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CONTENTS

The Editor does not hold himself responsible for the opinions expressed by the different contributors.

SPECIAL NOTICE TO CONTRIBUTORS

The Journal welcomes scientific papers on all subjects coming within the purview of medical science, and topics concerning medical education or of interest to the medical profession. Papers from non-members of the Association must be communicated by a member.

Manuscripts must be typewritten on one side only of the page, double-spaced, with ample margin and should not be offered to any other Journal for prior or simultaneous publication. Ordinarily papers should not exceed 12 pages of foolscap Mss. and authors are requested to condense their manuscripts as much as possible.

Clinical photographs, skiagrams and photo-micrographs should be printed on contrast glossy paper and sent unmounted, or if mounted, colourless paste should be used. All diagrams and graphs should be drawn with waterproof Indian ink on white drawing paper or Bristol board.

References to literature in the text should be given in accordance with the established international system followed in the cumulative medical index.

The galley proof will be sent to authors for correction and should be returned corrected with the least possible delay. Authors must not make any change in the text of the manuscript at the proof stage.

Authors will be supplied with 25 copies of reprints of their papers gratis. If extra copies are required, they could be had at a small additional cost on intimation at the time of returning the galley proof.

All communications pertaining to publication of papers in the Journal should be addressed to the Editorial Secretary.

Our thanks are due to Messrs. Ravai & Sons and Messrs. Klein & Peyerl for their sincere co-operation, the prompt and neat execution.

—EDITOR.

EDITORIAL

THE Madras Medical Service is alive to the fact that penicillin hailed once as the wonder drug has recently sustained a certain amount of disrepute because of an occasional unpredictable and uncontrollable anaphylactoid reaction occurring during its administration. Fatal hypersensitivity episodes have come to be known all over the world. Non-fatal but temporarily disabling serum sickness type of reactions, besides a curious hyperergic reaction involving the skin, muco-sac, cardiovascular, respiratory, and nervous systems, have also come to our notice.

Fortunately, the large majority of the unpleasant events associated with penicillin therapy have been non-fatal, temporarily disabling, but controllable unlike the infrequent, but fatal anaphylactoid reaction.

The publicity given to penicillin reactions, here, though not to the extent that one would expect, may create a misgiving in the minds of the general practitioners sufficient to restrain them from using penicillin in general practice even when the use of the antibiotic is most indicated.

While we plead for greater and greater acknowledgment of experiences of practitioners unfortunate enough, to encounter the hypersensitivity reactions in their practice, we would also remind them of the request to do

so, because of the circular issued by the Indian Council of Medical Research through state medical authorities. It may be indicated here that the collection of figures of incidence of penicillin reactions will enable us to present our experiences before the World Health Organisation session scheduled to meet in the coming year to discuss the item.

Meanwhile it is incumbent on our part to realise that we have no sure skin test to predetermine penicillin allergy in man. All that therefore may be done is that we remain alert for the appearance of penicillin reaction and be prepared to combat it immediately with an injection of adrenaline to be reinforced if necessary with antihistaminics and corticosteroids as per directions outlined in a W. H. O. Report appearing elsewhere in the issue. It must be remembered that it is obligatory on the part of any one in charge of a treatment centre where penicillin is administered to have a 'penicillin allergy emergency kit'.

Based on our experiences in the past we recognise that withdrawal of penicillin and symptomatic treatment are by themselves insufficient in the management of penicillin reactions. We feel the need for a product for neutralisation of penicillin in circulation especially when the use of long acting penicillins is the order of the day.

It is in this atmosphere that we are glad to present news about the neutralising agent, the subject of a symposium given publicity in the New York Times. Zimmermann, Welch, Becker and others taking part in the discussions, mentioned that nearly 325 ton of penicillin, were produced in a single year and that 10% of the population *i.e.* about 17 million in the U. S. A. were allergic; they have predicted at least 200—300 deaths due to penicillin reactions in the coming year; they also assure us on the basis of their experiences with penicillinase that this drug is a useful addition. They say:

'Penicillinase is a bacterial enzyme discovered in a strain of e. coli by Abraham and Chain in 1940. It is secreted by many strains of bacteria including b. cereus and some staphylococci. Till 1956 its anti allergenic effect was not tested.

Penicillinase hydrolyses the penicillin into a biologic and antigenically inactive penicilloic acid.

The unit of penicillinase is that amount which will inactivate one unit of penicillin per minute at 25 deg. C at ph 7 in vitro.

Under the trade name 'Neutrapen' by Schen Labs. it is sold as a white powder; reconstituted, the 2 c.c. aqueous suspension of 8,00,000 units of penicillinase is administered deeply intragluteally.

Slight pain is experienced at the site of injection, which soon subsides.

The circulating penicillin in the body is inactivated within an hour of the single injection. The effect of penicillinase continues for 4—7 days. Penicillinase is safe, cheap and easy to administer and corrects the cause. Every clinic where penicillin is administered should possess 'penicillinase along with the emergency kit'.

We eagerly look forward to the arrival and availability of penicillinase as a valuable adjunct in the management of penicillin reactions.

P. N. Rangiah.

MADRAS MEDICAL REGISTER

It is very essential that in the interests of both the Practitioner and the Medical Council, the Madras Medical Register should be up-to-date in all particulars relating to the Practitioner entered there in, including his address and qualifications. In connection with the recent elections held in November 1956 to elect 7 members by the Registered Practitioners, nearly 9200 ballot papers were sent, out of which, 1220 were returned as unknown or dead by the Post Office. Several requests were received to send ballot papers from individuals whose address did not agree with the one found in the 1955 Medical Register which served as the electoral roll and it was not possible to comply with their request as ballot papers had already been issued as per the printed address in the Register. To avoid a repetition should any election take place in the near future and also to serve as a useful guide to the pharmaceutical firms which utilise the Register for sending medical literature the Registrar, Madras Medical Council, Madras-6, earnestly requests all the registered practitioners to drop a card immediately giving particulars about their full registered name, and number and address. They may also register any additional qualifications since secured.

Office of the Madras Medical Council, Madras-6.
18th July 1957.

K. K. SHENAI,
Registrar, Madras Medical Council.

ANNOUNCEMENT

Members are informed that a few pages of the Journal are set apart for **"SERVICE PROBLEMS"**. The names of contributors wherever necessary will be kept confidential..

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Contributions by way of articles, advertisements, clinical reports, letters to editor etc. will be received by the Editorial Secretary for the next issue of our journal.

Editorial Secretary,
M. M. A.

Angina Pectoris

Dr. R. SUBRAMANIAM*
B.SC., M.D., M.R.C.P. (LOND.)

AFTER coronary thrombosis, the next important medical emergency that is seen quite frequently is angina pectoris.

This malady was described in the "Life of Edward Earl of Clarendon" by his son Earl of Clarendon. The symptoms of Earl of Clarendon were described as puzzling and ill-understood. The description is fairly accurate and on reading through the same, it is easy to make out that the Earl of Clarendon had attacks of angina pectoris. He seems to have had several attacks of angina pectoris and on each attack, he took leave of his son on account of the fear that he would die in one of those attacks. In him the pain used to be precipitated by passing water and death occurred in one of the attacks. The classical description of the disease was given by William Herbenden in 1768 when he presented to the College of Physicians, London, the subject of Angina Pectoris in the following words:

> "There is a disorder of the breast, marked with strong and peculiar symptoms considerable for the kind of danger belonging to it and not extremely rare of which I do not recollect any mention among medical authors. The seat of it and sense of strangling and anxiety with which it is attended, may make it not improperly be called Angina Pectoris".

His description of angina pectoris was masterly and very little can be added to it inspite of the advances we have had since his description in 1768.

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He described the angina pectoris under the name Pectoris Dolor.

The patients are comfortable in between the attacks. Generally the attack comes on exertion, occasionally on emotional disturbance. Sometimes even at rest but very rarely during the sleep. The attacks may be precipitated by exertion. For this Master's steps are used:

The typical clinical features of an anginal attack are:

1. **S**udden in onset.
2. **A**nterior chest wall.
3. **V**ague discomfort.
4. **E**xercise and emotion induce the attack.
5. **S**hort duration.

The first letter of each of the symptoms, namely SAVES gives a mnemonic to remember the symptoms of angina pectoris.

The attack has an abrupt onset. In susceptible subjects a few minutes after the starting of the exercise, the attack suddenly comes on. The discomfort that sets in is in the anterior part of the chest, generally over the precordium and radiating to the left as far as the little finger, but in less severe attacks the radiation may be upto the wrist, and in still less severe cases the pain may stop short of the elbow or the middle of the arm. Sometimes instead of the left arm the pain may radiate to the right arm to similar levels. Attacks are generally precipitated by exertion or emotional upsets. John Hunter, one of the famous victims of this malady said "my life is in the hands of any rascal who irritates me". When the attack is on, it causes not a localised pain but a vague discomfort all over the precordium. A sense of fear is on—fear of impending death and dissolution called angor animi. The patient is so much overcome with the fear that he comes to a still posture almost like a statue. He does not move his little finger. There is marked contrast to the extreme restlessness of coronary thrombosis.

The whole attack is of short duration and in 2 or 3 minutes time it passes off. Death may occur even during the first attack. Patients may survive several attacks before the death occurs.

The knowledge of angina pectoris is always from the patients history only. We are not aware of any animal suffering from this condition.

Since exertion brings on anginal attacks under standard conditions of temperature, environment and rate of exercise, attacks are precipitated, to study the severity of the attacks and to assess the progress with therapy. Cold precipitates anginal attacks more easily than heat. So also heavy meal; with exercise in some patients, the first attack may produce immunity and in others, the first attack may precipitate more quickly a second attack. With treatment the attacks may be warded off completely or the time of onset may be delayed considerably.

The standardised exercise tolerance test is done under following conditions:

1. Low temperature 45°—55° F.
2. One hour after a light meal.
3. No recent attack.
4. No medication—for at least 12 hours preceding test.
5. Familiarity with the test.

These constant conditions give constant results for each case. If patient gets an attack on the way, no exercise is to be given. During the attack in some patients, flushing, pallor, fainting and vomiting may occur.

The site of pain may extend from precordium to supra sternal notch to epigastrium and to the two anterior axillary borders on either side. The intensity of the attack is severe below the sternum. Radiation of pain occurs in 60% of cases.

Sometimes the radiation may be to the upper part of back in the region of the spine. Rarely the radiation may be to the neck or the undersurface of the lower jaw.

The incidence is 3 to 4 times more common in men. Generally these men are short and stocky with a short neck, with tendency to be obese. It is rare under 40 years of age. The B. P. is not usually raised. E. C. G. in between the attacks is normal. Heart size is also usually normal. During the attack E. C. G. may resemble coronary thrombosis particularly the precordial leads.

> In Heberden's own words the characteristic features of an attack are, "Those who are afflicted with it, are seized, while they are walking .and more particularly when they walk soon after eating,—with a painful and most disagreeable sensation in the breast, which seems as if it would take their life away. If it were to increase or to continue the moment they stand still all this uneasiness vanishes".

The pathogenesis of angina pectoris is, the heart muscle is not getting enough blood when it is called on to do extra work, *i.e.* muscular exertion is going on under anoxic conditions. The attacks can be precipitated by making these patients breathe in an atmosphere of low oxygen and the walking capacity prolonged by making them breathe in an atmosphere of pure oxygen.

Predisposing factors are :—

1. Atherosclerosis.
2. Diabetes.
3. Ostial syphilis.
4. Aortic regurgitation and stenosis.

5. Abnormal rhythms, particularly very fast heart.
6. Anaemia.
7. Thyrotoxicosis.
8. Emphysema, asthma and inadequate oxygenation of the lungs.

Pathology.—Jenner noticed coronary vessels were calcified in angina pectoris.

Treatment.—Treatment of Angina Pectoris is to be divided into two phases :— (1) treatment during the attack and (2) treatment in between the attacks. In the first attack nothing can be done since there has been no warning when the attack is likely to occur. The first attack itself may prove fatal. Generally patients survive several attacks and so after the patient reports the first attack, he should be instructed to carry amyl nitras capsules. These capsules were available in very thin glass capsules, enclosed in silk bags in the pre-war days. Now it is coming in cardboard cartons with plug of cotton at either end. As the carton is bent the capsule breaks which can be put in a handkerchief and inhaled. This amyl nitras has got a peculiar acetone like odour. The effects start in 30 to 40 seconds and lasts for about 20 to 30 minutes. It is only effective when the attack is on. It is not of much prophylactic value on account of its action being very short. Where the attack is expected to occur, as when a man knows exertion is to take place and the pain will come on, or when he is likely to face an unruly audience—in these conditions he can ward off the attack by putting a pill of glyceryl tri-nitrate 1/100 gr. under the tongue at least 15 minutes before the expected strain or emotional disturbance, when the effect is likely to start in about 20 minutes time and goes on for the next three to three and a half hours; but when the pill is chewed, it may be felt in as short a time as 2 minutes and it lasts for about an hour and a half. If the attack is on, then also glyceryl tri-nitrate can be used, but the

pill has to be chewed. In some people it may cause severe headache and severe throbbing feeling in the head. Where these unpleasant symptoms are prominent, it can be controlled by giving a smaller dose of the pill, *i.e.* half or quarter for the first few occasions and as, slowly the effect wanes off, the dose of the pill can be increased. In between the attacks, measures that are useful are to have blood cholesterol estimation and if it is found to be elevated the same may be corrected by putting the patient on a low fat, low cholesterol diet (*Vide* annexure I and II) which I am giving below at the end of this article. This diet has been modified for vegetarians, and in addition to the diet, the patient is on nicotinic acid 100 mg. tabl. t. d. s. and heparin 5000 units I. M. twice a week for two or three months. The main principle of low fat, low cholesterol diet is to avoid fats of animal origin, particularly fats with a high melting point. Fats of vegetable origin like gingelly oil or groundnut oil can be used. If the patient is grossly obese, obesity should be corrected by putting the patient on suitable diet and giving him amphetamine preferably in the morning and noon before food and avoiding it in the night.

Stellate ganglionectomy used to be done before with some degree of success. If stellate ganglionectomy is not possible, then stellate ganglion blocking is of value in cases where the angina pectoris is occurring at frequent intervals and not responding to other lines of treatment. Stellate ganglionectomy will give more lasting results than the block. Even with normal functioning thyroid, administering either anti-thyroid drugs or doing a sub-total thyroidectomy may sometimes give relief from anginal attacks.

Recently we have done in a number of cases ligaturing of the internal mammary artery after the artery has given off branches to pericardium. By this procedure the pericardial branch gets dilated with time and patients get relief from anginal attacks. This operation is particularly of value in anginal attacks that follow coronary occlusion.

Portal Hypertension

A. L. ANNAMALAI*

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

PORTAL hypertension is a word recently come into vogue for a clinical entity where there is increased pressure in the portal venous system. The normal pressure in the portal vein is 100 mm. of water and it may go up to 500 mm. of water.

The causes for portal hypertension are:—

I. SUPRA-HEPATIC

(*a*) Congestive heart failure.
(*b*) Constrictive peri-carditis.

} Not of much clinical significance, because there is increased pressure both in systemic and portal veins.

(*c*) Hepatic vein thrombosis:

(*i*) Main vein: (Budd-Chiari-Syndrome)—Acute, subacute and chronic.

(*ii*) Small veins: Veno-occlusive-disease.

II. HEPATIC

Cirrhosis of liver:—

(*a*) Portal—commonest cause.
(*b*) Post necrotic.
(*c*) Biliary cirrhosis—late stage.
(*d*) Haemochromatosis.
(*e*) Wilson's disease.

} Rare.

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In this group portal hypertension is associated with varying degree of hepatic cellular failure. The prognosis depends upon the extent of associated hepatic cellular failure.

III. EXTRA HEPATIC

(*a*) Obliterative process extending from the umbilical vein.

(*b*) Infection spreading through the umbilical vein.

(*c*) Portal vein anomalies—seen in children with unexplained splenomegaly.

(*d*) Portal vein thrombosis.

(*e*) Splenic vein thrombosis.

As there is no hepatic cellular failure, the outlook is better than in the other group. (Group II).

The rise in pressure is brought about by:—

(1) Direct intra hepatic communication between the portal vein and hepatic artery,

(2) Structural disintegration and distortion in liver and

(3) Pressure by newly formed liver tissue. Normal liver lobule is supplied by hepatic artery (50% oxygen) and portal vein. (25 to 75% oxygen). In regenerated liver nodule the blood supply is from the hepatic artery alone.

The clinical manifestations of portal hypertension are:—

(*a*) Establishment of collateral circulation.

(*b*) Enlargement of spleen.

(*c*) Liver changes—normal, enlarged or shrunk.

(*d*) Ascites.

COLLATERAL CIRCULATION

(*a*) Seen in established portal hypertension of some duration.

(*b*) Lowers the existing portal hypertension.

(*c*) Helps to localise the anatomical site of obstruction. *e.g.* oesophageal varices mean obstruction must be beyond the left gastric or coronary vein and short gastric veins. In complete portal and splenic vein thrombosis oesophageal varices are absent. Caput Medusae: Intra hepatic obstruction in left lobe. Lateral chest veins: extra-hepatic obstruction.

(*d*) Warns about possible complications:—

(1) Neurological symptoms appear in cases with well marked collaterals, when given high protein diet.

(2) Bleeding from the collaterals.

Chronic oozing of blood and anaemia occur from the varices in the fundus of the stomach.

From oesophageal varices, haematemesis leading to anaemia, coma or death may occur.

(*e*) In splenovenogram there may be an apparent hold up of the dye due to the deviation of the dye into the well marked collateral circulation.

(*f*) Disappearance of the collaterals at one place may be due to lowering of portal hypertension by surgical operation, haemorrhage or due to appearance of fresh collaterals at other sites. (lumbar veins) or when the aetiological factor is removed—(stopping of alcohol) *e.g.* oesophageal varices.

(*g*) Absence of collateral veins does not rule out the diagnosis of portal hypertension because collaterals are not seen in portal hypertension of recent origin.

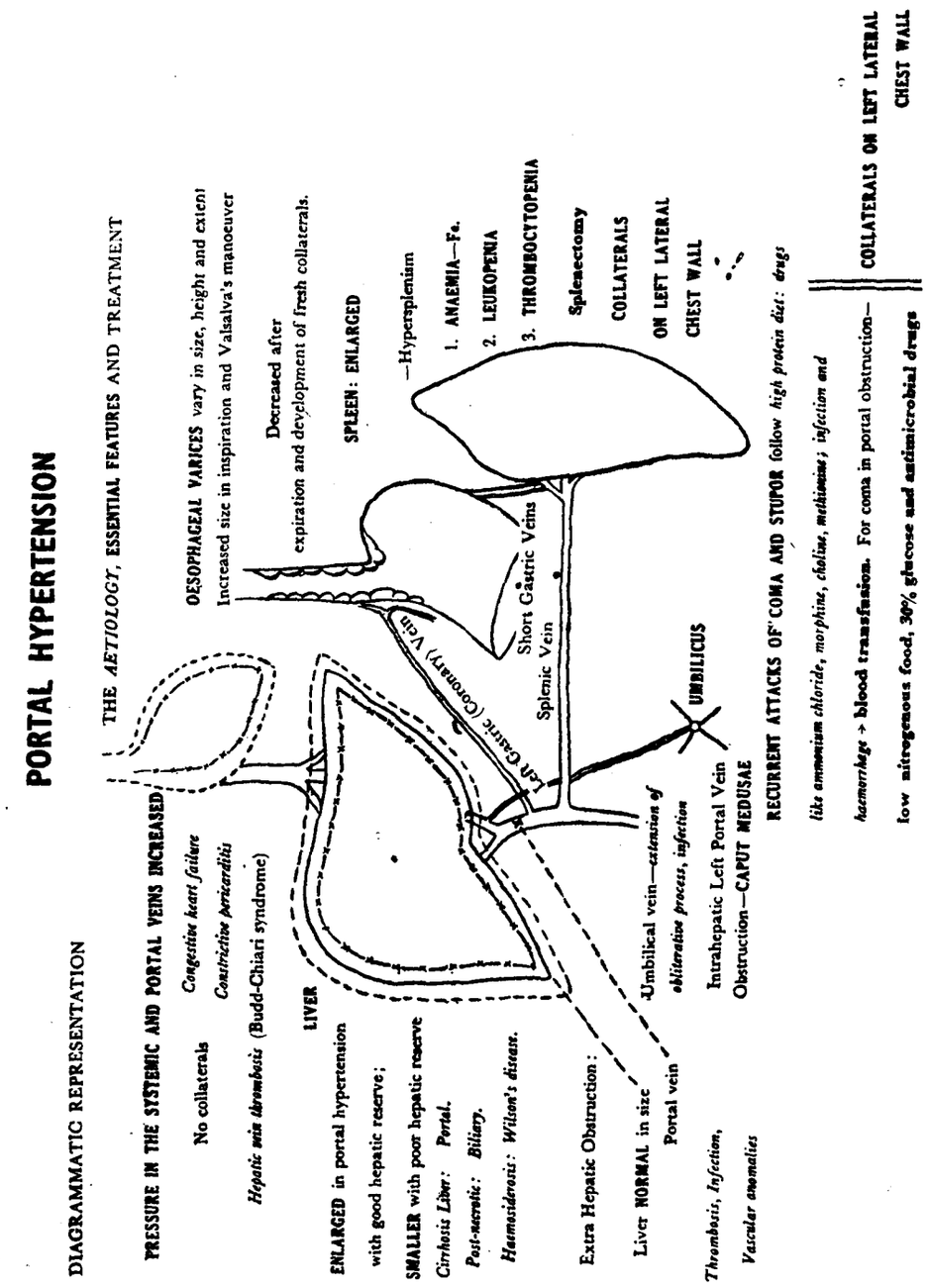
OESOPHAGEAL VARICES

Common cause is portal hypertension. It starts at the lower end and may extend up to the upper end of the oesophagus. The size of the varices is variable from patient to patient and in the same patient at different times. During inspiration, the systemic veins drain and there is greater flow from the portal vein, increasing the size of the oesophageal varices. During the Valsalva manoeuver, there is obstruction to venous return, and this increases the size of the varices. After the operation to relieve hypertension or the development of fresh collaterals at other sites, the oesophageal varices may disappear or become smaller in size. Re-appearance of oesophageal varices after surgery denotes that there is thrombosis or appreciable narrowing of the stroma at the site of the vascular anastomosis. Further surgery then is indicated.

