naushero Feroz. Graduated from Dow Medical College in 1956. Took keen interest during college days in students welfare activities. did his early house job in J.C.H. in 1957 appointed as Anatomy Demonstrator. In late 1958 proceeded to England. Got his fellowship F.R.C.S. from London in 1961. While in London worked in Nuffield College of Surgical Sciences attached to the Royal College of Surgeons of England and was residents representative committee. In February 1962 appointed as Assistant Professor of Surgery in Liaquat Medical College and in 1963 transferred to Karachi. On retirement of Professor Siddique 1966 took over as Professor of Surgery. In 1968 was selected as Professor of Surgery by the then West Pakistan Public Service Commission on open competition. Attended in meeting of American college of Surgeons at Atlantic city U.S.A.. He was one of the members of the Pakistan deligation to West Germany. Beside being a pioneer in shunt Surgery (Portal Canal Shunt) in Civil Hospital, he is also the first Surgeon who conducted total exchange blood transfusion in cases of hepatic coma. Has always taken keen interest in teaching and demonstrating students by slides, museum specimen at the same time have particular interest in his words staff. In 1969 transferred to Hyderabad and in November 1970 transferred back to Karachi at Professor of Surgical III.



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Professor

Khwaja Muin Ahmed

M.B.,B.S., M.R.C.P., (Edin)
D.T.M. & H. (Eng.)

*Prof. of Medicine, Medical Unit III.
Dow Medical College, Civil Hospital,
Karachi.*

IN 1947, migrated from Nagpur Medical College, India to Dow Medical College from where he did his medical graduation in 1952; securing third position from University of Karachi, having highest marks in medicine. Did his house job in medical unit I under Late Prof. Major Hasan, and later as a registrar in Medical Unit II with Col. Malik. For 2 years, he worked with Late Prof. Paracha of Cardiology. In early 1957, on Volkart's foundation left for U.K. for his post graduation. Obtained his D.T.M. & H. from England and M.R.C.P. from Edinburgh. On return to Pakistan, he was appointed as chief Medical Officer of Burma Oil Company from 1959 to 1961. Joined Dow Medical College in 1961 as an Asstt Prof. of Medicine in Medical Unit I till 1969. Late that year, left for Hyderabad as Prof. of Medicine. On breakage of One Unit, he was transferred to Dow Medical College in July 1970 as Prof. of Medicine in Medical Unit III. Prof. Kh. Muin was active in Union Activities of College during his college days. He was elected as Class Representative in 4th year. He obtained a trophy and prizes in social activities Dr. Kh. Muin takes keen interest in Student activities and was chairman of the Gymkhana Committee. Has written several papers which have been printed in Medical Journals of P.M.A. and he has read Papers in Medical Conference at Dacca.

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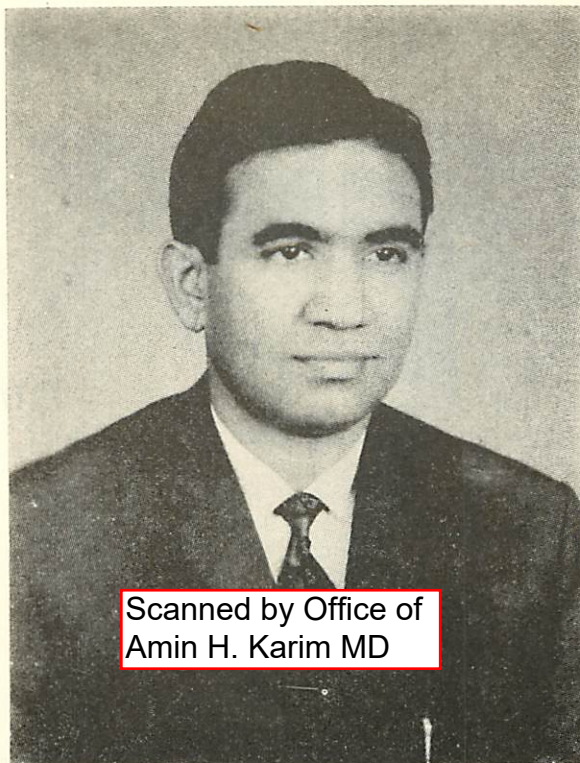


MMI - 593

THAYER

Dr.
Abdul
Gaffar
Biloo

*Asstt. Professor
of
Paediatrics
Dow Medical College,
Civil Hospital,
Karachi.*



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Amin H. Karim MD

DR. GAFFAR, a domicile of Karachi, born on 14th Jan, 1937, did his early education from Karachi. Did his M.B.,B.S. graduation from Dow Medical College in 1959.

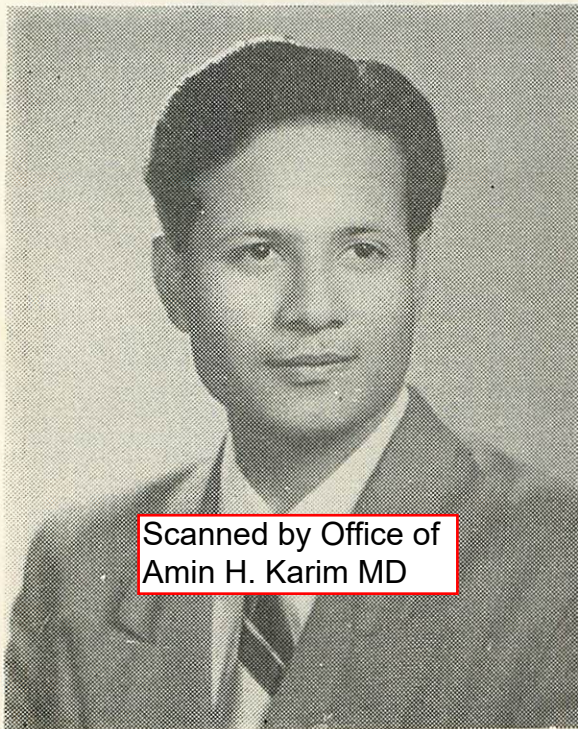
In mid 1961 left for abroad for his post graduation. In Feb. 1962, he obtained his D.T.M. & H. from London and same year in June D.C.H. from Glasgow. Later in Oct., 1964 he obtained his M.R.C.P. from Edinburgh and Glasgow.

DR. A. G. Biloo immediately after his graduation in 1959 joined J.C.H. as resident house-physician in children's ward under Prof. Hamid Ali Khan.

While in U. K. he had a full-time course in Tropical Medicine at London School of Tropical Medicine and Hygiene.

In April 1962 he did his post graduate training in Paediatrics at Royal Hospital for sick children in Glasgow under Prof. Hutchison. In early 1963, was appointed a Resident House Officer in Medicines Gateside Hospital, Grenock, U.K., and same year in August, till March 1965 was appointed as Registrar in Paediatrics at Seafield Sick children Hospital, Ayleshire, U.K.

On return to Pakistan in 1965, he joined the cardiovascular diseases Research Project at J.P.M.C. as a Physician under Lt. Col. Shaukat Ali Syed. From Sept, 1967—Dec. 1970, he was a consultant Paeditarician and Head of Deptt. of Paediatrics, Holy Family Hospital, Karachi. Dr. Biloo joined Dow Medical College, Civil Hospital, on 23rd Dec., 1969 as Assirt. Prof. of Paediatric. Dr. Abdul Gaffar Biloo has so far published four original papers on important Medical topics like cardiology, Bacteriology, and Paediatrics.



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Dr. MALIK ALI SHEIKH

M.B.,B.S., Ph. D. (Oxford) ;

M.R.C.P. (Glasg.),

M.R.C.P (E)

Rhodes Scholar

DR. SHEIKH distinguishes himself for breaking the record in Medicine held at the Panjab University since 1919. He won Distinction in Medicine in the final M.B.,B.S. and was awarded Dr. Rahim Khan's Gold Medal for standing first in Panjab University. Was awarded Harper-Nelson-Raghubir Singh Memorial Gold Medal for being the most Distinguished Medical Graduate for the year 1954-55. Sutherland's Memorial Gold Medal was awarded to him for standing first in Medicine in the Panjab University. He won Col. Bakhle Memorial Silver Medal for standing first in Clinical Surgery in final M.B.,B.S., examination. During the undergraduate training a Silver Medal and a Government Merit Scholarship was awarded to him for standing first and securing Honours in Pharmacology. Besides, he scored Honours in Hygiene.

Dr. Sheikh became a Rhodes Scholar by winning a Rhodes Scholarship in 1957. He was associated for a year with late Col. Illahi Bakhsh as his House Physician. In 1957 Dr. Sheikh proceeded to Oxford on the invitation of Rhodes Trustees for research work with Professor L. J. Witts. Nuffield Professor of Clinical Medicine. While at Oxford he published a thesis on "Biological Assay of Intrinsic Factor in totally gastrectomised rats and megaloblastic anaemias in gastrointestinal diseases" for which he awarded the Degree of Ph. D. in 1960. The same year he was admitted to the Membership of the Royal College of Physicians of Glasgow and Edinburgh. Later he was associated with Dr. E. A. Wood at Brompton Hospital and Postgraduate Medical School of London.

On return to Pakistan in 1963 was appointed Assistant Professor of Medicine, Liaquat Medical College. In mid 1964 he was appointed as Head of the Department of Clinical Research with an international pharmaceutical company for whom he worked till mid 1970. He joined us as Assistant Professor of Medicine in December, 1970 with very wide experience and a brilliant carer.

Dr. Sheikh has been interested in blood diseases and during his stay abroad has gained tremendous experience under the able guidance of the Clinical Haematologist Professor L. J. Witts. Dr. Sheikh has so far published eleven papers on varied subjects like gastrointestinal antiseptics, absorption of vitamin B12, iron deficiency anaemia and cardiac glycosides. His recent addition has been the Civil Hospital Formulary which is now in the hands of all the medical personnel attached to this college and hospital.

Beside his brilliant medical carrier, he has taken keen interest in learning languages, he can speak, read and write fluently English, Urdu and French.

Dr. Iqtidar Hamid Bhatti

M.B.,B.S., (Pb)., F.R.C.S. (Eng).

Assistant Professor of Neuro-Surgery,

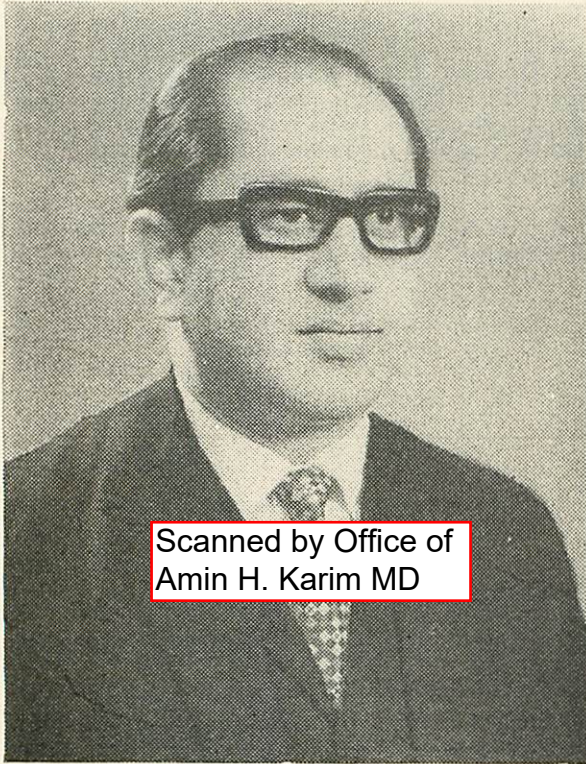
Dow Medical College—Civil Hospital, Karachi.

DR. I. H. Bhatti graduated M.B.,B.S., from King Edward Medical College in Lahore in 1959, with merits throughout his graduation.

In 1963 he left for U.K. for his Postgraduation from where he obtained his fellowship F.R.C.S. in Neuro-Surgery from the Royal College of Surgeons of England in early 1964.

While in England Dr. Bhatti worked in Atkinson Morley's Hospital London and at the National Hospital of Nerveous diseases Queen's Square.

Dr. I. Hamid Bhatti joined this institution in early 1970 as Assistant Professor of Neuro-Surgery.



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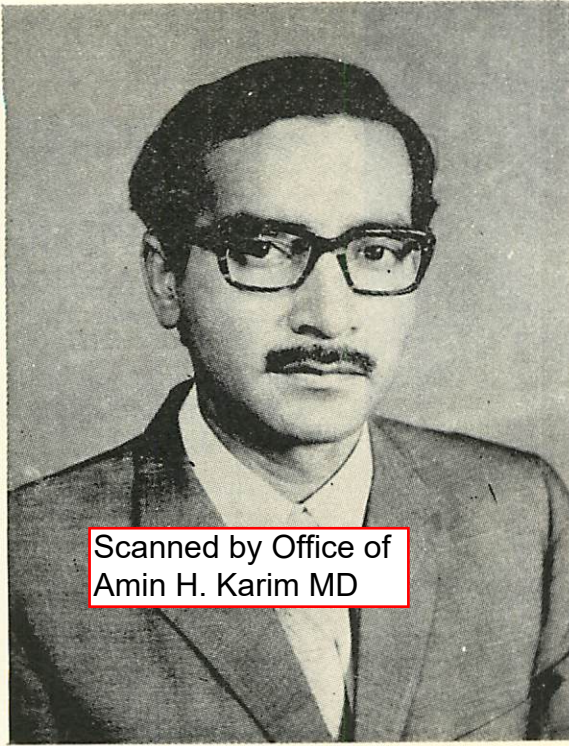
Dr. A. Majid Memon

M.R.C.O.G., F.R.C.S.;

*Asstt. Prof. Obstetrics and
Gynaecology.*

*Dow Medical College, Civil Hospital
Karachi.*

SURGEON Memon, born in Junagadh in 1935, migrated to Pakistan in 1948. After doing his early education in Hyderabad, Sind, he joined Liaquat Medical College, and graduated in M.B.,B.S. in 1959. Was honoured as the best graduate of the year having highest marks in Surgery and Gynaecology and Obstetrics. For his distinguished academic career in the Medical College he was awarded 4 gold medals. 4 silver medals and multiple merit certificates. In 1961, he left for abroad U.K. for his post graduates. On obtaining his fellowship F.R.C.S., M.R.C.O.G. from England, returned to Pakistan in 1967. While in England, Surg. Memon had a chance to work with the renowned Gynaecologists and Obstetricians of U.K. Sir Hector Melenon, Mr. Leaslie Patrick F.R.C.O.G. Had a teaching appointed in Glasgow University where he taught the under and post graduate students. On return to Pakistan, he was posted as an Asstt. Prof. of Gynaecology and Obstetrics in King Edward Medical College. On breakage of one Unit. he was transferred to Dow Medical College in June, 1970. Surg. Majid Memon has published 5 original papers of personal experience in the speciality while 2 more are under publication. He was invited by the Mount Sinai Hospital of New York for training in Culdoscopy. Besides his vast knowledge of the subject, he has a keen interest in photography, Lawn and Table Tennis.



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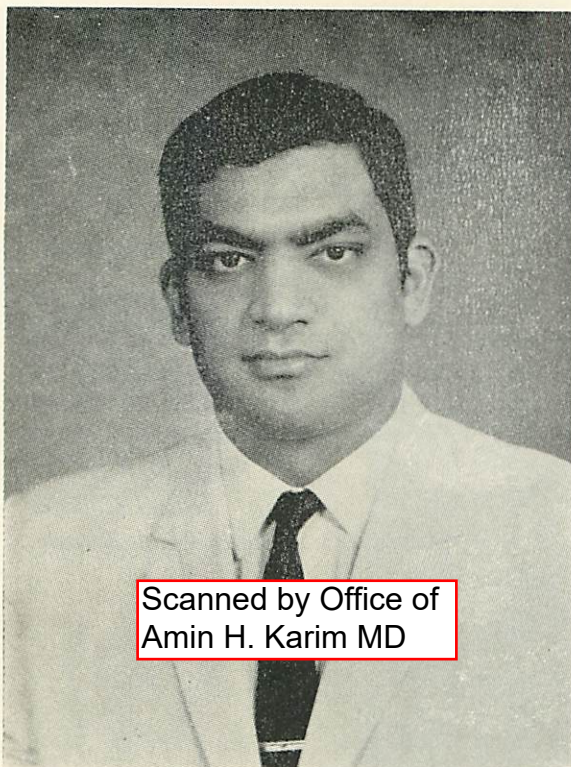
DR.
AKHTAR
AHMED

*M.B.,B.S., M.R.C.P. (Ed.)
Asstt., Professor of Neurology
Dow Medical College,
Civil Hospital Karachi.*

BORN in 1935 at Hyderabad Daccan, from where he did his early education. On Partition he migrated over to Pakistan. After his matriculation from Lahore, came over to Karachi and did his Intermediate Science in 1952 from D.J. College. In 1957 he graduated his final M.B.B.S. from Karachi University, topping the list in Medicine and was honoured with Mistry Gold Medal for the best Dow Graduate. He did his early house job under Prof. Maj. Hasan.

In early 1958 Dr. A. Ahmed left for U.S.A. where after working for 18 months, left for U.K. from where he obtained his M.R.C.P. in July 1962. On return to Pakistan, joined P.N.S. Shifa as Medical Specialist. After one year of service he joined the Mental Retard Project in the Neuro Psychiatric Unite at J.P.M.C. In December 1970 joined Dow Medical College, Civil Hospital as Assistant Professor of Neurology.

Dr. A. Ahmed has been on a study tour to U.S.A. under experts exchange programme in 1965. He has published several original papers on various aspects of mental retardation. and neurology.



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Dr. Irshad Wahid

M.B.,B.S., F.R.C.S. (Ed.)

*Assistant Professor,
Surgical Unit II*

*Dow Medical College,
Civil Hospital, Karachi.*

BORN in 1941 in U.P. India. On partition migrated to Pakistan, and settled in Karachi where he did his both early education and his M.B.B.S. Graduation from Dow Medical College in 1964. After doing his House job under Prof. Siddiqui left for U.K. in 1965 for his fellowship. Obtained his F.R.C.S. in 1968 in one attempt from Edinburgh.

While in U.K. worked in various hospitals, notable of which are Hammersmith Hospital and Royal Postgraduate Medical School of London and also in Peripheral Vascular Surgery in the same hospital.

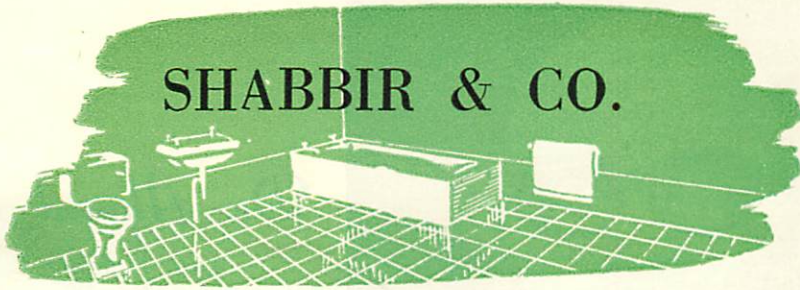
Immediately after his Postgraduation, returned to Pakistan and joined Civil Hospital as honorary registrar in Surgical Unit III. Later on became, Surgeon Incharge of the Surgical Unit at K.M.C. General Hospital, till before being appointed to Assistant Professor of Surgery, Dow Medical College, Civil Hospital in December 1970.

He presented various papers in Hammersmith Hospital on enternal Surgery.

Dr. I. Wahid had a brilliant medical career, during his under graduation he was a position holder throughout and winner of Gold Medal in his final M.B.B.S. and had distinction in Medicine. Beside his brilliant career he was a good Sportsman and was in the college Table Tennis team, and has won several prizes in this sport.

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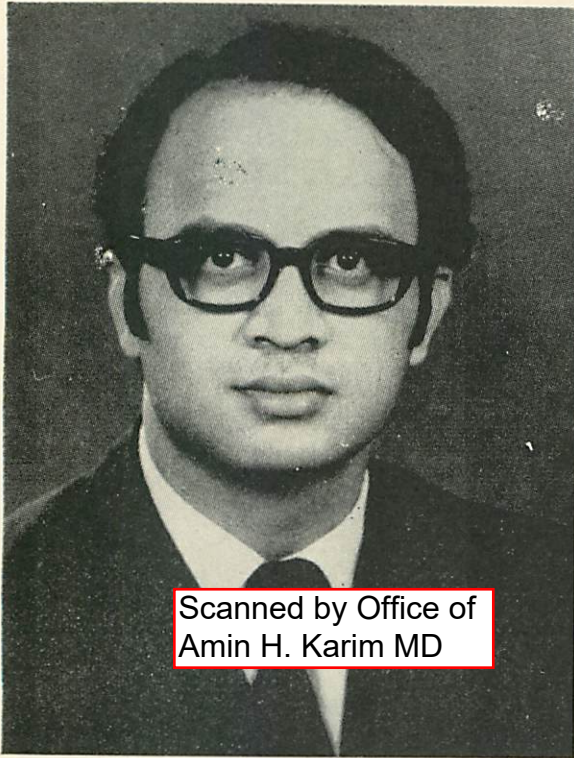
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Dr. Ahmed Hasan

Asstt. Professor E. N. T.

Dow Medical College,

Civil Hospital Karachi.

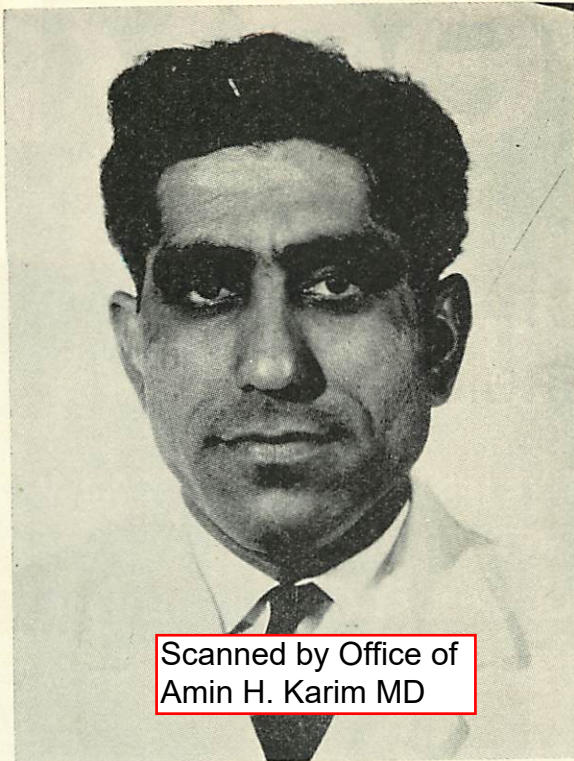
Born in 1940 in Hyderabad Daccan India. On Partition migrated to Pakistan, Did his early education from Karachi and Intermediate from D.J. Science College.

Graduated M.B.B.S., in 1964 from Dow Medical College. Did his house job in General Surgery for one year under Prop. Lt. Col. Said Ahmed.

Dr. A. Hasan left for U.K. in 1965 for his Past-graduation, where first he did House job in medicine and Ear Nose and throat.

Obtained his D.L.O. in 1968. and fellowship F.R.C.S. in E.N.T. in 1969. Got Registrar's job for three years in teaching hospitals.

On return to Pakistan in 1969 Joined J.P.M.C. as Registrar for 6 months, and then in December 1970 was appointed as Associate Surgeon E.N.T. in Dow Medical College, Civil Hospital, Karachi.



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**DR. S. ADIBUL
HASAN
RIZVI**

*Assistant
Professor of Urology
Dow Medical College,
Civil Hospital Karachi.*

BORN in 1936, after his pre-medical education in Karachi. Got admission to Dow Medical College in 1954 on merit list. In 1960 he graduated his final M.B.B.S. Dr. S. A. H. Rizvi beside having a brilliant medical carrier during his graduation he topped the Karachi University in his final Professional M.B.B.S. Examination.

Did his early House Job as junior and senior House Surgeon in J.P.M.C. for one year after which he was appointed as Registrar in Surgery in Civil Hospital for one year.

Dr. S.A.H. Rizvi, in 1962 left for abroad for his Post-graduation. While in U.K. he worked in various capacity. House Surgeon, Genito University Deptt., Salford Royal Hospital, S.H.O., Genito-University Deptt., Crumpsall Hospital, Manchester., S.H.O. Casualty and General Surgery, Ancoats Hospital Radium Institute, Manchester, Genito, Urinary, Plastic and General Surgery, Registrar in Surgery at Hope Hospital, Salford University U.K.

After obtaining his fellowship F.R.C.S. from Edinburgh and England in 1967, he returned to Pakistan where he was appointed as Honorary Senior Registrar at J.P.M.C. From 23rd of February 1971 was appointed as Asstt. Professor of Urology, Dow Medical College and Civil Hospital, Karachi where he works to date.

Dr. S.A.H. Rizvi has so far published several important publication on different aspect of medical science some of his important papers are on Idiopathic ileocaecal ulceration and on Parathyroid Tumors.

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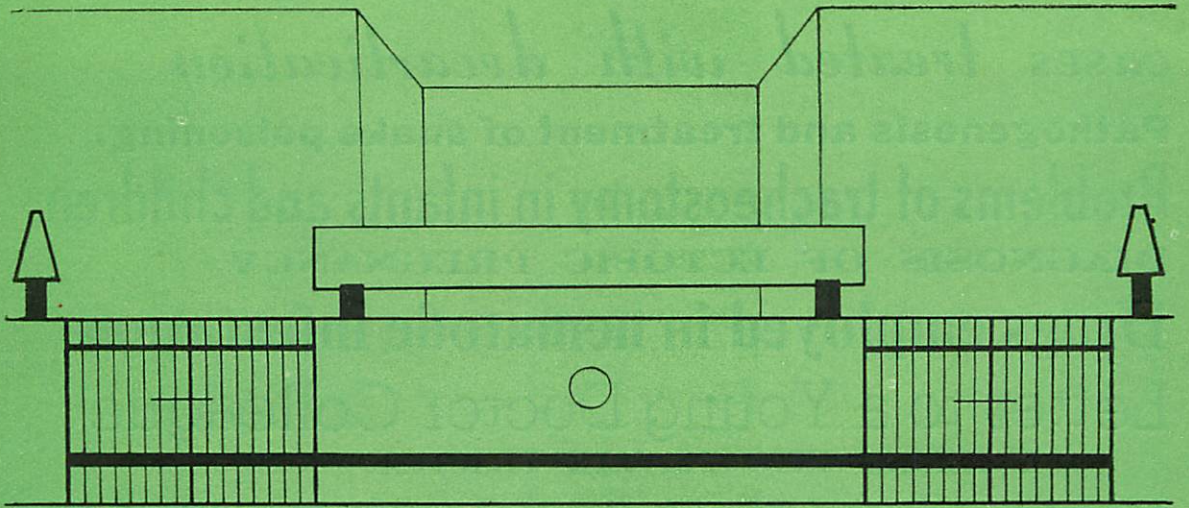
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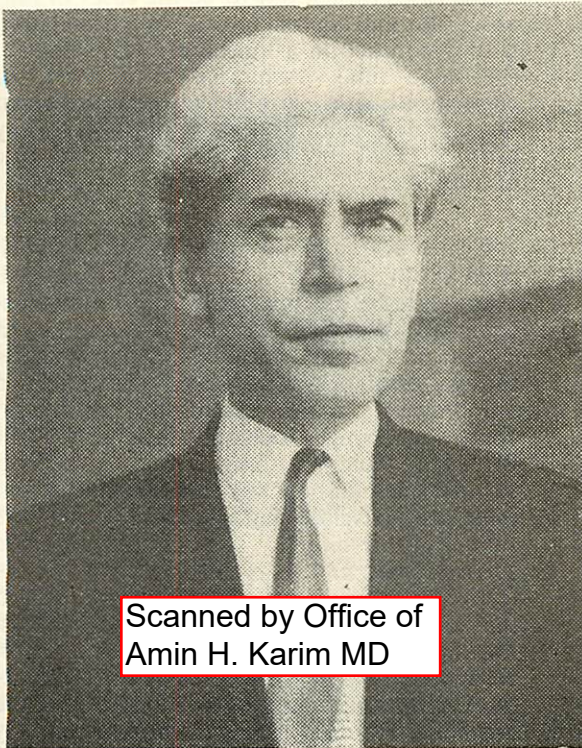
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A PRELIMINARY REPORT OF EMPYEMA CASES TREATED WITH DECARTICATION



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PROF. S. A. H. RAZVI
M.B.B.,S. (Osm) F.R.C.S. (Eng)
Ch. M., F.C.P. S.

EMPYEMA is a serious condition which is responsible for a high rate of morbidity and some mortality. (Graham and Bell and the Empyema Commission in 1918 reported that every case of Empyema in 1918 influenza epidemic who had a rib resection invariably died. Ucher and co-workers reported a series of 189 cases of Empyema between 1940 and 1956 with 59 death, a mortality rate of 29%. Hoffman in 1961 reported a series of 125 cases with 5 deaths.

It is obvious from these figures that though with better understanding of the pathological processes and better means of treatment the mortality rate is much reduced still 4% mortality rate in the hands of expert shows the seriousness of the condition. The morbidity is still higher.

The condition assumes greater seriousness for our country because of much greater incidence of pulmonary tuberculosis, resulting into many cases of pleural effusions and tubercular Empyema, which by injudicious management can be converted into Empyema.

Majority of cases of pleural effusion and acute Empyema with proper care and treatment can be cured. However, some cases will become chronic. Brown and Co-workers showed that 50% to 65% of acute Empyemas cleared on aspirations and antibiotics and 35% to 50% cases required surgery. In Hoffmans series of 125 cases 13 became chronic. I am sure with dearth of expert Chest Physicians and Surgeons the incidence of Chronic Empyema following pleural effusion or acute empyema must be much greater in our country.

Management of Chronic Empyema :

Chronic Empyema in the majority of cases is preventable. If cases of acute Empyema are properly and intelligently treated the incidence of chronic empyema can be much reduced. However, some cases will become chronic inspite of expert management and many for lack of expert attention.

Briefly speaking the problem of chronic empyema is to obliterate a pus containing cavity lined with infective granulation. At the same time if the underline lung is free of disease, allowing it to expand, will be a further help to the patient. Both these objectives can be obtained by decoratication operation in suitable cases. The idea is basically sound and is not new.

Delorame in 1864, probably for the first time described and practiced this operation. However, he was ahead of his times. In practice the operation failed to give satisfactory results and was abandoned.

The other alternative was to leave the underlying lung alone and close the cavity by allowing the overlying chest wall to collapse. With this view Estlander in 1879 improvised on operation. In 1890 Schede described his own modification of Estlander's operation. Both these operations were major surgical procedures and operative mortality was high. In 1935 Roberts described his operation. Although this operation is also mutaliting and serious, the mortality rate was reduced.

However, the problem of underline collapsed un-aerated lung creating cardio-respiratory problems remained unsolved. Price Thomas and Cleveland in 1946 described their war experiences with a large series of clotted and infected haemothorax treated with decortication. It was shown that decortication produced very satisfactory results provided the underlying lung was healthy and able to expand and in the immediate post-operative period it was kept expanded by suitable drainage and judicious suction.

During past few years I have used this operation in cases of chronic Empyema. The total number of cases done are 9. In one case operation was necessitated also because the doctor treating the patient accidentally broke the needle inside the chest. 2 cases were of empyema produced post-operatively. Seven were either cases of pleural effusion or acute empyema becoming chronically infected. 2 of the patients were females and seven were males. Average duration of symptoms were 5 months. The longest history was one year in 2 cases and shortest 2 months. Average age of the patient was 22.25 years. Oldest patient was 40 years and youngest 6 years of age. In five cases the onset was acute and in 4 cases it was insidious. In one case decortication was done because patient developed Empyema after removal of a Hydated Cyst of the lung. In another case decortication had to be done twice before the lung expanded. This was a case of lung abscess with empyema in a man of 32 years. In 3 cases empyema resulted from lung abscesses and a labactory with decortication had to be combined. In five cases pleural effusion got converted into empyema as a result of poor management and the patient came either with infected haemothorax or empyema. Majority of these cases were referred from Medical or Paediatric Wards and all had received treatment for various periods outside the hospital.

Presenting symptoms in all cases were cough history of chest pain fever and loss of weight. In 4 cases there was history of Haemoptysis but in none of the cases profuse. All the patients on admission were in poor nutritional state and anaemic 6, patients admitted to the general ward none had a haemoglobine of more than 60% and the lowest was 30% in a young boy of 12 years. He was also markedly emaciated with gross oedema of the legs and weighing only 32 pounds. 3 patients admitted in the paying wards were in better state of nutrition.

Sputum was examined repeatedly in all cases. Only one patient had a positive A.F.B. sputum and this on operation turned out to have an apical soft walled cavity. 3 cases produced mixed growth of organisms like strep, viridans diphtheroid, microcattarhalis. These cases turned out to be the cases of lung abscesses and in each one of these along with decoratiction a lobectomy was done at the same time. Aspirated fluid from the chest in all cases showed many pus cells but on repeated cultures failed to produce any growth. Probably an evidence of liberal use of antibiotics.

Urine examination on one seriously ill child showed albumim, rest reported normal. Every case before operation had a Bronchoscopic Examination. The 3 cases which on exploration turned out to be lung abscesses showed purulant discharge from the concerned lob orifices. In the rest of the other cases apart from congestion and oedema of the Bronchial orifices nothing abnormal was noted. Bronchography was not done in any of these cases. Excised plura and lung tissue were submitted for biopsy. 5 cases were reported as tubercular and 4 as chronic Pyogenic infection. The average stay of the patient in the hospital has been 2 months and 25 days. Post operative stay on an average was 39 days. However, these figures create a rather erroneous impression about patients long stay in the hospital. Actually one patient had to stay for 4 months post-operatively because the house surgeon inadvertently took out the tube and then realising his mistake tried to put it back unsuccessfully. When the mistake was detected the damage was already done. This case was treated conservatively and the result was not as good as in other cases. In another case also the drain did not function well and after waiting for a month with conservative methods I decorticated the lung again and in 15 days time the patient was fit to be discharged. In another case it was possible to discharge the patient after 17 days of operation. Majority of the cases if the post-operative care is vigilant can be discharged in 3 weeks time. In 2 cases to control acute pre-operative toximia interapleural cortisone with antibiotic was used with good results. On an average every patient received 4 pints of blood mostly one pre-operatively, 2 during the operation and one during the post-operative period. The average gain in weight during the patient's stay in the hospital was 8

pounds. Though in 2 young patients it was one stone each. One boy of 12 years at the time of admission was 32 pounds and at discharge 44 pounds. Another young adult of 15 years at the time of admission weighed 50 pounds and on discharge was 70 pounds.