Fatal and serious complications are due to oesophageal varices. Patient may die of severe or of repeated haemorrhage without medical treatment. Severe haemorrhage may give rise to anaemia in extra hepatic obstruction, and in hepatic obstruction to hepatic failure, and death if untreated. So the main treatment of haematemesis is to replace lost blood within an hour or two, to give Vitamin "K" i.m. and control the bleeding by balloon tamponade. (Sangstaken). Subsequent treatment is to overcome the anaemia with iron, to avoid straining and irritant foods, to neutralise the hyperacidity with antacid, to prevent oesophageal ulcerations, and to avoid too-much of proteins in the diet. Surgery is to be considered if the obstruction is extra hepatic or hepatic with a good hepatic reserve or where facilities for blood transfusion are not immediately available following haematemesis. The size of the oesophageal varices does not portray the degree of portal hypertension nor does it in itself call for surgery.

DIAGNOSIS OF OESOPHAGEAL VARICES

Oesophagogram with thin and thick barium at the end of deep inspiration and after Valsalva manoeuver, will show beaded appearance of negative shadow from the lower end



of the oesophagus extending upwards to a variable length. Oesophagoscopy, done with care, will reveal the presence of the varices. *Gastric varices in the fundus of the stomach* with a thin overlying mucous membrane is responsible for chronic oozing of blood and anaemia. It can be demonstrated with barium and aerated water drinks to supply gas for contrast. By gastroscopy the varices can be visualised.

SPLENIC ENLARGEMENT

Splenic enlargement is essential for the diagnosis of portal hypertension. The enlarged spleen is palpable or can be demonstrated in plain X'ray of the abdomen. The enlarged spleen gives rise to hypersplenism, which is responsible for pancytopaenia. (anaemia, leukopaenia and thrombocytopaenia). Splenectomy in the presence of pancytopaenia is useful to relieve the leukopaenia and thrombocytopaenia and to improve anaemia to some extent, but not useful to relieve portal hypertension because the fall in portal pressure is only transient. The anaemia is not fully corrected. If splenectomy is done in the presence of normal platelet count, there is the danger of thrombosis.

SPLENOVENOGRAM

Splenovenogram is done:—

(1) to outline the portal tract

(2) to localise the obstruction, (extra hepatic—the dye is held up at the site of obstruction, but in the presence of good collateral circulation the dye may give an apparent hold up, in hepatic obstruction the vascular pattern of the liver is altered or normal)

(3) to demonstrate the enlarged spleen and

(4) to show the presence of collaterals (serial-pictures both postero-anterior and lateral views) and

(5) to decide the line of surgical procedure.

LIVER

Liver is enlarged in cirrhosis when portal hypertension predominates and hepatic reserve is good. Liver is of normal size in extra hepatic obstruction and small in cirrhosis when hepatic reserve is diminished. Liver biopsy is useful to confirm the diagnosis of cirrhosis liver. Portalvenogram is indicated in emergency surgery, after splenectomy or when there is an apparent hold up of the dye due to the dye being deviated through the well marked collaterals.

The clinical manifestations of hepatic cellular failure may also be present in the case of portal hypertension due to intra hepatic obstruction. If the clinical manifestations are predominantly those of portal hypertension, surgery is to be considered. If the clinical manifestations are predominantly those of hepatic cellular failure, medical treatment is the choice, at present.

ASCITES

Oedema is due to hypoproteinemia resulting from parenchymatous damage. The localisation of fluid in the abdomen is due to portal hypertension. Result of surgery in the presence of ascites is not good.

The indications for surgery and medical treatment are well dealt in appropriate sections. The various surgical procedures and their choice form a special subject and of interest to a select few; hence not dealt with here.

The following points are to be borne in mind in general practice:—

(*a*) A routine examination for enlarged spleen (by palpation and/or X'ray) in all cases of haematemesis will help to diagnose portal hypertension.

(*b*) Avoidance of high protein diet, ammonium chloride, morphine, methionine, choline in the presence of good collaterals and neurological symptoms in a case of cirrhosis liver.

(*c*) Blood transfusion should be given as early as possible after haematemesis in cases of portal hypertension.

(*d*) Administering anti-microbial drugs (avoiding sulpha group) in cirrhosis patients with infection.

(*e*) If immediate medical facilities are not available to patients with haematemesis in remote villages, advise such patients to seek surgical aid in specialised centres with as little delay as possible.

(*f*) Cases with good hepatic reserve and with well formed collaterals who had haematemesis should be referred to surgical centres.

The article is based on Post-Graduate lectures of the Madras University and the lecture at the Annual Meeting of the South Arcot Branch of the Indian Medical Association.

Agglutination Tests in Diagnosis

N. R. RATNAKANNAN, M.D.*

MOST of the bacteriological methods employed in the laboratory for diagnostic purposes are based upon two main procedures, namely :

(*a*) Demonstrating the infecting agent by any of the usual methods like microscopy, culture, animal inoculation etc.

(*b*) Demonstrating the changes produced in the body as a result of the infection.

No doubt facilities for both type of tests must be provided to every medical officer as an aid to his clinical diagnosis but very often the tests like Bacterial Culture are not always within the reach of those working in smaller hospitals. It is not that he cannot make use of these tests but the sending of specimens for culture to a distant laboratory is not without handicaps. So tests based upon the second principle, namely demonstration of the changes produced as a result of the infection come in very handy for even these medical officers. The specimen required for these tests could easily be despatched.

Of the changes produced in the body as a result of infection, one important defensive mechanism that occurs is the formation of antibodies. The infecting organism acts as an antigen and produces the formation of substances called antibodies. These antibodies are essentially for combating the infecting organisms and thus help the body to overcome the disease. But there are two characters of antibodies that could be made use of for diagnostic procedures.

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(*a*) They are capable of combining with the corresponding antigen and there is specificity in this process, *i.e.* an anti salmonella antibody will combine with the salmonella antigen but not with a shigella antigen.

(*b*) Their combinations with the antigens are demonstrable by certain laboratory techniques. So by demonstrating the presence of the antibodies, an indirect evidence of the nature of the infection is obtained and in order to demonstrate these antibodies all that is required is to send the patient's serum to the laboratory which is quite a simple procedure.

The reaction of the antibody with the antigen can be demonstrated by various methods and the agglutination reaction is one of the methods. The principles of test were first outlined by Gruber and Durham in 1896 when it was shown that a serum prepared in an animal by repeated injections of an organism was capable of agglutinating a suspension of that organism. This was applied by Widal to the diagnosis of Typhoid fever and the same was found to be true of many other diseases later. But the usefulness of this method is not without limitations for one has to remember the

(*a*) The multiplicity of antigens in organisms which in turn produce a number of antibodies.

(*b*) The sharing of antigens by more than one bacterium, and

(*c*) Non specific reactions that may occur.

Even so the results offer quite a useful inferance and the agglutination reaction is a very useful procedure in the diagnosis of certain diseases. About 4000 agglutination tests are done annually in our department and in nearly a third of the specimens, some conclusion or other can be reached.

The antibody formation commences early in the disease, keeps on rising to a peak during the active disease process, then stays steady for sometime and falls later during convalescence leaving in the end a residual titre even after complete recovery.

The rise in titre of the antibodies during the active disease process constitutes a valuable information in the diagnosis. Invariably it denotes an active infection. Hence, the recommended procedure is to collect blood from the patient once in the early stages of the disease and another a few days later nearly after a week's interval, separate the serum and send the 'Paired Serum' to the laboratory for agglutination tests. One should take care to avoid Haemolysis and contamination. Asepsis in the bacteriological sense *i.e.* to avoid even in the non pathogens like the normal flora of the skin should be ensured.

The commonly used agglutination tests can be classified as:

(1) Tests where the homologous antigen is used, like widal reaction for the diagnosis of typhoid and other salmonella infections, tests for Brucella infections, Leptospira infections and Rickettsial infections. In these tests, the specific antigen is employed.

(2) Tests where a heterologous antigen is used like the Weil-Felix test and Streptococcus M. G. Agglutination test. In these tests organisms which are not the specific infecting ones but which are known to agglutinate with the Sera of these diseases are used as antigens.

(3) Tests where Haemagglutinations are used. For *e.g.*

The Middle brook and Dubos Haemagglutination test for Tuberculosis,

Cold agglutination test for Primary atypical Pneumonia, Fowl Cell agglutination test in Influenza and Paul Bunnell's test for infectious mononucleosis.

In all these tests the capacity of the antibodies to produce agglutinations of R. B. Cs. of different animal species is utilised.

It is not proposed to go into any detail regarding these tests but only the basic principles and the interpretation of the results as regards some of the commonly employed tests will be discussed.

The Widal Reaction.—In this test the patient's serum in increasing dilutions are tested against the commonly prevalent organisms causing Enteric infections and the result is expressed as the highest dilution of the serum which agglutinates the organism. It is necessary that an agglutination test for the H and O anti-bodies separately must be carried out as in some cases it is quite likely that the infecting strain may produce predominantly only one of these.

INTERPRETATION OF RESULTS

(1) It is necessary to take into consideration the normal titre of the population of the area. Usually this is below a titre of 50. Hence, a titre of 50 or over is to be taken into consideration for assessment.

(2) The next thing to consider is the stage of the disease. As already explained the test will be positive from about the 5th day onwards of the illness and continues to be positive well in the convalescence. But it may not be advisable to go by the text book pattern of the antibody curve as :

(*a*) It is difficult to get an accurate data of the day of the illness.

(*b*) The question of interference of antibody production by the administration of antibiotics is not settled. A good number of cases deviating from Standard antibody response curve are being recorded and hence it felt that too much importance to the titre of the antibodies in relation to the stage of the disease need not be attached.

(3) In an actual assessment of the value of titres :

(*a*) The H titre is not of much significance even if an increase in titre is demonstrated. More so when there is a history of protective inoculation. But in usual practice a titre of 200 and above may be held suggestive of the disease.

(*b*) The O titre can be counted towards infection more than the H titre. A titre of 100 and above especially when there is no history of protective inoculation within the previous six months is very significant.

(*c*) Above all a rise in titre of the O antibody can be held to be of diagnostic significance of an active infection.

(4) It is not necessary to look in for the Vi antibody for diagnostic purposes as this is usually associated with either H or O or both and hence tests for H and O will suffice.

BRUCELLA INFECTIONS

The diagnosis of Brucellosis is no doubt difficult but a satisfactory laboratory aid is the agglutination test. The patient's serum is tested against strains of Br. Melitensis and Br. Abortus in the same way as in the Widal Test. It is usual to get fairly high titres and titre of 100 or more is significant. Only 3 were positive out of 23 tested during the last four years. It is not known whether the incidence is so low. A plea has to be made for investigation for Brucellosis in all undiagnosed pyrexial cases.

WEIL FELIX TEST

Where facilities for specific diagnostic procedures for Typhus fevers are not available this test is quite a useful procedure. The principle of the test is the prevalence of common antigens in the Rickettsiae concerned and the strains of proteus used for the test namely OX 19, OX K, and OX 2. The Patient's serum is tested against these strains. It is usual to get fairly high titres. 100 of OX 19 and 200 of OX K is of significance. OX 2 is generally least agglutinated. 19 Positives were reported out of 282 cases referred during the last four years. The pattern of agglutination is as follows :

	OX 19	OX 2	OX K
Typhus—Louse borne ...	+ + +	+	—
—flea borne ...	+ +	+ +	—
Rocky Mountain type (Tick borne) ...	+	+ +	+
Mite borne Type ...	—	—	+ + +

COLD AGGLUTINATION TEST

The principle of the test is that in certain diseases like primary virus pneumonia irregular agglutinins which may sometimes be present normally in low titres are increased in titre and these agglutinins are capable of causing agglutination of human O cells in cold at a temperature of about 4°C. An important precaution in the sending of blood for the test is that the clotted blood should not be kept long in the refrigerator. The cold agglutinins are absorbed by the clot. Hence the serum should be separated as early as possible and the serum sent to the laboratory. The test is done by mixing the patient's serum with 1% human O cells keeping in Cold overnight and the reading of the result is effected while still cold. A titre of about 1 in 32 and more is of significance. A rise in titre is more valuable.

PAUL BUNNELL TEST

This test is used in the diagnosis of Infections Mononucleosis. The basis of the test is that persons suffering from Infectious Mononucleosis develop an irregular antibody against sheep red blood corpuscles in high titres. But in some normal sera as well as in those who have had Serum therapy before such agglutinins for sheep Cells may be present. So to rule out such possibilities the test can be made more specific by selective absorption of these antibodies with Guinea pig Kidney antigen which will not affect those due to Infectious Mononucleosis. The test is done is by mixing the patient's serum with 1% sheep red cells and incubated first at 37°C for 2 hrs. and then overnight in the refrigerator. Then a reading is made and the titre of agglutination is noted. A titre of 1 in 80 and more is of significance. When however selective absorption is performed even titres below 1 in 80 is of value.

CORRELATION TEST

Besides the agglutination tests enumerated so far; there is one more test which is at times quite useful in assessing the pathogenicity of an organism isolated from culture. It is not unusual to isolate an organism in the laboratory from Specimens

sent for culture whose exact identity it may be difficult to establish except probably to place it in the Genus concerned for *e.g.* a Salmonella which cannot be typed locally in the laboratory. Or some times an organism whose pathogenicity when isolated in that source is doubtful for *e.g.* Bact. Asiaticum or a Para Colon Bacterium when isolated from the blood culture. In these situations if it is suspected that the isolated strain is the offending pathogen, it is worthwhile testing the patient's serum for agglutinins against the strain isolated by performing a 'Correlation Test'. If the test is positive it may be a correct presumption that whatever the organism isolated may be, it is probably the cause of the disease.

Retro Caval Ureter

(Syn. Post-Caval Ureter; Circum caval Ureter and Pre-Ureteric Vena Cava)

Prof. T. JANARDHANAN,
T. J. VENKASWAMY & A. SUBBIAH*

RETRO caval ureter is a rare congenital anomaly resulting from the persistence of one of the embryonic veins forming the Inferior Vena Cava.

Hochstetter described the first case in 1893 and since then over eighty cases have been reported in the literature. Creevy analysed the retro caval ureters reported till 1948, and found that out of 38 cases, 22 were discovered in the dissecting room, 12 in the operating room and only 4 were diagnosed clinically. Familiarity with the existence of the condition, as pointed out by Creevy, has resulted in the recognition of a larger number of cases, during the past decade; and most of them were diagnosed pre-operatively and corrected surgically. This anomaly is of interest not only to the students of anatomy but also of great practical importance to the surgeon and as such several authors have extensively reviewed the historical, embryological, clinical and other aspects of this condition.

What is a Retro Caval Ureter?

It is a congenital vascular anomaly in which the ureter is found to pursue an abnormal course. After leaving the hilum of the kidney, the ureter passes medially behind the Inferior Vena Cava, towards the mid line, and may cross it either at a

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higher or lower level opposite the bodies of 3rd to 5th lumbar vertebrae and then runs downwards towards the brim of the pelvis. Thus the ureter follows a sinuous course running first vertically downwards, then upwards and medially behind the inferior vena cava at the level of the 3rd lumbar vertebra and then downwards and laterally toward the bifurcation of the common iliac artery beyond which it has a normal course in the bony pelvis. In an antero posterior uretero-pyelogram, this produces a characteristic S-shaped curve, which is typical of a retro caval ureter.

EMBRYOLOGY

Kidneys originate from the metanephros in the pelvis and ascend up cranialwards to meet with the embryonic longitudinal venous channels which have rich anastomosis around the ureter, forming peri-ureteric venous rings. Of the longitudinal venous channels in the embryo, the posterior cardinal vein lies lateral to the genital ridge while the supra cardinal vein lies medially. The ureter lies between them, passing in front and lateral to the supra-cardinal vein and then behind the posterior cardinal before it reaches the adult position in the loin. At about the level of the hilum of the kidneys, the supra cardinal vein on the right side establishes communication with another longitudinal vein, the sub-cardinal and after the establishment of the supra cardinal, sub-cardinal and inter sub cardinal anastomosis, the right post cardinal vein, and the left post and supra cardinal veins disappear, with the result that post renal segment of the adult inferior vena cava lies on the right side and is constituted in part by the right post cardinal vein at its formation lower down and by the post cardinal—supra cardinal anastomosis, the supra cardinal and the supra cardinal—sub cardinal anastomosis of the right side above. The ureter, therefore, lies lateral to the post-renal segment of the inferior vena cava in its entire course. If the post cardinal vein persists without disappearing and the supra cardinal disappears on the right side, then the ureter will lie behind a segment of the post cardinal vein in a part of its course, leading to this anomaly.

Fig. 1

Pyelographic course of Retro-Caval ureter.
A Opaque catheter in the ureter
B Retro-grade Pyelogram (*Courtesy Creevy*).

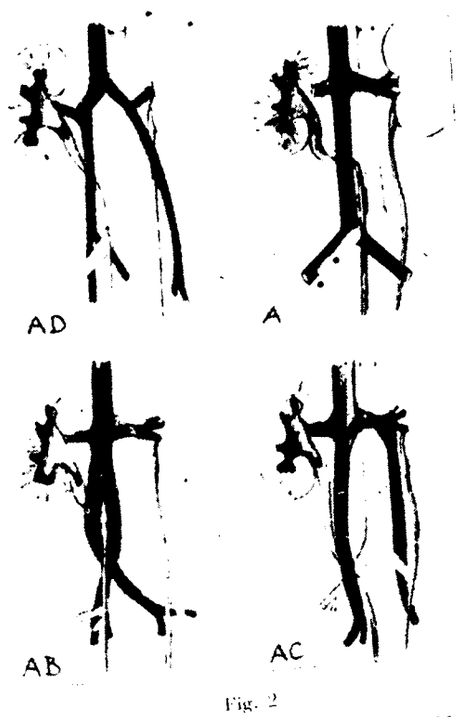

Fig. 2

Types of Retro-Caval ureters—(*After Huntington & Mc. Clure*).

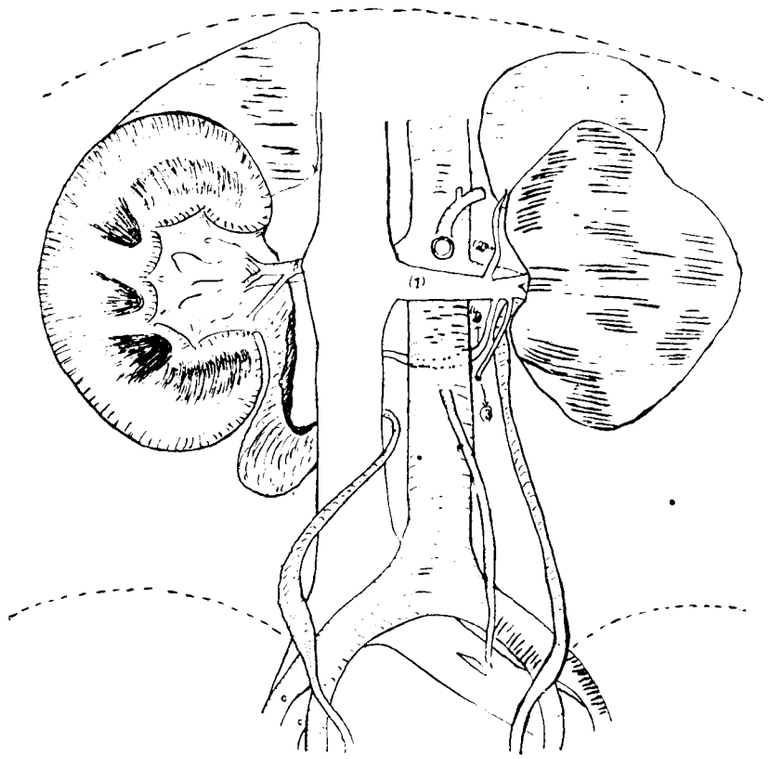

Fig. 3

(1) Left Renal Vein.
(2) Left Suprarenal Vein.
(3) Left Testicular Vein.
(4) Retro-Aortic Renal Vein.

Depending upon the persistence of the embryonic veins, Huntington and Mc Clure have described 15 types of inferior vena cava and have observed 12 types in the cat and other laboratory animals. Of these only 4 types have been met with in the human beings.

Type I.—Bilateral post caval ureters: The post cardinal vein on the right and left side persist as the right and left inferior vena cava and the ureter is seen winding round behind the vena cava on both sides. This bilateral retro-caval ureter is very rare and has been reported only once in the literature by Gladstone. This is the type AD of Huntington and Mc Clure.

Type II.—Single Vena Cava: The post cardinal vein persists on the right side giving rise to the major part of the adult Inferior Vena Cava and the ureter passes behind it on the right side. This is the commonest variety noted. (Type A of Huntington and Mc Clure).

Type III.—Both the post cardinal and supra cardinal veins persist on the right side giving rise to a double Inferior Vena Cava both lying to the right of abdominal aorta and the ureter passes through the ring formed by them. (Type AB of Huntington and Mc Clure).

Type IV.—Persistence of the right post cardinal vein and the left supra cardinal so that there is a Bilateral Inferior Vena Cava one on each side of the aorta, with the ureter passing behind the right vein. (Type AC of Huntington and Mc Clure).

Incidence.—This is met with more often in males than in females. De Carlo states that out of 40 cases only 8 have been reported in the female. Incidence in the dissecting rooms is

widely at variance from the hospital records. The incidence in dissections reported are as follows:—

Dial	reported in 1936	... 1 in 1600 cadavers.
Adachi	in 1937	... 2 in 1055 adults.
Pick & Anson	in 1940	... 1 in 570 cadavers.
De Carlo	in 1949	... 1 in 4185 (bodies at the Daniel Baugh Institute of Anatomy).

Though said to be rare, several authors have reported two cases each; Gladstone, Jacobson, Rotter, Randall and Campbell, Derbes and Dial, Laughlin, Pratt and Newton. Derbes has reported a third case. Heslin and Mamonas have reported 4 cases.

Signs and Symptoms.—It may be symptomless. Symptoms, if and when present, are usually those of obstruction, infection and stone formation with ureteral colic, pyuria and haematuria. Age is a factor. Symptoms manifest during adult life and in women after repeated pregnancy. Clinically, it has not been reported in children. All cases that came up for surgery had hydronephrosis. There are no symptoms pathognomonic of retro caval ureter.

Diagnosis.—When symptoms of obstruction are present, a retro-grade pyelogram or an X-ray with an opaque catheter in the ureter is essential for its recognition. According to Creevy, "failure to recognise a retro caval ureter by pyelography" is due to "unfamiliarity with the existence of this condition". "The course of the ureter is so typical that, once seen, it is not likely to be forgotten". Harrill has advocated stereoscopic pictures, Nourse and Moody oblique pyelo ureterograms and Goodwin et al have insisted on simultaneous catheterisation of the ureter and the Inferior Vena Cava and stereoscopic pictures to diagnose the condition. Heslin and Mamonas have stated that this possibility should be thought of and investigated in every case of unexplained hydronephrosis on the right side.

Surgical Repair.—In advanced cases, where the kidney is not functioning, nephrectomies, partial or total, have been done.

The following plastic repairs have been undertaken in those cases where the kidney function was normal:—

(*a*) Sectioning the ureter at the site of its crossing behind the vena cava, withdrawing it and reanastomosing it in a normal location. This has lead to post-operative stricture, requiring repeated ureteral dilatations.

(*b*) Harrill sectioned the pelvis of the ureter just above the uretero pelvic junction, unwound it and reanastomosed in the normal position, thus lessening the chances of stricture formation. This has been the accepted surgical procedure and has been followed by several authors.

(*c*) Lowsley sectioned the ureter at the uretero-vesical junction, freed its entire course and reanastomosed it to the bladder. This has resulted in complications.

(*d*) Corbus in 1954 has reported ligation and sectioning of the Inferior Vena Cava.

Goodwin et al in 1957 have reported sectioning of the Inferior Vena Cava and reanastomosing it after freeing the ureter.

We are reporting a case met with during routine dissections.

Case Report.—The specimen under review is that of an adult male, aged 30 years, who was admitted with fever on 29th May 1958 and died the same night. It is not definitely known whether the patient had any symptoms referable to the urinary tract.

On the right side, the ureter is seen passing from the hilum of the kidney first downwards and laterally and then ascends upwards and medially behind the Inferior Vena Cava at the level of the 3rd lumbar vertebra. It then descends downwards and laterally in front of the vena cava towards the brim of the pelvis and crosses it at the bifurcation of the right common iliac artery. The proximal segment of the ureter is dilated and has a sac like pouch before it turns medially as seen in the figure. The segment of the ureter lying behind the Inferior Vena Cava is narrow. The left kidney and ureter are normal.

This is the commonest type of retro caval ureter and is due to the persistence of the embryonic post cardinal vein on the disappearance of the right supra cardinal.

In addition to this ureteric abnormality, another vein is seen in this specimen which extends from the posterior aspect of the left renal vein to the right renal vein, crossing the aorta on the posterior aspect. This is called the Retro-Aortic renal vein. Thus a ring of veins is formed around the aorta, the left renal vein in front and the retro-aortic renal vein behind. Such a circum aortic venous ring is described as "Renal Collar of Huntington and Mc Clure".

SUMMARY AND CONCLUSION

A case of retro caval ureter met with during routine dissection is reported on account of its anatomical interest and surgical importance.

Though uncommon, retro caval ureter is not such a rare anomaly as it was thought to be. Familiarity with the existence of the condition has resulted in a large number of cases being recognised and reported in recent years, most of them diagnosed pre-operatively and repaired successfully.

We are grateful to the Dean, Madras Medical College, for having permitted us to use the material and for having encouraged us to publish this report. Our thanks are also due to the members of the staff and students of the department for their co-operation in the preparation of this report.

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Carcinoma of the Breast

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CONSTANTLY changing as the fires of ovarian activity wax and wane, the breast is often the site of tumours, benign or malignant. Carcinoma of the breast is one of the most common forms of malignant disease in women. Eleven per cent of all cancers occur in the breast. In spite of improved diagnostic and therapeutic measures, this lesion remains a major medical problem having an incidence much greater than cancer of the cervix. More than 16,000 women die of it annually in the United States and its incidence is increasing at the rate of 1%. However, the present outlook is not so discouraging when it is realised that 10,000 of the deaths could be prevented if the disease were treated in the early stages. The education of women to a correct method of examination every month and emphasizing the necessity of reporting to their physicians every 6 months or a year or at any time a suspicious lesion occurs is a big step forward.

Etiology.—So little is known about the cause of cancer of the breast that little hope can be entertained as to its prophylaxis. Recently, many possible factors have emerged that led to interesting speculation:—

(*a*) **Heredity.**—This is certainly worthy of consideration. Striking examples of familial incidence have been recorded and surely there is tendency in certain families toward the development of cancer.

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(*b*) **Trauma.**—This factor may be considered as significant in rare cases.

(*c*) **Predisposing causes.**—These include infections, abscesses, lactation, administration of estrogens and other carcinogenic agents play a part in the development of cancer.

Age.—Carcinoma of the breast usually occurs between the ages of 40 and 60. But it is not uncommon in the aged and certainly not unknown in the young. Nullipara are somewhat more liable to be affected than Multipara owing perhaps to the frequency of chronic mastitis in the former.

Pathological forms.—The pathological forms of cancer of the breast can be classified according to certain special naked eye or histological characteristics.

(*a*) **Scirrhus carcinoma.**—A hard scirrhus carcinoma is the commonest form of mammary growth occurring in women between the ages of 35 and 65. The growth is situated most often in the upper and outer quadrant of the breast; least often, the lower and inner quadrant is affected while the other two quadrants take an intermediate position as regards incidence. Usually, the growth arises in the substance of the gland fairly close to the nipple but occasionally an outlying lobule is affected first. In the axillary prolongation of the breast, a tumour may be mistaken for an enlarged lymph gland. Rarely both breasts are affected, simultaneously or in succession.

The tumour is of small size and is stony hard and it is easily felt by the flat of the hand. From the first, it is firmly fixed within the breast substance and later, from contraction of its tough fibrous stroma, it pulls upon surrounding structures. When the tumour is related to larger milk ducts, it may cause some elevation and fixity of the nipple at quite an early period. Later the nipple becomes deeply retracted. When the tumour pulls upon the ligaments of Cooper, the skin over it may be dimpled and later adherent. Eventually, the tumour becomes fixed and immobile upon the chest wall and it may ulcerate through the skin surface.

When the breast is cut across, the nature of the tumour is usually obvious. It is so hard that the knife may creak in the process of cutting and impart an almost gritty sensation. In the bisected breast, the tumour is seen to be of small size but invading the breast in all directions and it has no capsule. It is fibrous light grey or pinkish grey in colour and it retracts somewhat when it is cut so that the cut surface becomes slightly concave. Scattered through the tumour, there are often pale fibrous streaks and pin head yellow spots of necrotic epithelial tissue so that the appearance is aptly comparable to the cut surface of an unripe pear.

Microscopically, the tumour is a spheroidal cell cancer.

(*b*) The next variety is *Atrophic Scirrhus*, found in atrophic breasts in women over the age of 65, slow in its growth and with low malignancy: Breast shrunken, nipple deeply retracted and the skin over the tumour deeply puckered. The tumour is small, very hard and fibrous. Metastases develop only after a long period and death may be delayed for as long as 15 years.

(*c*) Medullary or encephaloid cancer has the same characteristics of the scirrhus variety but it is softer, cellular, more rapid in growth and wide-spread in its dissemination. It occurs in well developed breasts in younger women and forms a large soft mass that infiltrates widely. When cut across, it is spongy in texture or almost brain-like and haemorrhages and large areas of necrosis are common. This is also a spheroidal celled cancer. The tumour is vascular and the blood vessels are thin-walled and bleed readily.

(*d*) Acute cancer of lactation and pregnancy resembles encephaloid variety. It is highly malignant, grows rapidly to a large size and leads to an early fatal issue often in the course of a few months. The breast is swollen, painful and dilated veins may appear under the skin. The breast is hot and the patient has slight temperature, loss of appetite and malaise and consequently, the tumour is mistaken for a deep seated abscess and incised.

(*e*) Adeno-carcinoma, a term used by Halstead to describe certain malignant tumours which have a well merged glandular arrangement. In Dawson's opinion, the tumours are derived from ordinary epithelial cells of the breast and the pale appearance of cells results from degenerative changes. It is possible that other adeno-carcinomata arise from the malignant transformation of papillomata in ducts and cysts.

(*f*) Mucoid cancers are usually of large size, soft consistency, slow growth and late dissemination. The cut surface is composed of soft jelly like material, yellow or red. The cells contain the mucoid and the nuclei are displaced to one side giving rise to signet ring appearance.

[redacted]ct carcinoma arises from large milk ducts and is a form of adeno-carcinoma.

SPREAD OF CARCINOMA OF THE BREAST

1. Intra-ductal spread is an extension of the tumour along the lumen of the ducts and it is seen in its most extensive form in Paget's disease.

2. Direct spread is responsible for the growth of the tumour within the breast and sometimes for spread beyond the breast to fascia, muscle, skin and chest-wall.

3. **Lymphatic spread.**—The glandular spread is largely governed by the site of the tumour. From the upper and outer quadrant of the breast, the drainage is usually to the axillary glands first. From the medial half of the breast, the first extension may be to internal mammary glands, and from the lower medial quadrant, spread may occur rapidly to the abdomen.

4. Blood spread occurs in late cases to the lungs and brain and to certain parts of the skeleton.

5. Trans-coelomic spread occurs if the tumour reaches the peritoneum by extension from the lower medial quadrant of the breast through the rectus abdominis.

SYMPTOMS

The symptoms are as follows:—

1. Lump in breast;
2. Dimpling or retraction of skin or nipple;
3. Discharge from nipple;
4. Pig skin appearance;
5. Eczematous eruption or ulceration of nipple;
6. Edema of skin over breast;
7. Edema of arm;
8. Inflammatory reactions;
9. Axillary mass;
10. Distant metastasis.

It is now accepted that on inspection, the configuration of the breast is normal in "early clinical carcinoma"; that on palpation, a swelling in the breast of a woman of any age is cancer until it is proved otherwise; that a hard lump in the breast unattached to the skin is the earliest sign of carcinoma and that the cardinal signs mentioned above like adherence to the skin, a retracted nipple and palpable axillary nodes are the signs of long standing disease. It is also agreed that the inaccuracy of the clinical findings is greatest in the stout patient in whom fat conceals from palpation both the tumour and the glands; that no case is as early as it seems and that negative axillary finding and non-adherence to the skin are compatible with the presence of metastasis in glands which cannot be palpated clinically; and finally that it is the doubtful lump which excites our special interest and sense of urgency because it is in just those patients in whom the cardinal signs are absent and the diagnosis is uncertain—if promptly treated—that the chances of cure are highest.

Although delay in diagnosis and treatment is frequently the fault of the patient, it has been shown that the doctor and the surgeon are frequently also at fault in this matter. Two mistakes are common: (1) To ask the patient to report back for re-examination in a month or six weeks. If the condition shows little change, the doctor's dilemma is not resolved as the condition may still be a slow growing tumour. If sufficient changes occur to enable a definite diagnosis of cancer to be made, valuable time has been lost. (2) An even worse course to pursue is to leave it to the patient to report back if she notices any change in the breast condition. This may be disastrous.

SPECIAL AIDS TO DIAGNOSIS

There is no special aid to diagnosis to compare with biopsy which must be carried out under general anaesthesia whenever doubt exists. The tumour should be excised, the surgeon being prepared and having the patient's permission to proceed to mastectomy if by macroscopic or immediate microscopic examination of the tissue removed, the diagnosis of carcinoma is confirmed. It is preferable to make a decision at once and proceed to the major operation than to do the biopsy and wait for 7 to 10 days for the pathologist's report.

Transillumination of the breast may give some help in diagnosis especially in differentiating a tense cyst with clear fluid from a tumour. Aspiration can be done but the possibility that carcinoma may exist in the wall of the cyst must never be forgotten.

Once the diagnosis is made, the patient should not be put in the waiting list. The identification of a lump in the breast is an emergency operation. Everyday counts and one should not wait for the cardinal signs of cancer to occur. Thus a period of observation is often known as a period of lost opportunity and is no longer justifiable in the treatment of the doubtful breast lesion. These patients with doubtful breast lesion must be given special priority for biopsy. It is inhuman to leave these unhappy women languishing and metastasising upon a general waiting list.

TREATMENT

The treatment of carcinoma of the breast is not yet standardised throughout the world. The forms of treatment available are:—

1. Radical operation with or without radio-therapy.
2. Radio-therapy with or without radical operation.
3. Simple mastectomy with radio-therapy.

Staging.—All patients are staged at the time when they were first seen according to the Manchest classification (1946). The whole purpose of staging is to separate those cases which may be treated by the radical operation from those that must not be treated by radical surgery. This is a clinical classification and is not modified in any way by subsequent operative or histological findings.

Stage I.—The growth is confined to the breast and is unattached to the skin and with no glands palpable in the axilla.

Stage II.—This is the case with a lump in the breast either attached to the skin or with palpable axillary glands or both. Patients in both these stages are generally suitable for treatment by radical surgery.

Stage III.—The growth is extending beyond the corpus mammae as shown by:—

(*a*) The skin is invaded or fixed over an area large in relation to the size of the breast;

(*b*) The tumour is fixed to the underlying muscle and the axillary nodes may or may not be palpable.

Stage IV.—The growth has extended beyond the breast area with :—

(*a*) Fixation of axillary nodes ;

(*b*) Tumour fixed to the chest wall ;

(*c*) Supraclavicular nodes enlarged ;

(*d*) Visceral skeletal metastases.

Stages III and IV are unsuitable for radical surgery and may benefit from palliative local mastectomy.

Treatment in stages I and II is a radio-surgical problem and the part to be played by X-rays and by surgery must be determined separately before embarking upon either. The order of preference can only be worked out to the best advantage if surgeon and radiotherapist see each patient together and together plan and agree on the method of treatment.

Radical versus Conservative Surgery.—Since the turn of the century, radical mastectomy has been the sheet anchor in the treatment of operable cancer of the breast. We have now, after more than 50 years of experience, come to a parting of the ways; there are surgeons who would retain or even extend the radical procedure still further and there are others who will banish it forever from the surgical armamentarium. These divergent opinions have arisen from a general dissatisfaction with the existing results of cancer of the breast. They represent only opposite points of view—the one school placing their confidence in radio-therapeutic methods and the other in radical surgery.

Handley and Thackeray have shown that the internal mammary group of lymph glands are invaded earlier and more often, than we formerly thought. This chain of lymph glands is therefore situated outside the range of standard radical operation. This observation has lent force on the one hand to those who favour radio-therapy combined with conservative

surgery and on the other, has stimulated some surgeons to extend the radical operation to include the internal mammary chain. These observations have forced us to ask ourselves two questions :—

1. Should we do a biopsy of the internal mammary and supraclavicular glands in all cases of cancer of the breast to determine the extent of the disease before deciding on the treatment ?

2. Secondly, in view of the known extension of the disease, should we practise (*a*) extended radical operation ; (*b*) standard radical operation or (*c*) some form of conservative radio-surgical measure.

The biopsy of the internal mammary chain even in skilled hands is not without its dangers.

Extended radical operation.—Largely based on the newly knowledge developed by Handley and Thackeray, two American surgeons have undertaken aggressive steps towards meeting the problem. Dr. Owen Wangensteen, Professor of Surgery at the University of Minnesota, has extended the radical mastectomy to include the lymph glands of the anterior mediastinum and also those in the lower part of the neck.

Dr. Urban attempts to meet the problem of the invasion of the internal mammary chain by an *en bloc* removal of the chest wall, including the ribs and sternal edge area extending from the 1st to 5th rib including the internal mammary artery, vein and chain of lymph nodes. The chest wall defect is replaced by fascia lata. The chest cavity is connected to underwater drainage. According to Urban, his method is a logical extension to meet the new knowledge recently developed on the subject of breast cancer. In procedures of both Wangensteen and Urban, it is too soon to know their five years salvage or to compare results with those of the Halstead radical mastectomy.

Unquestionably, procedures other than those of Wangansteen and Urban will be coming along to meet the challenge. Until cancer research gives us an injection to cure this dread disease, surgery will probably have to continue to bear the load of cure.

THE RADICAL OPERATION

Radical mastectomy combined with radiotherapy remains the best treatment available for stage I and II cases. Those who continue to practise the radical operation do so not because they find this mutilating operation to their taste but because they find it still confers great benefits upon a significant number of patients in whom the carcinoma has only spread just beyond the confines of the breast.

OPERATIVE TECHNIC

While the exact technic of surgeons varies widely, most of them follow the principles founded by Halstead and Willymeyer which may be stated as follows:—

(1) Excision of a large area of skin over the breast.

(2) Excision of both pectoral muscles.

(3) Clean dissection of axillary space from base to apex.

(4) Removal of all tissues including the breast in one mass.

Many types of incisions have been prescribed and perhaps all have some merits. I am of the opinion that the incision that is used should be best suited to the individual patient, taking into consideration the locations end size of the tumour and the size of the patient, either obese or thin. In the process of dissection, the long thoracic and the thoraco-dorsal nerves should be preserved unless they are involved in diseased lymph nodes. Good haemostasis and drainage of the wound must be done to prevent serum from accumulating under the flaps.

When the skin flaps cannot be brought together without tension, the raw area can be covered by a skin graft.

POST-OPERATIVE CARE

Shock due to excessive blood loss should be treated by blood transfusion. The patient should be nursed with the arms supported in an abducted position. Drains are removed on the second or third day and the shoulder movements should be carried out after the wound has healed.

CONTRA-INDICATIONS TO RADICAL OPERATION

(*a*) When primary growth has attacked the bony thorax.

(*b*) In the presence of cancer en cuirasse or of subcutaneous nodules or skin infiltration situated more than 2 or 3 inches from the primary growth or of extension to the opposite breast or axilla.

(*c*) If there is a fixed mass of growth in the axilla evidently adherent to its walls.

(*d*) If there is oedema of the arm.

(*e*) If the supraclavicular glands are enlarged, hard and fixed.

(*f*) If there is evidence of visceral or bone-metastasis.

(*g*) If there is incurable constitutional disease, tuberculosis or diabetes for example, likely to be fatal within a short period or to lead to post-operative fatality.

(*h*) If the growth is of the acute fulminating type.