In every case general anaesthesia with endotracheal intubation gas and oxygen or fluthane alongwith pentothol and curare was used. All cases had a standard posteriolateral thoracotomy. In some cases fifth rib was excised, in others posterior ends of the 5th and 6th ribs were divided subperiosteally. It is my feeling that the later procedure is better, providing greater comfort to the operator during the operation and to the patient postoperatively. In every case a complete perital and visceral pleurectomy was done. Organised fibrin from the diaphragm and the costophrenic angles was thoroughly excised, adhesions in the interlobar fissure divided and a close palpation of the underlying lung carried out. If the lung was found diseased it was excised and the anaesthetist on the completion of the operation was asked to expand the lung by positive pressure to see that the lung completely filled the hemithorax and no air leak was present. The chest was closed with 2 drainage tubes, one at the apex and the other at the bottom of the chest connected with the under water seal. Careful management of these tubes is very essential. Use of vacume bottles like redivac are very useful at this stage. Patients are x-rayed after 24 hours and subsequently as necessary and as soon as the lung is completely expanded and no fluid present in the chest cavity tube is taken out. However, we do not hesitate to keep the tube as long as necessary. For this

purpose repeated x-rays and pleurograms are necessary. In every case antibiotics have been used and in 2 cases intrapleural trypsin or chymotrypsin was used with advantage. Grassi and co-workers also reported on the advantageous results of these preparations.

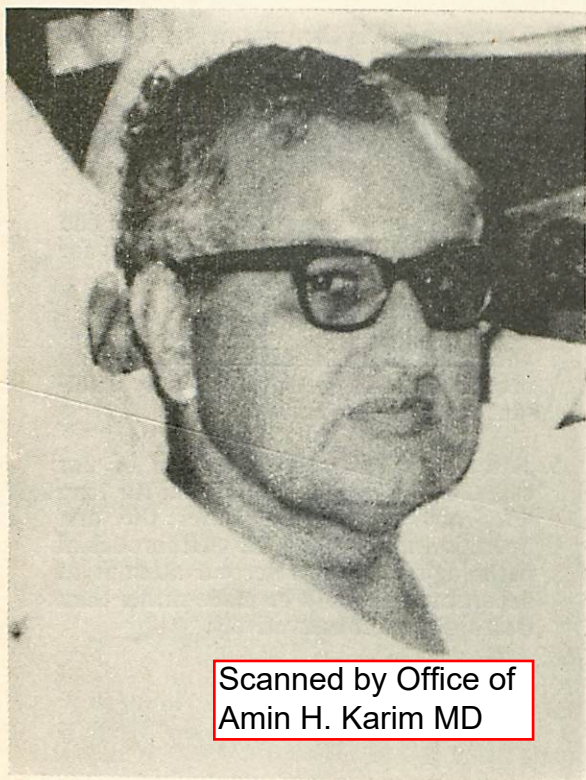
The post-operative follow-up due to obvious difficulties has been short but every case has been seen for at least 3 months after discharge and 3 cases have been followed for a period of 2 years.

Conclusion :

In the end I would submit that:—

1. Decortication is the treatment of choice for cases of Chronic Empyema.
2. In this series though small there has been no mortality and morbidity is also much reduced.
3. There has been no selection of cases and as soon as the case was considered fit for surgery he has been operated upon.
4. In four patients out of nine cases additional lung resections along with decortication has been carried out simultaneously with success.
5. Based on the small experience of our cases, we will recommend that if the lung does not expand fully after the first operation and there is no endobronchial pathology present, a second attempt at decortication should be made rather than treating cases conservatively.

Pathogenesis and Treatment of Snake Poisoning



Scanned by Office of
Amin H. Karim MD

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FOR the first time I came across patients of snake bites in the jungles of Burma during the Second World War. As a Medical Specialist in the Military Hospital I was expected to treat them, but I knew nothing

about the treatment. The usual practice in the Military Hospital was to give a strong dose of rum to the patient as an elementary First Aid, to combat his nervousness which was always serious, give polyvalent antsnake venom and make crucial incision over the bite wound, and pour into that Potassium permanganate crystals. During 8-1/2 years of my service in that area I never came across a fatality. After the War in 1946 at Tata Hospital, Jamshedpur during my first week as Physician-in-Charge I got my first real shock. To my ward one morning had been admitted a young man who said he had been bitten by snake on his ear lobe while he slept on the floor. He had two fang marks on his right ear lobe but otherwise was perfectly normal. He had been given polyvalent anti snake venom and was being given coffee to be kept awake. A careful examination revealed nothing gross abnormal except, small area of anaesthesia around the fang marks. A nurse had been deputed to keep him awake. A couple of hours later while I was still on my round in the same ward, this man gave a shriek, fell back on his bed and his breathing stopped. Artificial respiration was of no avail. That was death from the bite of Krait, neurotoxic variety of snake, which includes cobras. In Bihar, often neurotoxic variety of snake bites were seen. They were all given polyvalent anti-snake venom, after local wound was incised and cleaned with Potassium permanganate. Arrangements were made to nurse these cases in special rooms where an artificial respirator was available so that the patient could be put in the iron lung immediately respiratory failure sets in, but we never succeeded in saving any of the fatal cases; though vast majority of them recovered without developing respiratory paralysis. Those were probably cases of non poisonous snake bites.

In 1956 when I came to Hyderabad I was faced with a new problem when big number of patients from all over the interior of Sind came to Liaquat Medical College Hospital after being bitten by snakes. All of them could not be admitted and we were not sure as to how to distinguish bites of poisonous snakes

and non poisonous snake as none of those patients could either describe the snake, nor had brought snake. Therefore first study was to discover types of snakes in the area and shift up scientific data from folklore and dear Sind is full of folklores about snakes of various types including PIANRH which is terror of the desert that has never been seen. Our study revealed that overwhelming majority of poisonous snakes in the area were of Viperiadae variety, and the commonest was LUNDI. The next problem was how to distinguish the patients bitten by Viperiadae variety of snake from the rest, specially non-poisonous which were majority. Our study revealed as was later reported by Najib Khan and F.A. Zubari (1959) that the simplest method to distinguish the Viperiadae snake bite patients from other snake bites was to test the clotting time. This simple procedure discovered after a good deal of study, was the most invaluable discovery to us at Liaquat Medical College Hospital, Hyderabad, at the Casualty Department simple prick of finger and observing the blood on the slide for ten minutes gave the diagnosis. Further studies since then have revealed Najib Khan et al (1967) as has also been pointed out by Ried et al (1963) that the blood becomes incoagulable at the latest after 4 hours of the bite by the Viperiadae snake.

Till recently the only treatment known for Viperiade snake bite poisoning was to make crucial incision over the bite, put potassium permanganate in the wound, give polyvalent antsnake venom, and release tourniquet which often has caused gangrene by them or was completely in-effective. Most of the patients recovered though bleeding from wound, mouth, urinary tract, and from recent scars of the wounds continued for several days upto 12 days. Injection sites also oozed out blood in these cases. Blood transfusion of fresh blood was given to replace the blood and in the hope to supply the missing factor in blood coagulation: Upto 28 pints of blood over 10 days was given to a patient without controlling bleeding. Several patients died which was understandable as world mortality of snake bite poisoning as estimated by Minton (1968) is 20,000 to 25,000. Death occurred not due to loss of blood which was always combated but in the case who developed intracranial haemorrhage. There were three such cases amongst the series of 21 of our cases, reported in 1959, one of them 11 days after snake bite.

The exact mechanism involved in bleeding

was unknown. In 1895 Martin demonstrated that the injection of Australian snake venom in minute quantities intravenously and some what large quantity subcutaneously caused intravascular clotting of blood leading to death because of circulatory standstill. Mellanby (1969) showed that the non-coagulability of blood was due to precipitation of fibrinogen followed by removal of fibrinogen from blood. Suggestion had been made that the venom of Viperiadae snakes contains haemorrhagin (Taylor, Molic, Ohuja (1935). Suggestion had also been made (Napier, 1946) that there were damage to endothelium of capillaries. Taylor, Malick and Ohuja (1935) also found in monkey bitten by snakes (E. Carinata) reduced fibrinogen to account for bleeding and suggested "invisible coagulation probably, with fine deposition of fibrin in the walls of blood vessels.

We found in our 21 cases (1959) of non couglability of blood increased prothrombin time and normal bleeding time. That was inspite of intravenous injection of antivenom in high doses, and that incoagulability had continued for six days upto 12 days after bite. There appeared to be no damage to capillary endothelium as suggested by Napier, as the Hess's test was normal in all the cases. There is no evidence of any heamolysin as fragility test was normal in all the cases and also van den Bergh test and serum bilirubin level were within normal limits.

We had tried to combat incoagulability in these cases by massive doses of vitamin K, corticosteroids, several known proprietary coagulants and blood transfusion but in vain. The study was carried a step further as reported in 1959 (Najib Khan, Nasir Shaikh Mansoor Dar et al) we found on quantitative estimation fibrinogen markedly reduced. Exchange transfusion in a patient restored the clotting mechanism normal only for 40 minutes.

In 1968 we tried to combat fibrinogenopenia with Tryselol proteinase inhibitor which cures fibrinogenopenia in pregnancy bleeding syndrome but that was of no avail. On the indirect evidence of intravascular clotting being the cause of fibrinogenopenia which has been discussed by Najib Khan, Mubarika Shah, Mansoor Dar et al (1969), heparin was given and four patients were successfully treated. 75,000 I.U. of hepain was given for about 48 hours which stopped bleeding while patients

were still on heparin and clotting became normal in 13-16 hours after stopping heparin.

We recently had another case in which anti snake venom was not given at all and 60,000 units of heparin were given over 12 hours which made clotting possible in 13 minutes after 8 hours, and 9 minutes when tested after another 12 hours. This woman had been given 500 ml. of blood immediately after stopping heparin. In this case intravascular clotting is suggested on the basis of ethanol gel test which is positive in intravascular clotting. Najib Khan, A. Salim and H. Vania 1970.

Thus this case proves what has been suggested earlier by many authorities as mentioned above and on the basis of which we started heparin in 1968, that there was intravascular clotting that was responsible for fibrinogenopenia.

We have also found that incision over the bite by the snake is a serious handicap to the patient as that leads to excessive uncontrollable bleeding. Therefore, that old practice and also the practice of introducing potassium permanganate should be abandoned. Tourniquet appears of little use and in several cases of positive harm. Polyvalent serum we are using seems to be not very effective and last case improved without any of it. Early heparinization with big dose in the range of 60,000 units of Heparin is what seems to give best results.

Snakes are shy creatures and remain in their own holes, coming out only during hot and rainy weather. Therefore, snake poisoning cases are more common during month of May to September. Snake do not bite unless frightened or tremped over. All our cases except one had been bitten in dark and therefore carrying a light and making plenty of noise when one walks in dark will prevent people from being bitten by snakes. All our cases were wearing sandals and not shoes. One case who was bitten in day was a snake Charmer who was bitten when performing and died of cerebral haemorrhage. It was this young man who encouraged us to start

heparin in cases which came afterwards.

There are more non poisonous snakes than poisonous, and the commonest poisonous snake in the Sind region is Viperiadae Variety. Patients bitten by these variety of snakes can easily be diagnosed as their clotting time is prolonged.

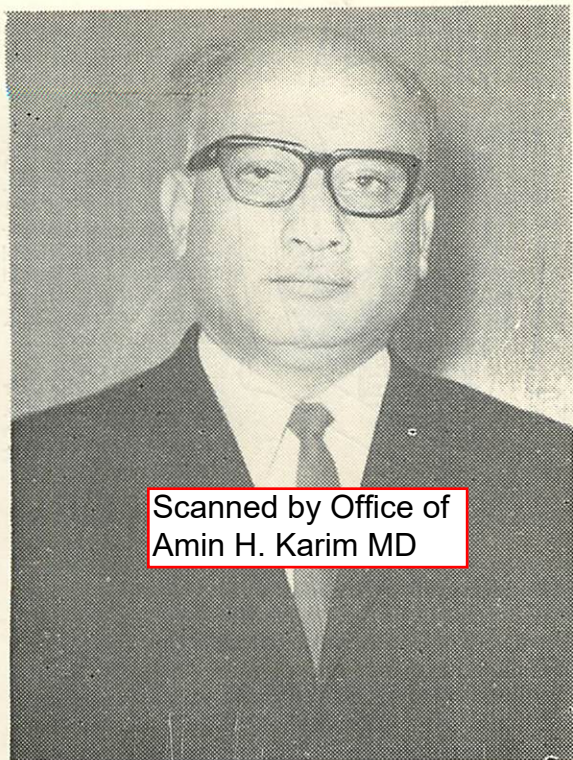
Acknowledgement :

Our thanks are due to the resident and nursing staff who co-operated in the study of this case.

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Problems of Tracheostomy in Infants and Children



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This article is based upon the experience gained after performing 278 "Emergency" tracheostomies in infants and children under two years. It is hoped that the young residents and the new specialists, who are more often called to perform this operation, will benefit from this article.

Emergency tracheostomy is done to overcome obstruction in the larynx and the subglottic space, to relieve dyspnoea and prevent asphyxia. It is a life saving operation in a patient who is weak, anxious and struggling for breath. There are certain problems which are particular to this age group and must be kept in mind to avoid disaster. The

subject will be presented under the following headings:—

1. Anatomical problems.
2. Problems of indication
3. Problems of anesthesia
4. Operative problems
5. Problems in postoperative period.

Anatomical Problems :

The neck. The distance between the cricoid cartilage and the suprasternal space is hardly 1-1/2 inches. The prominence of the thyroid cartilage is absent and there is abundant adipose tissue in the subcutaneous layer.

The blood vessels. The veins in the subcutaneous tissue are engorged due to increased venous pressure. Trauma, to these veins, is avoided by keeping in the midline of the neck. The anterior jugular veins are extremely prominent. "The inferior thyroid venous plexus lies on the 3rd and 4th rings of the trachea and the right inferior thyroid vein after taking origin from it runs obliquely over the trachea to open into the right innominate vein at its junction with the superior vena cava; the left vein descends and joins the left innominate trunk, frequently the two veins form a common trunk." —(Gray's Anatomy).

Injury to these veins or the plexus must be avoided because not only there is profuse haemorrhage during operation but there is a great risk of air being sucked into the venous circulation whenever the child takes a deep breath.

Thyroideaemia may be present running over the trachea and is in great danger of injury when an attempt is made to perform a low tracheostomy. It may also be eroded by a long, unduly curved tracheostomy tube which ulcerates through the anterior wall of the trachea.

Size of larynx, subglottic space and trachea. Grabreil Trucker (1932) stated that the lumen of the subglottic space and its measurements are more important than those of the larynx. According to him the antero-posterior diameter of the infant larynx varies between 7 to 9 mm, while the subglottic diameter of 5 mm was too small, and that measuring 4 mm

was actual stenosis. The subglottic space is surrounded by the cricoid cartilage. There is no room for the soft tissue to expand except at the expense of the lumen. A uniform coating of 1 mm all round will produce respiratory distress. The diameter of the trachea is slightly bigger than that of the subglottic space. The tracheostomy tube should fit in the tracheal lumen snugly, but not too tightly. The trachea is a midline structure, a slight rotation of the neck may shift the trachea to one side, which can be easily missed during operation.

The distance between the lower border of the thyroid isthmus and the carina as measured by Jackson (1963) in neonates varies from 1.6 to 3.1 mm. The lower end of a long tracheostomy tube may touch the carina and cause ulceration and partial obstruction.

Thyroid isthmus. It commonly lies over the 2nd and 3rd rings of the trachea. In some cases it is big and may extend up to the fourth ring. From its lower border the inferior thyroid venous plexus takes origin.

Cervical pleura. The dome of the right cervical pleura extends high in the root of the neck. A low incision to expose the trachea may lead to injury of the pleura, as it keeps on bulging during each respiratory movement. In one case the cervical pleura was punctured and since then the lower limit of skin incision is kept a finger's breadth above the suprasternal notch.

Extension of the neck. The neck should be extended to make the trachea more superficial and to pull a few rings of the trachea from the chest. Extension of the neck before instruments are ready, will aggravate the respiratory distress, and may demand an immediate opening in the trachea.

If the neck is extremely extended the lumen of the trachea will be further reduced by the bodies of the cervical vertebrae pressing the oesophagus anteriorly. The latter may also

be injured by the thrust of the knife while making an incision in the trachea.

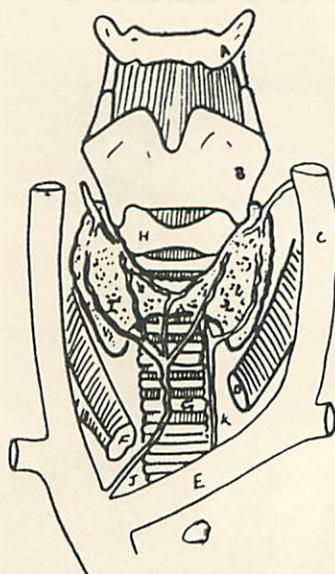


Fig. 1

Showing vascular relations of the trachea. A, Hyoid bone; B, Thyroid cartilage; C, Lt. internal jugular vein; D, Lt. common carotid artery; E, Lt. innominate vein; F, Right common carotid artery; G, Trachea; H, Cricoid cartilage; I, Thyroid gland; J, Right inferior thyroid vein; K, Left inferior thyroid vein.

The right inferior thyroid vein and left innominate vein can be easily injured during tracheostomy.

Problems of Indication :

The cause of obstruction may not be known immediately but one should remember that infants and young children cannot tolerate anoxia over prolonged period; the airway should therefore be quickly restored.

An anxious, restless child, with indrawing of the suprasternal, supraclavicular spaces, the epigastrium and the sides of the lower intercostal spaces, with good colour and pulse, with inspiratory stridor, should be operated upon immediately. To wait for cyanosis to develop is to invite death and disaster.

According to Wilson, "The thought of being too late and of losing a patient through neglect to perform a comparatively minor prophylactic operation is one that is powerfully compulsive of an early action."

There are however some cases, of diphtheria or acute laryngitis, which may improve by adequate medical treatment consisting of antibiotics, A.D.S., chymoral and cortisone. But the "clinical judgment and clear assessment of the case are essential in arriving at a wise decision" (Wilson).

Analysing the indications for tracheostomy Fitz-Hugh and Morgan (1954) distinguished:-

1. FIXED OBSTRUCTION in the upper air passage producing rapid obvious respiratory distress and anoxia.
2. FLUID OBSTRUCTION in the lower respiratory track causing a slow obscure distress and anoxia.

The following were the main indications for which tracheostomies were done:—

A. *Fixed obstruction in the larynx and upper trachea :*

1. Laryngeal diphtheria	.. 233 cases
2. Acute laryngo-tracheitis	.. 15 ..
3. Impacted foreign bodies in the larynx and subglottic space	.. 2 ..
4. Bilateral abductor paralysis of the vocal cords	.. 2 ..
5. Retropharyngeal abscess	1 ..

B. *Fluid obstruction in the lower respiratory track*

1. Bronchopneumonia	.. 15 ..
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C. *Elective tracheostomy*

I. Foreign bodies in the bronchus 10 ..
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Total : 278 ..

In fixed obstruction the tracheostomy is done to relieve the dyspnoea, while in the fluid obstruction the tracheostomy helps in reducing the dead space air and suction of the secretions becomes an easy affair.

Problems of Anaesthesia :

Local anaesthesia has been used in most of the cases. It is obtained by infiltrating 3 to 5 cc of half per cent xylocaine in the midline of the skin of the neck and the underlying subcutaneous tissues. Addition of a drop or two of adrenaline hydrochloride (1 in 1,000) renders the operation almost bloodless. Two per cent xylocaine is toxic to infants and children and therefore should never be injected in these cases.

General anaesthesia was used in four cases only. It may be given provided an expert anaesthetist is available, all the facilities of modern anaesthesia are present in the operation theatre and there is no cyanosis or cardiac impairment in the patient. The pharynx is first sucked dry, oxygen is given by a mask and anaesthesia given by nitrous-oxide. An endotracheal tube or a small bronchoscope is passed to ease the breathing. It also helps to decrease the venous congestion, acts as a guide to the trachea and decreases the anxiety of the operator.

No anaesthesia is necessary in a cyanosed patient and no time should be wasted in restoring the air entry into the lungs.

Operative Problems :

The details of the operative technique will not be described here but the problems which arose from time to time will be discussed. They should be kept in mind to avoid delay in operation and prevent a complication—often a serious one.

1. *Tracheostomy position.* It is assured throughout the operation. The neck is extended by keeping a small sand bag or a rolled towel under the shoulders. Extension of the neck should be avoided till all the instruments are ready and within easy reach and local infiltration has been made. The extended position of the neck will increase the respiratory distress and no time should be lost in making an opening in the trachea.

The chin and the suprasternal notch should be kept in the midline of the body. The head is supported by an assistant who should devote himself entirely to maintain this vital midline position. The jaw should never be held as it will close the mouth, and if the nose is blocked by secretion, asphyxia will soon occur.

2. *Grasping of the larynx.* This is another important step during the operation. The larynx should be grasped by the thumb and second finger of the left hand, and this grip is maintained throughout the operation till the trachea is opened. The index finger of the left hand is used to palpate and identify the trachea from time to time.

3. *Skin incision* A liberal longitudinal incision of about one inch should be given extending from the lower border of the thyroid cartilage up to a finger's breadth above the suprasternal notch. A transverse incision should never be given in emergency cases because the field of operation is small and landmarks are not easily identified.

4. *Exposure of the trachea.* After the cutaneous veins have been grasped, blunt dissection is carried out by the tip of a fine artery forceps in the midline, the ribbon muscles are gently retracted by the assistant. The retraction should be equal on either side. The thyroid isthmus comes in view. If time permits it may be clamped between two artery forceps after the pretracheal fascia has been incised at the lower border of the cricoid cartilage. In this series the isthmus was pulled upwards by a hook slipped below and behind its lower border. A sharp hook may be inserted in the second ring of the trachea to pull it more anteriorly. Next the pretracheal fascia is incised to expose the tracheal rings. Extreme care should be taken not to injure the inferior thyroid veins or the venous plexus. Undue dissection and separation of the soft tissues should be avoided because air can easily enter the separated tissues to produce surgical or mediastinal emphysema.

5. *Tracheostomy incision.* The trachea should never be incised unless the rings have been identified.

A "longitudinal incision" may be given in the 3rd and 4th rings of the trachea in the midline. The disadvantages of this incision are that a tracheostomy tube may be difficult to introduce if it has dislodged, and pressure necrosis of the margins of incised rings may occur.

A "window incision" may be given, the margins of the longitudinal incision are trimmed to make a circular hole in the trachea. The tracheostomy tube can be introduced with great ease even if it has slipped out, but it has the great disadvantage that the anterior wall of the trachea becomes weak and the moment the tracheostomy tube is removed, "inspiratory collapse" of the anterior wall of the trachea occurs, producing respiratory distress.

A "cross incision" is now used. Short lateral cuts are made in the middle of the vertical incision or at the upper and lower ends of the longitudinal incision.

Since this incision has been the practice, the problems of decannulation has been considerably overcome. The blood supply of the rings is assured, the anterior wall of the trachea is not weakened, the tracheostomy tube can be introduced with minimum trauma to the mucous membrane of the trachea, and the opening soon constricts around the tube of whatever size used. The disadvantage is that, if the tube slips within 24 hours, the reintroduction may be difficult unless a track has formed. "But this does not outweigh the advantage of earlier decannulation." (Jackson 1963). Fig. 2).

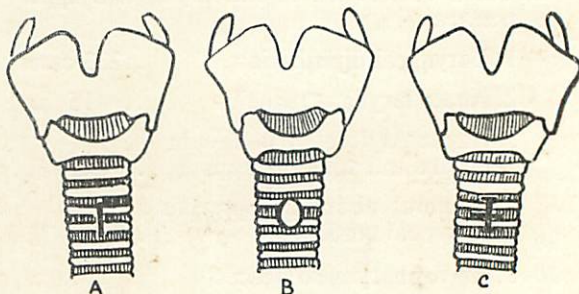


FIG. 2

Showing A. Longitudinal incision for tracheostomy; B. Window incision; C. Cross incision.

6. *Selection of tracheostomy tube.* A proper size tube should be used to give adequate airway both immediately and in the postoperative period. It should neither be too long so as to reach the carina and produce ulceration, nor it should be too short to dislocate during movements of the neck. It should not be unduly curved because the lower end of the tube will touch the anterior wall of the trachea and produce obstruction in breathing, and the prolonged contact will lead to pressure necrosis and ulceration of the anterior wall. Such a fatal complication has been described by Reading (1958).

The tracheostomy tube should be easily introduced 'leaving some space around for the air to pass towards the larynx during decannulation. It should cause least mucosal irritation, and should not touch either the anterior or posterior walls of the trachea.

The commonly used tubes are "a part of a circle type", either "King's College Hospital pattern" or "Edinburgh type". They should be introduced with the help of a pilot or introducer, otherwise the margins of the tube will catch in the tracheostomy incision.

The bivalve "Fuller" has been used most commonly. It has the advantage that it can be easily introduced but the drawback is that granulation tissue occupies the cleft between the two flaps.

Sixteen French gauge is used for infants up to six months. It has an outer diameter of 5 to 5.5 mm and the airway diameter is of 4 to 4.5 mm.

Eighteen French gauge is used for infants above six months and children up to two years. It has an outer diameter of 6 to 7 mm and the airway diameter of 5 to 5.5 mm.

A pair of each size tube should be kept ready before the operation.

7. Haemostasis. Bleeding either from a cutaneous vein or an injured inferior thyroid vein should always be controlled by using a non slipping ligature. Whatever blood that has entered the trachea should be sucked.

8. Fixation of the tracheostomy tube. The tracheostomy tube is tied round the neck by means of tapes which should be of equal lengths and the knot is tied at the centre of the back of the neck. The knot should be tied when the neck is fixed because if the tube is tied when the neck is extended it will become loose and slip out when the sand bag beneath the shoulder is removed.

Cooper (1961) even suggested that the flanges of the outer tube may be stitched to the skin to prevent slipping.

9. Skin stitching. The skin incision has not been sutured in this series. A tight skin suturing is dangerous because if the tracheostomy tube slips out of the trachea, the leaked air keeps on collecting in the tissue of the neck and may produce mediastinal emphysema and pneumothorax.

Problems in the Postoperative Period :

After the tracheostomy the dyspnoea is relieved, the anxiety of the parents is apparently over. There may be some relaxation in the care of the infant by the nurse who may have never looked after such a case before. The signs of blockage or dislodged tube may be easily missed or dismissed as minor, especially in a pediatric unit where some cases

of bronchopneumonia need a tracheostomy—"a dangerous division of post-operative care".

It is the most important duty of the nurse or the doctor to ensure that the child is breathing freely through the tube. A jet of air should be felt coming out during expiration.

The inner tube should be kept clean by repeated suction with the help of a sterile catheter. The inner tube may be frequently removed for cleaning and replaced by a duplicate tube. The outer tube should never be left without the inner for a long time as the former will be blocked by the secretions.

By neglecting these minor points in the after-care, disasters like blocked tube or slipped cannula may occur and cause fatal complications.

According to Reading (1949), "Paradoxically the patient is in great danger of dying from asphyxia after tracheostomy than he was before it".

The outer tube should be removed under good light and with a tracheal dilator in the hand, the duplicate tube should be immediately introduced.

Slipping of the tracheostomy tube. The tracheostomy tube may dislodge from the trachea and lie in the soft tissues in front of the trachea. The dislocation may be due to loosening of the tapes, or due to undue movements of the neck, or too short a tube has used. It may also be due to postoperative oedema of the soft tissues, or the neck has been kept extended for a long time. Inspiratory stridor, laboured fast breathing, and inspiratory dyspnoea will reappear, and demand the urgent replacement of the tube. The air is heard leaking from the sides of the tube and may mislead a casual observer. When the tube has slipped, air can enter the lungs through the diseased obstructed larynx and hence recession of the soft tissues of the neck and indrawing of the tracheostomy incision will take place. During expiration the air will escape from the tracheostomy incision, partly from the larynx and some from the sides of the displaced cannula but certainly not through the tube. If a hand is placed on the lumen of the tube a jet of air will not be felt. In cases where the skin incision has been tightly stitched the air will collect in the tissues of the neck and mediastinal emphysema may rapidly develop.

Blockage of tracheostomy tube The mucous secretions on drying block the lumen of the inner tube. In cases of acute laryngotracheobronchitis these secretions are thick and sticky, which quickly fill the inner tube.

Repeated suction or replacement of the inner tube must be done as often as necessary. The attending nurse must be instructed to clean the tube when the slightest obstruction in breathing is noticed. Failure to clean the inner tube in time may asphyxiate the infant.

Lower respiratory track obstruction. If on cleaning the inner tube the obstruction is not relieved, there is expiratory distress, a blockage in the trachea or bronchus should be suspected and immediate measures should be taken to relieve it by deep suction after instilling a few drops of sterile soda-bicarb solution. Even bronchoscopic clearance may be necessary. This type of obstruction is more common in cases suffering from acute laryngo-tracheo-bronchitis where thick tenacious mucous plugs block the main bronchus.

Spill over during feeding. During the first week or so the milk may appear in the trachea and cough out through the tracheostomy tube. This can cause anxiety because of suspicion of a tracheo-oesophageal fistula. It is really due to inco-ordination of laryngeal reflexes of respiration and deglutition. During swallowing there is inhibition of respiration together with closure of the larynx, while during inspiration the larynx dilates and opens up. These two reflexes are closely integrated. After tracheostomy the inspiratory dilation and opening of the larynx disappears and the breathing continues even during the swallowing reflex and allows spill over in the larynx to occur. The infant gradually learns swallowing-closure reflex within a 2 to 3 weeks.

Surgical emphysema. Air may escape in the subcutaneous tissue of the neck due to undue dissection and separation of the soft tissues or the window incision has been very large, accommodating a smaller tube, or the tracheostomy cannula has slipped, and the air keeps on collecting in the tissues, especially when the skin incision has been tightly stitched. If this is allowed to go on air may collect in the neck, face and the chest and even in the mediastinum.

Mediastinal emphysema and pneumothorax. Air is sucked along the carotid sheath into the mediastinum during inspiration through the skin incision, more easily if a low incision is made or a wide dissection of the fascial planes has been done during violent inspiratory movements (Reading 1958).

Air is locked up in the mediastinum and is gradually added by a valvular mechanism. Tracking along the pulmonary vessels, it reaches the hilum of the lungs and ruptures into the pleural sac through the mediastinal pleura to produce pneumothorax and collapse of the lung. Pneumothorax may also develop due to puncture of the cervical pleura.

Tracheo-bronchial secretions. Often thick mucopurulent secretions occur in a tracheostomized patient either due to secondary infection or due to irritation of the metallic tube or due to bronchopneumonia. These should be repeatedly sucked and a cover of antibiotics is given.

Decannulation. Removal of the tube has been the most worrying problem in these cases. Attempt is made to remove the tube after 3 or 4 days provided the cause of laryngeal obstruction has been overcome. In certain cases the removal of the tube may be difficult even when the cause of laryngeal obstruction has been relieved.

In two cases the tube was left for 3 to 4 months as removal of the tube produced immediate respiratory distress and the tube had to be reintroduced. Infants do not tolerate early decannulation.

The causes of delayed or difficult decannulation may be as follows:—

1. Granulation tissue at the upper end of the tracheostomy window blocks the tracheal lumen.
2. Inspiratory collapse of the anterior wall of the trachea occurs due to too much removal of the rings during window incision (Reading 1958 and Venables 1959).
3. Collapse or indentation of the rings above the tracheostomy window (Arday and Caust, 1963).

4. Extended position of the flanges of the outer tube over the trachea above the window (Reading 1958).
5. Suction of the soft tissues of neck when the tube is removed with collapse of the anterior wall of the trachea (Reading 1958)
6. Tracheal or subglottic stenosis due to fibrosis (Putney 1955).
7. Persistent cause of laryngeal obstruction like a missed foreign body in the larynx or subglottic space.
8. Depression of reflexes which control the laryngeal function during breathing and swallowing (Crookes 1954, Gray 1960). The infant or the child needs re-education.

ing with the tube disappears after the anaesthesia.

4. By introducing an obturator in the tracheostomy track allowing a free passage of air in the trachea.

5. When no organic cause is found within the larynx and trachea the passage of time and growth of the child will succeed where all human efforts have failed (Crooks 1954). The tracheal rings as they grow become harder and are able to withstand the negative inspiratory collapse when the support of the tube is removed (Jackson 1963).

Summary :

Tracheostomy is being increasingly performed, more often by in-experienced operators. An attempt has been made to describe the various problems met within in infants and children under 2 years.

1. The subject has been presented under headings of anatomical, anaesthetic, operative, and postoperative problems. The problem of indication has also been discussed. An early tracheostomy should be done whenever indicated.

3. Stress is made on cross incision in the trachea, without removing any portion of tracheal rings.

4. Decannulation has been the most important, and worrying problem. Various ways and means, to over come, have been described.

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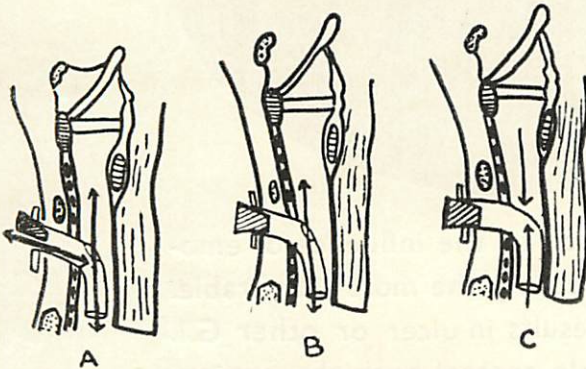


FIG. 3.—SHOWING CORKING TECHNIQUE OF DECANNUATION

- A. Shows half corking of the tracheostomy tube in which the patient can breathe partly through the larynx and also through the tube.
- B. Shows full corking of the tube. Patient can only breathe through the larynx.
- C. Shows full corking of the tube which is tightly fitting the trachea and is without opening on the convex side. Patient can neither breathe through the larynx nor through the tube.

Technique of decannulation :

1. By gradual corking of the outer tube which has a hole on the convex side to allow air to pass towards the larynx. When full corking is tolerated for 48 hours without any respiratory distress the cannula may be removed. Things should be kept ready to reintroduce the tube if distress reappears after some time. It may be a difficult task because of closure of the fibrous track within a few hours.