SIMPLE MASTECTOMY

McWhirter, a radiologist in Edinburgh, some years ago, having been discouraged with the five years salvage by radical mastectomy, decided on a new plan of attack on the problem. He together with his surgical colleagues at the Royal Infirmary launched on a plan to perform a simple mastectomy for breast cancer to be followed by intensive x-ray therapy to the axilla, supraclavicular and internal mammary areas. To the astonishment of the surgical and radiological world, this plan in their

hands seems to have been as effective as that of radical surgery. This procedure of simple mastectomy and radio-therapy has now been on trial for over 10 years and the 5 years salvage has been 55% in the 2000 cases that have been presented by McWhirter.

In the New York Memorial Hospital, the 5 years salvage after radical surgery has been 54·4%. Occasionally, a great expert like McWhirter may be able to accomplish such a thing. Radio-therapy was usually commenced about the tenth day after simple mastectomy and the total tumour dose of 3,750 r. was given in a period of three weeks.

Simple mastectomy followed by post-operative irradiation to the chest wall and the undissected axilla is being practised by some surgeons in place of radical operation. The view is that if the disease has spread to the axilla, surgery will serve only to disseminate it still farther and if the disease is confined to the breast, dissection of the axilla is unnecessary according to McWhirter.

The advantages claimed are:—

(1) High survival rate;

(2) A lower operative mortality;

(3) A better functional result, and

(4) A lower incidence of post-operative oedema of arm.

The disadvantage is that, cancer cells may remain in the axillary glands and there is the possibility of their recovering their activity.

The question is, can x-rays in Stage I and Stage II restrain the local growth and spread of carcinoma in the axilla more effectively than operative clearance? The answer is not yet known. The advocates of x-rays believe that the cancer cells either disappear or be rendered harmless by fibrous encapsulation, if the irradiated tissues are not disturbed by operation. Until

longer survival rates are published, it is not possible to assess the final place, conservative surgery combined with radio-therapy is likely to occupy in the treatment of early cancer of breast.

Thus, simple mastectomy combined with irradiation of the undissected axilla should always be practised in (*a*) all bad risk cases; (*b*) when there is a combination of adverse factors present, such as age over 65, a history of rapid growth, wide attachment to the skin, when there is a four quadrant carcinoma and when the site of the tumour is in the inner hemisphere and lastly, in all cases of stage 3 and some in stage 4 as a palliative procedure.

X-RAY TREATMENT

Pre-operative irradiation is given with the intention of sterilizing or restraining the activity of the tumour and the glands. This treatment is indicated (in the skin-short case) for ulcerating carcinoma and for the quadrant tumour. It has the following advantages:—

(1) Pre-operative irradiation is more reliable, in that there is no delay in starting the treatment, whereas post-operative irradiation may be long delayed by some complication of the operation, such as flap necrosis.

(2) If x-ray treatment precedes operation, any cells which may subsequently be disseminated may be either dead or so devitalized that they are not harmful.

(3) It is probable that the skin will tolerate a heavier dosage of x-rays if its blood supply has not been disturbed by previous operative trauma. In cases where pre-operative x-ray therapy has been given, any subsequent operation would become difficult because of increased bleeding. Sloughing of the skin flaps may also occur and it is advisable to do the operation after six weeks so that the skin regains its natural healing qualities, but the time interval should not be long enough to allow regrowth of tumour cells.

Another disadvantage is that the patient has to wait for 5 to 10 weeks before he could undergo the operation and this waiting can be very irksome and in some patients, it causes marked mental upset. The next disadvantage is that some patients may refuse operation altogether especially if the lump disappears after x-ray treatment.

Post-operative x-ray treatment.

Post-operative irradiation is given to destroy any islets of active cancer cells which may still remain in the field of operation after the primary tumour and glands have been removed. The area irradiated includes the chest wall, the axilla, and the supraclavicular region. The treatment should be started as soon as the wound is healed which is likely to be anytime after the tenth post-operative day.

In the frail, in the elderly and in those who have had a slow convalescence following the operation, it is better to withhold post-operative x-rays; the treatment can be exhausting and may defeat its own ends if we insist upon it regardless of the general condition of the patient.

Inoperable cases.—Radical surgery is absolutely contraindicated in patients who belong to Stage III or Stage IV.

Treatment of advanced carcinoma of the breast.—There are a number of palliative measures which may be used in the treatment of advanced carcinoma of the breast. They are:—

(*a*) Local mastectomy—Such treatment rids the patient at one sweep of a lesion which is not only painful and offensive but requires frequent change of dressings. The raw area left is covered by a split skin graft.

(*b*) Deep x-ray treatment may be of great value in the treatment of the ulcerating carcinoma fixed to the chest wall and for multiple skin nodules, glandular masses and metastases in bone, although the ultimate prognosis is, some of these patients survive for considerable period with well controlled x-ray treatment.

(*c*) Bilateral oophorectomy and ovarian irradiation. Bilateral oophorectomy should be given serious consideration as a delaying measure in all premenopausal patients with advanced cancer of the breast. This procedure was introduced by Beatson as long ago as 1896. The results are variable but occasionally dramatic. If ovaries cannot be removed, then ovarian irradiation reinforced by androgen therapy is an alternative. This method is not as effective or lasting as surgical castration, but is to be preferred when the hazards of anaesthesia are high, especially when the patient has pulmonary metastasis.

(*d*) **Hormone therapy.**—Hormone therapy is so uncertain and unpredictable in its effects that is should only be considered in advanced cases like inoperable metastasis and recurrent carcinoma and in whom local surgery or radiotherapy is not possible. There is no recorded case of a "cure" of the breast that can be attributed to hormone therapy but there is good evidence that palliation can be produced in one-third of the patients. The rule laid down by the Committee on Cancer and Steroids is the following. If the patient is under the age of 60, give her androgens; if she is over 60, give her estrogens. Androgens should be used before the menopause, in all postmenopausal women up to the age of 55, and in women over this age, if estrogens fail or are not tolerated. The dosage of Testosterone is 100 mg. weekly. In older women, estrogen in the from of Stilbestrol is the hormone of choice. The dosage varies in different hands but 5 mg. twice daily by mouth or 5 mg. by injection may be taken as an average. The effect of hormone therapy is that the primary tumour may undergo reduction in size, the visceral metastasis may reduce in size or actually disappear, and the skeletal metastasis may undergo recalcification. Complete or partial relief of pain and a sense of well-being occurred in more than 45% of patients with advanced cancer.

For the past four years, adrenalectomy or hypophysectomy has been considered for all patients with advanced breast cancer, in whom the possibilities of surgery, irradiation and hormone therapy were exhausted. After bilateral adrenalectomy, regression

of tumour and relief of pain have been observed, but the remedy is a desparate one in a very sick patient and the results are unpredictable. These patients have to be maintained on cortisone and the procedure cannot be done unless hormonal substitution therapy is available.

Hypophysectomy eliminates the pituitary hormones and profoundly suppresses ovarian and adrenal function in a way comparable to removal of these glands. In view of the favourable responses, hypophysectomy seems preferable to adrenalectomy in treatment of advanced breast cancer. This procedure may produce good palliation in selected cases but the greatest disadvantage is that it produces severe metabolic derangements and should be recommended only after careful evaluation of each patient.

Although the longest survival after hypophysectomy was a year longer than the longest survival after adrenalectomy, neither procedure appears to hold significant promise for permanent cure.

CONCLUSION

At present, there are two schools of thought in the treatment of cancer of the breast. McWhirter, after his intensive study, believes that the results of simple mastectomy are superior to those of radical mastectomy, while Wangensteen and others advocate a more radical and extensive surgical procedure. The problem is not yet solved and final opinions cannot be rendered. Certainly it is hoped that the necessity for such procedures may fade away completely in the future but a patient with cancer of breast cannot await for some future discovery of a biological or chemotherapeutic agent for cancer control. Although no definite conclusions can be drawn from the statistics and results reported by numerous clinics, it would appear that standard radical mastectomy combined with irradiation remains the treatment of choice. To-day the prospective patient, after hearing the great strides that surgery has made, has become more inclined to the view that the hazard of surgery is less than the hazard of delay.

The Other Side of the Mirror

NAMAK AUR MIRCHI.

THE Medical Services have responded with vigour and gusto, to the increased tempo of the Second Five Year Plan, now in full swing. Primary Health Centres and Family Planning Clinics have penetrated the thick crust of ignorance and superstition in remote hamlets, and raised rustic standard of living. Like everything else, planning too has its other aspects. It is one thing to plan on paper, parked on a 'bug-proof' chair, with a cushion, shoved for comfort, underneath the site of election. It is quite another affair altogether to translate the resulting blueprint into actual field work.

Not long ago, a Board, outside a Taluk Head Quarters Hospital, proclaimed the opening within its precincts of a Rural Family Planning Centre, with full complement of armaments. The sanctioned staff were at there action stations, every working day at 8 a.m. on the dot. The woman assistant surgeon, in charge of the Centre, was a pious soul accustomed to invoke the name of the Almighty before commencing her avocations. Every morning she started the out-patient register with the entry "Serial No. 1, Name: Arokya Matha, Disease: Constipation". Insult, through an aperient or an enema to "Our Lady of Health" to relieve her diagnosed state, was not added to the injury inflicted daily on the Virgin by binding her bowel. The simple doctor continued her devotion in the same strain, blissfully ignorant of the merriment that her manifestations of reverence caused all round the hospital.

One fine morning, a fifth para-amenorrohea of over thirty weeks—walked in and made the Centre hum. Approaching the

doctor the visitor said :—" Now that you have come out into the open with a board up, give me an injection, get the stuff out, and be quick about it"; that was much more than what the planners had ever bargained for. The doctor was staggered. Shuddering, she pungently pointed out to the pregnant woman, that criminal abortion was not undertaken in the hospital. The woman was not convinced and became assertive. A crowd collected. The situation was absolutely out of control, when the chief male doctor was summoned to lend a hand. He was a wizard who always advanced on the line of least resistance. He quietly escorted the expectant visitor to the examination room, followed by his godly colleague. He ran his stethoscope all over the enlarged abdomen, the chestpiece lingering long over the umbilicus. Finally, feeling her pulse he pronounced that it was too late for any relief by injection. He advised her admission into the hospital, for confinement when a permanent solution would be offered. Incidentally he canvassed a candidate for puerperal sterilisation. The way in which he put it across made the woman feel that it was a pleasure to go the rest of the way to full term, to attain sanctuary at his surgery. The uproar was put down and order was restored. The crowd melted away everyone grinning from ear to ear.

The foregoing is not the one and only instance. Similar requests are far too many, and are not complied with, for obvious reasons. The assistance of quacks and unscrupulous persons is then sought, with disastrous consequences. Madras always is in the forefront. In this age of Sputniks and the sub-four minute mile, it is the only state up-to-date to use surgical techniques for contraception. Why not go all out, relax rigid conventions, and move forward further? There is a growing demand for termination of pregnancy, for limiting the size of the family. The parallel euthanasia is available elsewhere as a humane exit for painful, incurable maladies. To those who have taken the cue from the classical Kusela, the addition of one more mouth to feed should prove to be the last straw. For them the claims of evacuating the products of conception should be considered in terms of " the greatest good for the greatest number".

A married woman nurse, as is the practice was attached to the Centre. She had also to attend the Primary Centres close by. One of those had to be reached in three stages: the train for the first leg, a bus for the next, and bullock cart for the third. The nurse was herself in the family way. Often she developed nausea and vomiting *en route*. The preliminaries for a transcontinental flight were rigorously observed by her, before she commenced her tour. Fortified by a couple of 'Sealeg' tablets she started her rounds. Avomine pills, glucose powder, and barley water were carried to cover the last lap. Any time, one or the other of the above three conveyances was expected to be commissioned to serve as a delivery board. The cross country trek was considered the best bet. The bus was the close second favourite. The train had the longest odds. By way of abundant caution, a midwife, with her outfit, accompanied the nurse to cope with emergencies, in transit. However before matters were brought to a head, the nurse withdrew, from the scene of her official labours, on maternity leave, to deliver normally in normal surroundings—in her house.

On her first visit the villagers gave the nurse the coldest of cold shoulders. Several were intrigued by her. The men had an impression that she was a menace-cum-spy on their privacy, let loose in their midst to put the backs of their women folk up. The subsequent trip was turbulent. The foam tablets distributed by her, on the previous occasion, produced a good amount of froth, meanwhile. The temper of some of the lusty louts bubbled and boiled over. Hooligans set upon the nurse, called her names, ordered her to decamp under threats of assault and battery. Abandoning her possessions, the nurse panicked and took to her heels. With the nurse on the run, the roughs threw in a running commentary, and fired a caustic broad-side on physicians' healing themselves, and also on occupants of glass houses. The local headman was instructed to throw his weight about, and assure security to a public servant on duty. Overnight the villagers adopted nonviolent tactics. When she went again, the nurse discovered that all able bodied, fertile

females of the species had disappeared, presumably in quest of agricultural pursuits. Those left behind, to hold the fort, and keep the home fires burning, were in the extremes of age under ten and over sixty. The remnants were absolutely immune to the invasion by the nurse, armed with different sized diaphragms, a variety of jellies and other offensive weapons. Progress in that primitive outpost was indeed slow and painful.

In Family Planning Centres the presence of personnel who do not practise what they preach goes against the grain. To encourage married members of the staff to give a positive lead, they may be given an annual bonus, payable preferably on the eve of 'Ganesh Chathurthi' day, in commemoration, of the perfect example in limitation set by that God, who chose to remain celibate. Spinsters, who have already pierced the menopausal barrier, if employed, preparatory to their retirement, are the ideal solution. In these centres, for propaganda purposes, due to some unknown reason, the accent appears to be on the fair sex. Equal opportunities are not afforded to both men and women to hear the gospel of contraception. The male counterpart of the woman nurse is missing. The men are left in the lurch, to fend for themselves, so to speak. Perhaps it is an attempt to tackle two birds with one shot. In any case, sauce doled out to the goose will be passed on to the gander. The knowledge acquired by the wife, will be imparted to the husband by a series of curtain lectures, under congenial conditions. So, why then have another separate unit to boost up the stock for Family Planning? So far, the cry of negligence has not been heard, and no masculine voice has been raised in protest against the discrimination.

The 'Madhar Sangam' (Ladies' Society), of another nearby village, invited the woman doctor to enlighten them on birth control methods in vogue. After the routine coffee, snacks, gossip, and garland, the doctor rose to address the gathering. She was flummoxed. Boys and girls of the school going age, still clinging on to their deciduous teeth, constituted the bulk of her audience.

She was like the cat on the wall. Whether to display the accessories in her bag, with illustrations on the blackboard—so thoughtfully provided by the organisers with a box of assorted coloured crayons—and indoctrinate into juvenile minds the axioms laid down by Malthus, or to beat a retreat home sweet home, and call it a day, was the question. The frame of coloured beads, a familiar object to the listeners, brought over by the doctor to explain the intricacies of the rhythmic school, while increasing her distress, raised the curiosity of the younger generation to a feverish pitch. Somehow on the spur of the moment, the lecturer became suddenly inspired. She adroitly switched over to the theme of 'Mens Sano in Corpore Sano'. She advocated a full measure of fresh air, sunlight and good food for improving all families. She even fitted the frame of beads into her scheme for rural welfare. She advised each household to provide itself with such a contraption, exploiting local talent and raw material. To tick off the tucking in of the daily bread by the family, after exposure of its members for a *safe period* to air and light, the lady of the house should every night, before retiring to bed, lower one bead from the top row to the vacant rung below. The doctor deserved the applause, and earned the outsized which the kids presented her with as a parting gift, in token of their admiration of her lucid exposition of the counting frame.

On the way back, she confessed to her companions, her embarrassment, when confronted by the youngsters. The wag who travelled with her, remarked that the speaker ought to have just said: "Peasants! Budding citizens of Bharat!! Prospective fathers and mothers!!! Because your forebears did not have foresight, you are all here. Sooner or later all of you will enter the ring, to have a crack off your own bat. Keep in step with, and march to the latest tune. Start your education straight away. I wish you all, when the time comes, well planned parenthood" and no more.

Due to bad antecedents Vasectomy, for family limitation, had a bad reputation in the aforesaid town. Sometime previously all on the same day, one after the other, three V. I. Ps. of the place underwent a 'hat trick' of Vasectomies, at the hands of a leading local Medical Practitioner. This was followed, on the next day, by a similar operation on a still more important Government Official. These manoeuvres were accomplished to a fanfare of trumpets. The publicity brought repercussion in its wake. Consternation was caused a few months later, when the wife of the first V. I. P. conceived. Scandal reared up its ugly head. The lady involved, the target for mud slinging, was in an uneviable state. Soon the second V. I. P. a Mohomedan followed suit. His four consorts also individually repeated the performance of the first V. I. Ps. wife. Speculation was rife. The third V. I. P. had it, when his partner in life also toed the line of failures. The Government man rose to the occasion, and put on a star turn, after the definite interval of a year. His better-half stole the show away with twins. Confusion was worse confounded, when each of the famous four with null and void transactions, had still further increase of his progeny. The four negative operations stirred up the town. Public opinion condoled with the four, absolved them from any blame and cleared them of all stigma. A dim view was taken of the whole procedure, which was condemned lock, stock and barrel as useless, and good for nothing. One of the V. I. Ps. owned three streets and a fleet of cars. He was proposing to leave for the United States in search of an infallible remedy, when the current acute shortage of dollars all over intervened, and confined him to his ancestral abode.

One or two futile efforts might have been quietly slipped under the bushel, and inurned for ever. But the all time record, the uninterrupted flush of four failures, impelled the profession to investigate. The doctor under dissection, was leading ad astra, and hence was unapproachable. An *ad hoc* committee constituted itself, like Phoenix, from the ashes of a defunct local

Medical Association. The committee held a full dress debate, in camera, to decide whether it was really the cord or some other structure that was messed about; if the cord, then to determine the *modus operandi* that produced such deplorable results. Discreet inquiries revealed that the private practitioner, the architect of all the hubbub, in good faith, had without resection, ligated the cords with thin absorbable (one nought plain) catgut. It was an uphill task for Vasectomy to make any headway there.

The other side of the mirror is neither bright nor it is ever exposed to view. It is distinctly different from its fellow. The path of the People's Plan bristles with problems, and is strewn with difficulties. The gap, between work on paper and in the field, is wide and deep. Execution of the medical part of the programme needs tact, resourcefulness, and ingenuity. Much has been achieved. Yet more remains.

Acute Appendicitis in Childhood

Dr. K. VASUDEVAN*

APPENDICITIS is a fairly common intra-abdominal lesion requiring surgery in childhood. In the Surgical Unit to which the writer belongs, there has been seven operated cases in the last three years (the total number for all ages being fifty-eight). Childhood appendicitis is different from that in the adult in that the reaction of the individual to the disease is more grave in the former. The pathological process is more rapid and deadlier. This is because of difficulty in early diagnosis as well as the child's susceptibility to progressive peritonitis. The omentum in the young is thin and tenuous, thoroughly inadequate to spread its protective mantle over the smouldering appendix. The appendix itself is relatively larger and prone to occupy varying positions rendering diagnosis proportionately difficult. Often it is children who aro victims of ill-advised enema or purgative which have in them the dangerous propensity to precipitate a perforation and peritonitis.

In children it is rather difficult to diagnose appendicitis unless a careful, methodical and gentle examination is made. During infancy appendicitis is rather rare, the incidence progressively rising from the second year upward. A suffering child commonly complains of abdominal pain, nausea and vomiting. The pain commences with an unlocalisable central discomfort, which after a few hours shifts to the right lower quadrant of the abdomen. The threshold for the intestinal pain felt in the centre of the abdomen is higher than that of pain

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felt as a result of parietal peritoneal irritation in the right iliac fossa region when the inflammation reaches the serous coat of the appendix. That may be the reason why the central abdominal distress is not complained of by some patients. If peritonitis supervenes, the pain may become more severe and more diffuse. Appendicular pain is usually constant though in the early phase, it may be colicky. Of all the signs, the important single sign is local tenderness—perhaps it may be the only sign. There have been many occasions in which the writer has confidently proceeded to perform an appendectomy on this only single sign. Vomiting is a frequent accompaniment. The tongue is usually furred and the breath is feterous. A low grade fever, never above 100·5° is usually present. In advanced cases with peritonitis the temperature may be higher. At no time does it rise above 103°. Many cases of malaria of the intestinal type with severe pain in the abdomen and vomiting admitted as appendicitis have always been ruled out by the mere fact of the presence of a high temperature round about 103°. I have found this a very useful tip in practice. Due to the proximity of the inflamed appendix to the ureter or sigmoid colon, sometimes frequency of micturition and diarrhoea may be induced. Rebound tenderness (Blumberg's sign) is not easy of elicitation in children. Rovsing's sign is positive only in a small number of cases.

The examination of the stricken child should not be rough or hurried. Inspection has to be careful and complete. Among other things, the general appearance, the degree of dehydration, position of the legs and the respiration must be observed. Palpation must be gentle and superficial to begin with and on no account should the tender spots be roughly pressed. If the abdominal muscular spasm be due to basal pulmonary disease steady splinting of the lower thoracic cage with one hand will cause the abdomen to relax. The degree and the location of the peristaltic activity is always to be judged by the stethoscope. Digital rectal examination is to be done, but always as a last procedure. Throughout the whole examination it must be

borne in mind that the child's appendix is prone to occupy a more variable position near the midline, down in the pelvis, or well at the flank. A psoas disposition can be deduced by the flexion of the right thigh.

Basal pulmonary condition, pyelitis, primary peritonitis and ileocaecal affections may simulate appendicitis to some extent and have to be ruled out.

The management of acute appendicitis is purely surgical. Antibiotics can never substitute surgery satisfactorily. A conservatively treated case runs the risk of a greater chance of fatality and morbidity. Even a spreading peritonitis could be controlled if the appendix which is seeding fresh organisms is excised and the peritoneum given a chance to look after itself. The operation of removal of the inflamed appendix should be done with no disturbance of other intraperitoneal structures. The operation is to be immediate except in grossly dehydrated cases where fluid replacement has to be carried out preliminarily. The anaesthesia employed is nitrous oxide, oxygen ether combination. The incision is over the lower right rectus with lateral sliding of the muscle. (In a child the Macburney's incision is inadequate in exposure and often not leading to the appendix which may occupy different positions). The upper end of the incision is to be on a level with the umbilicus, so that the higher placed caecum of the child can be manipulated easily into the wound.

The operation itself is as follows:—The small intestinal coils are swept by means of a pad to the left side of the abdomen and the caecum with the appendix is picked out into the wound and held there by the finger and thumb of the assistant. In cases where disease has plastered the caecum to the posterior abdominal wall, it is a useful measure to make an incision on the posterior peritoneum lateral and inferior to the caecum thus enabling it to be mobilized forwards and medially. The meso-appendix is ligated, purse string placed around the base of the

appendix and then it is severed near its base between a proximal ligature and a distal clamp. The stump is then treated with carbolic and spirit and buried. Inflammation of the caecal wall at the base of the appendix may sometimes render the burial of the stump impossible in which case it is left alone. Sometimes it is easier to perform appendectomy in the retrograde fasion, *i.e.* sever the appendix at the base and then proceed to ligate and sever the meso-appendix. Care must always be exercised to prevent the rupture of a tense inflamed appendix and if the appendix is enclosed by a layer of omentum, it should not be dissected off, for in all probability it wraps up an already perforated, gangrenous appendix. Such an appendix is to be excised in toto with its covering omentum. Drainage tube (soft rubber) is to be kept if the appendix has perforated.

If at the time of observation appendicular abscess has formed, it is to be opened by an incision at the side reaching the abscess through a retroperitoneal route, thus guarding against soiling the general peritoneal cavity. If during the procedure, the appendix presents itself and can be readily excised, it is removed. However if it is embedded in vascular adhesions and difficult to remove it is left behind, a drain placed and wound closed. Four months later the appendix is removed electively.

The post-operative period is usually uneventful. Oral intake of fluids is to be limited in the first 24 hours. Fluids may be started on the second day and diet gradually built up thereafter, One important sign which has always helped me to decide giving of oral feeds is the occurrence of peristaltic sounds and passage of flatus. If there had been peritonitis gastric aspiration and intravenous fluid administration will be required for 48 hours. Continuous oxygen inhalation is useful to combat distension. Fowler's position for the first two days helps to localise abscesses (if they form) in the relatively harmless areas

of the pelvis. Morphine or other sedatives are to be given in calculated doses in the first two days to give the child much needed rest and to facilitate nursing. A child thrashing about plucking out the nasal catheter or the I. V. canula is a real problem to the nurse. Drainage tubes are to be shortened and removed by the third or 4th day. Antibiotic cover is to be provided till the temperature touches normal and remains so a few days. By the 8th day, the child is allowed to walk.

If during the post-operative period paralytic ileus sets in, it is probably due to spreading peritonitis, or undue trauma to intestines during operation or hypochloraemia due to vomiting. Suitable antibiotic administration, intestinal decompression (by gastric aspiration and passage of flatus tube) and oxygen administration will help to meet the situation.

A subacute intestinal obstruction may sometimes occur as a result of adhesion of coils of intestine due to a fibrinous exudate. In most cases this can be tided over by conservative treatment. Rarely an obstructive case may require an operative procedure.

General Paresis

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GENERAL PARESIS is a neuropsychiatric disorder of syphilitic aetiology characterised by a constellation of neurological and mental changes with typical serological findings. The brain biopsy (in a living patient) enabling a study of the histo-pathological features of the disease and for demonstrating the Treponema pallida—'*the cansa causans*'—is a useful research technique and is of recent development.

The history of general paresis extends for over hundred and fifty years. Haslam, the apothecary at Bethlehem Hospital, described the mental and physical features of a case of general paresis in his monograph entitled "Observations on Insanity" in 1798; but he failed to recognise its nature. In the earlier part of the nineteenth century, a group of French investigators-Esquirol, Georget, Bailey and Calmeil—helped to elucidate the nature of the disease and correlated the clinical symptoms with the pathological features. In 1805, Esquirol observed that "paralysis was a common complication of mental disorder and added considerably to the gravity of the prognosis". Georget, while confirming this observation, termed the condition "Chronic muscular paralysis". In 1822 A. L. J. Bayle, a French psychiatrist, presented a thesis for the Doctorate of Faculty of Paris at the age of 23, in which he expressed the opinion that general and incomplete paralysis developing in association with mental disorder was due to chronic meningitis.

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In 1826, Calmeil showed that the morbid process was the result of chronic inflammation of the brain and the meninges. Esmarch and Jessen in 1857 expressed the opinion that the disorder was due to syphilis. At that time many investigators including the psychiatrists did not take favourably to this view. It was thought that syphilis could only be incriminated in some cases while head injury, alcoholism and host of other factors accounted for the majority. The conception of the luetic aetiology of general paresis was strengthened when Krafft-Ebing inoculated the paretics with the syphilitic virus but failed to infect them. The histopathological features of the paretic brains were described in detail in 1904 by Alzheimer and Nissl. Wassermann, Neisser and Bruck in 1906 applied the Bordet-Gengou phenomenon of complement fixation as a test for the diagnosis of syphilis—now called the famous "Wassermann Reaction" This test revealed the presence of antibodies in the sera and the cerebrospinal fluid of the paretic cases thus showing the existence of syphilis in them. Lange introduced the colloidal gold test in 1908, while earlier in 1900 Widal, Sicard and Ravaut pointed out that an increase in the cells in the cerebrospinal fluid was an important diagnostic feature in nervous and mental disease. While a diagnosis of syphilis was being firmly established, the syphilitic nature of paresis was still in doubt. The final solution of the controversial problem of the syphilitic aetiology of paresis came with the demonstration of the treponema pallida in the paretic brains in 1913 by Moore and Noguchi. With this discovery it came to be known justifiably "No syphilis—No paresis". Juvenile general paralysis was first described by Clouston in 1877 and since then several observers have reported cases.

In the therapeutic field, the advances have been mainly during the last forty years. The inefficiency of mercury, iodides and arsphenamines was known early. Wagner—Jauregg of Vienna in 1917 introduced artificial pyexial therapy in general paresis and his discovery of malarial therapy which marked a definite advance won for him the Nobel Prize in 1927. Tryparsamide, a pentavalent arsenical, was introduced in 1919 by

Jacobs and Heidelberger and it became a valuable chemotherapeutic agent. Penicillin has been in use for the last 15 years and the steroid hormones are the recent additions to our limited therapeutic armamentarium.

General Paresis is common between the ages of thirty and fifty. Its incidence is about 4-6% of admissions into Mental Hospitals. It is predominantly a disease of the males, occurring from four to five times more frequently in them than in the females. The cause for the low incidence in women is not known though the probable ratio of primary syphilis among men as compared with women is not greater than two to one. Pregnancy has been suspected by some workers to act as a moderating factor since neurosyphilis is more commonly found in women who have never undergone pregnancy. Thus it came to be known that "Pregnancy is good for syphilis". But the exact cause for the infrequency in women is not known for certain. The incidence of juvenile paresis is equal in both the sexes. There is no definite occupational predisposition though the disease favours the 'cerebrotonics' (those who utilise intellectual functions predominantly) more than the 'viscerotonics' and 'musculotonics'. The history of alcoholism is elicitable in several cases but its exact role in predisposing to or precipitating the disease has been uncertain.

It is likely that acquisition of syphilis and addiction to alcohol, each being a form of human behaviour, are the direct offshoots of a common basic distorted personality.

The disease is usually insidious in its development but the sufferer loses insight from its inception and fails to recognise the change that has crept over him. Kinnier Wilson tells of a psychiatrist who suffered from paresis but yet never realised that he was succumbing to the disease on the histology of which he was an acknowledged expert. Some cases are precipitated by head injury in which case it is likely that the latter activated an asymptomatic paresis and caused the appearance of clinical symptoms.

The disease develops from 5 to 30 years or more after the primary infection with syphilis. The long incubation period does not mean that the nervous system has not been involved for long before the 'break out' of symptoms. In fact, the invasion of the nervous elements occurs during the first few months following the primary infection. The earliest evidence of the entry of treponema pallida into the nervous system is afforded by a raised cell count in the cerebrospinal fluid. Later follow the elevation of protein content, W. R., and colloidal reactions. These C. S. F. changes are evident long before the occurrence of clinical symptoms. Being the fore runner of clinical paresis the disorder should be spotted during this asymptomatic stage for the treatment to be effective. Though slow in its progress, the disease forces the patient's admission into the hospital through acute symptoms or signs—acute excitement, a sudden change in behaviour, an attempt at suicide, violence, sexual offence, slovenliness in dress and appearance, epilepsy, coma, paralysis or incontinance. Several clinical varieties of the disease have been described depending upon the leading features namely—expansive, depressed, circular, agitated and simple dementia. The dementing type is the commonest variety contrary to the popular belief that grandiose forms are common. Lissauer's type is characterised by atypical clinical features and the cerebral pathology is one of 'status spongiosus' Clinically, in addition to the symptoms of usual forms of paresis, there are localising signs and symptoms determined by focal atrophic lesions. Aphasic disorders, epileptiform attacks confined to one side of the body, unilateral facial palsy, hemiplegia, hemianopia, apraxia are some of the features of Lissauer type of paresis. Memory may be exceptionally well preserved in this variety in contrast to the others. In the rare so called 'galloping' type, the deterioration is rapid with the patient dying within a few months of the onset of the disease.

The symptomatology is a combination of mental and neurological features. It is to be remembered that this mixed presentation is not '*sine qua non*' for a diagnosis of paresis, since cases occur in mental institutions without neurological changes.

The converse situation namely general paresis with no obvious mental change, is also reported but rare. Some of the important neurological findings are—pupillary abnormalities, dysarthria, tremor of the fingers and facial muscles and tongue, convulsions, paralysis, and association with tabes dorsalis in taboparesis.

The pupillary abnormalities were described by Argyll Robertson in 1869. Argyll Robertson pupil is a myotonic pupil with an absent or a diminished response to light with retention of accommodation reflex. In addition, the pupils are unequal in size, with atrophic changes in the iris, and dilate imperfectly with mydriatics. Such pupils are noticed in 50% of cases of general paresis and are more consistantly observed in taboparesis. The disturbance of speech is the result of weakness and incoordination of the muscles of articulation. The incoordination and paresis are manifested as tremor of the tongue, lips and facial musculature; tremor of the fingers causing a defective hand writing, clumsiness of the actions of the fingers. Speech in early stages is characterised by hesitancy and slurring and gradually tending to show omissions, reduplications, and transposition of the syllables. The speech then becomes unintelligible and in cases where the weakness and incoordination is extreme there is anarthric mutism. Aphasia is seen in some cases especially the nominal variety. The facial tremors are brought out with the patient speaking or when he is requested to show his teeth. They appear like ripples spreading over the otherwise bland expressionless, mask-like facies that typifies general paresis and enables one to venture the correct diagnosis. General paresis ought to be thought of in the differential diagnosis of dysarthria. Tremulousness of the fingers leads to defective hand writing and clumsiness of the actions of the hand. I know a case of paresis, a telegraphist who was diagnosed earlier as suffering from 'Writer's Cramps'; unsteadiness in gait and difficulties in deglutition also result from muscular incoordination. The paretics are liable for epileptic fit and this is an ominous

sign. Not infrequently status epilepticus is a terminal event. The so called 'congestive episodes' characterised by recurrent occurrences of features like paralysis, aphasia, convulsion are commonly observed. I know a case where recurrent stuporous states prompted an earlier mistaken diagnosis of subarachnoid haemorrhage (recurrent coma syndrome described by Collier).

The impairment of memory is a common inaugural feature of the illness though as stated already it may not suffer in Lissauer type of general paresis. Initially the defect is for the recent events while with the progress of the disease the encroachment occurs into the remoter past. Korsakow's syndrome is an occasional manifestation. This is characterised by gaps in the memory and the confabulations to fill these lapses; and disorientation in any or all spheres. For example a patient of mine who has been in the hospital for more than a year told that he was living at the moment at Tondiarpet (a different part of the City) and had been out to see his family the previous day and that he had arrived at the hospital a week ago. In addition he could not recognise the people around. A similar picture occurs in alcoholic polyneuritis, meningovascular syphilis, cerebral arteriosclerosis and following head injury. The early manifestations of general paresis may resemble a psychoneurosis. The patient may be anxious, or lose his concentration and be sleepless. He suffers from physical and mental fatigue and a sense of fear may dominate him rendering him apprehensive. There is a gradual diminution in the efficiency of his work and a loosening of the grasp over the situation. Being impaired in reasoning and judgment, he may indulge in unreasonable and ill judged speculations and sustain financial loss. He may undertake new enterprises and his behaviour seems odd when he orders for a dozen aeroplanes or motor cars. The earliest change in behaviour is evident only to those knowing the patient intimately. The affect of the patient varies being one of elation or depression or agitation depending upon the delusional content.

The mood-swings are common and in this respect resemble the manic depressive psychosis. Delusions occur and are of grandiose or persecutory type. Suspicion of marital infidelity is common. Hallucinations occur in some cases. Slovenliness in dress and appearance may occur. The urinary and fecal incontinence usually results from the mental attitude of the patient though in some cases associated tabes dorsalis contributes to this. The end result is a picture of affective and intellectual deterioration, and physical disability resulting from neurological involvement. The patients become bed-ridden, doubly incontinent, and have to be supervised completely. Febrile bouts are common even in the absence of infection and are believed to be due to erratic functioning of the thermogenic centre.

The final diagnosis of general paresis rests solely upon the laboratory findings. Pleocytosis and an elevated protein content in cerebrospinal fluid, positive serology in blood and cerebrospinal fluid, and the paretic type of Lange's colloidal reaction, in combination are the essential pre-requisites. A word about the paretic curve. A paretic curve by itself is of no significance unless associated with the other laboratory findings. A paretic curve is not uncommonly encountered in meningo vascular syphilis, multiple sclerosis, presenile dementias, cerebral cysticercosis and carcinomatous neuropathy.

At present Penicillin is the mainstay in the treatment of general paresis. Penicillin aluminium monostearate is administered in does varying from 6-9 mega units. In select cases fever therapy (malaria or typhoid) may be tried with benefit. Ideally *PAM* and fever are concurrently given. There is no unanimity as regards the question of repeating the treatment. The modern view appears to be that there is no further advantage gained by repeating *PAM*. Cortisone as an adjuvant is under trial. Its role in preventing Herxheimer reaction is established, prednisolone being more effective in this respect. It is now known that

benefit of fever therapy is partly due to the cortisone that is liberated endogenously.

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Medicine in the New India*

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FOR two years, from early 1956 until early 1958, I was in India, having been invited there under the Colombo Plan. Working entirely among Indians, with Indians and for Indians, and counting as a class I officer of the Government of India, I obtained an insight into medicine in the country such as is not possible for anyone paying a brief visit.

Western medicine on the British model has been established in India for a long time: for example, the Government General Hospital in Madras claims to have been founded in 1753, and much of the present building was designed by Florence Nightingale. British methods of teaching predominate, British textbooks are used, and English is still the medium of instruction. The present generation of educated people think and talk in English, and this language is unlikely to be replaced by Hindi for a long time, especially in South India where Hindi is regarded as the more foreign.

Indeed British methods persist in every activity, especially in government and administration and perhaps it is the persistence of this edifice that has prevented the country from sinking into chaos. Unfortunately, however, the system was not designed to give freedom at the periphery; and the vested interests of people who have been in it for a long time have increased its

*We have taken the privilege of reproducing the whole article entitled **"Medicine in the New India"** appearing in the Lancet of 13th September 1958 contributed by a distinguished British Pathologist, Dr. R. E. Rewell, M.D., of the Women's Hospital, Liverpool, for the information of the members of the Madras Medical Service.

rigidity. Europeans long in the country told me how little was the difference to them when the few British at the top were replaced by Indians; and indeed there were few to replace. 77% of foreign investment in India is British, and the number of British technicians and business administrators in the country is greater then ever. Indians regard the British domination as one episode in their country's long history—inevitable in the circumstances and nothing to be ashamed of. Newspapers always refer to their present "independence", and there is no double talk of "freedom or liberation". Sastri presents the background to this.

British policy in medicine has been continued in many ways. Thus one of the recommendations of the committee on the medical services, formed in 1941 with Lieut.-General Sir Bennet Hance as chairman, was that institutes for postgraduates training should be established throughout the country, where there were suitable facilities and teachers and these are now being set up. The Institute of Obstetrics and Gynecology is at the Government Hospital for Women and Children in Madras and I was invited there as first professor of pathology. It was intended originally that these institutes should eventually move to Delhi and form part of a Central Institute of Medical Sciences; but now a much smaller Central Institute is starting up, while the peripheral ones are to continue.

Some improvements in the organisation of medicine have been introduced recently by the Central Government. Thus the standard of the qualifying examinations has been made uniform at an internationally accepted level. The diplomas of the various states have been abolished, retaining only the M.B. of the universities, and central inspection of the examinations has been undertaken. There is, of course, reciprocity with many Commonweath countries. A number of new colleges have been opened, new buildings being erected, and senior staff trained specially, many of them abroad. Though unable to visit any of these colleges, I heard much about them from younger colleagues who hoped to transfer to them.

THE DOCTORS

The doctors among whom I was workig were a hand picked bunch, but I found the general standard of medicine higher than I had expected. In his own surroundings the Indian is far more adaptable and resourceful than he often appears in an alien environment, nor is he as self-conscious. After the first shyness had worn off I found postgraduates well informed and energetic in discussion; and, as with us, methods of teaching are far more by informal rounds and discussions than by for formal precept and lecture. The Indian doctor works among ignorant and depressed people who regard him as a superior being; patients are too poor to pay much and there is heavy competition from cheap quacks (These include practitioners of Ayurvedic "medicine" a system based on the old humours but encouraged by the Government). It is surprising then, that almost all the doctors remain keen and alert and continue to think of what will be best for the individual patient. They tend to emphasise their membership of the international army of medicine at the expense of local knowledge: thus they will quote British and American statistics when these are not applicable (although often there are no comparable Indian figures). However, they know well enough the circumstances of their own compatriots and I myself found that adaptation of Western knowledge to the social conditions of the patients was not difficult, given a readiness to inquire and to learn. Indians of education are very willing to help in this, and do not object to enquiries made in the proper spirit, even when concerning religion. I heard of an understandable tendency among undergraduates to regard the humble villager as a lower species, but this is evidently soon rectified by the chastening discipline of practice.

I was told that there are about three times as many candidates as places at the medical schools. A fifth are reserved for women and others for members of the "scheduled caste". The curriculum is based firmly on the British model. Some interesting experiments with it are being made at the Christian

Medical College at Vellore; but this, like all missionary enterprises now, works under a strong and continuous barrage of criticism and discouragement from the Government. The whole concern is a free gift from private individuals in America, Australia, and Britain, and its senior staff is drawn from those countries, but its achievements are claimed as "Indian".

CONDITIONS OF WORK

Government schemes are by no means all helpful to progress. Not only is the administration rigid but the Oriental genius for red tape and procrastination, especially over finance, has to be experienced to be believed. My own work was much curtailed by this.

Most unfortunately the semi-military control of personnel has been retained, and even senior people ase "posted" (with no warning and without being consulted) by the D. M. S. who rules the medical service of each individual State in the Indian Union.

Promotion is entirely by seniority within a speciality; there is virtually no competition for appointments, and in a hospital all authority is in the hands of the senior member of the staff as superintendent. Because people are moved so often, the staff of a hospital becomes quite unstable in its composition. Even at the earliest state, trainees are "selected" arbitrarily for the various courses or appointments that will lead to higher degrees. Unless one is chosen in this way, one has no chance of specialising whithin the hospital service. Except for those still belonging to missionaries, all the free hospitals, including the teaching ones and almost all the research institutes, are run by the State Governments. Even in the non-clinical departments of the medical schools, the appointments are made by the local D.M.S. and accepted by the university. The new postgraduate institutes are attached to universities, and the senior jobs in them rank in the academic hierarchy; but here again almost all appointments are made by the local D.M.S. Wherever they may have graduated, the postgraduates students are admitted to the higher

degrees of the local university. We had graduates from as far apart as Cambridge and Calcutta. There is nothig corresponding to the diplomas of out Royal Colleges.