2. By gradually introducing smaller size tubes so that air can pass through the tube in the trachea.

3. Under general anaesthesia the larynx and bronchi are examined and the tube removed. When the child wakes up he can breathe through the mouth. The fear of

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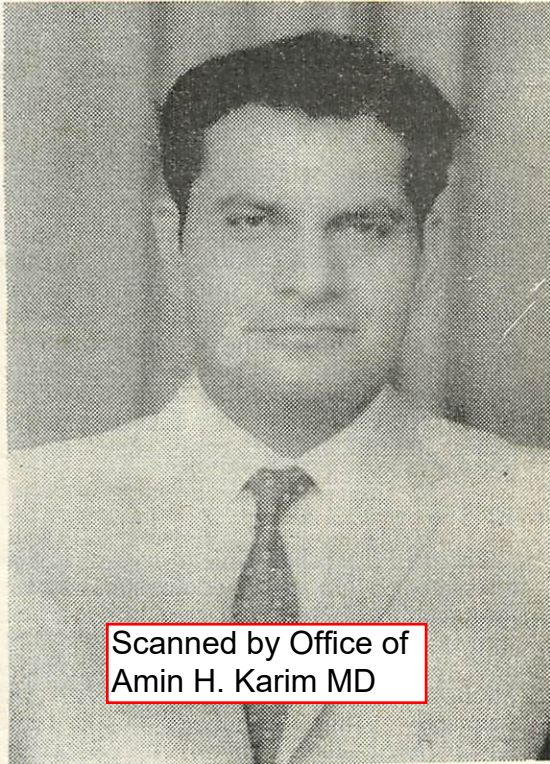
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Diagnosis of Ectopic Pregnancy

(Review of 13 Cases)



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EVERY first year clinical student knows that amenorrhoea, followed by pain and then bleeding are the cardinal symptoms of ectopic pregnancy. And yet the diagnosis of this condition can be one of the most difficult and perplexing problems in Gynaecology.

In our department, in the past 12 months, 13 cases of Ectopic Pregnancy were admitted and the total deliveries in the department last year were 2,005. The frequency of

Ectopic Pregnancy is once in every 300 deliveries, after the 28th week (I). The incidence, of course, varies from country to country and from community to community. Many Ectopic pregnancies are not even diagnosed. In our series of 13 cases, pre-operative diagnosis was made in 10 cases.

In a recent survey by Marchetti, Kuder and Kuder(II) the diagnosis was made before operation in only 56.6 percent of a series of 219 cases. Other authorities report a correct diagnosis in 75 to 80 per cent of cases, but all admit the difficulty. This is due to the presence of a typical cases which are not uncommon; in fact it has been said that if one is confronted with a pelvic condition that follows no rules and does not conform to any standard, one should think of ectopic pregnancy or tuberculosis.

In ten of our cases, the diagnosis was made before laparotomy. The variability of the clinical picture has been stressed by all authorities. This inconsistency is quite comprehensive if one considers the variety of extra-uterine locations and their several stages of development with a distinct pathology and clinical picture in each. The various types of implantations in the Fallopian tube may all give rise to differing syndromes and the ovarian, abdominal, and cervical pregnancies, as well as previous inflammatory tubal disease and ovarian swellings, add to the confusion. A detailed, careful, unhurriedly taken history alongwith certain signs and symptoms, will help considerably in making a proper diagnosis. Diagnostic aids may be helpful in cases where the condition is obscure. Each of these are discussed in detail:—

1. History :

It is well known that ectopic gestation often arises in women who have been sterile for several years. A history of infertility was present in three of our cases. A careful enquiry may reveal previous gonococcal salpingitis or salpingitis following upon septic abortion and puerperal sepsis. Women are often inclined to omit in their history accounts of their pre-marriage days and as such one has to be extremely sympathetic and tactful. A careful history alone will help in making a diagnosis in 45 to 50 percent, but according to Wharton (III) where the history is suggestive, a tubal pregnancy is to be considered first,

regardless of palpatory findings. One also must remember that the incidence of ectopic gestation is much more frequent in densely populated areas and in seaport and holiday towns.

II. The Symptoms and Signs :

The symptoms and signs depend upon whether the pregnancy is intact, or ruptured through the tubal wall and also upon the amount of haemorrhage that has occurred. The important symptoms and signs are discussed below:—

(a) Abdominal Pain :

This complaint is always made at some time in the history of the patient. In all my cases it was the leading complaint. In Lavell's V series of 410 cases, pain was noted in all cases, although other authorities give its incidence between 90-95 percent. The pain may be unilateral or generalised over the abdomen. It may be lacerating or cramp like. According to Schouffier VI, when other factors point towards ectopic pregnancy, the lacerating type of deep pelvic pain is pathognomonic of ectopic gestation. In certain cases a dull aching sensation may be present due to the expansion of the tube; later tubal colic develops from attempts by the tube to expel its contents as happened in one of my cases. The pain has no constant time relationship to the vaginal bleeding. Thus, in those cases in which the latter occurs, in about one third the pain precedes the spotting. In a third it occurs simultaneously with the first spotting, whilst in another third it follows the initial vaginal bleeding. Moreover, in at least a quarter of the cases, no vaginal bleeding whatsoever occurs.

Shoulder pain, if present, is a most important symptom. According to Dodds VII shoulder pain in a woman suffering from acute abdominal pain is pathognomonic of an extra uterine pregnancy. Brown VIII does not attach as much importance to the symptom because it may be present in appendicitis and cholelithiasis. In my series it was present in five cases. Bearing down pain between the front and back passages with a feeling of pressure in the bowel and stenosis is often complained of when a haematocele is present, (Mahfouz, IX). Rarely the pain may be situated in the sacrum or anus.

(b) Amenorrhoea:—

Hospital records indicate that a history of amenorrhoea is not obtained in a quarter of the cases. The reason for this is that the patient mistakes the pathological bleeding which so frequently occurs in tubal pregnancy for a true menstrual period. To avoid error, it is extremely important that the character of the last period be investigated in detail in respect to duration, amount and as to whether it impressed the patient as being abnormal in any way. In ten of our cases amenorrhoea was present.

(c) Vaginal Spotting or Bleeding :

The incidence of vaginal bleeding is about the same as that of amenorrhoea, namely, in the neighbourhood of 75 percent. As long as the ovum remains intact, uterine bleeding is usually absent, but with disturbance or death of the ovum, the chain of endocrine relationships which maintain the uterine decidua is broken and the collapsed uterine mucosa bleeds. The bleeding is usually scanty in amount, dark brown in colour and may be either intermittent or continuous; it was present in eleven of my cases.

(d) Syncope and Shock :

The pallid, shocked patient, so inseparably associated in the young doctor's mind with the picture of a ruptured tube pregnancy, is seen in a minority of cases. Although faintness and weakness occurred in 47 percent of Jarcho's X series, it is usually recorded less frequently. Thus Marchetti, Kuder and Kuder noted such symptoms in 29.1 percent while in Langman and Goldblatt's series XI of 310 cases, 133 patients complained of weakness and 91 fainted. In my cases faintness was present in four patients. Actual shock occurs in about 10 to 20 percent of cases.

(e) Nausea and Vomiting :

As a result of peritoneal irritation, nausea and vomiting are common symptoms and in 310 cases Langman encountered nausea in 162 patients and vomiting in 142. In our cases nausea occurred in three cases and vomiting in six.

(f) Urinary Disturbances :

Occurs due to peritoneal irritation induced by pelvic haemorrhage; this was only present in two of our cases.

(g) *Vaginal Tenderness :*

By far the most common physical finding in ruptured tubal pregnancy is exquisite tenderness on vaginal examination, especially on movement of the cervix. This is demonstrable in over three quarters of the cases, but occasionally may be absent. It was present in all of our cases. Abdominal rigidity and tenderness are present in about the same proportion of cases and in my cases rigidity was present in only six.

(h) *Pelvic Mass:*

A number of studies indicate that a pelvic mass is palpable in about one half of the cases only (XII) Several authors report this finding frequently; Marchetti and his associates found a pelvic mass in 70.2 percent of cases. The mass varies in size, consistency and position. It ranges as a rule between 5 and 15 cm. in diameter, and may be soft and elastic. It is rarely anterior to the uterus, but almost always either posterior or lateral. In my series the pelvic mass was palpable in ten cases.

(i) *Uterine Changes :*

Because of the action of oestrogen produced by the placenta, the empty uterus enlarges during a tubal gestation and its consistence also is similar to that of an intrauterine pregnancy so long as the foetus is alive. In broad ligament pregnancies the uterus may be displaced to one or the other side.

(j) *Blood pressure and pulse :*

As might be expected the blood pressure falls in proportion to the amount and the suddenness of the intra-abdominal haemorrhage. In a sense the drop in blood pressure is a protective mechanism since it favours haemostasis; as a consequence a rise in pressure often follows the fall, but as the pressure returns again towards normal it produces renewal of the bleeding with another drop. In cases which rupture suddenly the systolic pressure is usually below 100 mms. Hg. In Jarcho's 147 cases only in 15 percent did it fall below 70 mms. Hg. In all my cases the systolic blood pressure was above 100 mms. Hg.

(k) *Temperature :*

Following acute haemorrhage the temperature may be low but with recovery from shock it sometimes shows a tendency to rise slightly as the result of absorption of blood. As a consequence temperature between 100 and 101 degrees Fahrenheit are seen in about one patient in three but it is rare for this temperature level to be exceeded in the absence of infection. This is an important distinguishing sign between ruptured tubal pregnancy and acute salpingitis. If there is an ectopic and superimposed infection the diagnosis can be very difficult. In six of our cases the temperature was 101.2 degree Fahrenheit, whilst in another three cases it was normal and in the rest sub-normal.

(l) *Culler's Sign :*

In 1919 T.S. Culler of Baltimore described a sign that is occasionally present "when the abdomen contains an abundant quantity of free blood arising from a slow persistent bleeding rather than from a sharp or severe one." In such cases the "Umblicus may in some way imbibe the blood and appear bluish black so that in time one gets the same play of colours that one gets with a black eye—the greens and yellows." Apparently it is more likely to occur in the skin covering an Umbilical hernia or in the region of a rectal diastasis. It is, however, so rarely present as to be of little value in diagnosis. It was present one in 149 cases described by Bortini XIII in four of which there was umbilical hernia. In my cases this sign was absent in all the patients.

III. Diagnostic Aids :

(i) *Blood Count and Blood Sedimentation Rate :*

The leucocyte count shows an extreme variation in ruptured ectopic pregnancy. In about half the cases it is normal but in the remainder all degrees of leucocytosis may be encountered up to 30,000. The blood Sedimentation Rate is raised after the haemorrhage but this rise can occur in any infection.

(ii) *Icteric Index :*

May be helpful. A positive delayed direct Van de Bergh reaction is of help in that it may indicate the presence of free blood in the abdominal cavity.

(iii) *Biological Tests :*

Such as the Aschheim-Sondek and the Friendman's test may be of value in non-emergency cases. This test was of some use in diagnosis of two of my cases. Zondek 1942, points out that after the placenta has ceased to function, Prolan B disappears from the urine quicker than Prolan A. A positive Prolan A reaction alone therefore may be found in an extra-uterine pregnancy and according to him may serve as an aid to diagnosis.

(iv) A Bimanual Examination under anesthesia is a valuable aid in all cases (Browne).

(v) *Pelvic Puncture:-*

When the diagnosis is in doubt a posterior fornix puncture or cul-de-sac puncture may be helpful. This procedure helped us to diagnose our four cases, but this procedure is not entirely free from danger as it may sometimes introduce infection. Bloody fluid can be obtained from a twisted ovarian tumour of haematosalpinx. Cases have been recorded where the needle entered a haemorrhagic Graffin follicle and a laparotomy was performed. If the puncture is not positive a posterior colpotomy is sometimes indicated (Greenhill, XIV). It is advocated as a diagnostic procedure by a number of authorities-Heaney (XV) prefers it to simple puncture believing that the danger from the procedure is slight. Furthermore, if the pregnant tube is accessible it may be removed through the colpotomy openings.

(vi) *Curettage :*

Sometimes has a diagnostic value if definite decidua is found and there is absence of chorionic villi. According to Novak (XVI) in only about half the cases is decidua found. A dry scrape, in which no tissue is obtained in a suspected case, is almost certain evidence of an extra-uterine pregnancy according to Heaney. He states that the scantier the curettings the more probable the diagnosis of ectopic pregnancy as most of the patients expel the decidual cast before coming to operation.

(vii) *Endometrial Biopsy :*

May be useful diagnostic aid (Mischell and Newmark XVII). A biopsy specimen of the decidua can be obtained by a section curette. This procedure should not be attempted if an intrauterine pregnancy has not been ruled out.

(viii) *Pneumoroentgenography :*

Injection of carbon dioxide gas in the peritoneum followed by X-ray has been used by Stein(XVIII) as a diagnostic procedure. Its use in ectopic pregnancy is limited to early and unruptured tubal pregnancy. Greenhill does not think this procedure is necessary and prefers posterior colpotomy.

(ix) *Peritoneoscopy :*

Peritoneoscope was devised by John Ruddock(XIX) to visualize the peritoneal cavity. All the pelvic viscera can be seen clearly and an ectopic pregnancy diagnosed. This procedure is extremely disturbing to the patient and is not free from danger. Its popularity has not increased in recent years.

(x) *Culdoscopy :*

Has recently been found to be helpful in atypical cases of tubal pregnancy. A satisfactory view of the ovaries and tubes is obtained and the exact origin of the bleeding seen. W.T. Black and H. B. Turner from the University of Tennessee (XX) carried out the procedure on 60 patients and 45 of these were saved from an unnecessary operation. This procedure should be always carried out in an operation theatre.

(xi) *Hysterosalpingography :*

This is perhaps a most useful aid to diagnosis in cases of advanced abdominal pregnancy where the outline of the uterus can be made out. Tubal pregnancy in its early stages will show a triangular or slightly round uterus. The tubes may or may not be patent, for if the decidua fills the uterine ostia of the tubes no contrast medium will pass, but if the uterine decidua has been shed both tubes may admit the medium. It is unwise to perform hysterosalpingography in unruptured cases of tubal pregnancy because of the danger of rupture (Bourne and William XXI). Only in cases of suspected abdominal pregnancy when X-ray shows the foetus and there is any doubt about its situation should be hysterosalpingography employed as an aid to diagnosis.

(xii) *Laparoscopy:*

This recent procedure may help in Diagnosis in some early cases.

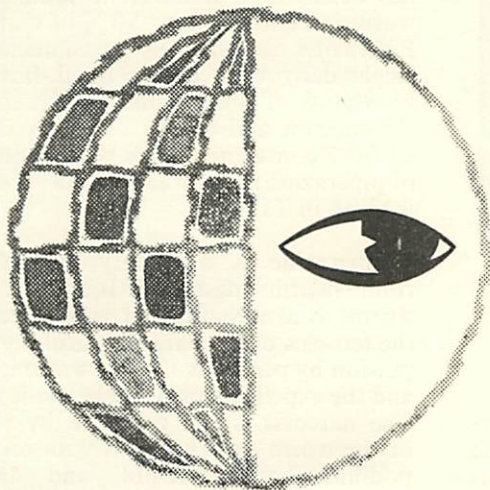
Summary and Conclusions :

1. A typical case of ectopic pregnancy can be diagnosed easily from the history and physical findings.
2. In an urgent case with diffuse intraperitoneal haemorrhage and collapse, diagnostic procedures have not much place as immediate decision and treatment are essential.
3. In an atypical case or obscure case, diagnostic procedures may be helpful.
4. Pneumoroentgenography, peritoneoscopy, culdoscopy and hysterosalpingography have a limited use and may not be free from dangers. Moreover, the first three require a special knowledge and special equipment.
5. A blood count and blood sedimentation rate are not of much help.
6. Pelvic puncture may be a most useful aid.

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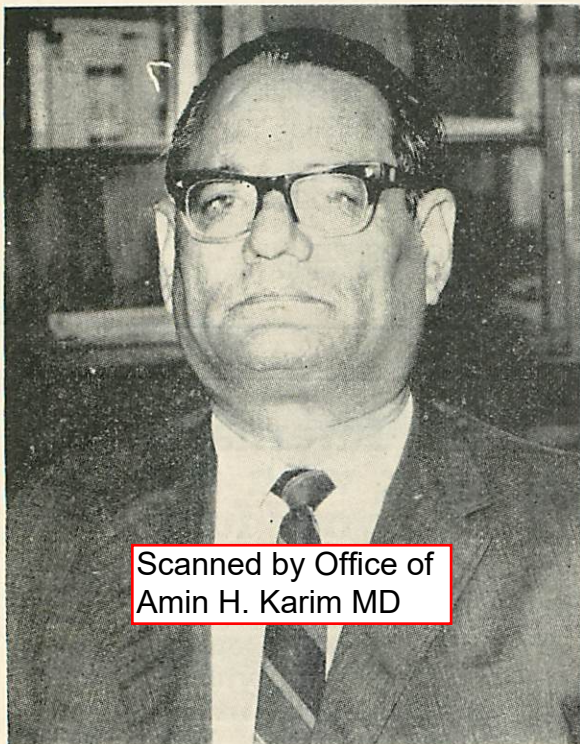
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Drugs Employed in Nematode Infestation



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NEMATODES that infest man and harbour the intestinal canal include the thread worms (*Enterobius*), round worms (*Ascaris*), hook worms (*Ankylostoma* and *Necator*), whip worms (*Trichuris*), and strongyloides. Whereas *Dracunculus* and *Filaria* are the nematodes which are found in the sub cutaneous tissue and the blood.

1. Drugs Employed in the Treatment of Intestinal Nematodes :

Many of the anthelmintics effective against nematodes produce curative effect in more than one type of parasites and are therefore of greater value in mixed infections. Some of the drugs, however, have more specific action against a particular type of nematode infestation. The drugs employed against intestinal nematode infestations include.

1. Piperazine :

The discovery of piperazine as an anthelmintic is usually credited to Fayard, but this was already known to Boismare, a pharmacist whose reference appears in Fayard's work (14). The drug has been found to be highly effective against both the thread worms (*Enterobius*) and the round worms (*Ascaris*).

In the treatment of thread worms in children, piperazine has been reported to be more effective than Gentian Violet (27,28). A single dose of piperazine, with or without the simultaneous administration of a purgative, has been found sufficient to eradicate thread worm infection in over 90% of children (27). Piperazine is generally recommended as a single daily dose before break-fast followed by a glass of water which carries the drug to the caecum and colon. Therapy is continued for 7 consecutive days. The dose schedule of piperazine in the treatment of thread worms is given in Table I.

Piperazine is also very effective against round worm infestation. It acts on the round worms as a narcotic and causes paralysis of the muscles of the parasite resulting in its expulsion by peristalsis. The worm is not killed and the expelled worm can be made to survive. The narcosis is not preceded by stimulation of the worm as it happens with oil of chenopodium, hexylresorcinol and tetrachlorethylene. (12) The initial stimulation of the parasite may result in knotting together of the worms and causes intestinal obstruction, or the worm may migrate into bile duct or appendix or may cause perforation of the gut

wall. Piperazine has also been reported to act as neuromuscular blocking agent in the worm(21) and to inhibit the production of succinate by ascaris, resulting in paralysis of the worm muscle and blocking of the stimulatory effect of acetylcholine(6).

Piperazine is readily absorbed from the gastrointestinal tract. A portion of the drug is degraded in the body and the rest is excreted in the urine(22).

Piperazine does not produce any pharmacological actions. The activity of the drug is mainly restricted to the parasitic worms.

In ascariis infestation a single dose of piperazine cures 55-85% of the cases. Therapy on 2 consecutive days eliminates about 95% of infections. The presence of food in gastrointestinal tract does not affect the activity of the drug against worm. The drug therefore, may be given at any time and without any preparation of patient before medication. The worms are passed out in the stools on the first, second or third day. The worms expelled are immobile but not dead. The dose regimen of the drug in ascariasis is given in Table II.

Piperazine is a safe drug. The side effects are very infrequent and consist of nausea, vomiting, headache, abdominal cramps and very occasionally urticarial eruptions. Neurological side effects like vertigo, tremors, incoordination, visual disturbances, muscular weakness may be observed in patients with chronic nephritis when the drug is given for 5 days or more (8). This may be the result of high blood concentration, due to defective excretion.

2. Pyrvinium Pamoate [*Vanquin*]

Pyrvinium, also known as viprynum Emboate, a cyanine dye is available as bright orange or orange red to almost black crystalline powder with no odour or taste. It is insoluble in water.

Pyrvinium has been reported to be highly effective against human pin worm infestation (23,24). The drug in doses of 5 mg/kg body weight cures 92% of infections. A second dose given one week later eliminates the residual infection. The drug is liable to colour the stools bright red and the patient should be forewarned.

Pyrvinium is not absorbed through the gastro intestinal tract and does not produce any systemic actions.

Pyrvinium is quite safe drug. However, nausea, vomiting and cramps have been reported in some cases with relatively large doses.

3. Gentian Violet (*Crystal Violet*)

A greenish-bronze odourless or almost odourless crystalline powder is sparingly soluble in water.

Gentian violet has been very commonly employed in the treatment of thread worm infestation before the introduction of piperazine. The drug in 65mg. doses three times a day is administered to an adult for 14-15 days. The children under 16 years age are given the drug in 10 mg. daily doses per year or age.

Crystal violet is usually well tolerated, especially by children, but it may cause nausea, vomiting, diarrhoea, griping, headache, dizziness and lassitude. Gentian Violet is also indicated in the treatment of giardia and strongyloides infections.

4. Thiabendazole (*Mintezole*)

A white or creamy white odourless, tasteless powder insoluble in water, has been reported to possess a high degree of activity against a wide range of nematodes. It has been successfully used against strongyloides, thread worms and hook worms.

Thiabendazole in dose of 25 mg/kg. body weight given after meals as a suspension three times a day and repeated after 7 days has been reported to give a cure rate of over 95% in thread worm infestation (28). In the mass treatment of helminthiasis, a single dose of 550 mg/kg body weight, preferably at night, has proved effective, but the incidence of toxic reactions is higher than when 2 doses of 25 mg/kg. are given.

In hook worm infestation, a dose of 25 mg/kg. body weight twice a day for 3 consecutive days has been reported to give a uniformly high egg count reduction and cure rate (11).

Thiabendazole is effective against *Ascaris*, *Trichuris* and *Strongyloides* and is therefore of special value in the treatment of patients having multiple infestations.

No dietary restrictions are necessary when the drug is being administered.

The most common adverse effects produced with thiabendazole are anorexia, nausea, vomiting epigastric distress and dizziness. Occasionally pruritis, skin rashes, diarrhoea, headache, drowsiness, hypoglycaemia anthopsia and a decrease in pulse rate and systolic pressure may be observed.

5. Santonin :

Santonin, one of the oldest anthelmintics, is obtained from various species of artemesia plant. It is available as a white or colourless crystalline powder with no odour but a slightly bitter taste. On exposure to light it becomes yellow in colour. It is insoluble in water.

Santonin was very widely used in the treatment of enterobius and ascaris infestations before the introduction of piperazine. It acts as a vermifuge. The drug is reported to affect the neuromuscular system of parasite so that it is not able to maintain its position in the small intestine and is easily expelled with purgation.

Santonin is usually administered as powder or tablets once a day for 2 to 3 consecutive days. The drug should not be given empty stomach. It is generally given in 60 to 200 mg doses at bed time followed by a saline purgative first thing next morning. Castor oil must be used as a purgative since it may dissolve the drug and facilitate its absorption. Fats and alcohol should also be avoided for the same reason.

Santonin, in therapeutic doses, does not produce toxic effects. However, in some cases it may cause disturbances of colour vision, headache, nausea, and vomiting. Large doses may give rise to epileptiform convulsions followed by coma and death may result from respiratory failure.

In the presence of safer drugs, the use of santonin as an anthelmintic is almost abandoned.

6. Hexylresorcinol :

Hexylresorcinol is a non-specific anthelmintic effective against various types of intestinal worms.

Hexylresorcinol is white or almost white crystalline powder with a pungent odour and sharp astringent, numbing taste. It is very sparingly soluble in water.

Hexylresorcinol is an effective anthelmintic against round worms, hook worms, thread worms and the fish and dwarf tape worms. Piperazine has replaced it in the treatment of thread worm and round worm infestations.

For successful treatment with hexylresorcinol, the patient has to be prepared before hand so that the drug has contact with the parasites. Hexylresorcinol is administered by mouth as a single dose of 1G for adults and 100 mg per year of age in children upto 1 G. A saline purgative is given 2 hours after the dose and no food is allowed for 5 hours. The treatment may be safely repeated after 3 days, if necessary.

In the treatment of hook worm infestation 3 courses of treatment at intervals of 3 days may be necessary.

For the expulsion of dwarf tape worms, treatment may be given weekly for 3 weeks to ensure that autoinfestation does not occur.

The drug is not toxic, but may produce local irritation of the gastorintestinal tract.

7. Tetramisole Hydrochloride : (*Nilverm*)

Tetramisole is a new introduction against round worm infestation. A white odourless amorphous powder with bitter taste is reported to be active against round worm and thread worm infestation. The drug is recommended in doses of 1-2- mg/kg. body weight for effective treatment. The drug is safe and even much greater doses than therapeutic have been well tolerated without any alterations in liver function or the blood picture of the patient.

8. Bephenium Hydroxynaphthoate :

(*Alcopar*)

Bephenium hydroxynaphthoate is an anthelmintic which is effective against a variety of intestinal nematodes.

It is available as a yellow odourless crystalline powder with a bitter taste. It is insoluble in water and only a small fraction of the drug given orally is absorbed through the gastrointestinal tract.

Bephenium is effective against hook worms, both the *Necator americanus* and *Ankylostoma duodenale* (13,25). It is also effective against *ascaris lumbricoides*, *trichostrogylus stercoralis* and *Hymenolepis nana*.

It has a moderate effect against whip worm infestation, but not against *taenia saginata* (19). The drug is also reported to expel heterophytes, a trematode which passes one stage of its life cycle in the small intestine of man (18).

Bephenium is especially suitable for mass therapy in hook worm infestation because of the simplicity of administration without preparation of the patient and the lack of toxicity. It has proved 100% effective in patients moderately infected with *A. duodenale* and 62% effective in cases heavily infested (29). A single dose of 2 or 3 G of base or multiple doses given on successive days or 3 times on the same day have been reported to compare favourably in effectiveness with tetrachlorethylene. Ahmad and Rasool (1) found bephenium more effective and less toxic than tetrachlorethylene. The drug has been found to be particularly suitable for the treatment of patients with advanced anaemia, diarrhoea and heavy hook worm infestation, because of its low toxicity and because no purgation is necessary (13).

Bephenium is more effective against *Ankylostoma duodenale* than against *Necator americanus*. Bephenium is given to the fasting patient in a single morning dose of 5G for adults and half this amount for children under 2 years of age. No purgative is necessary. In severely infested patients the treatment may be repeated on 3 consecutive days or at an interval of 7 to 10 days. Bephenium may cause nausea, vomiting and diarrhoea, but is generally well tolerated. Good results without side-effects have been obtained in adults by a combined treatment of bephenium hydroxynaphthoate 5G with tetrachlorethylene 5 ml. This treatment has the advantage that bephenium is rather more selective against *Ankylostoma duodenale* and tetrachlorethylene against *Necator americanus* (30).

The drug is least toxic. It is generally recommended in 2.5 G base, contained in 5.0G of bephenium hydroxynaphthoate, given twice a day. In case of *Necator americanus* the drug has to be repeated for 3 consecutive days (16).

Nausea, vomiting and abdominal discom-

fort are the only side effects so far experienced in certain cases.

9. Tetrachlorethylene :

Tetrachlorethylene is closely related to carbon tetrachloride in its anthelmintic properties, but is less toxic.

Tetrachlorethylene is a clear colourless, heavy, mobile liquid with an odour like that of carbon tetrachloride. It is insoluble in water. Little is absorbed through gastro intestinal tract and therefore the risk of toxic effects is less. The presence of fat in the gastro intestinal tract promotes its absorption leading to toxic effects, hence fat in diet should be avoided during therapy with tetrachlorethylene.

Tetrachlorethylene is an effective anthelmintic against hook worm infestation and was considered to be the drug of choice before the introduction of bephenium. Tetrachlorethylene is more effective against *Necator americanus*, but is not effective against other nematodes or trematodes.

Tetrachlorethylene is generally recommended in 3.0 ml dose given with or followed by a saline purgative 2 hours after its administration. However, this dose is not considered to be an optimal as a dose bigger than this has been reported to be well tolerated, producing few side effects and better therapeutic results. A single dose of 5.0 ml of tetrachlorethylene has been reported to be quite safe and has eliminated approximately 92% of worms (7). Doses of 4-5 ml may be safely given to adult patients and 2 such treatments at intervals of 10 days may be expected to cure patients with severe hook worm infestation. No appreciable toxic effects have been found even after 8.0 ml doses on the cardiovascular, respiratory, hepatic and renal organs (10).

The children are given a dose of 8.05 to 0.06 ml per pound body weight. The preparation of the patient is necessary for successful treatment. The patient is given a light meal at night preceding the treatment. No breakfast is given on the morning of treatment when the drug is given in 2 doses at one hour interval, followed 2 hours later by a saline purgative preferably sodium sulphate. Food is restricted till the bowels have opened. The food should be relatively fat free.

In case of mixed infection with round worm and hook worm, the round worm infestation should be first eliminated with a suitable anthelmintic before tetrachlorethylene therapy is given for hook worm infection. Tetrachlorethylene like its closely related compound, Carbon tetrachloride, may stimulate the round worms and produce serious complications.

Minor toxic effects have been reported in 10 to 50% of patients. These include diarrhoea, vomiting, headache, dizziness and incoordination. The drug is contra-indicated in liver disease and in patients whose general condition is poor. Good results are obtained without marked side effects by a combined treatment of tetrachlorethylene and bephenium (30).

10. Bromonaphthol (*Wormin*)

It is available as white needle shaped crystals with a naphthol like slightly bitter taste and is sparingly soluble in water.

The drug has been employed in the treatment of both types of hook worm infestation (17). and is also effective against whip worms. Bromonaphthol has been reported to be considerably more effective than tetrachlorethylene against both types of hook worms.

The drug is administered in 2 to 6G doses. It may be given as a single dose or in divided doses taken with large quantity of water. The side effects are mild when given in this dose schedule. They include nausea, abdominal pain, loss of appetite, dizziness and headache.

11. Oil of Chenopodium :

A colourless or pale yellow liquid with an unpleasant odour and a bitter burning taste, effective against round worm, and hook worm infestation. The anthelmintic activity is due chiefly to active principle ascardiol, an unsaturated terpene.

It is highly active against all kinds of nematodes. The anthelmintic activity is greater against *Necator americanus* than the *Ankylostoma duodenale*. No preliminary fasting or purging is necessary. A single dose of 2.0 ml is very effective, but the oil is nauseating and must be given in divided doses in capsules. Three capsules of 0.5 ml are

generally administered at intervals of an hour and one ounce of magnesium sulphate is given 2 hours after the last dose of drug. Purgation after medication is especially important since the oil inhibits peristalsis and is toxic if absorbed. No food is allowed until after the purgative has acted.

The combined use of chenopodium oil and tetrachlorethylene is said to have given better results than the use of either drug separately; the usual adult dose being chenopodium oil 1 ml and tetrachlorethylene 3.5 ml.

Chenopodium oil may cause headache, vertigo, tinnitus, nausea, vomiting, temporary deafness, gastrointestinal disturbances and in severe cases of poisoning, kidney and liver damage, jaundice, complete prostration and death.

After the discovery of bephenium the drug has gone into back ground.

12. Dithiazanine (*Telmid*)

A dark greenish crystalline powder, almost insoluble in water, a cyanine dye, reported to be particularly effective against whip worm, strongyloides, hook worms, *Ascaris* and *Enterobius* infestations in man (26). The activity against round worms and thread worms is less than that of piperazine. It is also less effective than bephenium and tetrachlorethylene against hook worms.

Dithiazanine acts as an anthelmintic by interfering with oxidative process and anaerobic reactions in worms (5,23). Dithiazanine is absorbed from the gastro-intestinal tract in very minute quantities. Nearly all the drug ingested is excreted unchanged in the stools which are stained blue. If the intestinal mucosa is inflamed, the drug gets absorbed and produces toxic effects.

The drug is administered orally in the form of tablets or suspension. The usual adult dose in whip worm infestation is 45 mg/kg body weight divided into three equal portions or 200 mg. 3 times a day for 5 days. If the dose is reduced to 1/2 on the first day of treatment the incidence of nausea and vomiting is reduced.

In strongyloidiasis, 100 to 200 mg of drug is given 3 times a day for 14-21 days according to the degree of infestation and the condition

of the patient. The cure rate in strongyloidiasis is excellent whereas in trichuriasis radical cure rate varies from 32 to 100% (25).

A total daily dose should not exceed 600 mg. No preparation of the patient prior to medication or purgation after therapy is necessary.

Children between the age of 5 and 10 years are given about half the adult dose. The dose in children may also be calculated according to the body weight. In the treatment of trichuriasis children over 20 lbs body weight get a daily dose of 50 mg/10 lbs body weight upto 300 mg. divided into 3 parts on the first day and double this dose on subsequent 4 days. For strongyloidiasis half of the dose calculated for trichuriasis is indicated.

Dithiazanine has an irritant effect on gastrointestinal tract and produces anorexia, nausea, vomiting, abdominal cramps and diarrhoea. These symptoms are more frequent in the first day therefore the dose on first day should be smaller. The administration of drug after meals minimizes these side effects. Occasionally skin rashes, transient albumin-uria, oedema and fever may be produced. Deaths have occurred following a fall in blood pressure, acidosis and coma.

B. DRUGS EMPLOYED IN THE TREATMENT OF NONINTESTINAL NEMATODES

Filaria and Dracunculus differ from other nematodes in being not harbouring the intestinal lumen. Filariæ, when adult, live in the lymphatics, connective tissue or other body tissues and cavities. The micro-filariæ circulate in the blood or in the skin of the host. Dracunculus medinensis resides in the subcutaneous tissue and emerges out of the skin.

The drugs employed in the treatment of filariasis include:

[1] Diethyl Carbamazine (*Hetrazan*)

A white, odourless, crystalline, slightly hygroscopic powder with a bitter acid taste, is very soluble in water.

Diethyl carbamazine is effective against several species of filaria but more particularly against *Wucheraria bancrofti* and *Loa Loa*. In onchocerciasis and in *W. malayi* infections

it is less effective and is liable to cause severe allergic reactions.

The piperazine ring in the structure of the drug is probably of fundamental importance in the activity of the compound, though piperazine itself has no activity against filaria.