The pay to doctors is extremely low, even by local standards. A specialist in his 30s is unlikely to have more than about £ 300 a year and can get little extra from part-time private practice. A senior professor may get as much as £ 900 a year without private practice. The retiring age is still 55. Of course, some senior people make large incomes in private, and many distinguished consultants have no hospital appointment. Nursing-homes and private hospitals of all grades flourish. Many of the younger people resign from the hospital services as soon as they have their higher degrees. The diplomas of our Royal Colleges are still very popular, and I am sure will continue to be so, especially as they are the only alternative to the Government's rigid system.

Pay becomes worse the further one goes from the centres; yet it is at the periphery, among the unchanging villages that cannot afford to support doctors, that they are needed most. One is always reading exhortations from elderly politicians to educated young people to go to work in the villages; but they are expected to go about on foot, live in mud huts, cut themselves off from all hope of refresher courses and of promotion, and be content with a pittance. Such dedicated souls exist in India as in all countries, but naturally there are far too few to do what is essential. In obstetrics the position is very bad because far more women than men are being trained. Almost all are married and, though they are able to go on working, they cannot leave their husbands to go to the villages. India being a democracy, a member of the hospital services is free to resign, and he will certainly do so rather than be posted to a village. He can get better pay abroad, *e.g.*, in the U.K. or Malaya—and so many of the best young people are exported. This applies to other fields besides medicine. I found that goldfield technicians were still being attracted to South Africa (of all places) by the pay.

THE HOSPITAL AND INSTITUTE

We admitted about forty postgraduates each year, nominated by the medical services of the various States of the Indian Union. They had a year's course for a diploma, which almost all obtained, and about half went on for a second year to sit for the Madras M.D., which about five obtained. The average age of students was rather high at first, but is coming down as people who obtain priority by seniority are passed out. As the hospital undertook about 13,000 deliveries and 5,000 operations each year, they had plenty of material.

Fortunately money had not been lavished to make a show place for distinguished visitors, and we still had the old open airy wards with wide verandahs. The poor-class Indian does not understand or like a bed, and so is kept in one only as long as the nurses find it more convenient. After this there is a mat on the floor. Many of the patients came from long distances; all were poor and mostly illiterate; few received antenatal or post-natal care; and reattendance and follow-up were virtually impossible with our resources. Anyone needing long-continued treatment had to be kept in for the whole time, and immediate admission from out patients was essential. Some had been seen by a doctor outside; others had been treated by such people as the local barber's wife, who is the hereditary midwife in an Indian village; while others simply arrived on foot or in a rickshaw and told their tale. The number of patients thus has to be, and can be, expanded considerably as required. A new building to house laboratories, library, &c., is projected, but fortunately is to be in the old simple style.

The average family income of patients was about Rs. 40 (£ 3) per month, and their degree of anaemia and of infestation corresponded. The average age at marriage was just over 14 years and at first delivery just under 20. Prolapse was common and severe and also vesicovaginal fistula. Much stress is laid on "family planning", but many came for sterility too because it carries grave social disabilities.

The patients stood surgery very well despite severe malnutrition and anaemia. After a normal delivery the women would be sent home in forty-eight hours. Of course, we saw many specifically tropical conditions–filariasis, malaria, amoebic dysentery—but this hardly affected gynaecological treatments which differed only in small ways from those seen in the West. The medical staff of all grades were most keen and competent. Their practice was based on advanced British and American ideas and they easily adapted their Westernised knowledge to the background of their patients. Most of the seniors had been abroad for work and study, usually to the U.K., U.S.A., Canada, or Sweden.

I found the standard of laboratory medicine good wherever I went in India, but it is confined almost exclusively to academic centres. Buildings and equipment are simple—except in a few very favoured places—but adequate. I felt that on the whole they had spent the small available funds to good advantage and had avoided frills. Biochemistry is largely in the hands of science graduates, but not bacteriology. Blood-transfusion is neglected. The old-established research institutes continue in being and some new have started, especially in the all-important subject of nutrition; but there are still too few and they are hampered by the arbitrary selection of staff. Our institute was very research-minded, and the suggested investigations were usually carried out by juniors specially posted by the D. M. S. on request. These young people had a very varied background but seemed to tackle the work well under supervision. The amount of Indian original work which reaches print seems to be very small compared with the effort put into it, but it is hard to see just why this should be so.

The best technicians in our sense of the term are junior science graduates, classified as "assistants". Lower grades are not well trained, and indeed most ancillary staff are of poor quality because deliberate policy keeps the number of jobs high and the pay low. This may still be necessary in India, but the Western visitor becomes irritated by the rows of peons asleep on

benches and of clerks who cannot type accurately. Many of the routine chores are done by junior medical staff who stay too short a time at them to become skilled.

Of nursing I was unable to judge; but I understand from visiting experts, and from those who have been under their care that Indian nurses can be described as moderate. They are kind and attentive, but most are lacking in advance techniques. Their pay and conditions of service are relatively rather worse than those of doctors. Many more are needed urgently, especially midwives.

The main object of the institute was, of course, teaching, and for this we had adequate facilities, firstly in the flood of material, secondly in the quality of the teachers, and thirdly in the equipment. Much of the teaching was informal, but seminars and lectures were held. We had a cool lecture room, projectors, tape recorders, and good photographic equipment, with a trained "photo-artist" who also assisted students to prepare their "books" of cases—an examination requirement obviously based on that for the M. R. C. O. G. We had a small museum which we recatalogued and enlarged. We took a fair number of the world's journals relevant to the work, but there had not been time to build up a library. We all relied heavily on the library of the British Council, which has a very good and up-to-date medical section, containing many of the summaries of recent work which are so useful to post-graduate students. Indeed the British Council is very active and influential in India.

Unfortunately necropsies were almost impossible to obtain. Junior doctors shrink from asking for them, but the seniors have even attempted to introduce legislation to facilitate them. I had not realised how important they are until I was without them.

GENERAL BACKGROUND

Social.—Working with enlightened and friendly colleagues and students it was often difficult to remember how different was their background from my own; but we must do this if we are to understand their problems and especially if we are to help Indians who come to this country and are uprooted from their own culture.

The ancient organisation of caste and family was described once and for all by Dubois, and the account has been brought up to date by Thomas. Some recent writers, such as Carstairs, have implied that it is now confined to a small section of the people; but, in South India at any rate, it is still almost universally valid, although in the cities there is little evidence of it to the casual observer. The great majority still live in the old way all the sons, with their wives and children, remain under their father's roof; the wives do not speak to their husbands in the presence of their mother-in-law, and marriages are arranged by the parents. Unless destined to go to a university, girls in enlightened families are still married off at the minimum legal age of 16, while in poorer and more backward families this minimum is generally disregarded. Like so much recent legislation apparently directed against ancient wrongs, that against child marriages is so worded as to be easily disregarded in practice. Despite forecasts to the contrary (*e.g.*, Wheeler) this way of life has probably become more rigid since independence. The various "communities" do not mix with each other in their own homes, and I am sure that this—not European standoffishness"—is why mixing between Indians and Europeans has always been so difficult. Outside their homes, mixing is now general in the cities.

Economic.—India is an overcrowded country with an impoverished soil and few industries as yet. The cow is sacred: innumerable semistarved brutes crop all the young vegetation, producing very little milk, and lack of wood leads to their dung being used as fuel instead of as manure. The only animal protein that many people will take is curd made from the milk of cow or buffalo, but its scarcity makes this expensive. Meanwhile the population increases.

India then must industrialise, and faces the now familiar problem of how to do this rapidly without inflation and profound social dislocation. Medicine cannot claim an undue slice of increased productivity; but, without disparaging what has been achieved recently, I am sure that much more could be made of resources available. The methods of administration are extremely wasteful; and in any case it is an insult to responsible, trained, and honest people to tie hem up with red tape as is done. This treatment has to be experienced to be believed. Doctors in hospital must be allowed much more say in non-clinical and administrative matters than at present; they should also have some security of tenure in senior posts, and better methods of promotion must be devised. With the present expectation of life the retiring age should be raised to 60: by preventing waste of skill this would save money. Most important of all the periphery must be made attractive. It is there that the real work is to be done, and it is there that at present nobody will go if he can possibly avoid it. On the practical side medicine is keeping up well, and fortunately practitioners are striving to maintain a place well in the mid-stream of present-day medical thought. To continue the use of English will certainly help to keep them there. (The only subject in which no regard was paid to accepted opinions appeared to be faecal hygiene).

NEED FOR HELP

India remains a poor country and needs help to raise herself. Western experts are welcomed, and every facility was given me by the people with whom I was actually working; the atmosphere was most friendly and I soon felt myself to be one of the team. In spite of the shortage of trained people, there is no room in India now for the European doctor to settle: Indians intend to keep their own jobs for themselves and cannot understand how we in Britain admit people from other Commonwealth countries or European refugees. But organisations

like the Colombo Plan allow British doctors to give their help for a time, without personal loss and indeed with gain in many ways.

I am extremely glad that I went to Madras. The officials of the Commonwealth Relations Office, both in the U. K. and in India, were most helpful, and my pay and conditions of service were very good. Pay is very important, because a high standard of living is necessary for us to maintain efficiency in a difficult climate. My conditions certainly were very much better than those of people whom I met working for the World Health Organisation.

Venereal Diseases in Madras

A PROGRESS REPORT

Dr. P. N. RANGIAH, M.D.*

Mr. President, Ladies and Gentlemen,

IT is customary to produce a progress report at annual conferences like ours and I do so with pleasure, incorporating within the report the recent trends in the diagnosis and treatment of venereal diseases.

No discourse on the management of V.D. can be considered complete, productive or fruitful until and unless a concrete idea of the magnitude of the problem of V.D. in our area is visualised. What is the statistical status of V.D. in our city to-day? I must confess I can only talk of what I know of the Inst. of Venereology, G.G.H., Madras. Here are the statistics brought up-to-date, *vide* Charts 1 and 2.

You will observe in the charts presented, figures for every one of the five V.D., compiled over the past few years at the Inst. of Venereology, show a marked decline. If you believe in a grain of rice for the pot of rice I am afraid you will rush to the presumption that the conquest of V.D. has begun and is fairly complete.

The truth is far from it, for a review of the 13th report on the progress and activities of Shree Jain Medical Society, Madras, reveals the establishment of 8 dispensaries including a maternity hospital within our city limits between 1950 and date and these dispensaries took up a case load of 5,44,266 for one year ending November 1956.

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On the authority of the Asst. Director of Medical Services, ESI., Madras, I may state that 14 Employees' State Insurance Dispensaries, one mobile van dispensary and 2 utilisation dispensaries treated between them 1,62,413 insured persons in 1957.

The annual report of the GGH, Madras for 1957 indicates that a total of 7,91,292 patients were treated registering a drop by 2 lakhs, approximately, when compared with the figures for 1955 *viz.*, 9,94,192.

In the light of this division and dispersion of labour that has occurred during the past few years it is not surprising that there should be a decline in the admissions at the Inst. of Venereology. Within less than 5 years a proportion of our out-patient load seems to have got screened off in the auxiliary and other newly sprung up treatment centres. It is only the maintenance of a Central VD Register for the city, if not for the State, that can give us authentic information on whether the incidence of VD in the city has declined or not.

The percentage of positive reactors amongst pregnant women attending the Women and Children's Hospital has remained constant at about 8·5. Similarly the %age of positive reactors by the self same VDRL slide test technique amongst the victims of ocular diseases attending the GOH, Egmore, has not registered a fall below 16. If these figures mean anything, they are an indication of the persistent, uncontrolled and ever enlarging syphilitic reservoirs in the city.

Apart from this we have our misgivings when we come to consider the change over of the patient load from the Specialists' hands to those of others elsewhere. If the antibiotic penicillin were specific for syphilis and gonorrhoea it is equally beneficial in many another common non-venereal ailment met with in practice. Penicillin that is obtainable for use in ready made suspension, penicillin that requires no search for the veins and penicillin that could be easily delivered without any fear of reactions early or late, has flowed down the syringes of not only the qualified members of

the medical profession, the general practitioners, but also through the syringes of others who have managed to learn to wield and load the Venereologists' gun with the magic bullet, the penicillin of Fleming, honoured by us as the Queen of drugs. This single circumstance is responsible for blasting out any surface evidence of syphilis or gonorrhoea for the time being. With haphazard treatment, the infection is driven to the depths with the potentiality of a boomerang recoil effect at not a distant period of time. We have the impression that pucca facilities for laboratory diagnosis of VD and personnel for epidemiological follow up of patients are not the ideal elsewhere. We some times feel that the management of VD without supervision is nothing short of just 'first aid' with a full stop there.

Let us not repeat history. We may recall the time not long ago when the American and British Medical literature were once replete with news about their truimphant decline in VD. Recent trends in those countries appear disappointing. The Bulletin of Hygiene, October 1958, page 914 reads under USA—"VD incidence is rising again in many parts of the USA. Reports from 145 health departments in all 48 states indicate an increase of 4144 cases of syphilis, (all stages except early latent). VD is rising in 19 states, teen age VD is rising in 11 and control programmes have been considered inadequate in 35 states. It has been estimated that 200,000 boys and girls contract VD each year. A reduction in the federal budget was considered to have wrecked a system so carefully constructed by VD experts". For our part we are still in the preparation for construction of a net work of VD clinics in the State. Even before we could implement the VD schemes contemplated under the 2nd Five Year Plan our seemingly declining figures appear to distract us to slumber under the false premise that the death knell of the VD specialty and of the Specialist who practises VD, has been sounded.

Ladies and gentlemen, venereal diseases are yet with us., camouflaged and in the negative phase and I anticipate a bumper crop of untreatable late syphilis in course of time. It is

high time that we hoist the flag of warning that the disturbing ripples on the seas of venereology forebode a future storm.

With this preamble, I propose to present the salient features depicting the recent trends in the diagnosis and treatment of each one of the five venereal diseases.

SYPHILIS

Diagnosis:—We have conventionally depended for diagnosis of syphilis upon historical, clinical, bacteriological, serological and histopathological data, an ensemble of information—each one of which is full of ambiguity and uncertainty except perhaps the demonstration of Treponema Pallidum which even is subject to mistaken identity in the midst of the teeming spirillary saprophytes usually found in the lesions simultaneously. If the patient should already have been partially treated with penicillin or other antibiotics, the difficulties in diagnosis become insurmountable. For one thing, the morphological pattern of the disease gets altered and/or the causative organism cannot be demonstrated. Should the serological test be negative to start with, it may continue to remain non-reactive, while the clinical condition progressed or the serology may take a longer time to become reactive and when this does happen, the titer appears to be low. The task of the Consultant Venereologist who has to spot syphilis under these circumstances becomes one, not enviable.

It is here one looks forward to help and contribution by the socalled verification tests or specific tests in the diagnosis of syphilis, namely treponemal immobilisation test, treponemal agglutination test, treponemal immune adherance test and treponemal complement fixation test. Of these, the best adjudged elsewhere in the world is the treponemal immobilisation test which we have not been able to perform in our laboratory for want of certain special essentials. In the absence of this test, we have had to experiment with the treponemal agglutination test and the treponemal immune adherance test, and at the moment the usefulness of either of them is under study.

We have had to resort to another test for the diagnosis of syphilis with spirochaetal antigen prepared from our own rabbits in Madras in our own laboratory, *viz.*, the treponemin skin test, to resolve problematic syphilis cases. Even with this diagnostic procedure we have been perturbed, for, when the reaction was positive, it did not connote a syphilitic condition nor did it preclude the clinical condition belonging to a different aetiology, independent of syphilis occurring in a syphilitic individual.

In such a predicament we hastened to study the histopathology of suspected lesions in the fond hope of getting light but found ourselves in the dark in a sea of " Chronic inflammation ", a highest common factor in most of histopathological studies.

We were compelled, when in such a dilemma, to violate the principle of 'treat after diagnosis' and adopt what is called 'the therapeutic test', 'to give the benefit of doubt' and diagnose after treatment. At the end of this procedure we found ourselves worse confounded than heretofore as the irreversible pathologic state of the individual lesion maintained the *status quo*.

Having described the diagnostic puzzles in syphilis, may I take this opportunity of venturing before this audience the plea that no case of suspected syphilis shall be treated as such until all avenues of investigations relevant to syphilis are thoroughly explored and the conclusions arrived at: otherwise the treatment of syphilis on supposition without supportive evidence is prolific and productive of untold misery and dangerous syphilophobias which none of the ordinary physicians can treat but the well trained psychiatrist.

TREATMENT

The treatment of well established syphilis has not much altered. Whatever the category of adult syphilis may be, the approved schedule followed has been the administration of 2 c.c. or 6 lakhs of PAM in oil given I.M., daily for 10 days.

This plan has been followed steadfastly during the past 6 years. We have not had reason to alter the schedule in the management of early syphilis, nor have we heard of augmentation elsewhere in the world except probably in Russia where early syphilis is treated with penicillin concurrently with metal chemotherapy and nutritious diet.

In congenital syphilis of less than 2 years of age 1 c.c. or 3 lakh units of PAM or the halved adult dose is given daily I.M., for 10 days with care to requisition immediately the services of paediatric physician to look after the needs of the marasmic infant, in the form of warmth in an incubator, fluids, salts and occasionally blood.

The infected infant or the adult at once becomes a focus of enquiry and an epidemiologic survey of the whole family is carried out and the possible contacts are traced, examined and treated. The epidemiologic treatment comprises a single insurance dose of 1·2 mega units of PAM.

This is also the prophylactic treatment *i.e.*, 1·2 mega units of PAM in oil whether it be taken pre or post coitally. Mechanical or chemical prophylaxis of the sexes holds its usual place of importance as an adjuvant.

In the absence of authority through legislation, or Public Health Acts in operation it has not been possible for us to insist on compulsory production of sex partners or to prevent the infected patient from indulging in sexual congress, particularly getting into wedlock while under treatment.

A word about epidemiologic failures :—Our intelligence section, meaning our social workers, concentrated their probing into the affairs of a child, its mother and father but unwarily or unconsciously left out of consideration the "keep" of the father who was incubating syphilis and who therefore was ultimately responsible for reinfecting the treated family and to reconstruct the broken chain of infection in the family once more.

When one of the siblings in an infected family was omitted for reasons of unavailability there was epidemiologic failure in the treated group requiring re-treatment over and over again.

These are but a few instances demonstrating the loopholes in epidemiologic work in a well conducted syphilologic clinic as ours. If such misgivings should befall us, the state of the patient clientle elsewhere where such facilities do not exist, can be easily imagined.

We have to record with regret that in spite of our untiring vigil over the infected syphilitic patients, before our very eyes nearly 30% of them, failed to take the treatment for syphilis or to complete the therapy which is only of such a short duration as 8 to 10 days.

While on the subject of treatment it may be mentioned also that we have no method of knowing when treatment for late syphilis should cease. For want of this knowledge we have had to treat in the past, cardio-vascular, neuro and visceral syphilis for many times over and over again. We have stopped this repetitive treatment now. Fancy the face of the Venereologist who practises such masterly inactivity in relation to patients suffering from CVS or CNS syphilis in the wards. He looks small when he has to pass by the patient in the ward without further therapy for the duration of patients' stay which may extend to weeks or months. It is here we have felt the need for indigent homes for the chronically ill.

Bismuth and iodides have staged a come back in the management of late syphilis. Bisoxyl 2 c.c. or 0·2 gms. of bismuth metal is injected I.M., once a week for 10 weeks concurrently with penicillin therapy of late syphilis.

Iodides in the form of 20% NAI solution are given I.V. daily in doses ranging from 5 to 20 c.c. We also administer 60 grains of Pot. Iodide in 60 minims of water to such late cases early in the morning when they get up from their bed.

Precautionary measures are taken to ward off bismuth intoxication through oral hygiene as in the past and iodism is countered with simple withdrawal of iodides.

Benzathine Penicillin in a single session therapy of 2·4 mega units I.M., was given to 169 patients and the results have been recorded as satisfactory.

The BSA, Achromycin, 500 mgm. in capsules orally, 6th hourly round the clock for 12 days was administered to a selected group of 10 pregnant women with syphilis. Syphilis was brought under control as judged by:

(1) A satisfactory outcome of pregnancy *i.e.* the birth of a living non-syphilitic baby at full term free from any taint of syphilis and found to maintain normalcy, clinically and serologically followed up to a period of 6 months from the date of birth.