In the treatment of *W. bancrofti* infections with diethylcarbamazine the micro-filariæ are rapidly eliminated from the blood stream. The drug has no direct toxic action on the larvae and it is thought that it may act by so modifying them that they are trapped by the reticuloendothelial cells in the liver sinusoids. This helps in limiting the spread of filariasis by the insect vector. The action on adult worms is slow and they may persist for several months, but after they have been eliminated, micro-filariæ do not reappear in the peripheral blood. Local reactions sometimes appear at the sites which commonly harbour adult worms.

In loiasis, both micro-filariæ and adult worms are killed. In onchocerciasis, the micro-filariæ may be killed but adult worms are less affected.

Diethyl carbamazine citrate is administered by mouth in tablet form. In *W. Bancrofti* or *Loa loa* infection the drug is given in 6 mg/kg. body weight daily doses for 3 equal portions. For mass treatment in endemic areas, 6 mg/kg. body weight given at weekly intervals to a total of 6 doses is effective. Diethylcarbamazine in 6 mg/kg. body weight daily doses given once a month for upto 12 months and repeated for several years has resulted in almost eradicating Bancroftian filariasis (15). Doses of 20 to 30 mg/kg. body weight have been given without serious side effects. In onchocerciasis and *W. malayi* infections a low initial dose should be given to reduce the risk of allergic manifestations.

Diethyl-carbamazine is also effective in tropical eosinophilia and is employed in 8 mg/kg. body weight daily doses for 8 to 16 days. The drug has proved to be safe and effective (9,20).

The side effects produced with diethylcarbamazine include, anorexia, nausea, vomiting, headache and drowsiness. These effects are usually mild and the drug is not to be discontinued. Allergic reactions due to release of foreign proteins in the tissue by the death

of adult worms or larvae include fever, tender swelling, muscular pains and skin rashes. These allergic reactions are more common with *W. malayi* and onchocerca infections. Severe allergic reactions are controlled with antihistamines or corticoids and by withdrawal of the drug.

2. Suramin (Bayer 205)

A white, pinkish white or slightly cream coloured odourless hygroscopic powder with slightly bitter alkaline taste and soluble in water, is effective against the onchocerca, especially the female worm. The drug acts on the adult filaria and has no direct action on microfilariae. The drug is generally given intravenously in an initial dose of 500 mg for an adult followed by 7 doses of 1 G each at weekly intervals. A total course of 160 mg/kg. body weight has been reported to be very effective against both the adult worm and the microfilariae (4).

Suramin gives rise to a variety of toxic reactions which vary in intensity and frequency according to the nutritional conditions of the patient. Immediate reactions include vomiting, shock, oedema, pruritis and urticaria. Paraesthesia, hyperaesthesia of the hands and feet, photophobia and peripheral neuritis may be observed within 24 hours of taking the drug. Damage to the kidney, agranulocytosis and haemolytic anaemia are serious reactions seen late after the therapy.

A number of antimony and arsenic containing compounds, given intramuscularly or intravenously, have shown some success against filarial infections. In general the trivalent compounds act rapidly on the microfilariae and slowly on adult worms. The pentavalent compounds, on the other hand, exert their effect on adult worms and the microfilariae disappear gradually from the blood over a period of months (2).

These compounds have not attained any clinical value for the reason that they produce unpleasant side effects, even serious toxic reactions and are to be given parenterally.

DRUG USED IN THE TREATMENT OF DRACUNCULUS MEDINENSIS INFECTION

So far no satisfactory drug treatment for

Dracunculus infection was available. Recently a drug, niridazole, has been reported to produce beneficial effects in this condition.

Niridazole (Ambilhar)

A yellow, odourless, crystalline powder, almost insoluble in water has been reported to be effective in guinea worm and amoebic infections. The drug has already been known to be the most effective agent against schistosomal infection.

Niridazole is a nitrothiazole synthesized in 1966. The drug is slowly absorbed from the gastrointestinal tract. After absorption the drug passes in the portal blood to the liver where it is metabolized. The metabolites, believed to be relatively inert, are slowly excreted in the urine and faeces. The urine is coloured dark brown.

In guinea-worm infection, the drug acts on the vitellogenic gland of the female worm and inhibits egg production. Male worms are less sensitive than the female.

Niridazole in 25 mg/kg. body weight per day for 7-10 days is the only available drug which can cure guinea-worm infestation. Pain, tenderness and swelling are rapidly relieved. The emerging worm is easily extracted and there is less tendency for fresh worms to emerge.

Niridazole is regarded the best drug in the treatment of schistosoma haematobium infection. The drug is administered in a daily dose of 25 mg/kg. body weight for 4-5 days. It is generally given in two equal parts administered twice a day and has been reported to cure a majority of patients. In *S. Mansoni* infection, niridazole in 25 mg/kg. body weight daily dose given for 7 days is as good as in *S. haematobium* and probably better than other drugs. In *S. Japonicum* infection, the drug is as effective as in *S. mansoni* infection. However, it is not advisable to employ this drug for mass treatment of either *S. mansoni* or *S. Japonicum* infections for hepatosplenic involvement.

Niridazole is a powerful amoebicidal drug both for intestinal and extra intestinal disease, but other more safe drugs are preferred.

The toxic effects, mostly minor in character, include anorexia, nausea, vomiting and

abdominal pain. Headache and drowsiness has also been reported in some cases. These symptoms are all reversible and do not require withdrawal of the drug.

In a number of patients E C G changes appear 4-5 days after the beginning of medication and may persist for 2-3 weeks after the stoppage of therapy. The changes observed in E C G are flattening or inversion of the T-wave often accompanied by tachycardia. These changes do not call for cessation of therapy.

Neuropsychic side effects, though transitory and reversible on withdrawal of the drug, can be very alarming. These are usually observed when the drug is given in the treatment of *S. mansoni* infection with hepatosplenic involvement. In such cases the drug does not get metabolized in the liver and reaches brain in large amounts. Episodes of excitement, euphoria, hallucinations, mental deterioration, generalised convulsions, localized muscle tremor and spasm, delirium, loss of consciousness, confusion states and psychoses with suicidal tendencies can all appear from 4th day of treatment onwards. These effects can be minimized with barbiturates and tranquilizers. The drug must be immediately stopped when psychic symptoms appear.

A slight leucocytosis and eosinophilia have been reported in some cases. Moderate and temporary haemolysis may occur in patients who are deficient in Glucose-6-Phosphate dehydrogenase.

Niridazole should not be given in cases of epilepsy, behavioral abnormalities, marked impaired liver function, vascular shunt and of those of poor general physique.

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TABLE I.

DOSE SCHEDULE IN THREAD WORM INFESTATION:

Weight In ibs.	Piperazine Citrate Syrup ml.	Piperazine Oxyhydrate G.
up to 15 ..	; 2.5	; 0.25
16—30 ..	; 5.0	; 0.50
31—60 ..	; 10.0	1.00
Over 60 ..	; 20.0	; 2.00

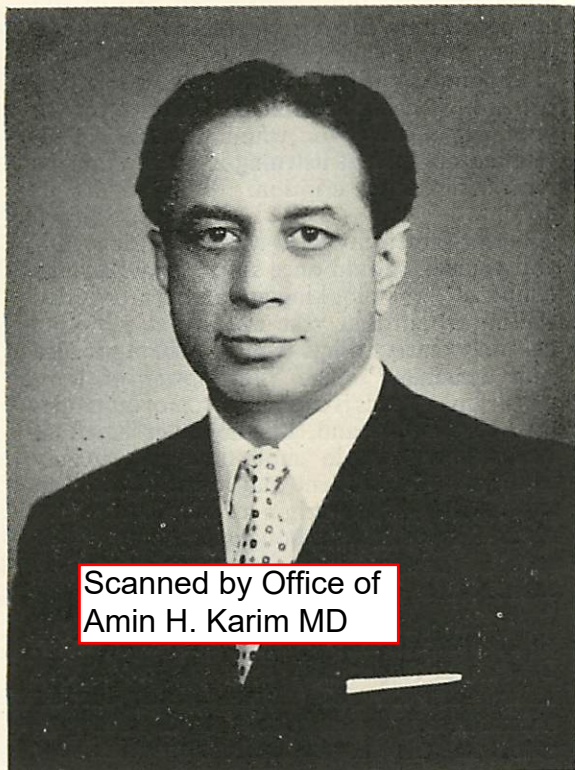
TABLE II.

DOSE SCHEDULE IN ROUND WORM INFESTATION:

Weight in lbs.	Piperazine Citrate Syrup ml.	Piperazine Oxyhydrate G.
30—50 ..	; 20.00	; 2.00
51—100 ..	; 30.0	; 3.00
Over 100 ..	35.0	; 3.50

LETTER TO A YOUNG DOCTOR COLLEAGUE

entering into private Practice



Scanned by Office of
Amin H. Karim MD

Dr. M. A. QAYYUM

FRCS., DLO., DO., (ENG.) FACS., FICS.

Professor of Ear, Nose & Throat

Dow Medical College, Civil Hospital Karachi.

My dear friend :

Your wish to set up office as a practitioner is now being fulfilled at the end of your clinical training period as a house surgeon in this hospital.

My Congratulations! Instead of following in the comet's tail of the visit by the professor, I imagine you waiting for your first "Own" patients in your own dispensary, to devote all of your capabilities, your patience and your energies to them. You have been put through the paces of diagnosis and therapy by studies

and **clinical practice**, having been led through the labyrinth of **differential diagnosis**, to pre-
pare you now to enter life, to a general practice of your own.

You are asking me, my friend, advice about the vital points in this type of work that is, so new to you in its way—to put it briefly;—**the Patient and You Yourself**. On the daily achievement or failure of this symbiosis, on the question whether it is good or bad your success will depend and with it your medical and human development as well as the confidence you gain or lose.

In the **hospital** you have **treated your patients by virtue of your office**. Your studies, **medical, degree, and your position** were your qualifications.

In your own practice, a liberal professional, **the patient is free to choose you for his physician**, to place his confidence in you. **It is your patient who grants you full power**. May be it is chance that leads your first patient into your dispensary, may be also the fact as a newcomer you are free as yet from negative experiences and prejudice. Later patients may be decided by sympathy, **successful cures and other imponderables**, **But in each case it is the patient, his family, or his colleagues who take the initiative**. The patient determines the partnership. **Your Competence, your Personality and your Patience** are only opportunities to make this relationship permanent. **To the patient seeking help, you are the projection of an ideal**. Whether you qualify as a tool of his wish-fulfilment does not depend on you alone as a "Curative agent", as a secret but especially **on the undisturbed continuity of the confidence the patient has placed in you**. It is up to you to fortify and maintain this trust. **UNCONDITIONAL CONFIDENCE, his PERSONAL NEED, and his WISH TO BE CURED** are the weights the patients places onto the highly sensitive scales of the relationship between physician and patient.

You yourself use as counter—weight **confidence in his cooperation, faith in his healing and your competence as a physician**.

The scales of trust rise or fall during the first encounter, whether at the dispensary or at the bedside. **The intuition of the patient concerning your medical personality has a**

decisive effect on the negative or positive turn of the scales, whether you are rushed or unconcentrated, whether you are "quit there" and are listening an art which physician and spiritual advisor alike should bring to particular perfection your patient feels it like a blooded horse senses the condition of its rider. Only if the patient does not remain merely homopatient, the suffering patient, **but can unburden himself to "his physician" of all his physical and mental worries, of the things that hurt him and make him ill, will be he fully able to put himself into his doctor's hands.**

The **confidence** growing out of this relationship is directed mainly to the physician as a **Personality and only secondarily to his medical capabilities and the equipment of his dispensary.** It is the necessary return service by the Physician to take his patient seriously as a Personality and thus activate mental and Physical healing forces.

In addition to listening, it is of major importance to have **time** for one's patient and to his objection and anxieties seriously as need as to show **benevolent patience** to any annoying and sometimes an aggressive type of self-righteous person, who professes superior culture.

Take care to prevent that your patients have to **wait** longer than absolutely necessary. This may easily be arranged by selfdiscipline and a little organizational skill. Excessive waiting times interfere with the greatest readiness to confide not only while at home the baby is crying or a hungry family is waiting for its meals. **Convey to you patient a feeling that during his consultation you are there for him alone** and have time for him—and he will reciprocate by respecting yours. Because the patient is to treat the time of his physician with great care and not to consider his patience as a performance to which he is entitled by his sickness certificate. **Patience and time, both of them the most invaluable and rarest things in this world,** are at least as important for the efficient treatment of patients as is a comfortable hospital or a well-equipped practice. Strangely enough, those physicians who show sympathy to their patients always have sufficient time, while the impatient physicians never have time, although they do not accomplish more.

Patience like any real strength creates time. To this quiet strength of listening on the part

of the physician the patient will show the greatest confidence, and this will restore his health, which does not consist only in a momentary absence of bodily ills but represents strength. **"He who has patience will succeed in everything"** should be the motto for this phase of your life and work.

You shall then feel as if you have received many and often quite unexpected gifts; if you are penetrating down to the real emotions of a patient who so far refused you access, or if disappointed patients, intimidated by the impatience of another doctor, find their way to your dispensary, for whom the **medical advice born of patient listening** is better than the most complex prescription.

Never forget, my dear young friend, even if you yourself should once suffer from **"Angina temporis"**, when looking at you over crowded waiting room that **"the words of a physician not only carry wings but are simply loaded with dynamite."** The vital power of the physician's words is capable of removing stones from a heart, and, on the other hand, of building up whole mountains of anxiety fixations. The patient may be entitled to an explanation of the origin of his disease, but never forget that, although he may have enough common sense, he never passed an examination in Latin language.

The word of the physician has great power. Don't ever forget this! What may be a plain information to the physician, may become a dark mystery to the patient, or, if misunderstood, may feed hypochondriac speculation.

You should explain his disease to your patient **just as you would tell you own mother.** Help him to understand his condition and the place his sickness is taking in his life.

Refrain from criticizing diagnosis and prescription of a colleague to a patient, because you might lose credibility and trust—learn to know you own limitations.

Remember that each patient and doctor encounter has a medical and a paedogoical aspect. This self-education includes the training **to keep an inner distance.** This is the the foundation of every successful practice. It represents the fence which delimites your own life clearly and unmistakably from that of your male or female patient.—The smaller

the number of "friend" among you patients is the greater that of you "Steady patients" will be.

This does not mean that in the course of your medical life. You will not be given an opportunity to form sincere and constant personal relationship where the initial relationship of physician and patient is changed into a friendship.

The more you deal with the entire personality of your patient, the sooner you will give an understanding of psychosomatic diseases.

The unconscious of the patient often builds up a very ingenious system of sabotage against the physician, which may find its expression in unjustified criticism against your therapeutic measures, in report from the daily papers and magazines and in playing off one physician against the other. In this case it is possible to resolve the blocking of the patient-physician relationship by bringing the underlying mechanism of resistance out into the open.

Always recase, my dear young friend, the great medical task which does not consist in binding persons to one-self, but to enable them to live their own free life buy their own free will.

If the initiative for an encounter between patient and physician at first was the patient, who was selecting "his physician", leadership and direction must remain in the hands of the physician, and this requires strength. For this reason keep you friendliness, you optimism and you good health.

These, in addition to knowing that we, too, are merely a very small molecule within the great big order, are the best condition for successfully practising the art of medicine.

"The physician is the servant of nature, and God is the master of nature. The art of the good physician is a gift of God. The patient is sent to him, and he is sent to the patient."

(Paracelsus)

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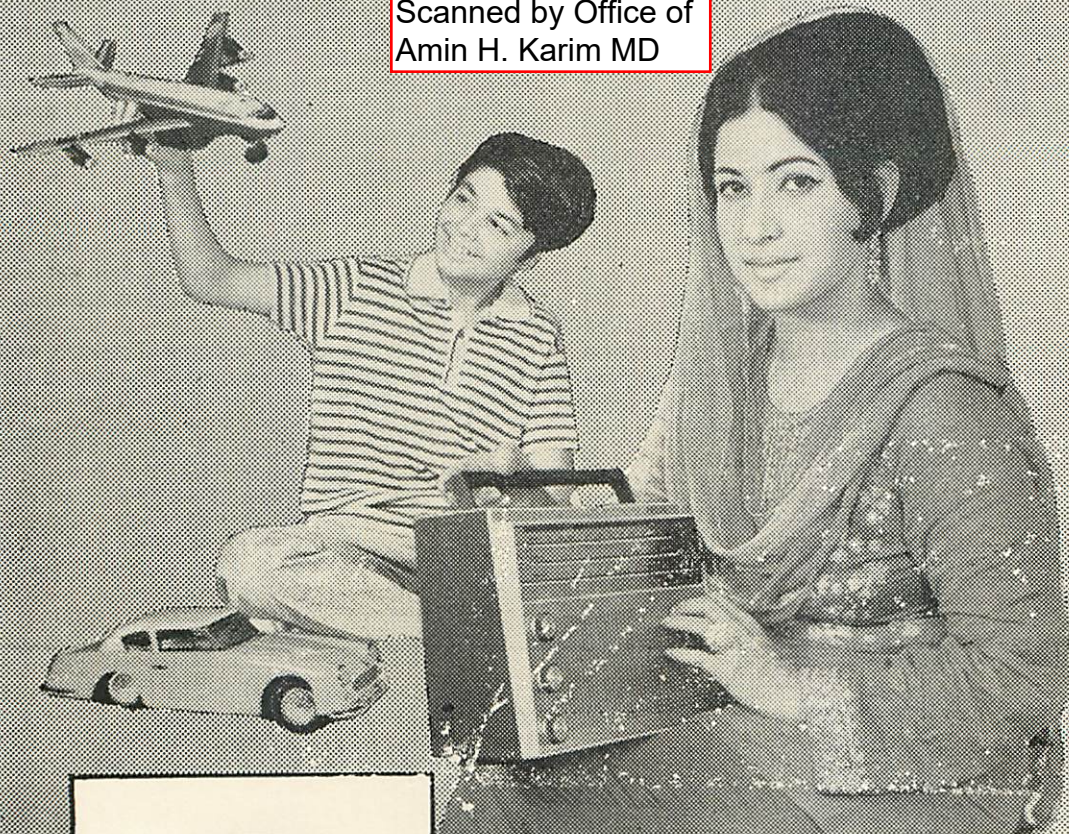
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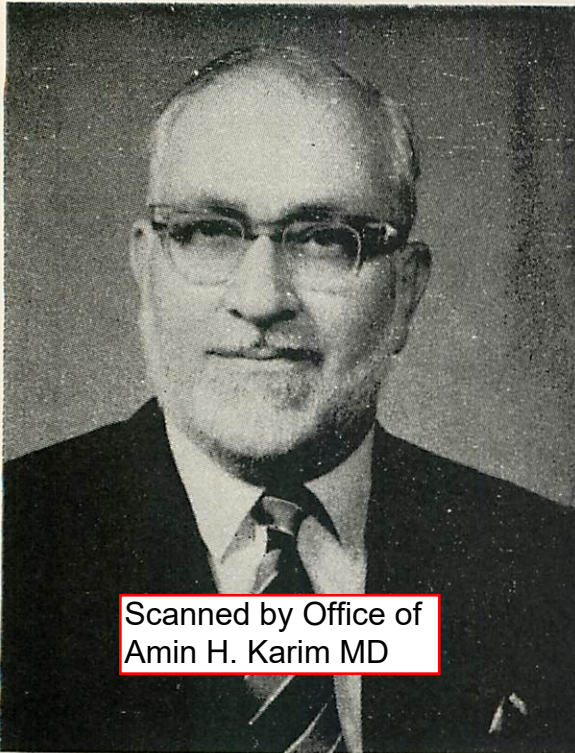
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The Place of Specialities in the Under Graduate Teaching



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Amin H. Karim MD

SURGEON M. R. SHIRAZI
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It is said that you can take a horse to the water but you can not make him drink. I think, there can not be two opinions about the place of Specialities in the Under-graduate teaching but it is being made a controversial subject by some who are in a rather advantageous position to take arbitrary decisions and are trying to do so. I have therefore chosen to avail myself of this opportunity to reach a very wide circle of

people who are affected by these decisions, with what I think are sound grounds for my views on the subject Viz. that Specialities teaching has a real place in the Under-graduate Institution but as quoted above WHO CAN MAKE THEM DRINK!

Today, Specialisation is the trend, be it in Arts, Law, Engineering or Medicine for it is realised that every subject is getting so extensive and voluminous that it is just not possible for any one individual to comprehend, less so to master, it in the short span of active life at his disposal. So much so, even from the general education a good deal is being cut out, not only to reduce the load on the Collegiate but also to make available more time for acquiring more detailed knowledge in specific fields. Every one knows how in our own field of Medicine even the basic subjects like Anatomy and Physiology are being reduced to shorter periods so as to allow more and more time for narrower and more specific fields of study. Indeed the idea of specialisation has spread to such an extent that in some places they speak of Specialists for the Right Eye, for the left Nostril, for the Middle Finger and so on. In short specialisation is the trend and one can find it from amidst the ordinary trades to the higher sophisticated professions. In fact the above referred gentlemen who are trying to be little specialities are themselves Specialists and that is the IRONY.

Now, as for the Specialities in relation to the Under-graduate teaching. It is the view of those whom I have already referred to that the Under-graduate should not be taught by the Specialists on the plea that they are under-graduates and that the Specialists are likely to teach on post-graduate level and that the Professor of General Surgery and Medicine and his Asst. Professors are quite capable of teaching the specialities. It reminds me of the occasion when the College was asked by the T.B. Directorate to send batches of Students to the T.B. Centre and the Ojah Sanatorium so that they could learn a little more in detail the exact methods of diagnosis and of tackling our Enemy No. 1.-Tuberculosis. Bang came the answer that a Professor of Medicine is quite capable of teaching Tuberculosis. Of course he is but one fails to understand how he was going to teach about Tuberculosis without the clinical material, as by the rules of the Hospital NO Tuberculosis case is to be admitted in the Hospital! Nor can one understand how

a Professor of General Medicine and Surgery can teach any thing about, for instace Plastic Surgery, Cardiovascular Surgery, Neuro Surgery, Thoracic Surgery Dermatology, Neurology and their investigations etc., when all the clinical material for these subjects is isolated away in the specialist department. Is it that they do not want our under-graduate should have any knowledge of these subjects? Is it that they really want to put our Medical Graduates at par with the Quacks, Homeopaths and Ayurvads etc. and on the same Register as some Officialdom has been trying to, in the recent past? Oddly enough, in another context, these very people are voiceferous enough about the already lowering standards of our graduates. However, I would like to put forward here a few of the grounds on which I hold the view that the Under-graduate should and must have a period of attachment to the Specialist Units and should be given an introduction to the subjects of various Specialities.

1. It is obvious that the Under-graduate is the future Doctor. He may eventually be a General Practitioner or if one, with an academic bend of mind may go up to post-graduate studies and specialisation. If he is to be a General Practitioner he should have an idea of what can be attained by specialists in different fields. He should have seen during his clinical training an Oesophagectomy, a plastic repair of defetes and deformaties. He should have seen Mediastinal Tumours and Lung Cancer tackled. He should have seen Head Injuries and Brain Tumours diagnosed and treated for him to be able to guide the all ignorant patient. How else can he know what can be attained by the Specialists and in Our Own Country. How often, we have heard it said "Oh! nothing can be done further or at best nothing can be done Here" and patients are held on to mere Placebos by the general practitioner. I have personally come across a number of such cases where there has been an almost criminal neglect. How tragic and how sad that so vital a man as the General Practitioner in the chain of our Health Services should be so handicapped.

If on the other hand he believes specialisation, then having gone through the various specialities, he may taken a liking and may have been impressed enough, by one of them, to take it up instead of groping in the dark after graduation not knowing what to specialise in. In fact, that is how I personally decided to take up my speciality having been impressed in my student days by one of

Aurgem Roberts the famous pioneer Chest Surgeons and his work. There has to be a meeting for the cord to strike. There is not enough time after graduation to go through all specialities to find out one's own aptitude.

2. An argument is put forward that the Specialists are apt to teach on a post-graduate level. How false an argument! If it is conceded that a specialist is one who has mastered a subject, then surely a master in any subject or Art can wield that subject or art better than any one else. He can enlarge it, he can reduce it, modify it or present it in any manner that he is required to. He is a master and not a Jack of all Trades. In other words, he knows best how to cut the cloth to the required size. What kind of a specialist will he be if he can not talk to a particular level of audiance in a particular way! If this argument had any substance then no Professor of Medicine or Surgery should teach the under-graduate for, a Professor is supposed to have very wide knowledge of the subject far beyond even that of a post-graduate. How does he manage to keep his level down to the under graduate or is it that our Professors are not really beyond the under-graduate level? On the basis of this argument then, the right people to teach the under-grate are perhaps the General Practitioners who certainly can not teach beyond under-graduatelevel.

3. It is obvious that the syllabus for the Medico covers each and every one of the speciality subjects e.g. Neurology, Urology, Dermatology, Cardiovascular Surgery, Thoracic Surgery, Neuro surgery and even Plastic Surgery etc. and lectures and clinical teaching of these subjects has to be done, be it in two lectures or ten. Why can not the Specialist in that particular subject do that teaching? Can any one deny that an Empyema has to be taught, a Carcinoma Lung has to be shown and a success-Oesophagectomy to be seen by the under graduate! Why can't the specialist do that teaching and show those cases. Why can't a Plastic Surgeon show what a Cleft Palate is and how and when it is tackled. Why can not the Cardiologist teach the latest and best methods of dealing with a Coronary- a very serious and increasingly common emergency today. All that is required is to indicate the extent of the subject to be taught as per the requirements of the University. Further, as pointed out above all this Special clinical material is segregated in the specialised departments how then can the Professor of general Surgery and Medicine teach these

things without the clinical material. They can do so only by sabotaging the arrangements and taking in these specialised cases. Then why have the Specialities.

4. It is to be noted that the designation of all these Specialists as well as the other Surgeons and Physicians, is Assistant Professor and they are attached to the College. What on earth is a Professor or Assistant Professor in a college for, if not for teaching. His very designation implies teaching. It is his duty and privilege to teach and those that are trying to stop it are doing it through sheer ulterior motives and obstinacy of the type we have been witnessing recently in our country. Professors and Assistant Professors are appointed not to show the physical strength of the college but the teaching strength.

5. It may also be noted that the Pakistan Medical Council stresses the need to use the staff of the college in the best manner possible in the teaching of the students. What better use can there be for the specialist Asst. Professor than to teach his own subject. Subject in which he is a master-Subject which he can handle with ease. After all he is on the staff of the college and has got to be utilized.

6. It is a rule of the Medical Council that the requirement for the post of a Professor is 5 years standing and 4 years teaching in the subject and as we know there are Chairs in many of the Specialities and there are likely to be in others also. If the Asstt. Professors of specialities are not to teach, how will they ever qualify to aspire for a Chair in their subject. Or is it that our friends referred to above aspire to occupy two and three Chairs at the same time. Perhaps they do but it is obvious that when one tries two to sit on two chairs, he is neither on one or the other.

7. If the Assistant Professors of Specialities are not to teach because they are specialists and are likely to teach on a higher level may I ask what is a Gynecologist, an Eye Specialist and an E.N.T. specialist? Are they not Specialists? In fact are not the Professors of General Surgery and Medicine themselves Specialists? How do they teach to the undergraduate. Are they not the great Meisterers?

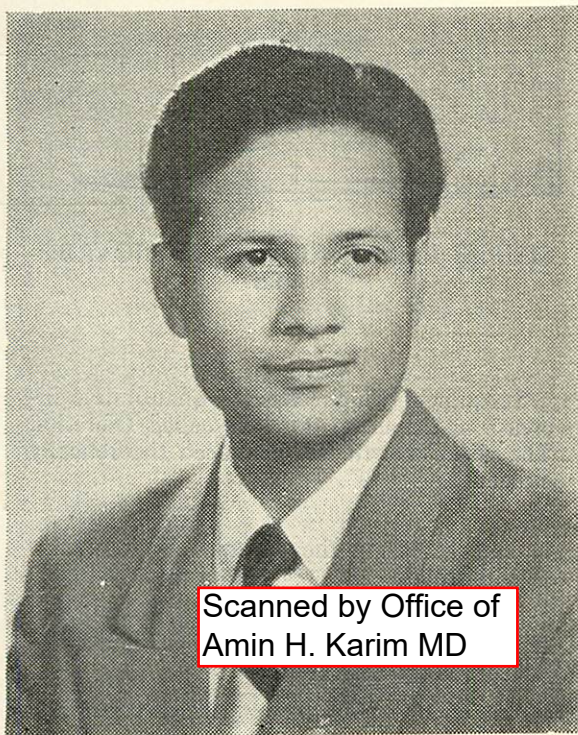
8. There is yet another absurdity. It is said that there are two categories of Specialities—the Essential and the Non essential. To add insult to injury, they ascribe this categorisation to the august body of the Medical Council. I can not believe any

Medical Council who is in touch with modern trends and teaching could ever categorise in this manner. How could you say that Dermatology is unessential—ask the man who has an Itch. How could you say Neuro Surgery is unessential—ask the man whose son has been knocked down in a car accident and has a head injury. How could you say Cardiology is not an essential speciality—ask the man who has a Coronary attack and whose life is hanging in the balance. Does he not want the General Practitioner who reaches him first, to know the latest and the best method of dealing with this catastrophe. Finally, how can one say that Thoracic Surgery is unessential in the present day when it is perhaps the most progressive branch of Medicine? Essential Specialities. I believe are Paediatrics, a subject which any physician should be able to tackle and Orthopaedics wherein every bone will unite and heal with the immobility consequent to the fracture, only at its worst it will be a little out of alignment. It is not meant to belittle these two specialities. I will be the first one to utilize the services of these specialists, God forbid, if the occasion arises. It is only meant to show how any subject can be made light of and called unessential. However, if the Medical Council is of this opinion then there is only one explanation and that obviously is that these very gentlemen referred to above are on the Council as well. It sounds very much like 1st and 2nd class citizens.

9. Finally it is odd that while we are so ready to follow the West in many frivolities and superfluousities, we do not care to follow them in their more mature actions. Any one who may have been abroad in recent years would have seen that in the teaching institutions the students are posted to all the speciality units during their clinical teaching. In fact if the Professors care to recall at the recent lecture by Prof. Carstairs, Professor of Psychiatry and a leading Psychologist of U.K., at our College, he had stressed the importance of having a definite number of beds in that speciality in a teaching institution and the posting of students to the department. Surely he knew what he was talking about.

I have had my say, starting with a saying from the English world that you can take a horse to water but you can not make him drink and now I will conclude with a wiser and more potent Persian saying *Ger Der Khanai Kess Asth—Hameen Harf Bass Asth.*

Diuretics And Their Clinical Use



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Amin H. Karim MD

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THE functional unit of the kidney is **nephron** of which there are one million in each kidney. Each nephron consists of a renal tubule and a **Bowman's Capsule** which is the terminal dilatation of the renal tubule,

Each Bowman's capsule contains a tuft of capillary vessels known as **Glomerulus** and both the Bowman's capsule and glomerulus together are called **Malpighian corpuscle**. The Bowman's capsule is lined internally by endothelial cells. The nephrons drain via the collecting tubules into the renal pelvis and thence into the ureter.

Secretion of urine involves :

1. Glomerular filtration
2. Modification of tubular fluid by tubular activity.

For glomerular filtration to take place the force of blood pressure in the glomerular capillaries is required to be more than the opposing osmotic pressure of plasma proteins. If somehow glomerular filtration force is reduced e.g. hypotension due to any cause, the urine secretion becomes scanty (*Oliguria*) and eventually anuria results.

The normal daily volume of filtrate is about 180 liters. Tubular reabsorption reduces this large volume by 99%. The net result is 1-2 liters of hypertonic urine. This reduction is due to the tubular functions.

Renal tubules have three functions to perform:

1. Selective reabsorption of certain constituents of filtrate for return to the blood.
2. Passive diffusion between tubular urine and blood of substances like urea, alcohol and volatile anaesthetics.
3. Active secretion into the tubular urine of certain ions and drugs.

1. Selective reabsorption :

During the passage of the glomerular filtrate through the proximal tubule 80% of the filtrate is returned to the blood by a highly selective but not indiscriminate process. This includes absorption of salts, glucose and water. Excess salts, waste products like creatine and foreign substances like inulin and many drugs are allowed to pass unabsorbed. This process of selective reabsorption is

controlled by enzyme systems of the cells lining the renal tubules.

With selective reabsorption of each anion e.g. Cl^- , a cation will be transported to blood e.g. Na^+ and with each such molecule of salt approximately 7cc of water will move towards the blood stream. The enzymes responsible for Cl^- absorption are inhibited by mercurials and thiazidas. Enzyme responsible for glucose absorption is inhibited by phloridzin.

2. Passive diffusion between tubular urine and blood:

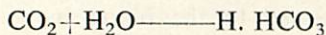
There is a group of substances like sulphates, nitrates, sucrose and mannitol which readily appears in the glomerular filtrate and are not selectively absorbed by the tubular cells. These, therefore, carry with them an isomolar quantity of water. This mode of diuresis is known as osmotic diuresis and the substances are classified as osmotic diuretics. Urea is also an osmotic diuretic but 50% of it diffuses back through the tubular wall into the blood.

The selective reabsorption of water occurs in the distal tubule and is promoted by the antidiuretic hormone (ADH) of posterior pituitary. Urine is, therefore, concentrated. Lack of secretion of ADH under conditions of excessive water drinking produces diuresis.

3. Active Secretion into the tubular urine; Carbonic anhydrase and the renal tubular function :

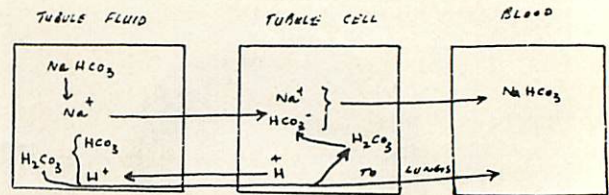
Carbonic anhydrase is an enzyme present in kidneys, gastric mucosa, pancreas, brain and red cells. It catalyses carbonic acid (H_2CO_3) from carbon dioxide and water.

carbonic anhydrase



H^+ ions in the tubular cells make possible the exchange of H^+ for Na^+ in the tubular urine and lead to the reabsorption of bicarbonate.

Carbonic anhydrase is inhibited by acetazolamide and absorption of HCO_3^- is inhibited. Should the tubular enzyme system be overloaded and is beyond the reabsorption capacity of the tubular cells, the unabsorbed fraction will carry with it in the tubular lumen an isomolar amount of water and so cause, diuresis.



SIMPLE REABSORPTION OF BICARBONATE

Substances which cause a quantitative increase in the urine flow are called **Diuretics**. The diuresis can be produced theoretically either:

1. By increasing the volume of glomerular filtrate, or
2. By diminishing the amount of fluid reabsorbed by the tubule.

	Filtered by glomeruli	Reabsorbed by tubules	Urine volume
Normal	180.0 litres/24 hrs.	178.2 litres/24 hrs. (99%)	1.8 litres/24 hrs.
Glomerular filtration increased by 10%	198.0 litres/24 hrs.	196.02 litres/24 hrs. (99%)	1.98 litres/24 hrs.
Tubular reabsorption decreased by 1%	180.0 litres/24 hrs.	176.4 litres/24 hrs. (98%)	3.6 litres/24 hrs.

A drug may be given which will increase glomerular filtration by 10% and, if tubular activity remains unaltered, the increase in urine volume would be 10%. If, on the other hand, tubular reabsorption were dimi-

nished by as little as 1% the urine volume would be doubled. The most efficient diuretics are thus, those which act by diminishing tubular reabsorption. They are called PRIMARY DIURETICS, and the diuresis is produced by a direct action on the renal functions.

Primary Diuretics: The Primary diuretics are sub-classified as:

I. Inhibitors of the tubular enzyme systems:
(A) Inhibitors of Na transport:

- (a) Organic mercurials—Merselyl
- (b) Halogenated heterocyclic hydrocarbons,
 - (i) Disulfamyl compound—Benzothiazine.
 - (ii) Monosulfamyl compounds:
 - Frusemide
 - Quinethazone
 - Chlorthalidone
 - (iii) Des-sulfamyl compounds—ethacrynic acid.

(B) Inhibitors of H—for Na—exchange.

- (a) Carbonic anhydrase inhibitors—Acetazolamide.
- (b) Potassium Salts
- (c) Ammonium Chloride

(C) Inhibitors of adrenal steroids:

- (a) Spironolactone
- (b) Amphenone

II. Osmotic diuretics:

- (a) Certain salts like sulphate, nitrates.
- (b) Sugars like sucrose and mannitol.
- (c) Urea.

III. Inhibitors of ADH secretion; water, alcohol.

Secondary Diuretics :- The diuretics which permit renal water loss by an extra renal action are called SECONDARY DIURETICS and are sub-classified as :

I. Cardiac glycosides e.g. digitalis, which increases glomerular filtration by action on the heart and resultant increase in cardiac output.

II. Xanthines, especially theophylline which opens up the renal blood vessels by a direct action on their musculature.

III. Colloid and plasma volume expanders; albumin, Dextran etc.

IV. Cation exchange resins.

V. Dopamine.

A. INHIBITORS OF SODIUM TRANSPORT

(a) Organic Mercurials :

Organic mercurials are reliable and most powerful diuretics. These have to be injected intramuscularly and dose is 0.5—2 ml.

The initial dose is small i.e. 0.5 ml. and is only a precautionary measure in detecting patients with idiosyncrasy. Mercurials act by temporarily combining with SH groups of the enzyme concerned with chloride reabsorption. Large quantities of chloride associated with isosmolar amount of water. They are irritant to tissues and are commonly given deep intramuscularly. Theophylline is included for pharmaceutical reasons. It enhances stability of the solution. Theophylline is also a strong diuretic but the quantity present is too little to contribute significantly to the diuretic action of the preparation.

Mersalyl is readily absorbed from the injection site and is eliminated 50% at the end of 3 hours or more than 90% by the end of 24 hours. Diuresis begins in 2—3 hours, is maximal at 8 hours and passes off in 12—24 hours. The injection should, therefore, be given early in the day to ensure that the diuretic effect is over by the evening.

Untoward effects :

1. Due to hypersensitivity :

Patients sensitive to mercury may develop excessive salivation, diarrhoea, albuminuria or haematuria, shivering, fever, headache, nausea, vomiting and a red blotchy rash are allergic manifestations.

2. Due to mercury :

Intravenous injection should not normally be given. Though this route has the advantage of painless injection, quick onset of action and more intensive effect of shorter duration, the risk to the patient is much greater and sudden death may occur due to toxic effect of mercurial on myocardium. Skin rashes of various kind i.e. erythema, urticaria, petechial spots may occur and these may proceed to exfoliation. Signs of chronic mercury poisoning include proteinuria, haematuria, diarrhoea and hypersalivation. Such poisoning responds to Dimercaprol.

3. Due to diuresis (*Secondary toxic effects*) :

Excessive loss of sodium, potassium and water may be seen as secondary effects.

Chloride depletion may produce mercurial unresponsiveness and can be restored by giving ammonium chloride 2 G. 4 Hourly for 2 days.

Sodium depletion may accompany chloride depletion and cause malaise, weakness, drowsiness, muscle pains, mental confusion and hypotension. Hyponatraemia will produce extra renal—uraemia. These symptoms are reversible by giving added quantities of common salt.

Potassium depletion is manifested clinically in the digitalised patient by the appearance of signs and symptoms of digitalis poisoning. Previously it was attributed to mobilisation of digitalis in the oedema fluid. It is now established that the potassium loss from the body sensitises the heart to the action of digitalis.

The management of such cases lies in the stoppage of digitalis and giving potassium supplements.

When mersalyl and ammonium chloride fail to be diuretic in the fully digitalised

oedematous patient an intense diuresis can often be induced by giving aminophylline intravenously 3—4 hours after the dose of mersalyl. At this time the mercurials are acting fully on the tubular cells and aminophylline by causing an increase in the glomerular filtration rate, delivers a large load of chlorides to the tubules which cannot be absorbed and, therefore, excreted.

[b] Halogenated Heterocyclic hydrocarbons:

(i) Disulfamyl Compounds :

Benzothiadiazine (Thiazine) diuretics :

Cholorothiazide	Bendrofluazide
Hydrochlorothiazide	Cyclopentiazide
Hydroflumethiazide	Polythiazide

They have a weak carbonic anhydrase inhibitor effect. Thiazides promote Na & Cl excretion by interfering with the enzymic activity of the renal tubules. They have an additive effect with mercurials. Continued use may lead to severe potassium deficiency. This is probably due to a low intake of sodium and a high excretion of potassium. Thiazide diuretics promote exchange of sodium for potassium in the distal tubule with subsequent rise in excretion of potassium.

Thiazides also have HYPOTENSIVE ACTION. This is due to their direct action on the blood vessels reducing peripheral resistance.

Thiazides reduce the volume of urine in DIABETES INSIPIDUS. The mechanism of action is not known.

Thiazides produce metabolic disturbances. They may aggravate established diabetes mellitus or may bring to light latent diabetes. They should, therefore, be used with caution in patients suffering from diabetes mellitus. Thiazides may also precipitate an attack of gout. Thiazides probably block urate formation in the tubular cells leading to hyperuricaemia.

Side Effects :

Potassium depletion may cause general malaise, anorexia, muscle weakness and increased digitalis sensitivity in digitalised patients. If thiazides are used in hepatic cirrhosis potassium depletion may precipitate

hepatic coma. Regular supplements of potassium are, therefore, necessary. Skin rashes, thrombocytopenia and agranulocytosis have occasionally been reported. Other side effects are due to metabolic disturbances i.e. hyperglycaemia and glycosuria, attacks of gout due to hyperuricaemia. The comparable doses of various thiazides are as follows:

Chlorothiazide	500—1000 mg.
Hydrochlorothiazide	50— 100 mg.
Hydroflumethiazide	50— 100 mg.
Bendrofluazide	0.5— 100 mg.
Cyclopenthiiazide	0.5— 1 mg.
Polythiazide	1— 4 mg.

Hydrothiazides :-

Hydrochlorothiazide—Hydro flumethiazise :

They have 5—10 times more of sodium excretion activity than Chlorothiazide, though they cause less carbonic anhydrase inhibition.

Bendrofluazide:

It is ten times stronger than hydrothiazides and is usually given in a single morning dose of 5—10 mg. Further it is 100 times more potent than thiazides.

Cyclopenthiiazide:

It is 1000 times stronger than thiazides and the usual morning dose is 0.5—1 mg.

Polythiazide :

It has a longer duration of action.

[i] MONOSULFAMYL COMPOUNDS

Quinethazone:

Sodium excreting power is comparable to other benzothiadiazines while potassium is excreted to a much lesser degree. The effect is rapid and relatively prolonged, beginning within 2 hours, reaching a peak at 6 hours and lasting for 18—24 hours.

Chlorthalidone:

It has a prolonged action of 48—72 hours and is often indicated in patients refractory

to other agents. Hypersensitivity and most cases of severe renal or hepatic disease are the only contraindication to its use. Available in 100 mg. scored tablets. The usual dosage is 50-100 mg. (1/2—1 tablet) on alternate days.

Frusemide: Lasix*

Frusemide has a chemical similarity to thiadiazine diuretics. The diuretic response begins within 30 minutes and is complete within 4—6 hours. It often succeeds when other diuretics fail and can also create electrolyte imbalance rather easily. The dose is 40—120 mg. daily, can be repeated depending upon the requirements. Potassium supplements are necessary. Frusemide may also be given intravenously or intramuscularly in a dose of 20 mg.

[iii] DES-SULFAMYL COMPOUNDS:

Ethacrynic Acid :

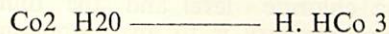
It has high power of activity in inhibiting the renal tubular enzyme system. Therefore, the mechanism of action is very similar to organic mercurials. Ethacrynic acid inhibits tubular sodium reabsorption both proximally and distally.

Like thiazides, ethacrynic acid causes uric acid retention and may precipitate an attack of acute gout. It might possibly have hypotensive properties but further trial results are awaited.

(B) INHIBITORS OF H FOR Na EXCHANGE

(a) Carbonic Anhydrase Inhibitors.

Acetazolamide, 250—500 mg. daily, It is a powerful inhibitor of carbonic anhydrase. Carbonic anhydrase catalyses formation of carbonic acid from CO_2 and H_2O



The enzyme, therefore makes available a supply of H and HCO_3^- . The H ions in the tubular cells make possible the exchange of H for Na in the tubular cells & leads to reabsorption of bicarbonate and to the acidification of the Urine. Lack of carbonic an-

hydrase due to acetazolamide leads to inadequate formation of H. HCO_3 and therefore enough H ions are not available for exchange with Na . Therefore, bicarbonate absorption cannot take place which in turn is excreted with associated base and isosmolar quantity of water. Plasma chloride remains normal and excessive HCO_3 is excreted producing acidosis. The diuretic effect lasts for 8—12 hours.

Effects other than diuretics :

Acetazolamide diminishes the secretion of aqueous humor in eye due to inadequate availability of HCO_3 . The drug has therapeutic usefulness in glaucoma.

Acetazolamide has an anticonvulsant effect probably due to carbonic anhydrase inhibition.

Topic effects : 1. Primary: Sensitivity reaction similar to other sulphonamides.

2. Paraesthesiae of face, extremities & drowsiness
3. Secondary effects due to excessive diuresis (already described under mercurial diuretics).

Therapeutic uses :

1. As a Diuretic in oedema due to cardiac, renal and hepatic disease.
2. Anticonvulsant.
3. In glaucoma.

When unresponsiveness to organomercurials is due to hypochloreaemia acetazolamide can be given to promote excretion of HCO_3 and to restore the diuretic response to mercury but a more reliable way of restoring the plasma a chloride level and the diuretic response to mercury is to give Ammonium Chloride in Capsules.

[b] Potassium Salts :

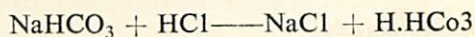
The H ions are exchanged for Na in the distal parts of the tubule. This exchange is depressed by the secretion of potassium ions. The number of Na ions absorbed in

exchange for hydrogen ions falls and kidney excretes an alkaline urine rich in Na which carries with it an isosmolar quantity of water with a net loss of extracellular fluid and electrolytes.

[c] Ammonium Chloride :

It is an acidifying salt, With these salts urine chloride excretion increases for 3—4 days and then it becomes constant. Sodium excretion increases during the first 2 or 3 days of ammonium chloride therapy and diuresis occurs. Renal sodium excretion then diminishes as ammonium ions are excreted in exchange for sodium and urine volume returns to control levels.

Ammonium chloride is rapidly absorbed from the intestines and in the liver NH_3 is utilised to form urea by interaction with H.H Co_3 . The HCl so produced lowers the blood alkali reserve of plasma with the production of H. H Co_3 .



There is; therefore acidosis. In the early stage increased excretion of basic ion Na occurs along with isosmolar quantity of water. As the acidifying agent accumulates acidosis develops. The renal response to acidosis is to conserve base by secreting a more acid urine by forming from aminoacids.

Ammonium Chloride is contraindicated in advanced renal disease when the tubules are no longer capable of maintaining acid base balance.

(C) INHIBITORS OF ADRENAL STEROIDS

(a) *Spirolactone:* The natural mineralocorticoid, aldosterone is secreted in the zona glomerulosa of the adrenal cortex. Its secretion is stimulated to a greater extent by a high K intake or a low NaCl diet.

Aldosterone produces retention of Na by an action on the renal tubules and excretion of potassium. Sodium content of Saliva, sweat and intestinal secretions is also reduced. With excessive doses hypertension and oedema also appears.

Primary aldosteronism occurs in patients with aldosterone secreting tumours. The urinary excretion of aldosterone is increased in certain oedematous states such as cardiac failure, nephrosis clampsia and cirrhosis of liver with ascites since the intravascular volume is reduced and a state of physiological dehydration exists. Nature tends to conserve the intravascular fluid by excessive secretion of ADH and aldosterone. This condition is, therefore, known as secondary aldosteronism.

Sodium retaining effects of aldosterone can be inhibited by spironolactone (Aldoctone A 25 mg Searle, 25—50 mg, 6 hourly). Spironolactone inhibits the sodium retaining action of aldosterone on the renal tubules. It probably acts by competitive inhibition displacing aldosterone from the receptor sites, mainly on the distal tubules. The sodium excretion effect is, therefore, potentiated when given together with organomercurials or thiazides which block Na reabsorption in proximal tubules.

Spironolactone, therefore causes excretion of Na and retention of K. It is contraindicated in the presence of hyperkalaemia since it may further raise the blood potassium levels. Drowsiness and mental confusion is occasionally seen during treatment and transient erythematous rash may occur.

(b) *Amphenone*: Amphenone suppresses the synthesis of 17 hydroxycorticoids provoked by ACTH. It also reduces the secretion of Aldosterone. Aldosterone suppression as described above will cause increased urinary excretion of Na and reduction of K excretion. It has not been used extensively in therapeutics since it produces nausea, vomiting, skin eruptions, methaemoglobinaemia and liver damage.

II. Osmotic Diuretics:- Osmotic diuretics are not used in therapeutics.

III. Inhibitors of ADH i.e., water & alcohol

Cation Exchange Resins:- The capacity of cation

The capacity of cation exchange resins "Kationium" is limited. These resins contain H, NH₄, or Na for each Na absorbed a H, NH₄ or K is given up. The resins have more affinity for K and hence these contain some quantities of K to prevent the occurrence of hypopotaemia.

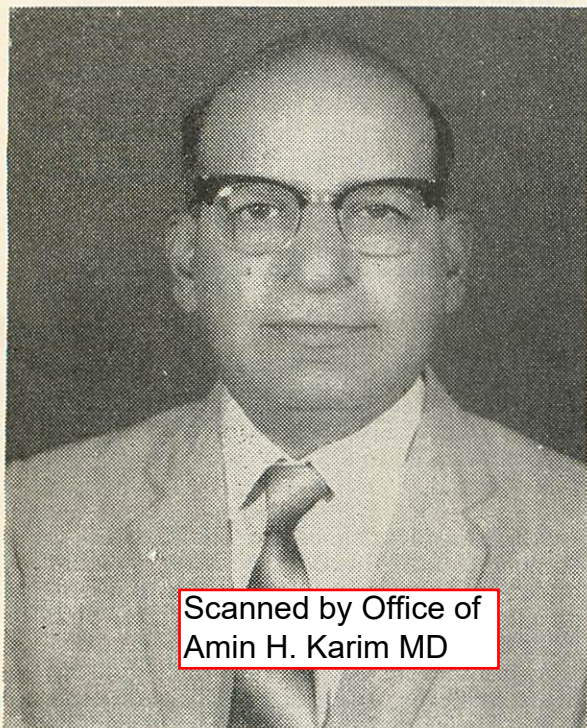
The onset of diuresis is slow. Such resins are useful in oedema of nephrosis where mercurials may be harmful but where renal function is poor dangerous uncompensated acidosis may result.

Plasma volume expanders: albumin and dextran.

They are of very little importance as diuretics except when oliguria is due to reduced blood volume. For example, following severe hypotension due to any cause.

Where the plasma albumin falls below 30% oedema is likely to occur. This happens in nephrosis replacement of blood proteins is impracticable because of the high cost and secondly the transfused proteins rapidly disappear and thirdly the electrolyte content of the transfused plasma imposes an additional load on the already poorly functioning kidney.

Rural and Urban Health Services



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THE dilemma of providing basic health services, mainly to the rural population and generally to the urban people remains unsolved. Time and again deliberations in the shape of seminars, conferences, clinical meetings, surveys, study groups and discussions at various levels have been held with the idea of evolving a solution for rendering ade-

quate health services to the people of Pakistan. Recommendations and suggestions accruing from the national and international conferences remain a hope for the interminable future as they could not be implemented due to various socio-economic as well as administrative reasons.

After the dis-integration of One-Unit, on the 1st of July 1970, the Province of Sind was reborn and so deliberations for providing rural and urban health services in the province have re-started. It was a happy augury to observe that in the annual development programme for the year 1970-71 following allocations have been announced by the Governor:

- (1) Rs. 14.36 lacs —for building rural health centres and sub-centres.
- (2) Rs. 23.41 lcs —for improvement/cons-truction of Tehsil head-quarter hospitals.
- (3) Rs. 45.00 lacs —for combating malaria, small-pox and tuberculosis.
- (4) Rs. 36'00 lacs —for improving health facilities in urban areas.

This announcement was made on the occasion of inauguration of Joint Clinical Conference P.M.A. Karachi & Hyderabad held on 19th and 20th September 1970. In this conference eminent medical personnel read papers and threw light on the various public health problems confronting the people; discussions were held and suggestions have been sent in the form of reports, as desired by the Governor of Sind. As usual in this conference too the question of water supply, refuse disposal, communicable disease control, nutrition, school health services, family planning, malaria, tuberculosis, small pox eradication, industrial health, health education, rehabilitation, mental health, statistics, drugs and their control, social services etc. etc. were discussed piece meal; each speaker tried to stress the need of solving one or the other public health problems.

Each member of the medical profession knows that the above problems exist in Sind as any where else and they need to be solved. But the crux of the problem is "how to solve them?" "And how is to solve them?" The obvious answer is the "DOCTORS OF SIND". The doctors who are trained and educated in the subject of "Preventive Medicine, Hygiene and Social Medicine", which clearly portrays all the above mentioned problems and suggests broad based principles for their solution. It is the all-purpose M.B., B.S. doctors who are going to staff the Health Centres of Sind (Rs. 14 lacs), it is the trained doctors who are going to work in Tehsil Hospitals (23 lacs), it is the knowledgeable doctor who can combat and eradicate communicable diseases (45 lacs), it is these doctors who have been indoctrinated in the art of preventive medicine who are going to improve the health facilities in the urban areas of Sind (36 lacs).

The question arises whether we have such all-purpose doctors and whether we are training such doctors for the future in the two medical colleges viz. Liaquat Medical College Hyderabad and Dow Medical College, Karachi? The presumptive answer to the first part of the question is in the affirmative with the observation that a little re-orientation in administration and organisation and constant self-appraisal with the idea of refreshing the knowledge through more active participation in seminars on health matters, clinical meetings, group discussions will be desirable to make up for the lost ground, if any.

The answer to the second part needs detailed consideration as it leaves much to be desired. A visit to the Liaquat Medical College or Dow Medical College will bring to light that the departments of Preventive Medicines are part-time departments. The teaching staff is either part-time or has been kept temporary from the beginning till todate. The temporary or part-time, ill paid staff who is constantly struggling to achieve security in service is entrusted the job of teaching Preventive and Social Medicine—the result can very well be imagined.

The didactic teaching of the students by the distinterested, insecure staff in a department which is poorly equipped in specimens, charts, models, audio-visual aids etc. gives the impression to the future medicos that the know-

ledge provided is not going to be useful in their future career and hence assumes the position of casual, unimportant learning. The maximum impact of this casual knowledge on students remains confined to such limits as will help them to succeed in the University examinations. The other aspect is that the teaching of principles of Preventive Medicine remains an isolated, teaching in 1st year of M.B.B.S. course (from 1970-71 the theoretical teaching will be in 3rd as well as 4th year M.B.B.S. class) and is not followed up or practiced in the clinical departments. The reasons of this neglect are many:—

- (a) The teachers on clinical side are not aware of the recommendations of Pakistan Medical Council that for teaching purposes the Principles of Preventive and Social Medicine are to be applied on patients in the O.P.D. and in the wards if necessary in active co-operation with the department of Preventive Medicine.
- (b) Teachers of clinical departments, after teaching the methods of providing curative relief, are not left with any time to teach the methods of practical application of the principles of Prevention on patients in the wards.
- (c) Pakistan Medical Council has no authority or means to enforce the implementation of its own recommendations except the moral force in the shape of requests.
- (d) The teachers of clinical departments, by virtue of their capability of providing curative relief, wield a considerable influence on non-medical government and University authorities and hence are able to guide them rather than be guided by them with regard to the implementation of teaching Preventive Medicine in the Medical College.
- (e) Above all, neither in the Academic Councils of Dow Medical College and Liaquat Medical College, nor in the Academic Councils of Universities of Karachi and Hyderabad, the subject of Preventive Medicine is represented by the teachers of this department. Instead, the teachers on clinical side even when they are neither qualified, nor trained, nor teaching and nor practicing the principles of Preventive Medicine represent the subject that too in

undertones, probably because of the obvious gaps in their own knowledge.

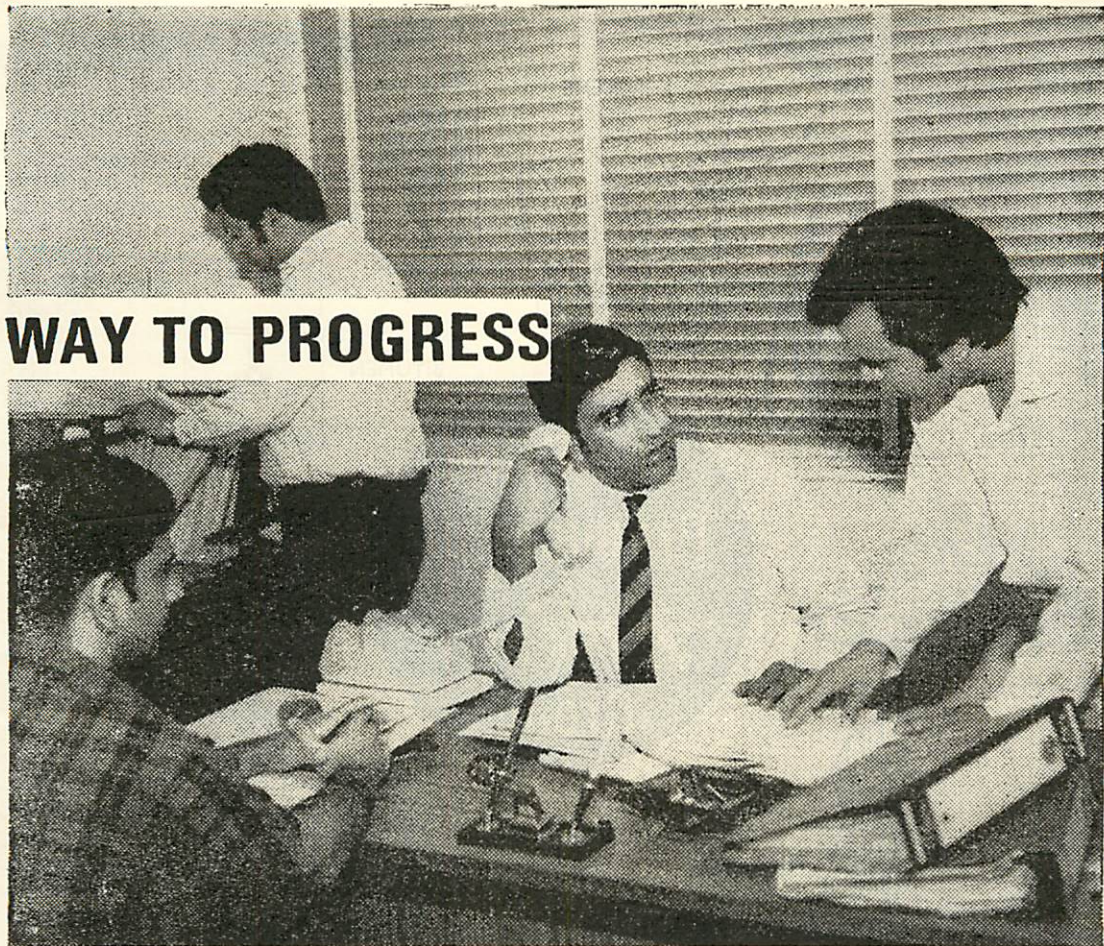
The ultimate result is that the fresh graduates from the two medical colleges of Sind Province emerge out as curative technicians rather than the much needed all purpose doctors. To expect from such curative technicians to go and man the various institutions and organisations in rural and urban areas (for which varying funds have been allocated in the 1970-71 development programme) is hoping against hope.

Naturally a medico who has not practiced immunisation procedures on his patients in the ward during his training period or who has not learnt the principles of prescribing good nutritious diet on his ward patients, according to socio-economic conditions, will not be able to work in a rural health centre. Similarly a medico who has not learnt to apply the principles of Health education, mental health, social services, family planning etc. on his patients in the wards of the hospitals will never become prone to apply that knowledge in the rural health centres or institutions in urban areas. Instead, this fresh graduate when he goes to work in these places whether in the rural or in urban areas prefers to act as the provider of curative relief. This is understandable partly because of the demand of general public for curative relief and partly because this service is remunerative. The other aspect is that the lucritiveness and self-satisfaction by providing curative relief to the patient offers an opportunity to the doctor to defer the preventive measures for a more opportune time; after all the prevention was considered only as a casual learning during the training period and so the doctor expects that the rural patients will also casually adopt preventive measures without being

guided and directed for this unimportant (as if it were) measure.

This vicious circle has assumed such proportions that remedy appears to be far fetched unless stringent measures are adopted as crash programmes for improving the educational standards in Medical Colleges particularly in the field of Preventive Medicine and provision of various facilities in the doctors comparable with their counter parts in the cities and compatible with their status. These facilities have been discussed at length by the P.M.A. in its various deliberations; e.g. better pay, housing, transport, education of children, security of service, opportunity of post-graduate studies, availability of equipment needed in the health centre, adequate para medical staffing etc. etc.

The crux of the problem has been presented here as food for thought to the medical profession in general and to the authorities in particular. Unless the future medicos are indoctrinated in the art of Preventive and Social Medicine during their training period with a view to create an awareness for disseminating the already existing spirit of service, dedication and self sacrifice, it is difficult to man the rural health centres for doing the much needed preventive work; without proper indoctrination in Preventive and Social Medicine the spirit amongst doctors of doing preventive service in community organisations such as rural health centres remains DORMANT. If this dormant faculty has to be aroused then we have to train, educate, indoctrinate the future medicos according to needs of people on one hand and provide facilities in the rural and urban areas commensurate with the status and needs of the doctor.



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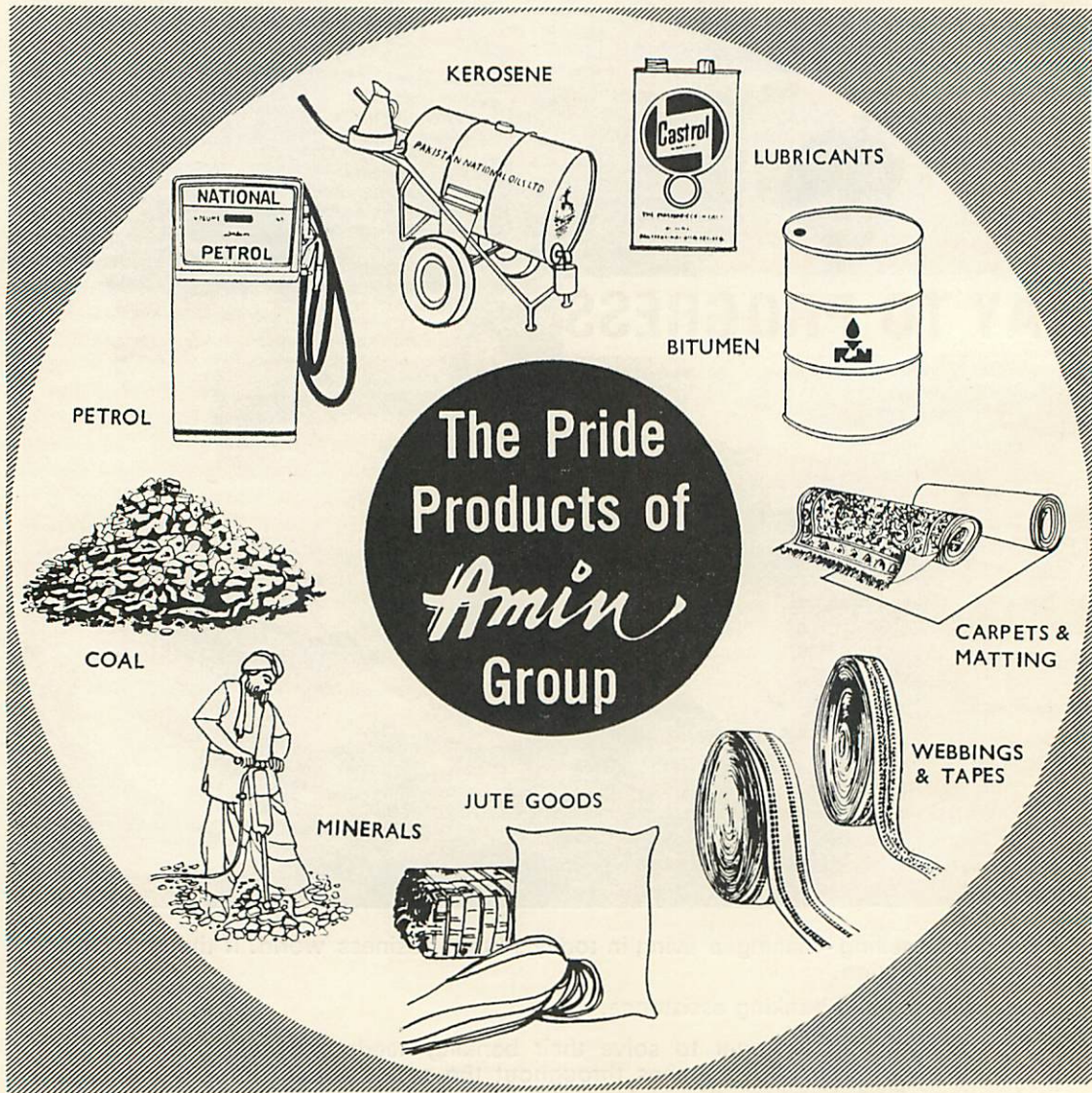
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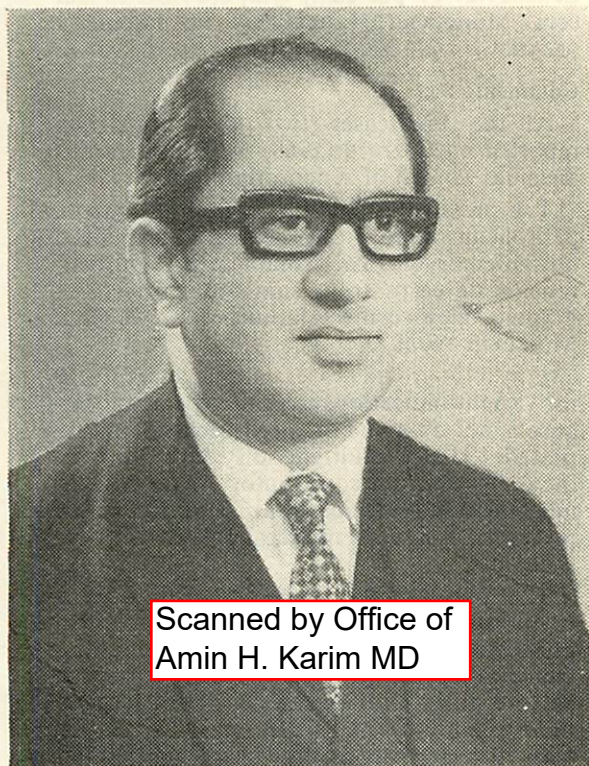
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ANOMALOUS APPEARANCE OF PERITONEIUM



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Amin H. Karim MD

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*Asstt: Professor Obst, and Gynae, Dow
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*—A single case of Peritoneal anomaly has been
reported by Fozzard (1968). Following are two
case reports of similar nature.*

Case No. 1 :

A 38 years old married woman, gravida 11, Para 10 (of which 8 alive 3M and 5F) was admitted as an emergency case with established labour at term and presentation was by breech. The temperature was 101.0F with interference outside by DAI (unqualified Midwife)—Vaginal swab and urine specimen was sent for culture and sensitivity. Intra muscular injections of crystamycine (Penicilline and streptomycine) one twice a day was started. She had an uneventful assisted Breech delivery of a live femal child weighing 5 lbs 14 ons. Durations of labour was 8 hours and 35 minutes.

All her past deliveries were spontaneous normal at home. This time she had to come to hospital because DAI told her that “baby was upside down.” Her Haemoglobin was reported as 60 per cent.

She was advised to get her tubes ligated to which both partners gave consent in writing. Her temperature became normal after 24 hours. The vaginal swab showed culture of E-coli, sensitive to streptomycine and urine culture was negative for any growth.