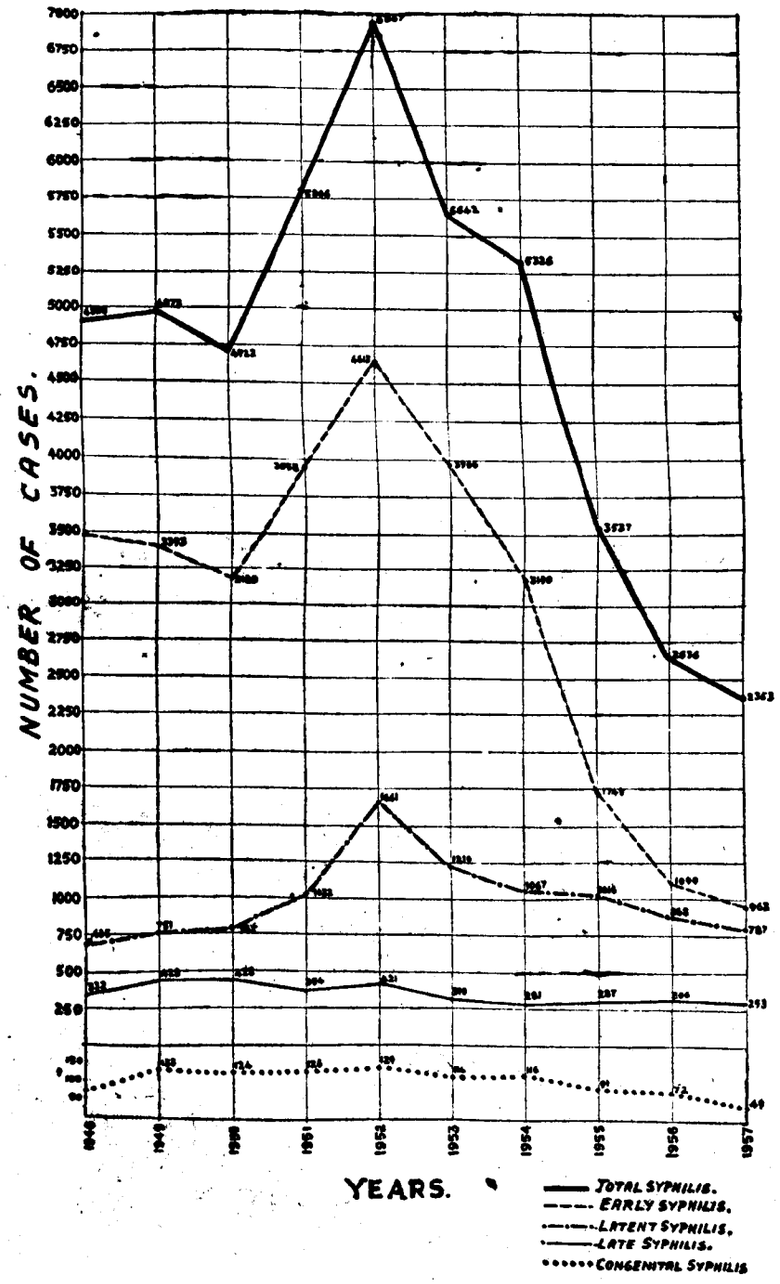
(2) A drop in the serologic titre of the mother or a reversal to negativity.

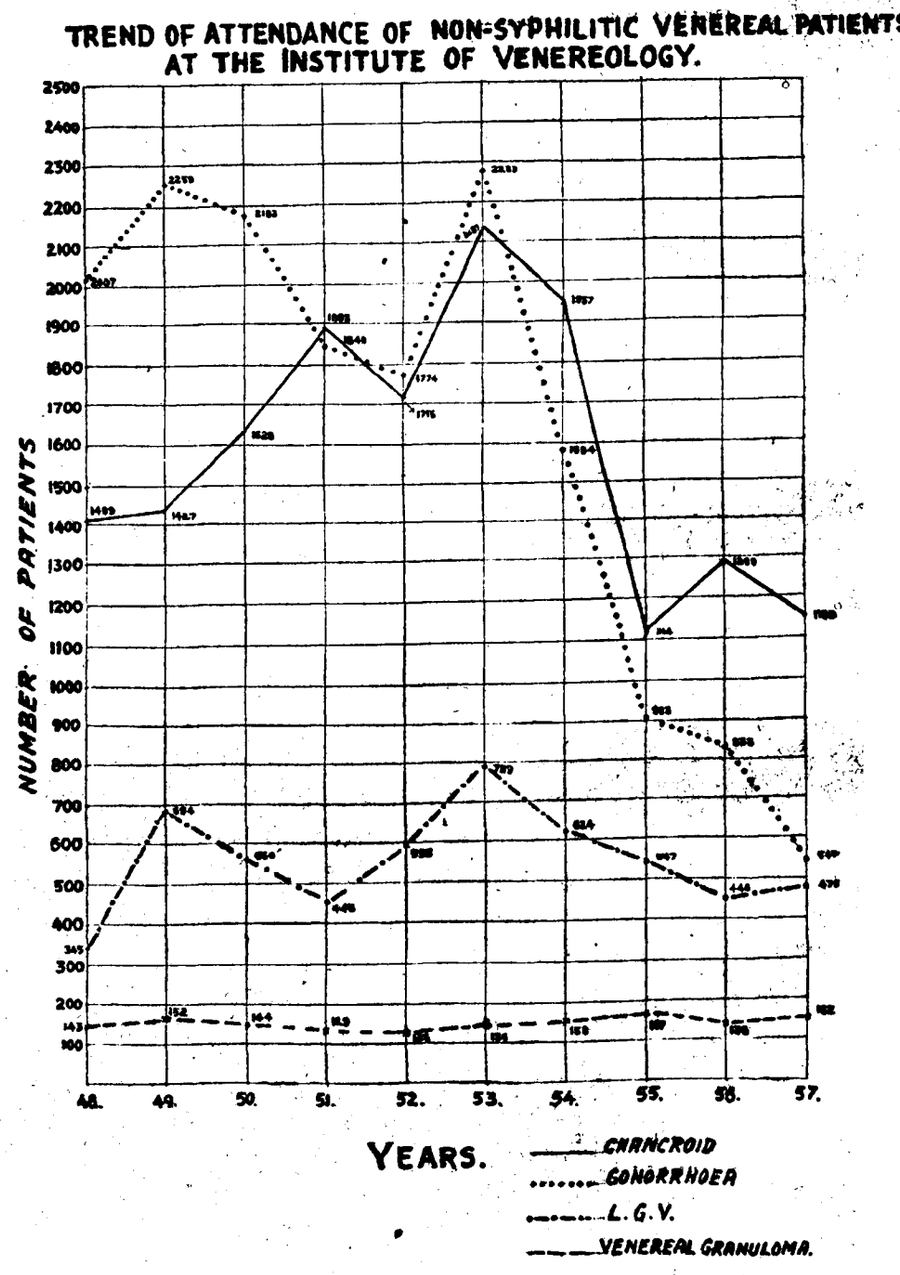
It may be noted here that the time is not ripe for recommending either Benzathine Penicillin or BSA for routine use in the management of early syphilis for reasons of difficulty in the administration of the former and the expense involved in the latter.

In the matter of ocular syphilis and mental syphilis besides the use of the antibiotic, penicillin as the specific remedy and appropriate symptomatic treatment, steroids have been employed in the form of Prednisolone 10 mgm, 6th hourly round the clock for the first week and then the dose is tapered off, observing the usual precaution of examining the weight, the b.p., and the urine for any alteration. The results will be available when the studies are over.

It is our regret also that in the midst of clinical malaria, therapeutic malaria, Von Jauregg's discovery is not available. Efforts are being made by the Director of the Institute of

TREND OF ATTENDANCE OF SYPHILITIC PATIENTS AT THE INSTITUTE OF VENEREOLOGY.





Venereology for the creation of a mosquitarium at the Mental Hospital, Madras, through the kind offices of the ICMR for the benefit of patients suffering from parenchymatous neurosyphilis of the categories of general paresis, tabes dorsalis, primary optic atrophy etc.

Reinfections in syphilis have become a common commodity. We have on record a patient reporting with reinfection in syphilis for the 6th time. No amount of persuasion could restrain the patient or restrict him in his chequered career. Remedy ? Marriage?

Resistance to penicillin has only once been recorded in late syphilis in our Institute.

Treatment reactions with penicillin have been published: 2 fatal anaphylactoid reactions and 1 fatal hyperergic penicillin reaction. Serum sickness type of reaction during penicillin therapy has been fairly common.

Our plan to meet such emergent reactions is as follows: 1 c.c. of Liquor Adrenaline Hydrochloride is administered at once. Oxygen inhalation is started, and anti-histaminics are given enterally or parenterally depending upon the state of consciousness. The patient is put to bed and ensured warmth and kept under surveillance. The adrenaline injection is repeated a few hours hence as sometimes the waning penicillin reaction waxes strong once again all on a sudden.

Recently we have been put in the possession of Neutrapen, the enzyme penicillinase, for I.M. injection in a single session, of 8 lakh units in 2 c.c. of water once only, for its action is to neutralise the circulating penicillin through converting it into an ineffective penicilloic acid in the matter of few hours.

Interrogation of every patient who has to receive penicillin, to elicit any history of previous penicillin reaction or for the past history of cutaneous, respiratory or other forms of allergy, forms a regular item in the programme of management of syphilis with penicillin.

Skin tests to predetermine allergy have been unsuccessful. It is our custom to provide every penicillin sensitive patient with a warning card with which the patient might be able to alert the future medical officers who might have occasion to treat him thereafter.

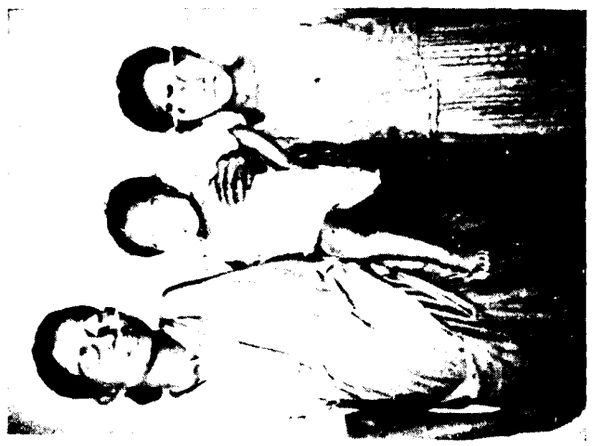
GONORRHOEA

In an annotation "Lancet" 11th October, 1958 entitled "Treatment of Gonorrhoea" it appeared that "the incidence of gonorrhoea continued to decline until 1955, when for the first time since the war the annual report of the Chief Medical Officer of the Ministry of Health indicated an increase in the number of patients of gonorrhoea attending the clinics. The rise in the incidence has continued and has accelerated".

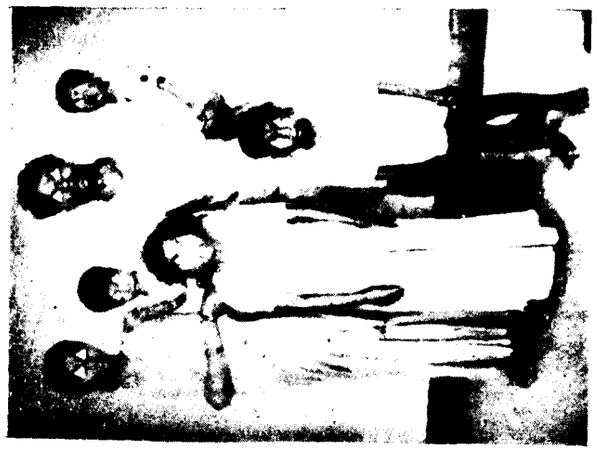
Gonorrhoea at the Institute of Venereology appears to be on the wane in parallel with syphilis. As the minimum treatment given for syphilis at any time by any body is more than the scheduled dose of 2 c.cs. or 6 lakhs of PAM necessary to combat gonorrhoea it happens that gonorrhoea has really suffered a severe blow. Adnexal complications of gonorrhoea have become a curious rarity though an occasional metastatic complication such as gonococcal arthritis and synovitis has been seen in patients now and then. We have not had a single proven case of gonococcal iritis.

Recurrent gonorrhoea was traced to reinfection from the untreated consort or fresh infections. One patient reported with gonorrhoea for the 16th time - VDOP No. 3273/53.

We have not yet encountered the resistant gonococcus contrary to the experience of Curtis and Wilkinson who were saddened by the appearance of an increasing number of cases of gonorrhoea resistant to penicillin throughout London. They measured the sensitivity to penicillin of 302 strains of gonococci by means of tube sensitivity tests. Of these strains 19·5% were sensitive to penicillin at levels of 0·125 - 0·5 units per ml. In no case did failure occur when the sensitivity of the organism was



The syphilis in the elder girl led to the discovery of infection in the baby and the mother.



The mother was treated for syphilis during her pregnancy more than once as the other infected members were brought for treatment later.

One who was struck by
"Neisseriae Gonorrhoeae Sixteen Times".

below 0·03 units per ml. which is the usual penicillin concentration aimed at in practice with the standard schedule of therapy of gonorrhoea *viz.*, 1 c.c. or 3 lakh units of PAM in oil given in a single dose I.M. On this score the authors advocate a higher schedule of penicillin therapy for gonorrhoea *i.e.*, 4 c.c. or 1·2 mega units given in a single dose.

Complications of gonorrhoea are treated with the induction of pyrexia with typhoid antigen in graded doses, given I.V., in multiple sessions alongside PAM therapy. Gonococcal ophthalmia in adults is treated with PAM 1 c.c. or 3 lakhs I.M., daily for 4 days. Crede's treatment of neonates continues unabated.

Gonococcal vulvo-vaginitis in young girls has lost its ancient sting. No more has one to resort to oestrogens to convert a girl child into an adolescent girl, for control of gonorrhoea. Just 1 c.c. or 3 lakhs of PAM I.M. daily for 4 days suffices to free the girl victim of gonorrhoea.

BSA, barring streptomycin, have every one of them given a cure in gonorrhoea.

Our problem to-day is not so much the control of gonorrhoea as checking non-gonococcal discharges in the sexes. Amongst the incriminated agents responsible for the leucorrhoea the invulnerable Trichomonas Vaginalis Donne happens to be the top ranker. When the female is infested with this parasite, the vagina is painted with aqueous gentian violet 1% and SVC tablets 2 at a time are inserted into the vaginal vault daily for 10 days. But it has been difficult to clear the male urethra of the T. V. After many a trial and failure with several remedies including a Japanese product, Trichomycin, we have started irrigating the male urethra with 500 ccs. of a solution of 0·06 G. of Mapharsen daily for 10 days. The immediate response has been satisfactory. The permanence of this achievement remains to be seen.

CHANCROIDS

A venereal disease diagnosed curiously as such usually by the elimination of syphilis and granulomas. It is stranger that it should be diagnosed only after successful therapy with sulphonamides.–1 gm. Elkosin orally given thrice daily for a week and topical application of any bland ointment to the ulcers. The causative organism H. Ducreyi has been elusive and baffling the bacteriologists and the clinicians. The smear method, the culture method, the animal inoculation method as well as the cuti test with the bacillary antigen (not available) have not been helpful as diagnostic aids. "Auto-inoculation diagnosis" has been successful in a few cases but this has been only one step in the ladder of successful diagnosis. The next step of isolation of a pure strain of the organism in the transplant has not been achieved.

In recent times there has been a keen competition between chancroids and a new comer, Herpes Progenitalis, on the scene: this new comer has come to prominence through suppression of the erstwhile major members of venereal diseases *viz.*, syphilis and gonorrhoea. Early chancroids of bacillary origin and herpes progenitalis of viral origin are both multiple, soft, small in size to begin with and occur on the external genitalia; while the chancroids grow, bleed easily, show undermined edges, remain discrete and produce lymphadenitis in the neighbourhood, the individual component of herpes progenitalis remains small, tends to coalesce and maintains a superficiality, disappearing spontaneously in a few days without producing any lymphadenitis in the vicinity. The distinguishing hall mark of herpes progenitalis remains the recurrent clustering character and the infection is checked through vaccination with cow pox lymph, one insertion intra-dermally, once a week for 8 weeks, and treating the sex partners similarly.

GRANULOMA VENEREUM

The bacillary venereal granuloma familiarly known to us as Donovanosis after the discovery of Donovania Granulomatis by Col. Donovan has stood steady without much of a tendency

to decline in its incidence. It is heartening to note that junior specialists have become cognizant of the disease and have become proficient in the demonstration of the causative agent in lesions even when insignificant and located on the external genitalia of the sexes.

No longer do we have to wait for a barber to rid the patient of the lesion through circumcision and allow the disease to flare up in the inguinal region, to deserve the appellation inguinal granuloma. Inguinal granuloma is the international nomenclature for the disease, which we do not approve.

The diagnosis of Donovanosis is simple, by the demonstration of the Donovania granulomatis in smears of the lesions stained with Leishman's stain. It is difficult only when a malignant condition co-exists, as the histopathology then is equivocal.

TREATMENT

The specific treatment of bacillary venereal granuloma has been successful with the administration of streptomycin, a combination of equal quantities of the plain with the di-hydro preparation, given I. M., in 1 Gm. doses twice daily for 10 days.

In recent years we have met with a few therapeutic failures. It has been observed that the causative organism has been developing drug resistance and we are alarmed at the progressive increase in the percentage of drug resistance, exceeding 13·2. This is one disease, *par excellence*, demonstrative of bacterial resistance. When streptomycin fails, the practice has been to switch over to the BSA–Tetracyclines or Chloromycetin—in 500 mgm. doses given round the clock 6th hourly for 10 days. In the event of a failure even with these, the drug resistance is broken with the ancient antimonials in the form of Fouadin in 4 c.c. doses given I. M., on alternate days till either the lesions are healed or a total of 100 c.c. has been administered. We have a case on hand that has resisted even the old antimony forcing us to invoke the aid of the Barnard Institute of Radiology for shattering the resistance of the organisms with x-rays.

Lymphogranuloma Venereum or the Viral Venereal Granuloma : insiduous in its early clinical phase and formidable in its late clinical phase, it often appears before the venereologist in the mid or the easily treatable bubonic or inguinal phase. The diagnosis rests on a positive Frei intracutaneous test and an alteration in the electrophoretic pattern of blood serum proteins with an increase in the gamma globulin component beyond the normal of 1·49 gms. %. The bubo may subside with rest or progress to suppuration, sinus formation, lymphangiectasis, lymph thrombosis with a resultant elephantiasis and ulceration combinedly known as " esthiomene ", reminescent of filariasis. Later manifestations are ano-proctitis, ano-proctitis with stricture, stricture without ano-proctitis and or rectovaginal or vesico-vaginal fistulae in women.

The treatment comprises an admixture of medical and surgical procedures :

Medical :— Cheap oral sulpha Elkosin 2 tab t. d. for 1 week. and for ano rectal syndrome a suspension of 20% sulphaguanidine as enema every night for periods of a week to alternate with weeks of oral sulpha therapy or an expensive oral broad spectrum antibiotic—Tetracycline or Chloromycetin given as 500 mgm, 6th hourly round the clock for 10 days.

Surgical :—The simple periodic dilatation of the stricture if any with suitable Hegar's dilators – a time consuming and painful procedure, failing which—(*a*) a palliative colostomy (*b*) proctotomy (*c*) resection of the rectum, bearing the stricture portion, provided the external sphincter is intact, and (*d*) plastic operations for the VVF, RVF or the destroyed urethral floor.

CONCLUSIONS

I conclude the review embodying the modern trends in the management of VD with a note that whatever be the rise or fall in the incidence of VD, one thing is certain that so long as the last man on earth exists, genito-urinary problems will remain

with him, requiring the expert specialist's aid. It is the specialty alone that can attempt to determine the specific cause of the specific disease, apply the specific remedy for the specific disease and enjoin the specific measure to prevent the specific disease.

Long live the specialty of venereal diseases !

ACKNOWLEDGEMENT

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1. Director, Institute of Venereology.
2. Dean, Government General Hospital, Madras.
3. Assistant Director of Medical Services, Employment State Insurance Scheme, Madras.
4. Secretary, Sree Jain Medical Relief Society, Madras.

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Modern Trends in Orthopaedics

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TO begin with I wish to thank the organisers of the Madras State Medical conference for giving me an opportunity to take an active part in the proceedings.

The subject allotted to me is Modern Trends in Orthopaedics, in line with the talks by other specialists on modern trends in other branches of medicine.

Orthopaedics as practised now is a vast field and it will be an impossible task to cover the whole range of advances in all aspects in a short period. Considering the relative organisational backwardness of our country what is recent here might be what was quite old in the western countries.

I shall first briefly describe the scope and development of Orthopaedics. Although as a separate speciality it has established itself in the west only during the last 3 decades, particularly after the I world war, the subject of Orthopaedics has been practised from much earlier terms. The word Orthopaedics was coined by Nicolas Andy in the 18th Century by combining two words Ortho and paedics, meaning straightening a child. Thus the original conception of Orthopaedics was as a science dealing with the prevention and treatment of deformities in children.

The scope then widened to include not only deformities in adults but all the potentially deforming conditions the most important of these being fractures and other traumatic lesions.

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The other deforming conditions like poliomyelitis, nerve injuries, skeletal tuberculosis and all other metabolic disorders of bone which are potentially deforming came within the purview of the orthopaedic speciality. Thus the scope of orthopaedics has become so vast that certain branches are tending to become minor specialities like hand surgery, traumatology.