On 4th day after delivery, under Intravenous pentothal anaesthesia, abdomen was opened by 2” of infra-umbilical incision. Theperitoneum was found thicker than usual and possibility of picking up of omentum or gut with spencer well’s foreps was thought of, Urinary bladder having been emptied with catheter just before the commencement of operation and incision being higher at the level of fundus of uterus on 4th day, after full term delivery. However Peritoneal cavity was opened up cautiously and peritoneum was found abnormally thickened with trebeculations which were 1 to 3 mm, apart running mostly in longitudinal direction and some in oblique fashions. The abdominal incision was extended so as to introduce the hand for exploration. The trabeculations were felt anteriorly and laterally all over the parietal peritoneum but most marked in the area around the umbilicus. Abdominal and pelvic visceras were normal on palpation and as far as could be visualized. Lymph glands in

omentum—Porta hepatis and para-aortic area were unremarkable on palpation—A piece of parietal peritoneum was taken, from the edge of the wound, for microscopic examination. Bilateral electro-coagulation of the tubes were carried out at two points, two centimeters apart on either sides. Wound was closed in layers. Post operative course was uneventful and patient was discharged on 9th day.

The histology of the peritoneal piece was reported as "Bundles of smooth muscles seen below the mesothelial and no evidence of any abnormal cellular activity or presence of inflammatory cells."

Case No. 2 :

A 35 years old woman gravida 7 para 6 (M5, F1 all alive and well) was admitted as, an emergency case with painless *ante-partum* Haemorrhage for 4 hours, at 36 weeks of Gestation. At the time of admission her Blood pressure was 120/70 mm of Hg. pulse rate 82/min of good *volume*. Temp 98.4°F—Abdomen was soft—foetal parts were palpable—presentation was by vertex, which was not engaged—Foetal heart sound was audible—uterus was not contracting—There was moderate trickle of blood per vaginum. Her Hb was reported 52 per cent. Two points of blood were cross matched. Examination under general anaesthesia was carried out in operation theatre while blood transfusion was in progress and assistant and nurse scrubbed up ready, to proceed for caesarean section.

Per vaginal examination revealed placenta covering the os, which was admitting two fingers and fresh bleeding started. Introduction of finger in cervical os was felt necessary as palpation of fornices revealed equivocal findings, head being high, delivery by abdominal route was decided.

Abdomen was opened by Infraumbilical Midline incision to skin and rectus sheath—Peritoneum was found thicker than usual and opened up by vertical incision. Living baby was extracted by lower segment caesarean section, which cried out soon after suction of nasopharynx and oxygen inhalation. Post placenta praevia type III was confirmed. Uterine rent was sutured in two layers after the cavity was emptied of placentas and membranes, uterine incision was covered by uterovesical peritoneum.

At this stage further exploration of the peritoneal cavity was done. Parietal peritoneum was thickened and finely trabeculated in

anterior part extending upto 3" on either side from the midline in Infra-umbilical region—More laterally and lateral part of the peritoneum was normal in appearance and on palpation.

No other abnormalities was revealed in any of the viscera or glands as in previous case. Piece of Peritoneum was removed for biopsy which was reported irregular bundles of muscle fibres—No evidence of chronic inflammatory or Malignant cellular infiltration.

Abdominal wound was closed in layers. Patient had uneventful post operative period and was discharged from hospital on 10th day.

Chest X-ray was without any pathology and differential white cell count was reported as Leucocytes 81 per cent, lymphocytes; 17 per cent. Monocytes: 1 per cent. Eosinophil: 1 per cent.

Comments :

All the three cases (two present one) and reported by Fozzard (1968) were multiparous anaemic woman of Asian origin.

The presence of smooth muscle in parietal peritoneum in rare cases could be explained on the embryological ground as parietal peritoneum develops from somatopleuric intraembryonic mesoderm (Hamilton, Boyd, and Mossman 1962).

Many multigravida cases undergo laparotomy for various indications but this type of appearance is not observed or rarely seen but not reported. Hence multigravidity could not be the only cause but contributory to the already inherent rare embryological anomaly of the presence of smooth muscle fibres in the peritoneum.

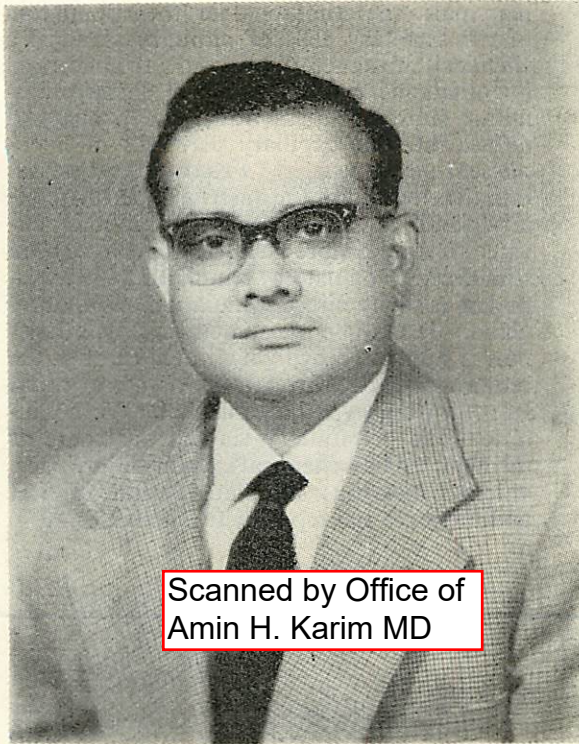
The presumptive inference is of the embryological rare anomaly possibly hereditary prevalent in certain race with contributing factor of repeated pregnancies there by repeated stretching and involution of the parietal peritoneum. What part anaemia has to play with this anomaly is difficult to understand. It could be just an incidental finding in all the three cases.

To prove the last assumption multiple biopsies of parietal peritoneum at random, in Asian and Caccasian origin women, undergoing laparotomies, will be necessary.

Reference :

Fozzard, C.E. (1968) British Med. Journal, 4, 625. Hamilton, W. I. BOYD, J. D. and MOSSMAN, H. W. (1962). Human embryology, 3rd ed., P. 62 Cambridge.

Effect of Light on Reproduction



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IT is now an established fact that sexual periodicity in most of the species is somehow controlled by light and dark fluctuations. The poultry husbandry use this fact to encourage egg production by subjecting the hens to extra light during night. Centuries back the Spaniards used the same method for egg production. The first scientist to work on this relationship between light and reproduction was Rowans who in 1925 worked on American crow. This relationship was further elaborated by Bissonutte (1935) who worked on immature female ferret. He kept one group of animals on a period of 8½ hours of light and kept a second group of animals on normal light plus a hours of artificial light (added after sun set) It was recorded that puberty was delayed in 'Long day' animals (with added light) and hastened in 'Short

day' animals. Fiske (1941) showed that rats subjected to continuous light from birth or from 21 days of age had opening of vagina 6 days earlier than rats kept under normal conditions of light. This is probably due to earlier secretion of gonadotrophic hormones as a result of photo stimulation.

Zacharias and Wurtman (1964) have shown that blindness is associated with an earlier menarche in human being especially if the blindness is accompanied by total loss of light perception. In U.S.A. the 50 percent incidence of menarche is attained in normal girls at a mean age of 149 months. In blind girls this is reached at a mean age of 140 months. In other animals the reverse is the case. It has been shown, in rats, that blindfolding delays the age of sexual maturity.

Some workers have subjected this photo-experimentation to other aspects of reproduction. Downson has worked on the breeding season of cat. This animal breeds in Massachusetts from January to July. Downson was able to induce oestros in December by gradually increasing the amount of illumination. Decreased lighting in late August and September, and increased lighting from October onwards induced the cats to come into oestrous in November. Yoshioka, Anwasra and Suzuki (1952) have shown the same relationship in goats. They placed nannies on fixed day light length in July equal to October day length. It was recorded that majority of females came into heat (oestrous) some 70-80 days later and conception occurred.

It has been established that if sheep are transferred from Northern to Southern hemisphere across the equator there is a reversal of their reproductive cycle and they continue to breed at the appropriate season. This is probably due to declining autumnal photoperiod inducing the onset of the cycle. The same result can be obtained under experimental conditions by subjecting the sheep to increased illumination during winter and decreased illumination during summer.

Anatomy of Photo-Gonad Relationship :

It has now been established that pituitary gland is a mediating structure in this light-gonad relationship (Parkes 1955, 1956). But the path through which the pituitary gland receives the light stimuli remains controversial. Experiments have shown that eyes

are the medium for the reception of light. (Bissonnett) Hill and Parkes have shown that after hypophysectomy female ferrets do not come to heat (Oestrous) even after artificial irradiation. Thompson (1951) is of opinion that the light stimuli are transmitted from the eyes to the pituitary through some nervous route. From the retina the stimuli are taken away by the optic tract, some fibres of the optic tract detach themselves and terminate in the supra-optic and ventromedial hypothalamic nucleus (Marburg). Both of these nuclei send fibres to the posterior lobe of pituitary and thus the latter is brought under retinal control by two neurone pathway i.e. retino supra-optic and supra-optico hypophyseal.

But Assenmacher and Manuel (1953) have shown that eyes are not indispensable. They have proved that, in birds, the hypothalamus can also be stimulated directly by light penetrating through the tissues of the

orbit. There are two views about the stimulation of anterior lobe of pituitary. But Donnouan and Harris have concluded that in mammals, the stimulus for the stimulation of the secretory cells of pituitary gland is a chemical substance discharged from certain hypothalamic neurones. This chemo-transmitter substance pass down the axons and diffuse into the capillary networks of hypophyseal portal vessels. From these it passes into the sinusoid of the anterior lobe of pituitary gland. In return the anterior lobe is activated to secrete more FSH. Rabbits have been stimulated to ovulate by stimulating the hypothalamus or by direct stimulation of pituitary gland. It may be concluded that hypothalamus is stimulated by light stimuli through the retina or directly through the tissues of orbit. In return the hypothalamus activates the anterior lobe of pituitary via nervous route or through some chemicals transmitter. The anterior lobe thus stimulated produce F S H and influence the reproductive activities.

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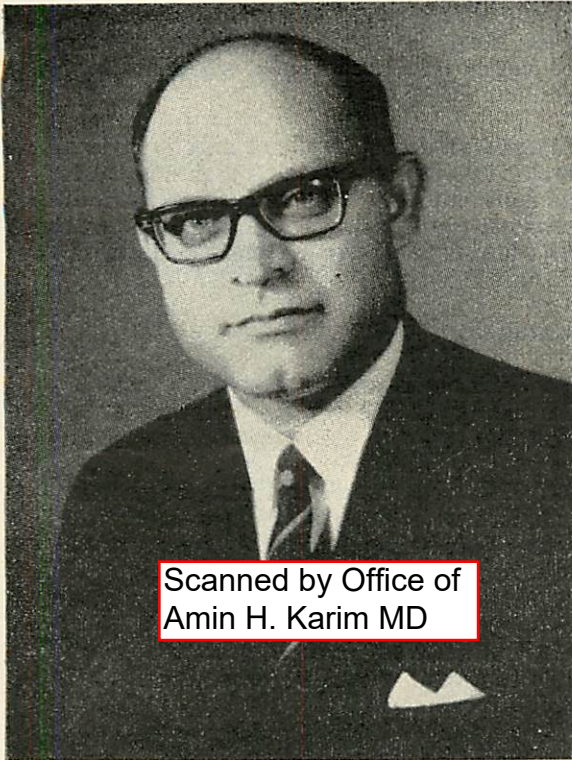
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Management of Helminthiasis



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Amin H. Karim MD

DR. A. J. KHAN

Department of Paediatrics C.H.K.

HELMINTHIASIS, or worm infestation, is one of the commonest diseases in the world. It is estimated that approximately 140 crore people in the world suffer from one or another type of worm infestation. *Ascariasis* is the commonest infestation affecting nearly 65 crore persons, while *ankylostoma duodenale* is the next commonest affecting nearly 46 crore sufferers.

Children are mostly the victims. They react to worm infestation more often because during early years of life there is no immunity to many of the parasites. Later with the passage of time humoral and cellular resistance develops, and the body develops a relative immunity to these infestations. Thus morbidity or mortality rates due to parasitic infestation is higher in children. Worm infestation does not usually cause fatal disease, however, complications could be dangerous and at times may lead to death. Helminthiasis

in children causes retardation of growth, lowered resistance to disease and general lethargy.

In a survey of children suffering from worm infestation and attending the Paediatric Unit at Civil Hospital, Karachi, and whose stools have been tested, it is found that round worm (ascariasis) is the commonest worm infestation affecting nearly 80% of the children. Threadworm (*oxyuriasis vermicularis*) infestation is the next commonest: tapeworm (*hymenolepis nana*) is the third commonest. Hookworm (*ankylostoma*) is not very common in Karachi and is seen among children recently migrated from the north. *Taenia saginata* (beef tapeworm) is very rarely seen.

In a study by Siddiqi among healthy school-children of Islamabad, it was discovered that Hookworm was the next commonest after round worm infestation in that area.

More than one type of worms are usually found infesting the same person. In the north, round worm and hookworms are usually the companions. Thread worms may also be present at the same time. To diagnose infestation of more than one kind of worms, stools have to be examined thoroughly and not to stop after seeing the first ovum of round worm.

Worm infestation is more common in unhygienic living conditions and among poor people.

Treatment and eradication of worm infestation is not easy. As the presence of worms does not always cause symptoms particularly in adults, therefore people do not take much notice of it until complications have set in. Diagnosis is more often made after a worm is seen in the stools, but this does not mean that those who have not passed a worm are free from this infestation. Treatment is difficult, repeated courses, fasting, purgation, toxicity and cost of treatment among the poor may be barring the use of the anthelmintics. Secondly, the treatment is usually given only for one type of worm—another type may not be affected by the drug given—and the patient may continue harbouring the parasites. Poverty and unhygienic conditions cannot be changed, therefore re-infection takes place frequently.

For successful treatment it is essential that correct diagnosis is made by repeated thorough examinations of stools. The safe and economical drugs are used to deal successfully with the different types of parasites present in intestines.

Given below is a brief account of the commonest worm infestation in children in Karachi.

1. Ascariasis :

A few round worms in a healthy, well nourished child may not produce any symptoms until one fine morning the mother notices a large round pinkish white or pale in the stools, or the child might have vomited this worm out, or the routine microscopic examination of the stools shows eggs to be present.

Rarely one or two worms wandering around in the small intestines may enter the bile duct, causing jaundice or liver abscess. From the stomach it may be vomited out. In larynx it may cause difficulty of breathing or suffocation. Round worms have known to perforate intestinal wall and entering peritoneum, causing peritonitis.

In heavy infestations, these round worms may tangle into a ball-like mass causing intestinal obstruction (commonly at iliocaecal junction). The child with this kind of obstruction will be very ill with abdominal pain, vomiting, intestinal distension and constipation.

When hundreds of worms are present in the intestines, they affect the nutrition of the child, as considerable portion of the food of the child is used up by these worms. During migration through lungs, allergic manifestations like bronchial asthma may occur. There may be haemoptysis and the X-ray picture may appear like that of pulmonary eosinophilia.

Sometimes in very heavy infestation, the child may develop features of meningitis and encephalitis. Migration of the larvae into the brain may cause convulsions.

Transient abdominal pain, nervousness, loss of appetite, loss of weight, urticaria, attacks of asthma, eosinophilia or symptoms and signs of intestinal obstruction may be the presenting features.

Ascariasis is spread by pollution of the soil with infected faeces. Infection results by migration of ova carried from dirty fingers to the mouth. Contaminated drinking water and eating uncooked soiled vegetables may cause the infection.

Freshly passed ova are not infective. Ova develop into larvae in about a month in worm and moist climates. Ova are very resistant to chemical disinfectants, withstand freezing and remain viable for 1-4 years. However, they are destroyed by sunlight and heat.

Treatment :

1. *Santonin* is an old remedy; it usually kills and expels the worms. It is not always effective.

2. *Oil of chenopodium*: It may be given in a mixture with liquid paraffin or in capsule form. Twenty-four minims are required. As such it is obsolete, but still some people are using it.

3. *Tetrachlorethylene*: May be given alone or with liquid paraffin. It is a safe and effective preparation.

4. *Oil of chenopodium together with tetrachlorethylene*: In a mixture these are effective and act also against hookworms which may be present at the same time. The worms when expelled are always dead or disintegrated.

5. *Helsya*: It is very effective, but not well tolerated; therefore not used.

6. *Piperazine preparations (adipate, sulphate and citrate)*: These are efficient in vitro and produce narcosis in worms. These are well tolerated and have no side effects; but prolonged and repeated courses are necessary before a patient can be freed of infestation. There is no need for preparation before hand and no need of a purgative afterward. Two to four grams should be administered at least on 2 successive days. Malaise, nausea and vomiting giddiness may result.

7. *Oxygen under pressure therapy*: 500-1500 ml of oxygen in 5-15 mins is introduced under pressure in the duodenum on an average for 2-3 days. After the oxygen

therapy dead worms are eliminated. Administration of saline purgative is advantageous. It is a very safe and effective method popular in Russia. Prof. Nurul Islam.

Oxyuriasis Vermicularis [Thread Worms]

A thread-like worm, usually lies in caecum and colon with the head attached to the mucosa and discharges ova. (male worm is about 1/2 c.m. long and female about 1 c.m.). Female worms crawl out of the intestine, mainly at night, lay a large number of eggs in the perineal folds and die. This results in *intense* itching and the patient scratches and transfers the ova to his mouth.

Children are mostly affected, scratching the anal region and irritable and restless, disturbed sleep, loss of appetite and loss of weight.

Worms may be seen in the stools, ova are visible microscopically in smears taken from the perineal folds. Scotchtape is good to take a smear.

Treatment :

Gentian violet extract of male fera and sublimate sulphur have been used in the past. Now piperazine hexyltrate is the most useful compound against thread worms. It is administered in a dose of 60 mg/kg daily in divided doses to be given for 7 days. (Maximum daily dose should not increase over 2 gms.) toxic effects are rare—giddiness, nausea, in coordination.

A cyanine dye pyravinium pamoate has been found useful in a dose of 5 mg/kg body weight as a single treatment regimen. This achieves 90% success. A dose of 2 mg/kg body weight daily for one week will completely eradicate the worms.

Hymenolepis Nana [Dwarf Tapeworm]

It is a parasite of children. Small tapeworm is only 1-3 cm long. Eggs are directly infective to man. Infection occurs by eating contaminated food or drinking polluted water. There may not be any signs or symptoms, or it may cause irritability, insomnia, not putting on weight, moderate eosinophilia.

Diagnosis is made by demonstration of eggs in feces.

Treatment :

- Hexylresorcimal
- Dichlorophen
- Mepacrine
- Acridine
- Extract of Filix mas.

have been used in the past without full success.

Niclosamide is a new, reliable and well tolerated anthelmintic. In adults 4 tablets are taken, chewed and swallowed after breakfast with water. In children of 2-6 years, 2 tablets and under 2 years 1 tablet should be given.

Hymenolepis nana is much more resistant than other tapeworms. Repeated treatment will be required 5 days and 10 days after the first treatment. Some physicians have found excellent results and they recommend 2 tablets (half dose) on the first day and then one tablet is repeated for the next 6 days to eradicate these worms.

Hook worms :

Ankylostoma duodenale is the type found in Pakistan. It is more common in the north in rural areas. Habits of passing stools not in proper latrines but in agricultural land is responsible for its spread.

Ankylostoma is 1-2 cm. long. Ova are elliptical, each containing 6-8 spherules. Present usually in small intestines, and are attached to the mucous membrane by their buccal hooks; and they are fed by sucking blood. Infection occurs either through skin or by ingestion of infected food or polluted water. From the skin, larvae pass through the blood vessels, heart and lungs and they pass to the bronchi and larynx and swallowed and deposit in duodenum and small intestines. Average life of each worm in the intestines is about 4-5 years.

Clinical Features :

Anaemia and poor nutrition are usually the presenting features. Severity depends on the number of worms in the intestines sucking blood.

A few hookworms in a well nourished child produce no disease as the small amount of

blood lost is easily replaced. However, an under-nourished child with a large number of hookworms will gradually become anaemic with mental and physical lethargy. If not treated, palpitation and later dyspnoea due to heart failure will result. Pot belly is usually a prominent feature in such small children.

Anaemia, microscopic and hypochromic and eosinophilia, presence of ova of hookworm in the stools and presence of blood in faeces by late test are diagnostic criteria.

Treatment :

(1) *Anaemia*—in severe cases a small transfusion of packed cells should be given. In moderately anaemic cases iron orally or by injection should be given. Good nourishing high protein diet is essential.

(2) *Removal of worms*: Oil of chenopodium, carbon tetrachloride and hexylresorcinol are not used any longer. Tetrachlorethylene and Bephenium both give satisfactory results to eradicate the worms.

Bephenium in a dose of 2 gm. for children and 5 gm. for adults is to be taken before breakfast. For still more effective results, piperazine may be combined. Stools should be examined for worms and stools tests repeated after one week and two weeks and if ova found, another course should be given.

Taking of Bephenium is usually associated with nausea and sometimes vomiting, otherwise it is quite safe and effective drug.

Tetrachlorethylene in a dose of 0.1 ml/kg body weight is quite effective in eradicating the worms. A combined treatment with oil of chenopodium is more efficacious. We have adopted the method as described by Manson Bahr in the treatment of hookworm infestation.

2 ml of tetrachlorethylene is mixed with 1 ml of oil of chenopodium and made up to one ounce in castor oil or liquid paraffin. Adults should take the full dose early in the morning on empty stomach and no food to be taken for 4 hours afterwards.

The dose should be appropriately reduced for children, i.e.

8-12 years old	should be given	3	teaspoonfuls.
4-8	"	2	" "
2-4	"	1	" "
under 2 years	"	1/2	" "

Stools should be tested 2 weeks later for ova, if found (which is rarely the case) a second course should be given. This method has been found most useful. Toxic effects are uncommon. Nausea may be experienced in some patients. Tetrachlorethylene should not be administered to patients with liver or kidney diseases.

Although even the best anthelmintic may not eliminate all hookworms, it can be relied that the majority has been eliminated. There is no need to give repeated treatment to those who are symptom free.

In the prevention of most helminthiases the most important part is played by sanitary protection of water reservoirs, the soil and foodstuffs from infestation with helminths and, primarily, from pollution with excrements of patients or intermediate hosts to the parasites. Extensive sanitary and hygienic measures in town and country, protection of sources of water supply, health education and inculcation of habits of personal hygiene are of decisive importance in the control of helminthiases.

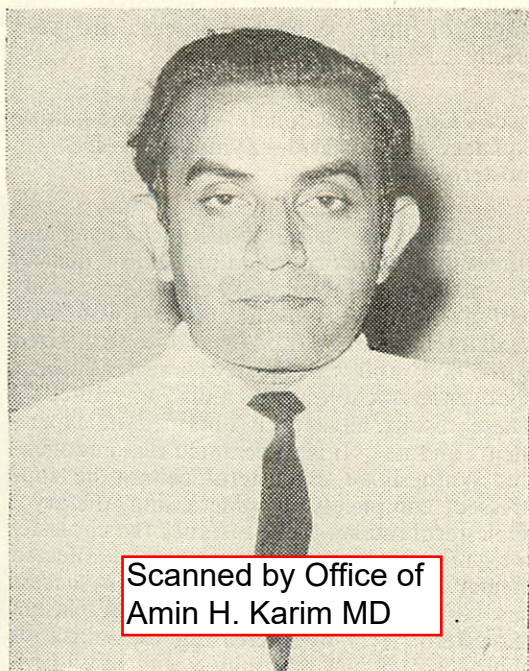
The impurities must be decontaminated from the eggs of helminths in composts or by keeping them in closed pits with lime chloride (1 part of lime chloride to 4 parts of impurities) Systematic disinfection of toilets and cesspools with lime chloride is an important method of dehelminthization.

An auxiliary role is played by thorough cooking of the meat. It is particularly important regularly to examine people for infestation with helminths, especially in organized collectives (kindergartens, children's homes, schools, workers of the food industry) and to carry out dehelminthization in hospitals with obligatory records of its effectiveness.

To prevent enterobiasis, it is necessary, in addition to the afore-mentioned measures, to trim the nails of affected children because retention of the parasite's eggs in the hyponychial spaces may result in repeated autoinfection.

The extermination of helminths is based on carrying out a complex of measures: ridding the human organism of the parasitic worms, destruction not only of the parasites driven out of the human bodies, but also of their eggs and larvae, and protection of people from new infestation by extensive sanitation of the water, the soil and all populated areas.

Biochemistry of Cholesterol



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CHOLESTEROL is a vital substance for our body. Its name has been derived from Greek words meaning "Solid bile" on account of the fact that it was isolated for the first time, from gall stones.

It is classified as a derived lipid because it becomes associated with lipids during the extraction of the latter from the tissues due to its solubility in fat solvents like ether, benzene, chloroform and hot alcohol. But unlike lipids it is not hydrolysed by sodium hydroxide. Hence it is regarded as an unsaponifiable fraction of lipids. It is crystallizable and forms colorless rhombic plate-like crystals with characteristic re-entrant angles at the corners. It gives rise to characteristic color reactions, which are used for its detection.

(1) Cholesterol Crystals, when irrigated with conc. sulphuric acid turn red at the edge a subsequent addition of Iodine drops produces a series of color changes—Violet, Green, Blue and finally Black.

2. Salkows-Kis' Reaction :

To a solution of cholesterol in chloroform an equal volume of conc. sulphuric acid is added. Mixing is done once or twice and then the solution is allowed to stand for some time. Now the solution shows two layers: the upper layer of chloroform having a Red Colour and the lower layer having a Yellow colour with greenish fluorescence.

3. Liebermann—Burchardt Reaction :

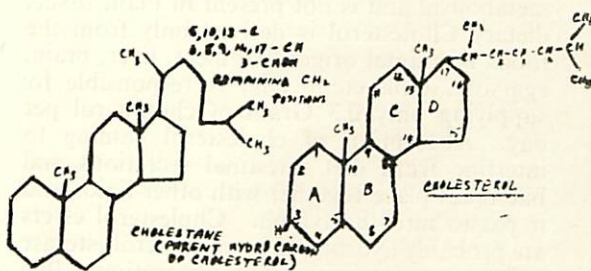
This reaction forms the basis of the quantitative estimation of cholesterol.

Cholesterol crystals are dissolved in 2 c.c. of chloroform. To this solution, 10 drops of acetic anhydride are added followed by 2 drops of conc. sulphuric acid. Mixing is done and a deep blue colour develops.

Chemically cholesterol is a steroid alcohol. It contains one double bond between C5 & C6 which makes it an unsaturated compound. Due to this, it can accept two halogen atoms at this position. Its parent hydrocarbon is cholestane. It can be described as a cholest-5-en-3-B ol.

It can be represented by a formula $C_{27}H_{45}OH$.

A study of its structure reveals that it is made up of four fused rings A, B, C & D, belonging to the Cyclopentano per hydro phenanthrene nucleus with side chain as shown below:—



It would be of interest to know that a great variety of naturally occurring compounds with diverse physiological significance are derivatives of the cyclopentane-per hydrophenanthrene nucleus e.g. bile salts, steroid hormones, sterol vitamins, aglycone portion of

cardiac glycosides (Digitalis), saponins (of plant saponins) and carcinogenic hydrocarbons of phenanthrene type.

Being an alcohol, it forms esters with fatty acids. Hence it is present in animal tissues not only in free state but also in esterified form. The ester formation takes place mostly with unsaturated fatty acids. As such it serves to transport unsaturated fatty acids in the body.

Cholesterol is widely distributed in the body as it forms a constituent of all animal cells. Together with lecithin cholesterides (cholesterol esters) are incorporated in the structure of all cell membranes. It is abundantly found in brain and nervous tissues, adrenal cortex, corpus luteum, skin and egg yolk. Liver and plasma contain both the free and esterified forms of cholesterol. It has been estimated that out of 54% lipid material of cerebrum solids, 10% is accounted for by cholesterol.

Blood cholesterol is distributed in the red cells and plasma. The red cells have only free cholesterol and it remains constant. Plasma contains both free and esterified forms of cholesterol. The esterified form is about 75% of total cholesterol content of plasma. The total cholesterol conc. of plasma is estimated to range between 150-250 mg%. It is to be noted that only plasma conc. is subject to variations in health or disease. Cholesterol is also present in bile, milk etc.,

The source of cholesterol for the body is either the diet or the synthesis done by body itself: As cholesterol is a product of animal metabolism and is not present in plant tissue, dietary cholesterol is derived only from the foods of animal origin like meat, liver, brain, egg-yolk, milk etc., Diet is responsible for supplying only 0.3 Gram of cholesterol per day. Absorption of cholesterol coming to intestine from diet intestinal secretions and bile takes place together with other lipids and it passes into the lymph. Cholesterol esters are probably hydrolysed by cholesterol esterase present in pancreatic juice before absorption. Bile salts are necessary for the absorption of cholesterol. The body synthesizes as much as 1.5 to 2 grams of cholesterol per day, and this is found to take place even when the diet is totally devoid of fat or cholesterol. The body makes use of carbon atoms from Acetyl

Co. A made available as a result of B-oxidation of fatty acids or obtained from the pyruvic acid, a product of glycolysis. The stages of these synthetic process are very briefly summarised as follows:

Acetyl Co.A—Mevalonate—Isopenoid Units—Squalene—Lanosterol—Zymosterol—Desmosterol—Cholesterol.

The main site of this synthesis is liver and cholesterol is incorporated in the low density lipo-proteins. If the dietary cholesterol is only 0.05%, 70 to 80% of the cholesterol of liver, small intestine and adrenal gland is synthesized by the body and with dietary cholesterol of 2% endogenous cholesterol falls to 10-30%. These results have been obtained in experiments on rats. It is to be noted that endogenous synthesis of cholesterol cannot be suppressed completely by increasing dietary cholesterol intake. For instance the cholesterol synthesized in the tests remains unaffected by dietary variation of cholesterol. No success has so far been gained in reducing plasma cholesterol level by decreasing the intake of cholesterol in diet although a diet low in fat and cholesterol content if taken for a long period of several months decreases the plasma cholesterol conc.

Cholesterol has got very important physiological roles to play in the body. It helps in the carriage of unsaturated fatty acids by forming esters with them as has been referred to in the foregoing lines. Besides it serves as a precursor of cholic acid (bile salts) and also of various steroid hormones like adrenal cortical hormones, androgens, progesterone and oestrogens. It can be converted to Vitamin D by irradiation. In this connection it can be pointed out that a sterol known as 7-dehydrocholesterol, which is present in skin can be converted to a compound with Vit. D. activity after irradiation with ultra violet light. That is why exposure to sunlight is useful in case of rickets. Besides there is also another sterol ergosterol derived from yeast and moulds and it can also be converted to calciferol (a form of Vit. D) by exposure to ultra violet rays.

Cholesterol owes its clinical importance to the fact that its plasma level shows variations in certain pathological conditions. There is

hyper-cholesterolemia in conditions like Nephrosis, Diabetes mellitus, Hypothyroidism, biliary obstruction. Besides plasma cholesterol level is also increased in conditions like pregnancy and high fat diet.

The plasma level of cholesterol is decreased in conditions like hyperthyroidism, pernicious anaemia and certain liver diseases. In the latter condition the esterified form shows a greater decrease, which under normal conditions is present to an extent of about 75% of total cholesterol content of plasma.

Cholesterol is also responsible for formation of gall stones and very rarely urinary stones. It has been demonstrated experimentally in guineapigs that cholesterol alone cannot give rise to gall stone formation and Riboflavin is required to be present together with cholesterol for the purpose.

The relationship of elevated cholesterol level of plasma to atherosclerosis (a disease of arteries in which there is deposition of cholesterol and other lipids in the connective tissue of arterial wall followed by calcification) is still a controversial issue. In diabetes mellitus there is increased cholesterol conc of plasma and at the same time there is atherosclerosis. But it has been observed that atherosclerosis may develop without the plasma cholesterol conc being higher. Further some dietary restriction of fat and cholesterol to the extent of total abstinence can alone bring about any substantial reduction in the plasma conc of cholesterol as there is synthetic mechanism going on inside the body for formation of cholesterol. As such there is as yet no agreement among clinicians regarding the amount and type of lipid required for keeping down the plasma cholesterol level and for prevention of atherosclerosis. Besides many other factors have also come to light. For example it has been experimentally proved that neither dietary fat or cholesterol nor the hypercholesterolemia itself has anything to do with development of the atherosclerosis. Now it is believed that physical condition of lipids present in the blood are actually the causative factor. It has been suggested that lipoproteins having floatation rate Sf of 12-100 increase in blood in cases of atherosclerosis and they contain only 10-15% of cholesterol. Lipoproteins content of plasma can be decreased with restriction of dietary fat and cholesterol. Besides deficiency of heparin

or pyridoxine and excessive amount of sugar or of carbohydrate or of saturated fatty acids like myristic acid in diet have all been incriminated in this regard.

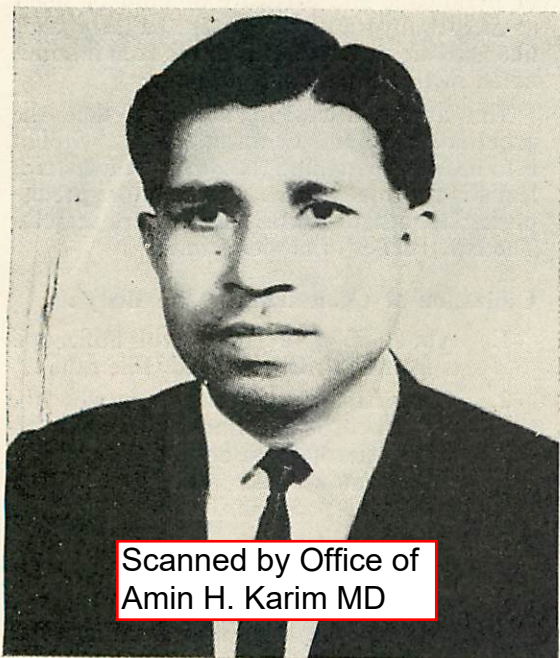
The above discussion indicates that the problem is a plethora of uncertainties. Still it is to be borne in mind that hyper-cholesterolemia is regarded as one of the factors predisposing to atherosclerosis and heart attacks, The No. 1 killer of modern times.

Utilization of Cholesterol in The Body :

1. About 80% of cholesterol utilized is converted to Cholic Acid (Bile salts).
2. Conversion to steroid hormones like adrenocortical hormones (17 hydroxycorticosterone and corticosterone) and sex hormones like androgens oestrogens and progesterone.
3. Excretion into bile.
4. Excretion in the intestine—Cholesterol so excreted is reduced to dihydro cholesterol and then to oysterol by bacterial action.
5. Conversion to CO₂, fatty acids, liver phospholipid and liver Glycogen.
6. The undegraded portion (which amounts to as much as 50%) is partly out in feces and partly stored up in liver.
7. Conversion to Vitamin D.
8. Incorporation into structure of cells particularly the cell membranes.

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Cardiac Arrhythmias in Acute Myocardial Infarction

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Heralding of Cardiac arrhythmias in a disease which already has a high mortality switches up the death rate to still higher figures. Collectively cardiac arrhythmias account for a mortality of 50-60% immediately following an attack of Acute Myocardial Infarction. About 70-80% of these unfortunate sufferers succumb to this complication and don't have time enough to reach the Hospital for treatment. Coronary intensive care units are responsible in saving at least over 50% of such cases who reach hospital and get the benefit of such a unit.

The onset of various arrhythmias is most common during the first few hours after infarction, without warning in majority of cases. If it developed after 48 hours of the episode of infarction, then pre-monitory ventricular ectopics are usually present. Multiple ectopic beats or R upon T Ectopics are particularly ominous. Arrhythmias 1-3 weeks after the initial episode indicates a fresh infarction. The site of occlusion of the coronary arteries a fesh infraction. The site of occlusion of

the coronary arteries has also a bearing. It has been observed that ventricular tachycardia is more apt to occur in Posterior Myocardial Infarction due to occlusion of Right Coronary artery which almost always supplies the A-V Node and in about 50% the S-A Node as well. This loss over the normal pace makers, even temporarily, makes the ventricles more liable to abnormal depolarization.

The onset of any arrhythmias is not necessarily related to the size of Myocardial damage. It is only an expression of electrical instability triggered off by the impact of coronary occlusion. Although large infarcts through intra-cellular loss of Potassium are more likely responsible than the smaller ones.

Psychological & biochemical stress both induce excessive secretion of adrenaline and nor-adrenaline. This has been proved by their increased content in the urine following an attack of Myocardial infarction. Also it has been observed that serious arrhythmias are

associated with a high serum-fatty-acid content.

The most sinister of all is Ventricular Fibrillation or Cardiac Asystole which cause abrupt death. About 30% of sudden death are contributed by this arrhythmia occurring within the first 15 minutes or so following an attack of Acute Myocardial Infarction. Other disturbance of rhythm are also common. They include Ventricular Ectopic Beats (Unifocal or Multifocal, the latter being of grave significance); Paroxysmal Ventricular Tachycardis; Paroxysmal Auricular Flutter and fibrillation; Nodal Rhythm and Hearth Block. They should all be regarded very seriously because all may herald Ventricular Fibrillation or precipitate Heart Failure. Complete Heart Block is also a lethal arrhythmia.

Haemodynamic Consequence of Arrhythmias: Immediately following the onset of a paroxysm of an arrhythmia the cardiac out-put drops by an average of 30%. The peripheral circulation gets jeopardised. The important viscera also share this disadvantage. Deficient Cerebral perfusion may produce confusion, dizzy turns, partial or complete loss of consciousness, associated with or without convulsive seizures (a very upsetting situation which makes the attendants very panicky and apprehensive specially if a sober individual happens to lose control over his sphincters). Similarly deficient RENAL perfusion for any length of time in addition to provoking aldosterone production, may land the patient in a state of Renal failure. In an atherooclerotic individual already living at a border line may get complete loss of perfusion of his limbs, thereby increasing the chances of an already threatening gangrene.

TREATMENT

1. Drug Treatment :

(a) For Supra Ventricular Tachycardas (paroxysmal Auricular Tachycardia, Paroxys-

mal Auricular Flitter and Fibrillation) Digitalis is the drug of choice. This drug is not well-tolerated by the necrosed myocardium. It is advisable, therefore, to use this drug in some what lesser dosage than one should use for such an arrhythmia not associated with Acute Myocardial Infarction.

(b) For Ventricular Arrhythmias "Digitalis" is a *lethal drug*. It can only convert Paroxysmal Ventricular Tachycardia into Ventricular Fibrillation which culminates death. The various drugs utilized from time to time are as under:—

- (i) Quindine Sulphate.
- (ii) Procain amide.
- (iii) Potassium Chloride.
- (iv) Chelating agents.
- (v) Xylocaine (Lignocaine).
- (vi) Anti thyroid drugs in resistant/recurrent cases.
- (vii) Polorizing solution infusions. This solution consists of glucose solution plus Potassium Chloride plus plain Insulin (devised by Sodi Pollaris)
- (viii) Certain drug with doubtful value are:-, Antistine, Dilantin Sodium, Etc.,
- (ix) Recent Drugs:-

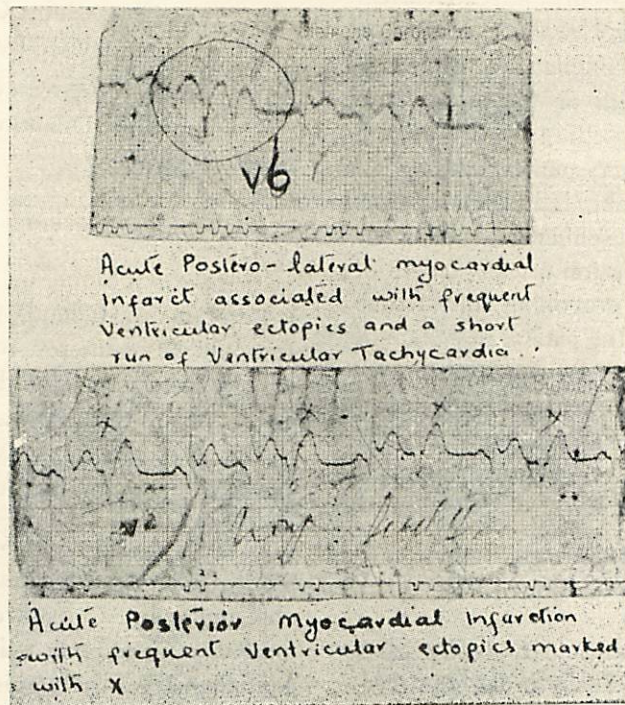
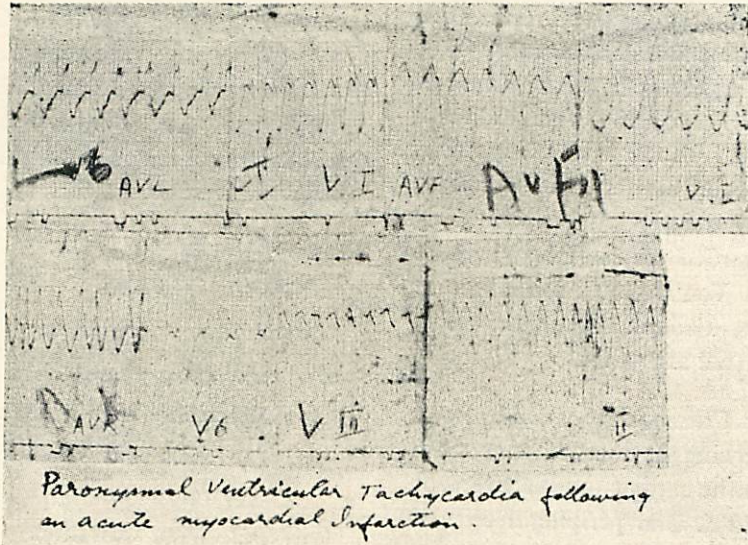
B-adrenergic blocking agents, e.g., Pronathelol.

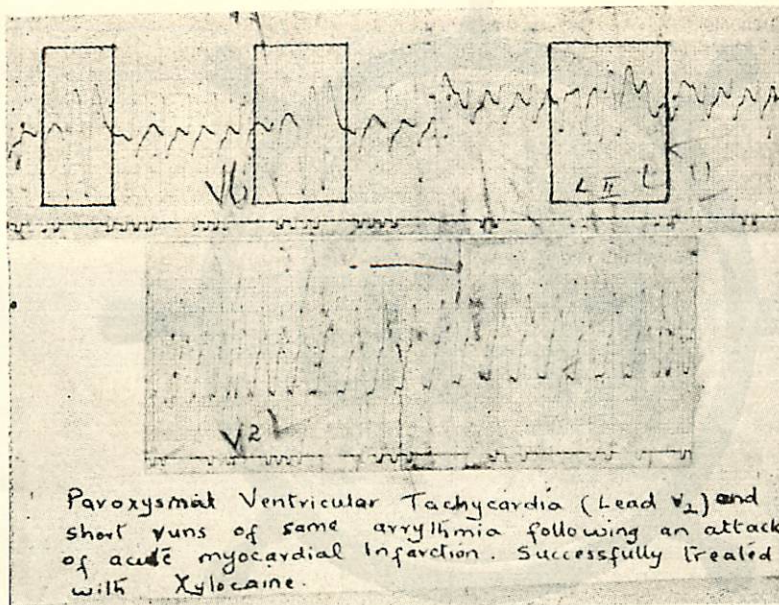
Propranadol (Inderal) and L.B-46 (Sandoz) It would be of interest to mention the mode of administration of Xylocaine (Lignocaine) as it is one of the recent additions in the drug treatment of cardiac arrhythmias and has met with fairly good amount of success.

10 to 15 ml. of 2% Xylocaine solution is given intra-venously initially as a loading dose under E.C.G. control followed by 1—2 mg/Kilogram of body weight in the form of a continous I/V drip. This drip is. composed

of 500—1,000 mg. of Xylocaine added to 500 ml. of 5% Dextrose in water or 500 ml. of 1/6 Molar Lactate Solution. This infusion is run at a rate of 10—20 drops/minute according to the patients' response and continued for a period of about 48 hours. It is advisable to

add 50 Dunites of Heparin to this infusion to prevent thrombo-phlebitis if this drip is to be continued for more than 24 hours, Xylocaine has little value, if any, in supra Ventricular arrhythmias. There are usually no unwanted side effects.





II. Electrical Treatment :

The greatest achievement in the field of Cardiac Arrhythmias has been their successful termination with D-C shock (Lown 1967)

D-C Defibrillation is the quickest, the best and probably the safest technique so far available for atrial flutter, atrial fibrillation, atrial tachycardia, ventricular fibrillation and ventri-

cular tachycardia. This method has no contraindication except electrolyte imbalance and digitalis induced arrhythmias. The disappointing thing about this technique is that the immediate 90% success shrinks to about 25—30%. This necessitates frequent defibrillation if and when necessary. It is advisable to put the patient on some anti-arrhythmic drug after the initial success with electric treatment.



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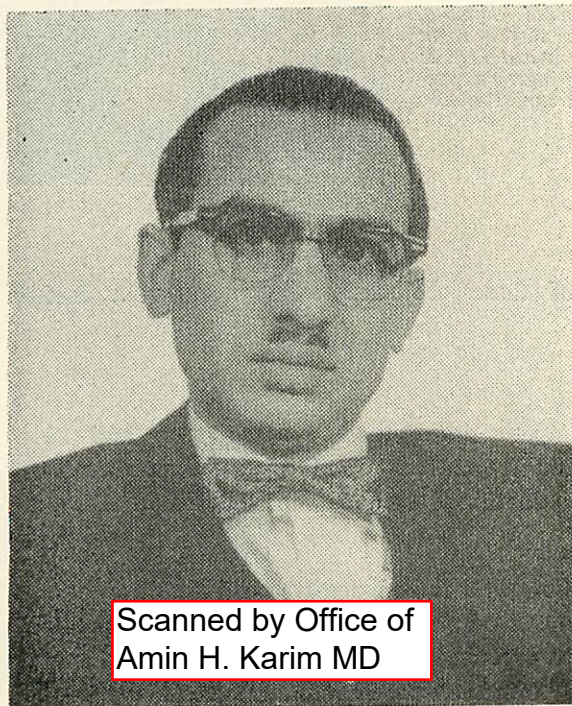
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Recent Advances in the Field of Plastic Surgery



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KHALID M. DURRANI,
M.B., F.R.C.S. (C), F.A.C.S.

DIPLOMATE AMERICAN BOARD OF PLASTIC SURGERY. ASSISTANT PROFESSOR OF PLASTIC SURGERY DOW MEDICAL COLLEGE, KARACHI AND ASSOCIATE SURGEON AND CHIEF OF PLASTIC SURGERY AND BURNS SERVICE CIVIL HOSPITAL, KARACHI.

WHATEVER advances have taken place in human knowledge in the past ten or fifteen years, they surpass by a wide margin everything that human race had known before since its inception.

Plastic Surgery is quite an ancient specialty. However, most of its organisation and its

recognition as a separate specialty has taken place only after the first world war and in most countries of the world, after the second World War. In our own country it happened after the 1965 Indo-Pakistan war when the first unit of Plastic Surgery in Pakistan started functioning on a regular basis at Civil Hospital Karachi in May, 1966.

What progress has Plastic Surgery seen in the recent years? I shall not go into the theoretical details but would just mention a few things in each branch of this specialty that have struck me as most remarkable; things that have made possible for surgeons to do what they could not or must not before, and for the patients to go through and to get what they did not before.

Plastic Surgery has several offshoots and I would discuss each one separately. First of all, to enumerate the various branches of plastic Surgery;

1. Tissue Transplantation
2. Congenital Anomalies
3. Maxillofacial Surgery
4. Management of Burns
5. Hand Surgery
6. Cosmetic Surgery.

Tissue Transplantation :

Ever-improving techniques of tissue storage have made it possible to develop tissue banks on which to draw in case of emergency without having to wait for the arrival of a suitable donor. It is hoped that the problem of immuno-rejection of grafts will be solved within our lifetimes. This would make the surgeon's own living more comfortable!

Congenital Anomalies :

These are a great challenge to the reconstructive surgeon. With improved knowledge of the causation of these anomalies, including the chromosomal and various exogenous teratogenic factors it is now possible to avoid many of these anomalies by proper marriage counseling, improved prenatal care and avoidance of harmful drugs during pregnancy.

Once faced with the challenge, the plastic surgeon now has the help of very safe neonatal anesthesia to undertake surgery practically right at the time of birth (Fig. 1—2).



< Figur 1 & Figur 2 >

Bilateral congenital cleft lip, repaired in two stages, Right side at one week and Left at eight weeks of age. Postoperative picture at age 11 month.



With better metabolic care early in life most of these deformed children live on as useful individuals in the society.

Maxillofacial Surgery :

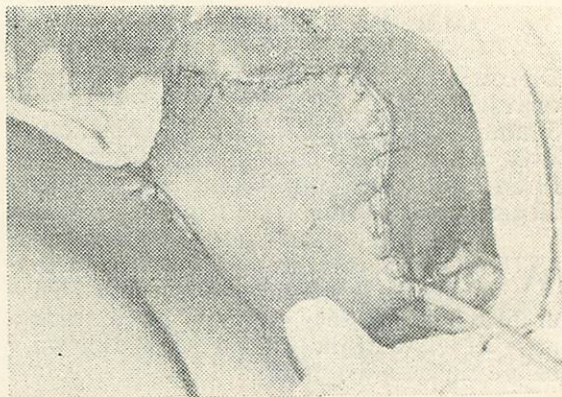
This branch of Plastic Surgery got a great impetus during the two world wars and now with the ever-increasing number of automobiles on the roads maxillofacial trauma remains a major client of the plastic surgeon. Cancer of the head and neck also is always a problem begging for a solution.

With hypotensive anesthesia the surgeon can undertake extensive corrective and resective procedures upon the head and neck without requiring transfusion of blood and with almost a dissection-hall clarity of the field of operation. Hyperbaric oxygen therapy allows raising of flaps with precarious pedicles to reconstruct the residual defects (Fig. 3—4).



< Figur 3

Figur 4 >



Case of advanced carcinoma of buccal mucosa. Radical excision including neck dissection was supplemented with rotationadvancement flap from the pectoral region. Note drain under flap in front of earlobe.

Postoperative rehabilitation of these patients is facilitated by the very much advanced field of prosthetics which eliminates prolonged reconstructive procedures on elderly patients with sands of their lives practically runout (Fig. 5—8). (5) (9) (7) (8)

Carcinoma of Maxillary Antrum.



< Fig. 5

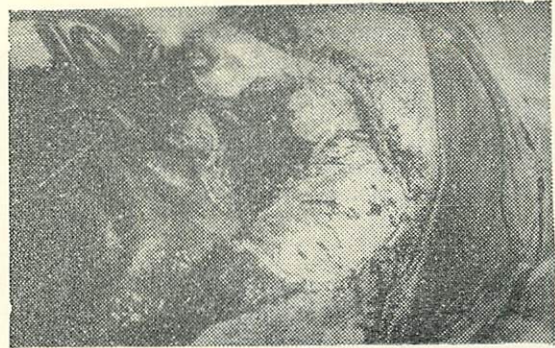


Fig. 6 >

Transoperative view of radical maxillectomy and orbital exenteration. Dark area in center is the nasal septum while the lighter areas on top and right are skin grafts lining the raw undersurface of the reflected cheek flap.

Preoperative view. Note bulging of entire side of face and distortion of eyelids with ulceration at outer canthus.



< Fig. 7

Surgical specimen. Note the eyeball at top left and the maxilla with teeth at the bottom.

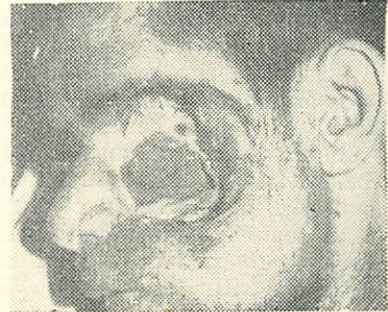


Fig. 8 >

Patient 10 days postoperative. Middle turbinate and the nasal septum occupy center of the defect. Reconstruction in such cases is deferred till after a period of observation to avoid concealment of local recurrence.

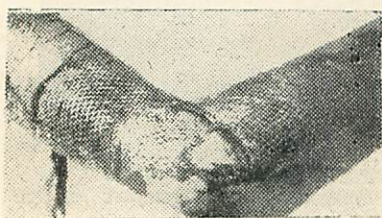
Burns :

In the field of prevention, better organisation of measures against fire-hazards in the home, in industry and in the operation theater has reduced the incidence of burns.

Early transport of the patient to a hospital and proper management of his shock allow even the severest burn cases to survive this phase of their illness.

Infection and septicemia can now be effectively treated with antibiotics, both topical and parenteral.

One significant advance in the early closure of the burn wound has been the invention of the mesh dermatome in 1964. This particular instrument allows stretching of the skin obtained for grafting from the patient himself to an area about three times its own size. Large areas can thus be resurfaced, with better chances of 'take's in one session, what would otherwise requires three or more operative sessions at two or three week intervals, every passing day fraught with the possibility of invasive infection gaining the better of the depleted victim (Fig. 9).



< Fig. 9

Deep burns of the upper limb. Mesh is patient's own skin cut with Tanner-Vandeput mesh dermatome. Interstices fill

with epithelium within two to three weeks.

Hand Surgery :

Better understanding of the functional anatomy of the hand has allowed the development of this specialty in its own right. Microvascular surgery has permitted reimplantation of amputated limbs with good chances of survival. Small nerves can be accurately sutured under the microscope, with much better functional restoration than was hitherto possible. Appreciation of the usefulness of the 'neurovascular island' in reconstructive digital surgery has restored many a useful hand (Fig. 10-12).

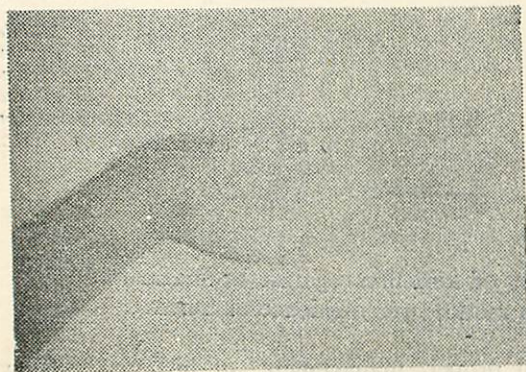


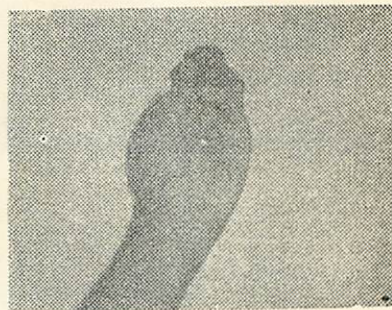
Fig. 10 ^
Postoperative

Fig. 11 >



Postoperative view of thumb reconstructed in stages from abdominal soft tissues, iliac bone graft and an island of skin from ring finger pupil, along with its neuro-vascular bundle (Littler flap).

Fig. 12 >



Reconstructed thumb in action.

In the rheumatoid hand, artificial joints of silicone can retrieve an otherwise hopeless situation quite remarkably.

Cosmetic Surgery :

Some advance has taken place in the management of keloids and hypertrophic scars in the past decade. Triamcinolone acetonide injected intralesionally would flatten out practically 90% of hypertrophic scars and 75% of keloids without surgery. It is very useful in the management of extensive lesions of this nature which often defy all other modes of therapy. Parenthetically, smaller lesions still do much better with surgery.

Similarly, extensive portwine stains on exposed parts of the body can be injected with pigments which are well tolerated by the organism. This is accomplished with the aid

of specially designed high frequency vibrating needles which inject the pigments at the proper depth into the dermis, thus camouflaging the abnormal natural pigmentation.

Dermabrasion: With the aid of electric or air-powered silicone carbide cylinders a variety of skin blemishes can be eliminated, e.g. fibroepithelial polyposis, smallpox and acne scars, freckles and so forth (Fig. (13) (14).



< Fig. 13 Fig. 14 >

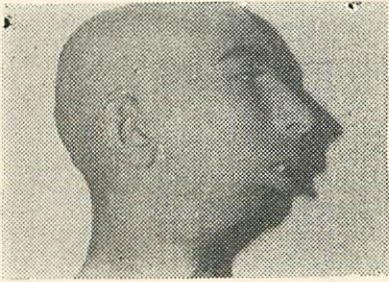
Fibroepithelial polyposis of facial skin in a girl of thirteen treated with dermabrasion.



I believe however, that the most important advances in the field of cosmetic surgery have been two:

1. The development of fine atraumatic suture, which allows practically invisible closure of incisions, and
2. The medical grade silicones. Chemically they are dimethylpolysiloxane. They are very well tolerated by the body and have found favor with practically every description of a surgical specialist.

In Plastic Surgery, some of their uses are depicted in the following pictures:



< Fig. 15 Fig. 16 >

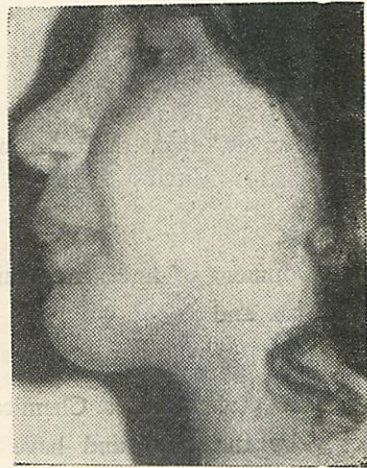


Bilateral temporomandibular ankylosis with trismus following fall on chin in an 18-year old male. Such cases are particularly refractory to treatment. Eight previous operations done elsewhere over a period of 12 years had been unsuccessful. Silicone plates inserted in both temporomandibular joints gave the patient permanent recovery of function with a good opening.



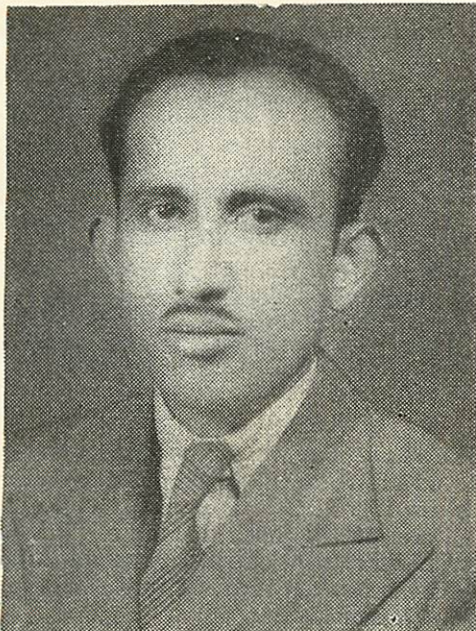
< Fig. 17

Fig. 18 >



"Andy-Gump" deformity of chin in a 17-year old girl resulting from traumatic damage to mandibular condyle growth centers. Chin augmentation with silicone block.

ASPHYXIA



DR. MOHAMMAD UMAR KHAN

(Police Surgeon and)

Prof. of Forensic Medicine and Toxicology
D.M.C.

THE term asphyxia has been applied to the conditions in which the supply of Oxygen to the blood and the tissues has been reduced sufficiently below the normal working level by some interference with respiration, in death from asphyxia it has fallen below the minimum necessary for the continuance of life.

Supply of oxygen and its successful utilisation are primary requirements of every

cell in the body, those things which cause mal functioning or death of the cell operate by interfering with some part of the oxidation-reduction process. The scope of oxygen lack as a cause of death is without limits.

Asphyxia is a Greek word means "pulselessness" and this cannot be considered as a primary feature of Asphyxia. The terms anoxaemia, anoxia and suboxia have all been suggested to replace the older term asphyxia but there are reasonable objections to each of them.

States of suboxia may develop as a result of disease, especially of the circulatory or respiratory systems and also in consequence of a deficiency of haemoglobin. Oxygen lack may also ensue from certain forms of interference with respiration; it may be caused by:—

1. Breathing a rarefied or vitiated atmosphere deficient in oxygen as in high altitude climbing or flying or near intense conflagrations.

2. Inhaling a gas which interferes with the normal oxygen carrying capacity of haemoglobin (e.g. CO or CO₂) or prevents the normal working of the cell oxidation enzyme system (e.g. HCN) or absorbing a poison like nitro benzene or aniline which form methaemoglobin.

3. Direct interference with respiration; as by narcotic or anaesthetic poisons.

4. Mechanical interference with respiration, which we are mainly concerned as these are the Medico-legal cases. They are:—

(a) *Hanging* :

(b) *Strangulation*:—It is called Throttling, when constriction of neck is by pressure of fingers on throat, or by foot or knees.

Bansdola: is compression of the throat, by one lathe or bamboo placed in front and the other behind and causing death.

(c) *Suffocation* : Causes are:—

(1) *Smothering*—due to closure of mouth and nose by hand or other material like bed sheet, handkerchief or pillow. This is the commonest method of killing infants and children.

(2) *Over laying*—an infant by its mother during sleep or intoxication.

(3) *Burking*:—a method adopted by Burke and his associate here for killing their victim. They used to throw the victims down on the ground, and kneeling on the chest, used to close the mouth and nostrils with one hand and firmly hold the lower and upper jaws together with the other hand. Thus effectively blocking the air passages.

(4) *Gagging*—Stuffing the mouth and nose with any material e.g. rags, mud etc.

(5) *Chocking*—Blocking of larynx and trachea from within e.g. due to regurgitation of vomit, blood, clotted milk or a fruit piece etc. In these cases asphyxia is due to one or combination of i.e. (a) Mechanical block. (b) Spasm of glottis. (c) Oedema produced by irritation due to foreign body.

(6) *Traumatic asphyxia*—due to pressure in chest as being crushed in a crowd or fall of a heavy wall etc.

(7) *Diseases*—as tumours, false membrane as in diphtheria, oedema of glottis, or blood from haemoptysis, epistaxis, or wound on throat or pus from an abscess.

(8) *Inhalation of irrespirable gases* e.g. CO, CO₂, carbon disulphide (CS₂), Hydrogen sulphide H₂S, Nitrogen mono-oxide or nitro-oxide N₂O SO₂, and war gases with:.

(a) Vesicants or blistering gases, Mustard gas.

(b) Asphyxiants—Phosgene.

(c) Tear Gas.

(d) Nasal irritants like AD, DC.,

(e) Paralysements—HCN., H₂S.

The following are the examples of the two very rare cases of asphyxial deaths brought to me at Civil Hospital Karachi for post-mortem examination.

1. Three persons in a petrol pump at Karachi were jocking each other on 4th

October 1949. One of them caught hold of a middle aged man named Malik Aman, aged 45 years and another man standing near the air pumping machine used for filling tubes of vehicles wheels brought air nozzle at his anal region and pushed the air through his pant inside the anus for a few seconds. This made the man feel very uncomfortable. He had pain in the tummy and became dyspnoic within few minutes. He was at once taken to Civil Hospital but he died on way to hospital at 4 p.m. on 4-10-1949. Post mortem examination was advised. The following were the findings.

External Examination :-



The whole body was bloated except extremities and showed signs of surgical emphysema at bloated portions. Eye lids and conjunctiva were much swollen and air crepitus was found at these place. Minute pin point scattered ecchymosis (Tardieu spots) were present in conjunctivale.

The air had not entered in the tissues of extremities, posterior side and top of skull.

Face looked congested and cyanosed. Lips and the nails were bluish. Cadaveric lividity was marked.

There was prolapse of rectum and internal piles which were inflamed. Air crepitus could be felt around anal region. There was little fresh blood and blood mixed faecal matter oozing out at anal region. There was no trauma at or near anal region, nor on any other part of the body outside.

Internal Examination

On internal examination I found the following:—

Head :

Little old inflammatory changes and adhesions were present in dura-mater at segital suture of brain on top.

Brain was slightly congested.

Thorax :

Mediastinal structures were pushed to the left side and the lungs on both sides were found partly collapsed, more on right side.

The mucous membrane of trachea and bronchi were found congested.

A hole measuring 1"x1" was found in the right diaphragm 1-1/2" lateral to midline and 3-1/2" from anterior marginal attachment of diaphragm. The margins of the hole were turned towards the chest.

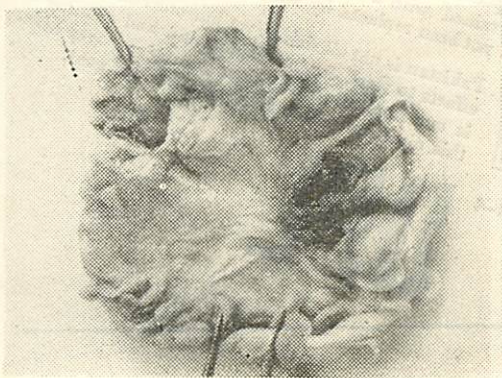
Heart: was found normal. Right side contained little dark coloured liquid blood and left was practically empty.

Abdomen Sufficient gas (air) came out after abdominal incision. All the abdominal organs were found congested.

Stomach: contained half digested food.

Small Intestines: were distended.

Large Intestines: were distended from caecum upto transverse colon. The descending colon was not much distended and the pebec colon and rectum were found collapsed. A hole was found in the pelvic colon 8 inches above the anal region measuring 1-1/2" in diameter as shown in picture below. The



margins were ragged and were turned inside the gut. Little blood, was also present inside the pelvic colon and rectum. The area around the hole was congested, inflamed and had haematoma.

Cause of Death: was quite apparent in asphyxia due to pressure over the lungs causing collapse due to forceful entry of air in the body by rupturing Pelvic colon and right diaphragm. This is a type of traumatic asphyxia.

Case No. 2 :

Dead body of an unknown young man aged about 30 years was brought by Korangi police from the jungle on 15th December 1970, for Post mortam examination. The following were my findings.

External Examination:

The body was naked and soiled with sand. Mouth and nose were stuffed (gagged) with sand and grass pieces. The tongue was pressed upwards and backwards. The mouth was opened. Blood mixed with sand particles was oozing out from right nostril.

There were two incised wounds in front of the neck which were not sharply cut and were not very deep. One wound was 1-1/2"x 3/4" muscle deep and another was 1"x1/3" Skin deep.

There were two more superficial cuts in front of the neck.

Multiple superficial cuts (8 or 9) were found at umbilical region and a deep incised wound was present over the umbilicus measuring 3"x1" cavity deep. The margins of the cut were not sharply defined.

Internal Examination

On internal examination I found the following:—

Head: There was no subcutaneous haematoma cranial bones were not fractured.

Brains was found deeply congested. CSF was found more than normal.

Thorax: Lungs were bulby oedematous ballooned and congested. Patches of subpleural ecchymosis were present (known as Tardius

spots named after French Police surgeon in 1866). These patches were varying in size from pin head to 1/4" in diameter. (They are caused by blood stasis, suboxia and capillary permeability). Many of the air vesicles were burst and fine frothy blood was found in the bronchioles and the bronchi.

Trachea and both the bronchi were fully choked with sand. Some of the sand particles had even reached smaller bronchioles. The mucous membrane of trachea and bronchi were cherry red and congested.

Larynx and upper part of oesophagus were also congested and stuffed with sand.

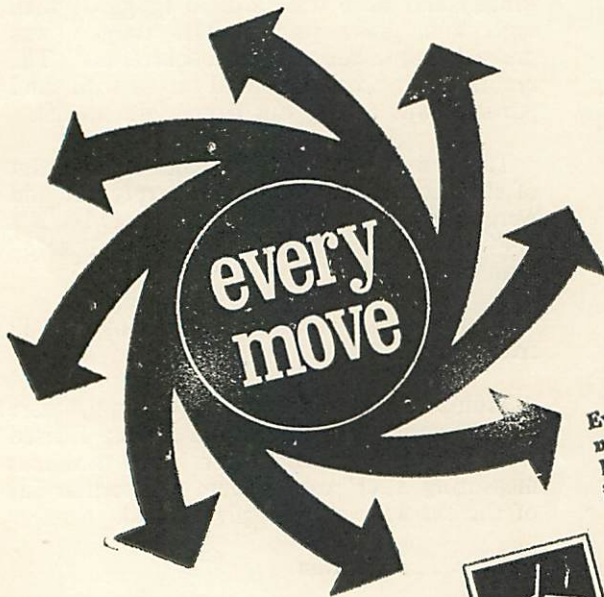
Abdoman :

All the abdominal organs were found congested.

Stomach was completely empty and no sand particles were present.

Cause of death: was Asphyxia due to gagging (Stuffing) with sand.

Comment:—This is a rare type of murder in a grown up person. Gagging with sand was tried after the stabbing was not successful because of non sharpness of the weapon. This could occur by more than one person or the person is very weak or intoxicated. His clothes were removed for the purpose of destroying the identity.



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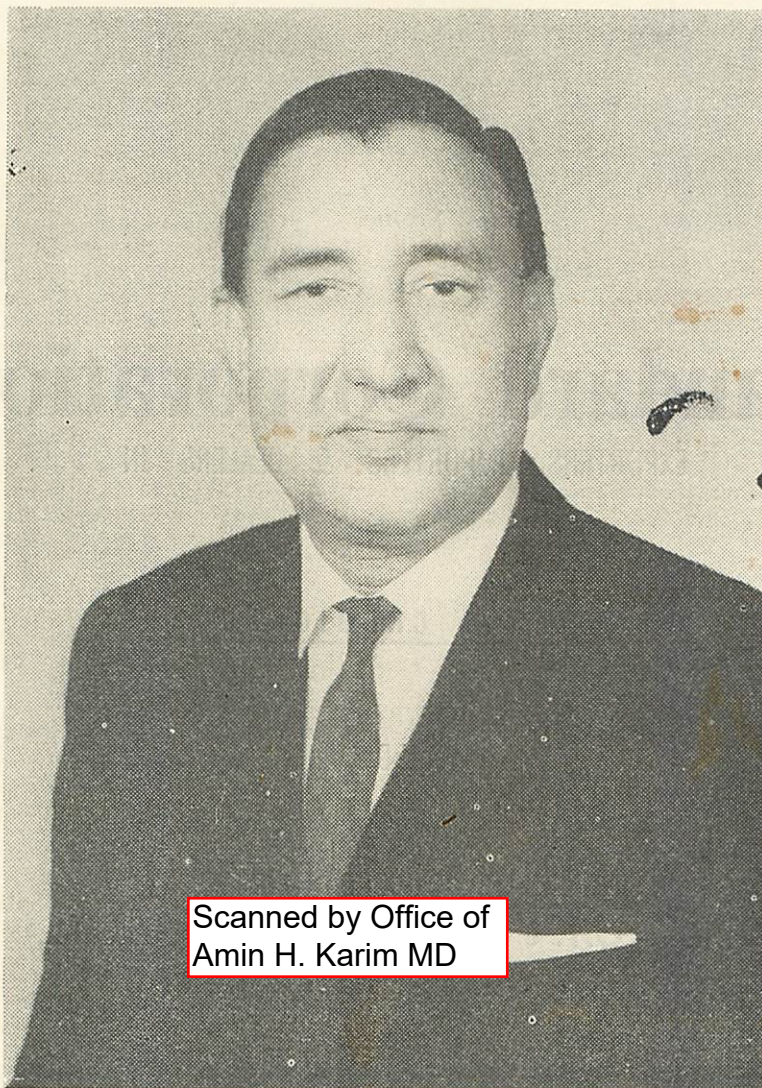
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FAREWELL



Professor Mahmud Ali Shah

M.B.,B.S. M.S., F.A.C.S., F.I.C.S.F.C.P.S.,

PROF. M.A. SHAH, the pride of Dow Medical College, who would always be remembered for his meritorious services.

As a man Prof. Shah, beside being very kind and sympathetic in nature, he is a man of great personality and dignity not too ready with words except when needed.

As a teacher having an intensive knowledge on his subject of ophthalmology, had a very systematic approach of the subject to the students and thereby would make the subject as simple as possible, and thus engrave it in the students minds. In other words, there are very few of his examples as a teacher.

As an administrator and patron of the students' Union: The Dow Medical College Students Union is proud to have had him as its administrator and a patron for about a decade and a half. He is a man of principles and absolute intellectual integrity. In any students' problem, as the patron, would go all out in trying to solve their problems peacefully.

As a doctor: Prof. Shah has helped to recover the sight of thousands of people.

BIO DATA

Prof. Mahmud Ali Shah, born in 1911 in Punjab from where he did his early education and then he passed his M.B.B.S. from King Edward Medical College Lahore in 1935. Did his post graduation in M.S. (ophthalmology) from Punjab in 1943. Later on, he was honoured with fellow of American College of Surgery in 1954; Fellow of International College of Surgery and Fellow of College of Physician and Surgery (Pakistan).

PROFESSION AND TEACHING

Worked as a house surgeon—Mayo Hospital as a casualty M.O.; as P.C.M.S.; as a demonstrator in Anatomy—King Edward Medical College; Part time M.O. Eye O.P.D. Mayo Hospital; and part time ophthalmic Surgeon Civil Hospital, Karachi. Assit. Prof. of Anatomy, Dow Medical College and later on from 46-49 Prof. of Anatomy and finally till retirement Prof. Eye Diseases, Dow Medical College, His contribution in making the Anatomy Museum was an instrumental in getting the Department and the college recognised by the then Bombay University.

Administrator :

Vice Principal, Dow Medical College, 48-54; Medical Superintendent, Civil Hospital Karachi 54-55; Director of Health Services Karachi 56-57; Principal. Dow Medical College 55-70 and Administrator. Dow Medical College and Civil Hospital, Karachi 64-66.

Academic :

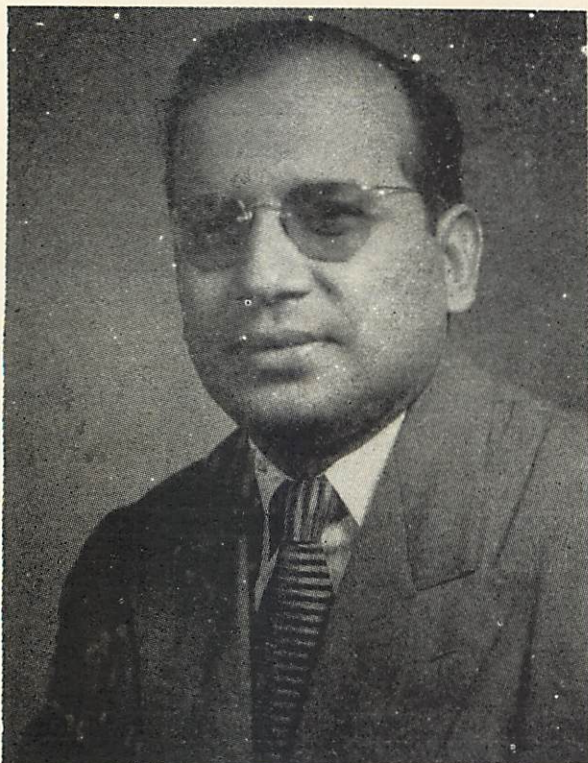
Member Medical Faculty, University of Sind 47-52; Member Board of Studies for Medicine, University of Sind; member academic Council and of Senate, University of Karachi; 55-62; examiner of ophthalmology in 1947; Member scientific advisory Board, Pakistan Medical Research Fund Association. Member Pakistan Research Council 63-66; Member Council for Post Graduate medical education. West Pakistan. Member Pakistan Medical Council, Member Advisory Panel of Health Sector Family Commission. Govt. of Pakistan; founder Fellow Pakistan College of Physicians and surgeons.

Travel Abroad :

Lead Pakistan delegation to the W. H. O. Mediterranean Conference on Trachoma at Tunis in 1959. Visited U.S.A. 1965; U.K. 52 and 65; Morocco, Spain, Yugoslavia 1959. Leader Pakistan Delegation to W.H.O. Mediterranean Conference on Medical Education at Tehran in 1962 where he was elected as the vice President of the Conference. Member special group W.H.O. on Medical education Alexandria; Vice-President third World Conference on Medical education New York 1965.

Research Work :

Author of 45 papers on different aspects of Eye Diseases. Of his large number of contribution to literature, a few may be mentioned here. Prof. and Mrs. Shah's work on arterial supply of the vermiform appendix published in the anatomical record and thereafter included in Grant's Textbook of Anatomy—his contribution to osteology—his...corneal stitch published in the Journal of Ophthalmology, London and Epidermolysis Bullosa of Conjunctive also reported in the same journal. His contribution to Geographic Ophthalmology and authoritative work of reference of Eye Diseases has met with in various parts of the world, edited by Holmes and published in Springfield, U.S.A.



FAREWELL

Professor TAFAZZUL HUSSAIN

M.B., B.S. (London),
D.T.M. and H. (Eng.)
V.D.O. and V.D.P. (Liv.)

*Head of the Department of Pathology
Dow Medical College, Civil Hospital
Karachi.*

PROF. TAFAZZUL HUSSAIN, after obtaining the M.B.B.S., degree worked as a house physician and then as a Medical Officer in Hyderabad Deccan for 2 years. He then, left for England for his past-graduation in 1947. He specialized in tropical medicine and Hygiene and obtained D.T.M.H. from the Conjoint Board of England. Then working at the Liverpool University and the Royal Infirmary with Dr. A.O. Ross M.D., and Dr. D. T. Robinson, Director City Pathological Laboratory, obtained the certificates of Venereal Diseases officer and pathologist of the Liverpool University. He worked as a research scholar at the Pathological Laboratory Derbyshire Royal Infirmary with Dr. G.R. Osborn, the Director of the Laboratory.

Prof. Taffazzul was very fortunate in getting the guidance in the study of Pathology of a world famous scholar—a leading experimental pathologist—the author of the book “Pathology of Cell”—Prof. G. R. Cumeron. He worked with him and obtained his Ph. D. (Lon.) degree in Pathology. His paper on “The Effect of Pressure on the structure, function, and susceptibility to bacterial Infection on Voluntary Muscle with special reference to the Bed Sore Problem.” was published in the journal of Pathology and Bacteriology to the M.B., Ch. B., students of the University, College Hospital, Medical School London, for 2-1/2 years. He has visited Germany. The Marbonrg Aschoff House. He has also visited Venice Rome, Switzerland, Paris, Belgium, and Holland.

Dr. Tuffazzul Husain joined the Department of Pathology of this institution in 1953 by succeeding Prof. G.T. Stewart, and retired in June 1970. During his Professorship in D.M.C. he has brought about the extension in the Department like Haematology, Bacteriology, clinical Pathology and Microbiology.

He brought up the Museum which previously had only 500 specimens, to about 1700 specimens.

In 1968, he was awarded fellowship of College of Physician and Surgeon of Pakistan (F.C.P.S.). From 1953 to date he has been an examiner of the subject of various Universities.



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FAREWELL

Dr. Mrs. Mubarika Shah

M.B.B.S. D.C.H. (London), Asstt. Physician (Paed),
Civil Hospital, Asstt: Professor of Medicine (Paed)
Dow Medical College, Karachi.

BORN in June 1915 in Punjab. Belongs to a respectable muslim family from Punjab. Did her early education from Punjab with several merits during her education carrier. Graduated M.B.,B.S. from King Edward Medical College in 1938, In her First, Second and Third Professional--Distinction in Hygiene and in Final M.B.,B.S. First in Eye, Ear, Nose and Throat.

In 1947 left for abroad to England for her Post Graduation. In 1948 she did her Post graduation from Great Ormond street Hospital, University of Edinburgh.

Dr. Mr Shah had the previlage of visiting children hospitals in Moscow, Sweden, Boston, Viana, etc.

In 1938-39 worked in a capacity of House Physician Lady Aithison Hospital, Lahore. From 1945 to 1951 as Demonstrator in Anatomy Dow Medical College. Became a Lecturer in Diseases of Children, Dow Medical College from 1951 to 1953, after which she was appointed as Associate Physician (Paed) Civil Hospital and also as Assistant Professor of Medicine (Paed) Dow Medical College. Dr. Mrs. Shah's hardlabour and personal efforts in completing the Anatomy Museum would never be forgotten. In her research work with rof. Shah on arterial Supply of the Vermiform appendix published in the Anatomiel report and thereafter included in Grants Text Book of anatomy.

Civil Hospital in general and the Paeiatric ward in particular would never forget load of personal effort and contribution that Dr. Mrs. Shah has offered to this institution,

F A R E W E L L S



Farewell to Dr. Mrs. Nusrat
Deptt. of Physiology



3rd Year Students Farewell to
Dr. M. A. Ansari



Farewell to Dr. M. F. Khan
Deptt. of Bacteriology

Obituary

*"Life is real; life is earnest,
And the grave is not its goal,
"Dust thou art, to dust returnest"
Was not spoken of the soul!"*

The most unforgettable day in the history of Dow Medical College, was the 12th of October 1969, when the medicos lost their most beloved and respected Professor of E.N.T. Prof. Shafiuddin Khan.

He would always be remembered with respect and appreciation for his meritorious services we rendered to our mother institution.

Prof. Shafiuddin Khan, was born on 21st June 1917 in Hyderabad Daccan. Graduated M.B.B.S., from Osmania Medical College in 1939, and Postgraduation, L.R.C.S. [Edinburgh] 1947; F.R.C.S. [Edinburgh] 1948; D.L.O. [London] 1948, F.A.C.S.; F.C.P.S.; F.I.C.S.

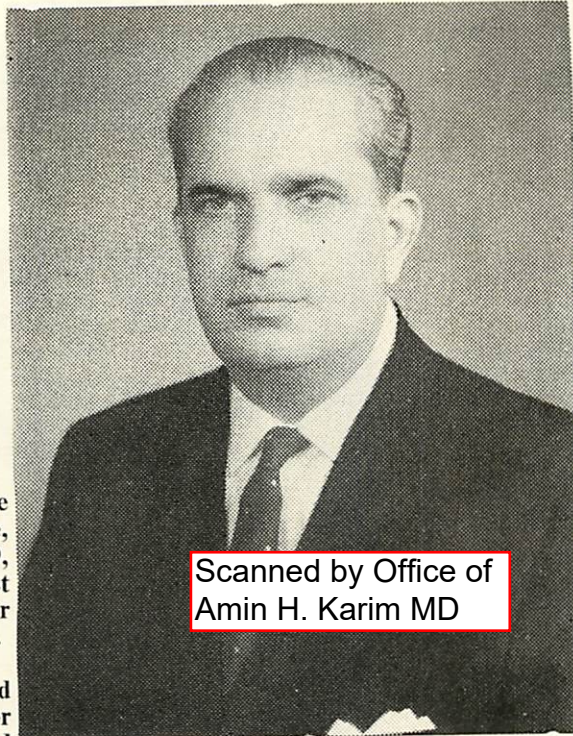
During his graduation in Osmania Medical College had distinguished record throughout by getting first place in all the Professional Examinations, and was awarded Gold Medale for General efficiency.

In 1940 got Commissioned in the Army. In 1945 became graded specialist in E.N.T. from 1948 to 1949 worked as consultant to the army and attached to the Civil Hospital and Medical College. In 1949 relieved from the army as Senior Major. In July 1949 came to Karachi and was appointed as Professor of E.N.T. Dow Medical College, Civil Hospital, Karachi. In 1960 was awarded Honouary Fellowship from American College of Surgeons.

Prof. Shafiuddin contributed general papers in the speciality and attended most of the international congresses and seminars.

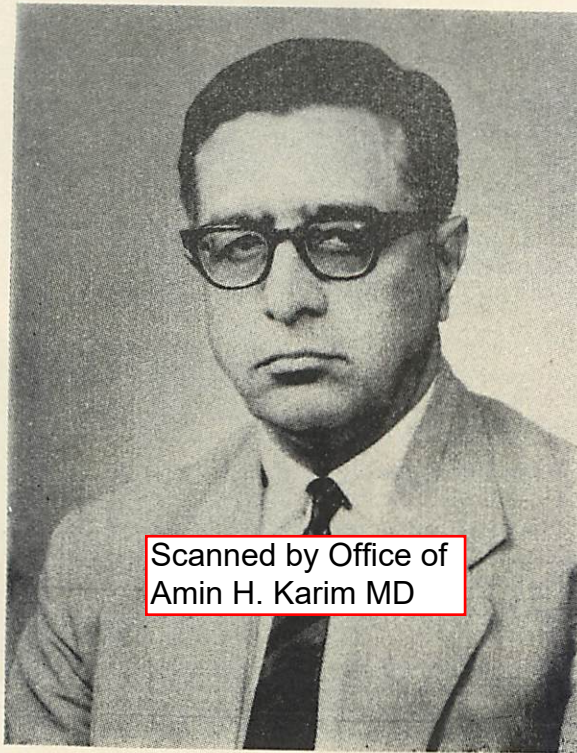
May the departed sant rest in in Peace "Aameen".

We extend our heart felt sympathies to the members of the bereaved family.



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Obituary



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*"How Shocking must thy summons be,
O! death, to him, that is at ease in his Passessions?
Who Counting on long years of pleasure
Here is quite unfurnished for the world to come*

“ELAIR”

It was the 8th of January 1971 when the Country in general and Dow Medical College and Civil Hospital in particular lost a cardiologist, who was loved and respected by all his colleagues friends and students alike.

Prof. Piracha beside having a sound knowledge of medicine, had great interest in literature, both in English and Urdu. His last publication was on Heart Transplantation, which he contributed to the College Annual Urdu Magazine “*Namood-e-Sehar*”. (Silver Jubilee Edition)

Born on 4th July 1908, was a domicile of Makbad of distric Attock, West Pakistan. Graduated from K.E. Medical College Lahore in 1933. Obtained his M.R.C.P. in 1948 from London and again in 1949 from Edinburgh.

In 1933 to 1934 was a house Surgeon in Mayo Hospital Lahore and was later on assistant Civil Surgeon in Punjab Medical Service from 1955-59.

Prof. Piracha joined Dow Medical College in 1949 as honorary Professor of Cardiology. He had a very fatherly and a Sympathetic approach to the students.

May his life be beacon light for all of us and inspire and guide us to dedicate ourselves to selfless devotion and service to humanity.

May the departed soul rest in peace *Aameen*.

We extend our heart felt sympathies to the-members of bereaved family.

Obituary

The untimely death of Dr. Ashfaq Hussain Siddiqui in the Prime of his life was really shoking and heart breaking. In him we not only lost a teacher demonstrator but also a most kind and loveable brother.

Born on 5 July 1942, Graduated M.B.,B.S. from Dow Medical College in 1966. Did his junior and senior House Physicine in Civil Hospital Karachi. Being a domicile of Karachi Joined Dow Medical College on 27th April 1968 as a demonstrator in Anatomy.

Expired on 29th May 1970 of Cerabral Embolis. We extend our heart felt sympathies to the members of the bereaved family.

May Allah grant peace and rest to the departed saul.

—Aameen.

Obituary



Golam Hussain Dolly

BORN on 21st of March 1942 at Transwal in South Africa. Graduated in Mathematics and Political Science in 1961. Started working voluntarily as a teacher in a school where only those coloured children studied who were deharred from studying in other schools by the racial regime. Had to leave his country in 1963 due to political reasons. Three years after arrival in Pakistan his father, a member of congress, was hanged in South Africa for political reasons. After the death of his father Dolly decided to do medicine. After passing his F.Sc., Pre-medical he got admission in King Edward Medical College in 1968. Migrated to Dow Medical College in March 1970. Took a very active part in activities of College. Went to Lahore in first week of July to see his friends. Developed infective hepatitis and died on 13th of July after remaining in Hospital for three days. He was burried in Lahore.

May the Departed soul rest in peace.

Aameen.



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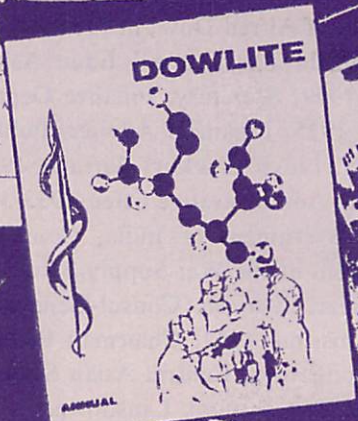
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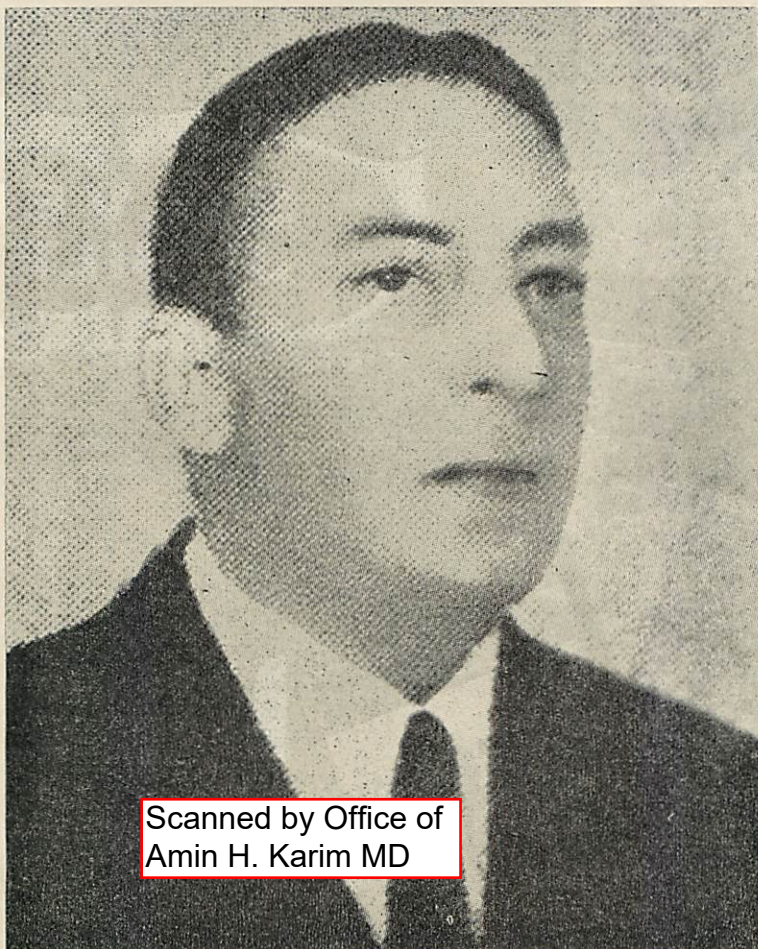


SILVER JUBILEE

MILE STONES



SIR HUGH DOW



SIR HUGH DOW of 1947 (CIE 1932); KCSI, of 1940 (CSI 1937); KSTJ; b 8 May 1886; s of Alfred Dow; m 1913, Ann (CHE 1947, CStJ m K-iH Gold Medal) (d 1956), d of J. Sheffield; one as one d. Educ: Aske's Hatcham Sch; University College, London, Entered ICS, 1909; Secretary, Finance Dept. Bombay, 1923; Financial Adviser, Public Works in Sind, 1925; Financial Adviser, Public Works and Development, Bombay, 1926; Revenue Officer, Lloyd (Sukkur) Barrage, 1927; Member of the Sind Conference, 1932; Chairman of Sind Administrative Cttee, 1933-34; Joint Secretary, Commerce Deptt. 1934; Secretary to the Government of India, Commerce Deptt, 1936-39; Director-General of Supply, and President of the War Supply Board, India, 1939-41; Governor of Sind, 1941-46; Governor of Bihar, 1946-47; Consul-General, Jerusalem, 1948-51m Chairman, Ordination Funds Commission, 1952; Chairman Royal Commission on East Africa, 1952-54; Chairman of Council, Royal Central Asian Society, 1947-58. Address: 6 Charles Street W.1. Clubs: Athensaeum, Lansdowne.

Sir Hugh Dow's Speech at the Dow Medical College Foundation-Stone Laying Ceremony

HIS Excellency the Governor said:

THE Hon'ble Minister has given you a full account of the steps which have led to the foundation of this college, and I will not go again over the same ground. I have always held the view very strongly that, once it was decided that there was a case for erecting Sind into a separate province, a decision which whatever its merits is not likely to be easily reversed, there was exactly the same case for deciding that Sind should have all the educational institutions which it needed within its own borders and that it should have complete control of them.

"I shall say nothing on the highly controversial questions of the form that a Sind University should take, or of the relationship between a Sind University and the Sind Government. But it is obvious that neither a Sind University nor a Sind Government can expect to have any effective control over educational institutions in other provinces; and, therefore, Sind cannot decide on what pattern its educated population (which I hope will soon include all its population) shall be turned out so long as Sind continues to depend on outside schools and colleges for educating its own sons. In the present state of Sind, I regard the expansion of educational facilities, whether primary, secondary or collegiate, which is the business of Government, as a more urgent question than the control of curricula and the conferment of degrees, which are the business of a University.

"These remarks are, perhaps, more applicable to medical education than to any other branch. There is a great dearth of qualified doctors and nurses throughout Sind, and over large areas of the mofussil medical assistance of any kind is practically non-existent. The training of Sindhi men and women in extra provincial medical colleges is not only expensive, but even at any price, a sufficient number of places for Sindhi students cannot be obtained. It was, therefore, urgent that our own facilities should be expanded and our own medical college should be opened at as early a date as possible.

"I fully endorse the tribute which has been paid by the Hon'ble Minister to his predecessor, Dr. Hemandas Wadhvani. His efforts were untiring he would accept no discouragement and it is certain that this scheme would not have been brought to the stage which we see today had it not been for his enthusiastic and devoted work. I have done my best to second his efforts, but in my opinion the college might have been more appropriately named after him than after me; and indeed it would not bear my name if the existing constitution had permitted me to come to a decision otherwise than in accordance with the advice of my Ministers, of whom Dr. Hemandas was then one.

Civil Hospital Beds :

"It was recognised from the beginning that the opening of this college at Hyderabad was a stop-gap arrangement, and that the proper location of the

college would be at Karachi. The inadequacy of the accommodation and facilities at the Civil Hospital, Karachi, has long been a trying scandal: I need only mention the fact that the population of Karachi has trebled since it was built. The decision to have a medical college here has made it absolutely urgent to expand the Civil Hospital, and as you now see something has been done. It is still in my opinion not nearly enough, and the next few years ought to see a still further great increase of hospital accommodation, together with institutions and hostels for the training of large number of nurses.

"The nursing staff in the Civil Hospital here is deplorably insufficient for even the present number of patients, and up-country the position is still worse. I was shocked to find in my recent visit to Hyderabad that there was only one resident sister and one non-resident nurse to attend to the wants of over 180 in patients, and that even this one nurse was expected in addition to attend to the wants of outside patients of private practitioners, who considered that they had a demand on her services. Such state of affairs is really scandalous, and I hope public opinion in Sind will soon be caused to demand that it shall cease.

"Another thing that is immediately and urgently required here in Karachi is the provision of proper hostel accommodation for the students of this college. I understand that at the moment it is proposed to divert part of the new hospital bed accommodation to the purposes of a hostel for the students. I look out this proposal with the gravest concern."

"I had hoped that this function would have given me the opportunity of addressing a few words by way of encouragement to the students of the new college but I understand that all or most of them are still at Hyderabad and are not likely to be here for some weeks. From the local press I learn that at my recent visit to the Civil Hospital there I was greeted with cries of "*Jai Hind*," I am sorry I did not hear them, for I know no reason why I should not myself have joined in a slogan for the helping forward of which I have already worked in the country for thirty-five years.

"If, as I hope, they have this slogan not only on their lips but in their heart they may rest assured that they have chosen a profession the quiet diligent and orderly pursuit of which will do far more to secure the health and prosperity and even the victory and independence of Hind than any amount of shouting of slogans, making of speeches, and taking out of processions. Nor do I suggest that their interest in the progress of their fellowmen should be postponed till their student days are over.

"There is in Hyderabad a flourishing Blood Bank, which has been instrumental in saving the lives of fifty Hyderabadis during the last year. It was rather blow to me to find that in spite of much propaganda, this bank has to rely almost entirely for its blood on holding out inducements to criminals in the local jail; and that not a single drop of it came from any medical practitioner in Hyderabad or from any student in the medical college or medical school. This is a reproach which might well be removed.

"On looking back over old friendships I am struck by how large a proportion of the finest men I have known have been medical men. Something of this is perhaps due to the fact that there is no profession which offers more obvious scope for the constant exercise of the best instincts of human nature. And, in looking forward, instead of looking back, it is clear that Sind offers unlimited scope for good doctors who are at the same time good men. I hope that this institution which I am now inaugurating will attract to itself a large proportion of young men and women, whose lure is not merely personal ambition or the hope of gain, but a strong desire to use all the opportunities which their profession affords for the alleviation of pain and suffering among the poor in the rural as well as in the urban, areas, of this province."

MESSAGE

Dear Mr. Shariat,

It is very kind of you to think of putting a photograph and message from my beloved father, Late Dr. K.T. Ramchandani, who was the first Principal (Pre-Partition) of the Dow Medical College, in your annual publication "DOWLITE INTERFATIONAL".

My father expired on 18th of April 1968. He used to talk about Dow Medical College, which started in Hyderabad (Sind) quite often. He used to teach the subject of Medicine in the same College and was one of the most respected and popular teachers there. I am sorry I am not able to send his photograph, as we have got only one copy at our home.

Please do accept my sincere good wishes on the auspicious occasion of the Silver Jubilee celebrations of your institution. May your institution grow bigger and bigger in the field of Medical research and medical relief to the suffering humanity. I wish you and your institution all success and prosperity.

Best Wishes,

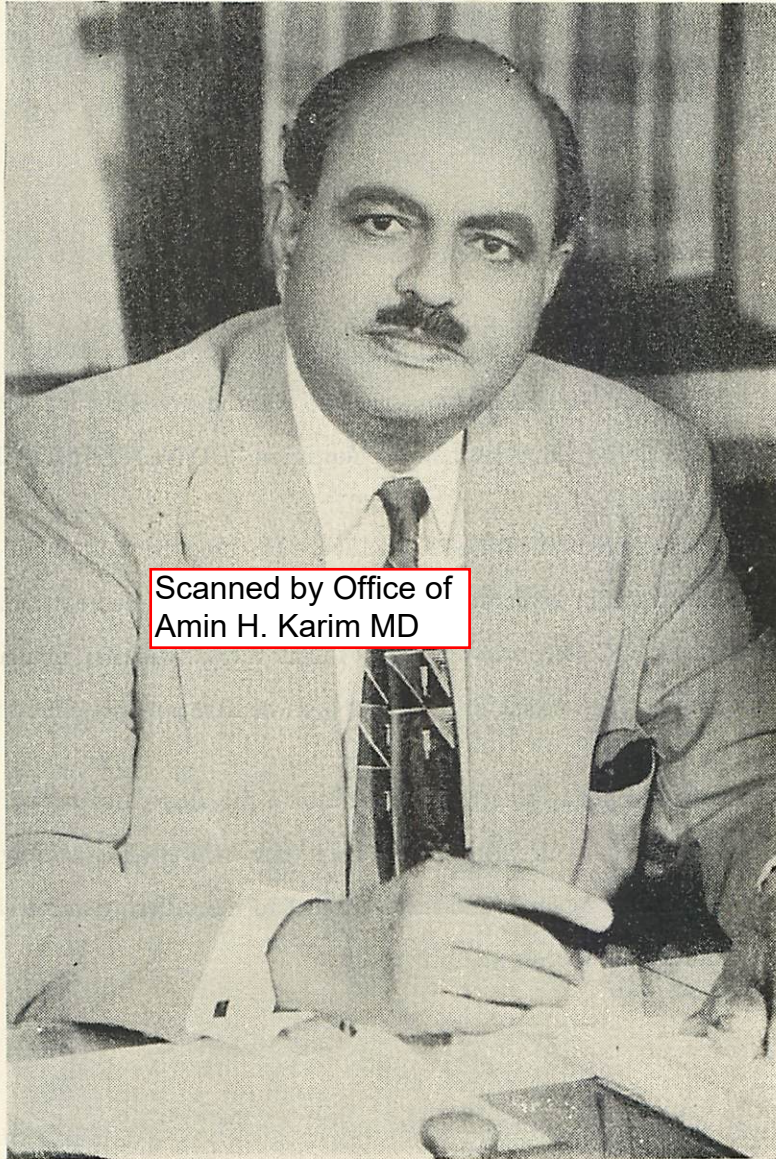
Yours Sincerely,

S/d.....

I.K. RAMCHANDANI,
M.D.

*Professor, and Head of the Deptt., of Physiology,
Seth G. S. Medical College,
Parel, Bombay, 12-D.*

FIRST PRINCIPAL



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Lt. Col. AZIZ K. M. KHAN

I. M. S. (Retd) F.R.C.S.

MESSAGE

Col. AZIZ KHAN, I.M.S. (*Retd.*)

F.R.C.S.,

IN 1945 on return from active service during World War II, I was appointed officiating Inspector General, Civil Hospitals, Sind and was assigned the responsibilities to start a Medical College at Karachi.

On 10th December 1945, foundation stone of the college was laid in the old N.J.V. High School, at its present site, by the then Governor of Sind, Sir Hugh Dow and the college was named Dow Medical College, under the University of Bombay.

In July 1946 I was appointed the First Principal and Professor of Surgery in addition to my duties as Inspector General Civil Hospitals. The University of Bombay granted temporary recognition for the pre-clinical courses and gave one year time to develop the pre-clinical departments of Anatomy and Physiology. You can well imagine the gigantic up-hill task. The N.J.V. High School had to be demolished and new departments and lecture halls had to be constructed. Anatomy museum with dissected specimens had to be prepared. I am most grateful to the absolute minimum nucleus of staff on my disposal, who whole heartedly co-operated with me and shouldered this heavy responsibility.

I wish to place on record the services—practically round the clock—rendered by Dr. Mahmood Ali Shah, M.S., and his wife Dr. Mubarika Ali Shah, who were Demonstrators of Anatomy and prepared Anatomy Museum which the Bombay University Inspection Committee remarked. "We cannot believe our eyes that this could have been achieved in such a short time."

From pin-cushions, to Laboratory Equipments, microscopes, Jars and furnitures had to be built. The World War II had just finished and there was world shortage of Laboratory Equipments and we had to run wild trying to buy these from where ever we could. A God sent opportunity came to our luck. At the Malir Cantonment, the American had built a hugh base hospital and supply depot. The Americans were leaving, taking away the equipment, but the Government of Sind authorised me to buy up this American Base Hospital and all the equipments of the depot.

In 1947, Pakistan came into being and the Government of Pakistan had no promises. The Ministry of Health, Government of Pakistan was housed on the premises of Dow Medical College and we gave the Director General Health, Government of Pakistan all facilities.

In 1948, the Hindu Staff of the College and Civil Hospital, doctors, nurses, ward-boys, sweepers etc., gave us a surprise of our life. During night, they all migrated to India. Ships were kept ready for them at Karachi Harbour and we were kept unaware. This "closed door" scheme was worked out by Hinre political Heads to collapse Pakistan, some even told us while leaving, "We aud returning as conquerors withen 15 days."

Mercilessly mutilated and penniless refugees from Delhi and other places started pouring in Karachi because of mass killing of Muslims in India and Pakistan was really on the brink of collapse but Allah saved us because of future events, the killings of Muslims in Katiyawar, Hyderabad Daccan, etc etc.

Muslim Professors and Doctors started coming to Karachi from India and they were blessings from Allah and they saved the situation and the cherished dreams of the Hindus to return to Pakistan as conquerors died for ever.

I could naturally write volumes on the history but it would be out of occasion. I am happy to Dow Medical College blooming and blossoming. Our Muslim youths are coming from other Islamic Countries for Medical Education here. Our Dow Graduates are spread all over the world and have won place of honour and prestige even in U.K. and U.S.A. and are on great demand.

I pray to Allah that he may shower his choicest blessing on our Alma Mater. I am happy to see Dow Medical College has come back to the Government of Sindh as this Institution was their cherished first born child for which they had taken great pleasure and pride and I trust they would double their love and affection for this Institute.

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