In contrast to the surgery of acute conditions Orthopaedic Surgery aims to restore a crippled man back to normal and if that is not possible to enable him to be self dependent and be a useful member of society. A child crippled by disease or birth defect is not only an orthopaedic but a social problem. The management of these often means prolonged treatment and care during which surgery as such is but a incident. The long hospital stay and treatment raise their own problems of hospital accommodation and maintenance of these patients and in the case of children, education also. They need in addition well organised, physiotherapy, occupational therapy departments from which many patients may grade into a O.T. workshop and a sheltered workshop before they are fit for their regular job.

In addition it is also essential to have splint workshops and artificial limb centres to provide the necessary splints and prosthesis. Thus complete rehabilitation is an essential part of modern orthopaedic treatment and it needs a well organised set up to cover all aspects of treatment.

It is thus evident that orthopaedics is essential and important part of a Medical Social Service and not merely a treatment service. The greatest need of the day in our state is to establish full orthopaedic service as part of a state wide service for the treatment and rehabilitation of the thousands of cripples and physically handicapped persons.

The greatest modern advance in the total effectiveness of orthopaedic treatment is the establishment of rehabilitation centres for the injured not only in the general civilian hospitals

but also in the Industrial Medical institutions, and the Defence Medical Services. As I have already pointed out, any amount of brilliantly conceived curative orthopaedic surgery will be of little avail if it is not followed up by adequate physiotherapy and other rehabilitation measures.

I shall now pass on to the various individual aspects of orthopaedic practice and indicate the lines along which progress is being made. The one aspect of orthopaedics which is of universal interest to all medical practitioners is the management of common fractures.

Fractures of course have been treated even by prehistoric medical man but Hippocrates laid down some of the most essential basic principles of treatment. Till the end of 19th century the diagnosis and management of fractures and dislocation have been mainly on clinical findings and comparison with the uninjured limb. The descriptions of fractures by the early surgeon like Astley Cooper, Pott and others were most accurate and elaborate, the reductions were done on commonsense principles and restoration of function was a very important consideration. The advent of X-Rays in 1895 marked a revolution in the management of fractures. A great advance was made in the accurate diagnosis of the exact displacement of the fragments; many fractures which were missed before were diagnosed correctly. As in the case of all innovations this was not an unmixed blessing. The X-Ray pictures drew so much of the attention of the doctors to the anatomical position of the fragments and their reduction to anatomical perfection, that the importance of functional restoration was forgotten. It became an obsession to aim at a perfect X-Ray reduction of the fractures. Manipulation after manipulation was done to a fractured elbow or forearm just because there was a slight displacement of a fragment in the X-Ray. Unnecessary surgery was a advised because one small piece of bone appeared to lie loose in a comminuted fracture of humerus and tibia. Another consequence of this excessive X-Ray consciousness of the doctors was

to make them forget the soft tissue injuries associated with the fracture or dislocation. The post reduction X-Ray of a dislocated elbow showed such an anatomically normal elbow that no thought was given to the obvious fact that a violence severe enough to produce a dislocation of the joint must have ruptured capsule, ligaments as well as muscle fibres causing tremendous laceration of the tissue all of which of course was not visible in the X-Ray. I came across a case only recently where a doctor after having reduced an elbow dislocation advised vigorous movements of the elbow from the next day itself. The patient was also equally well convinced that the elbow was " normal " because the X-ray was normal. The end result of such treatment was a stiff elbow with myositis ossificans.

Thus we find that while anatomy was too well remembered physiology was forgotten. The traumatic pathology was ignored ; the functional restoration of the limb and the psychological recovery of the injured man was not thought of. This led to very poor results. The most important of the modern trends in fracture treatment is the proper balance of outlook regarding the anatomical and functional restoration of the part. To the patient functional restoration is far more important than perfect X-Rays. I am not for a moment suggesting that X-Rays be dispensed with or be ignored, X-Rays of course have to be an essential aid in the treatment of fractures. There are many fractures like Pott's fracture of the ankle where we need perfect anatomical reduction with the help of X-Rays to prevent late complications like osteoarthritis of the ankle. But there are many simple fractures like those of meta carpals, metatarsals and others where serious harm is done by prolonged immobilisation of the limb in plaster till radiological union is evident.

It is a swing in the right direction that more attention is now paid to the restoration of function of the fractured limb.

TREATMENT OF HAND INJURIES

The increasing tempo of modern industry is causing a rapid rise in the incidence of injuries to the hand. Such injuries are

being treated by the junior most house surgeons or the untrained Casualty Medical Officers resulting in gross scarring, infection, deformity, and crippling, loss of earning capacity. Millions of man days of working are lost resulting in loss of industrial efficiency. The hand is not only the most wonderful mechanical tool and the most efficient sensory apparatus, but also an organ of emotional expression of great psychological value to man. Its importance is now being recognised in the west and in recent years great interest in being shown in the efficient treatment of injuries to the hand. Early and efficient treatment of such injuries by qualified and specially trained surgeons has resulted in saving so many fingers and hands and combined with good physiotherapy has restored the functional efficiency of injured hands.

In our country we are still in this respect far behind the western countries. It is very common to find a worker with a finger injury being out of work for months together. Many injured hands and fingers are being amputated at the classical sites taught in the college days. It is tragic to find that below elbow amputations are done for crush injuries of fingers in situations where the palm could have been saved. A deformed hand is better than no hand ; and surgical ingenuity can be utilised to repair and correct badly disfigured hand and restore some function, but primary amputation denies all chance to any reparative surgery.

I feel it will be good idea to ban all amputations of upper extremities except in cases of gas gangrene where the threat to life is serious. No amputation of hand should be done without a second medical opinion.

It must be a basic principle that every viable bit of hand or fingers should be preserved at the first treatment. Even areas of doubtful viability should be retained during the primary treatment of hand injuries except when there is doubt about gas gangrene infection.

In . consid atment of traumatic conditions I would like to r ier recent development. That is the organisation of vices and Accident Hospitals. Many of you have ly the talk on Accident Services by Sir Harry [illegible] President of the Royal College of Surgeons, London and an eminent Orthopaedic Surgeon. An efficient organisation to cope with an emergency where large number of casualties come in due to some serious accident is an important necessity particularly in the major cities and big towns. For efficient management of the large number of traffic industrial and domestic accidents in big cities it is better to have one hospital set apart where all facilities for urgent resuscitation are available and trained surgical teams are ready to deal with all types of injury cases. The Birmingham Accident is a notable example of such an institution.

I shall now briefly touch on one other major orthopaedic problem and the modern trends in its management. I am referring to skeletal tuberculosis. Tuberculosis in our country is a national problem of colossal dimensions. Next to pulmonary disease, the largest group is that of bone and joint tuberculosis; whereas in some of the western countries the disease is on the decline and many sanatoria are being closed for want of beds, we have in this country only 23000 beds for an estimated total of two million active cases. As you are all aware a pilot project is underway to study the effectiveness of domiciliary treatment for pulmonary T.B.

The advent of chemotherapy against Tuberculosis has created a serious problem in the public health field; while before the chemotherapy, a large percentage of the patients died and no longer infected any one, as a result of incomplete and insufficient chemotherapy a large number of cases are kept alive but with active and infective disease. This is the greatest menace to society as a source of spreading the disease. It is

likely that the incidence of skeletal tuberculosis is not going to fall down in the near future. Whereas the pulmonary tuberculosis patient can be given domiciliary treatment, the patient with a skeletal focus in the spine and other weight bearing joints needs complete and prolonged immobilisation in bed which is possible only in institutions like sanatoria.

Chemotherapy has certainly reduced the mortality rate, and the complication rate in skeletal tuberculosis, has made multiple sinuses and amyloidosis almost a thing of the past. It has made surgery safer and possible earlier in cases where surgical intervention is indicated. But a recent follow up study has revealed a disquieting factor. Chemotherapy has encouraged doctors to slacken in the constitutional treatment and shorten too much and ignore even the all important aspect of immobilisation of the affected joint. In a large number of cases the chemotherapy also has been inadequate. This has resulted in an increase of the morbidity rate; there are now a large number of incompletely cured patients with lesions which reactivate periodically.

With the advent of chemotherapy more operations are done on tuberculous joints to arthrodise the unsound ankylosed joints, the surgery is even extended to curette out and eradicate the local focus in the bone. The healing processes which used to take anything from three to five years are now satisfactorily complete in twelve to eighteen months. This by itself is a great advance. But the temptation is great indeed to curtail the period of immobilisation and treatment too much. Let us remind ourselves at this stage that skeletal tuberculosis is a local manifestation of a general disease. The apparent sense of well being felt after a period of chemotherapy can never be taken as a complete quiescence of the disease until the local as well as the primary focus are well and truly controlled by prolonged, adequate and unbroken constitutional treatment and chemotherapy.

I have tried to stress two of the important aspects of orthopaedic work, traumatology and tuberculosis. In both these aspects, the treatment is often prolonged and rehabilitation is an absolute necessity. The problems of a cripple and that of a skeletal tuberculosis patient both bring the Orthopaedic Surgeon into the social aspects of disability and disease. This is a last field where the concerted work of all medical and social workers, legislators as well as administrators is essential to bring relief to the sufferers. Viewed in such a perspective the work of the orthopaedic surgeon is only a very small contribution to the total effort needed to tackle these problems. I can only hope that the day will not be far off in our country where the welfare state will provide for the total relief and restoration of all the unfortunate victims of trauma and tuberculosis.

A Case Report of Leio-Myo Sarcoma of Spermatic Cord

Prof. S. P. VEDACHALAM &
Dr. R. G. MURUGESAN*

INTRODUCTION

VERY few cases of primary Leio-myo sarcoma of the spermatic cord have been reported so far. The condition is so rare that this case is being reported for the clinico-pathological interest.

The usual sites of origin of tumours of non-striated muscle—Leio-myoma and Leio-myo sarcoma—are the uterus, the gastro-intestinal tract, and the skin. A few cases of Leio-myoma of the lungs, bladder, prostate, kidney and blood vessels have been reported. As far as Leio-myoma of the spermatic cord is concerned, only six cases have been reported so far in literature (Kenneth Cruz). The authors have come across a case of Leio-myoma arising from the skin of the penis near the glans.

The nearness of the tumour to the testis would have given rise to difficulties in diagnosing the case clinically. In this case, infiltration of the scrotal septum and the corpus spongiosum has been noticed.

CLINICAL FINDINGS

A 48 year old man was admitted into the Government General Hospital, Madras for a swelling on the left side of the scrotum. Swelling was about 7" × 3", lobulated, firm. The testis was not palpable on the left side. Right testis and right spermatic cord were found to be normal clinically. A high

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orchidectomy was decided on and at operation the tumour was seen to be arising from the spermatic cord and infiltrating the median septum of the scrotum and also the perineum close to the corpus spongiosum. The testis was found to be atrophic and free from the tumour.

MACROSCOPIC APPEARANCE

Tumour of the size of 6″ × 3″ × 3″, solid, firm and nodular. Cut-section showed interlacing bands of shining tissue arranged in whorls, (watered silk pattern). The spermatic cord on this side was fused with the entire length of the tumour. The testis on this side was atrophic.

MICROSCOPIC APPEARANCE

Microscopically it showed spindle cells with rod-like nuclei with rounded extremities arranged in bands and bundles interweaving, intersecting and concentric patterns and sometimes, the bundles branching off at right-angles.

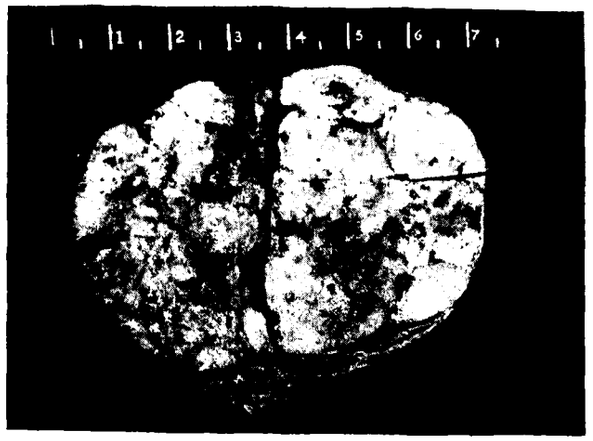
Certain areas showed cellular pleomorphism, increased and abnormal mitosis.

By special staining methods, the histo-genetic nature of the growth was arrived at.

DISCUSSION

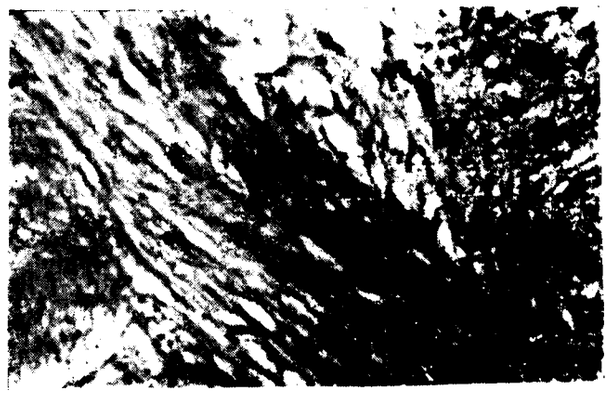
In many of these cases, the diagnosis was made only after a detailed histological examination. Only in very few cases, the diagnosis was made on clinical grounds. Due to the close proximity of the tumour to the testis, such cases are liable to be diagnosed as testicular tumours clinically.

Two conditions which closely simulate a leio-myo sarcoma histologically are fibro-sarcoma and neuro-fibro sarcoma. These two conditions can be differentiated from leio-myo sarcoma by the demonstration of myo-fibrils in leio-myomatous tumours by



Cut-section showing interlacing bands of shining tissue arranged in whorls (Watered silk appearance).

Showing spermatic cord on this side fused with the entire length of the tumour.



L. P. Showing spindle cells with rod-like nuclei with rounded extremities arranged in bands and bundles in interweaving intersecting and concentric patterns.

H. P. Showing cellular pleomorphism.

differential staining technique and by the general microscopic characteristics of the non-striated smooth muscle cells.

Occasionally, the myo-fibrils may not be easily demonstrated leading to more difficulties in histologic diagnosis.

In these cases, the malignant nature of the growth is suggested by the extreme pleomorphism of the cells, increased and abnormal mitosis, excessive and aberrant chromatin of the nuclei and by the presence of giant cells.

SUMMARY

A case report of leio-myo sarcoma in an unusual situation, namely the spermatic cord, in close proximity to the testis, is presented.

ACKNOWLEDGEMENT

Thanks are due to Dr. K. G. Krishnaswami, Surgeon, General Hospital and Prof. of Surgery, Madras Medical College.

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Cancer of the larynx and narrowfield laryngectomy

Dr. C. SATYANARAYANA*
M.B., B.S., M.S., D.L.O., F.I.C.S., F.C.C.P.

HISTORICAL

ARETAEUS, one of the most intelligent of the ancient physicians who lived about A. D. 80 to 160 referred to malignant disease of the throat in his writings. Galen who was born at Pargamos in Asia Minor in 131 A. D. was the Greek dictator of medicine for the next 1000 years; he also described a malignant ulceration of the throat. The middle ages lack further records. In 1668 Boerhaave described a case of cancerous angina and Morgagni (1732) gave a clear description of two cases of cancer of the larynx. Albers (1833) of Bonn reported a case of death from asphyxia caused by a malignant tumour of the larynx, about the size of a nut. Albers wrote that "tumours in the cavity of the larynx belong to a class remarkable alike for their rarity and their characteristic symptoms". He experimented on dogs to test the feasibility of laryngectomy after tracheotomy. These experiments apparently led to no definite conclusions. In 1836, Bellocq and Trousseau wrote on laryngophthisis carcinomatosa. This work shows that granulomas and neoplasms were not clearly differentiated at that date. They reported in 1837 from the literature and from their own experience only seven cases of intra-laryngeal tumour. Trousseau is said to have performed the first tracheotomy for the relief of a laryngeal carcinoma in 1846.

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Desault of Paris, in 1810, was the first to open the larynx by splitting the thyroid cartilage in a patient in whose larynx a foreign body was impacted. In 1833, Brauers of Louvain cut through the thyroid cartilage of a man aged 40 apparently to cauterise papillomata.

The surgeon who first performed laryngectomy was Patrick Heron Watson (1832 to 1907) of Edinburgh, in 1866; it was done for syphilis of the larynx, not cancer and the patient died of pneumonia. It was Billroth who was educated at Berlin, occupied a Chair of Surgery at Vienna, first removed the larynx for cancer in 1873 but recurrence and death took place in a month; actually the first larynx removed by Billroth was found when it was split open to be tuberculous, not cancerous.

In America, Gurdon Buck (1807-77) performed successfully thyrotomy for removal of a laryngeal cancer and the operation was done in 1851 and the patient lived for about 15 months after the operation. J. Solis Cohen (1838 to 1927) of Philadelphia was next to repeat this operation in 1868, curing his patient, whom he exhibited in 1887 in excellent health and with fair voice.

Bottini in Turin in 1875 successfully performed laryngectomy for a mixed round-and-spindle celled sarcoma and the patient was known to have remained in good health for several years and worked as a postman.

The history of cancer of larynx begins with the development of laryngoscopy. Manuel Carcia, Professor of Singing at the Paris Conservatoire, demonstrated in 1854 and made public in 1855 that auto-laryngoscopy was possible by a small laryngeal mirror. An effort to apply the discovery to medicine was made by Turck in 1857; but the perfection of technique and the realisation of its possibilities must be attributed to Czermak, who presented the art of laryngoscopy to the world in an article in the Wiener medizinische Wochenschrift of March 27th, 1858. The Academie de Medecine in 1860 divided in the Prix

Monthyon between Turck and Czermak and their pioneer work helped to establish Vienna, for the rest of last century, as the Mecca of Laryngology.

With the advent of the laryngoscope, its introduction by Garcia and demonstration by Turck and Czermak we record the first actual scientific observations of the vibrating vocal cords and the mechanisms of the interior of the larynx. Since then, laryngology has contributed to the scientific world an intense and unusually strong impetus and has developed to its present high degree the entire field of laryngology in the treatment and diagnosis of this area. Even after the invention of laryngoscopy cancer of the larynx continued to be recorded as an uncommon disease and was described as extremely rare by Cornil and Ranvier so late as 1876. In 1880 Stoerk, a successor of Turck and Schroetter in the Chair in Vienna remarked that carcinoma is rarely found limited to the larynx and most frequently invades it from the mucous folds between the epiglottis and the tongue or the epiglottis and the oesophagus. But Butlin, only three years later (1883) definitely advanced progress by stating that intrinsic cancer was much more frequent than extrinsic and that the vocal cords were the common seat of the disease. This was subsequently demonstrated by Semon, Chevalier Jackson, Gabriel Tucker, Schmiegelow and now every one accepts it.

CLASSIFICATION

Statistics from various clinics show nearly 2 per cent of all reported cases of malignant diseases is cancer of the larynx. The earliest and important attempts at classification of the cancer of the larynx were by Isambert in 1876 and Krishaber in 1879 who separated the cases into two groups, extrinsic and intrinsic although Isambert also suggested the subglottic. St. Clair Thomson suggested four main divisions long after into:

(*a*) Intrinsic
(*b*) Subglottic
(*c*) Extrinsic and
(*d*) Mixed;

In 1937, Douglas Quic proposed that it would avoid much confusion if the terms intrinsic and extrinsic were now discarded leaving two groups:

(*a*) Cancer of the larynx (formerly the intrinsic group).

(*b*) Cancer of the hypopharynx leaving the disease in the epiglottis as an entity by itself.

Wilson suggests the following classification, which he thinks would appear to be open to the least objections:

1. Laryngeal or intrinsic.
   Glottic: (i) Ventricular.
   (ii) Cordal.
   Subglottic:
2. Epilaryngeal or extrinsic.
   Epiglottic.
   Aryepiglottic fold.
3. Laryngopharyngeal.
   Pyriform fossa.
   Posterior wall of pharynx.
   Hypopharynx or post-cricoid.

International Classification and Staging of Carcinoma of the Larynx

CLASSIFICATION

Laryngeal cancer may be:

1. Supraglottic: arising from the infrahyoid epiglottis, false cord or ventricle.
2. Glottic: arising from the superior surface or edge of the vocal cord or the anterior or posterior commissures.
3. Subglottic: arising from any part of the subglottic space limited by the inferior aspect of the vocal cord above and the lower border of the cricoid below.

STAGING

Stage I: Carcinoma is limited to the mucous membrane. No infiltration. Full mobility of the larynx is retained.

Stage II: Carcinoma infiltrates, but does not extend beyond the larynx. Mobility of the larynx is impaired or lost.

Stage III: Carcinoma has extended beyond the larynx, direct extension or lymph node metastasis, but without producing the conditions specified in Stage IV.

Stage IV: Involvement of skin, or fixation or metastatic node, or distant metastasis.

Note: If any doubt exists, the case should be classified in the immediate lower stage.

Growths of the larynx also can be classified according to their histology.

HISTOLOGICAL CLASSIFICATION

Histiogenetic Origin.		*Malignant Neoplasm.*
Connective tissue	:	Sarcoma. Chondro-sarcoma.
Muscle	:	Rhabdomyo-sarcoma.
Reticulo-endothelial	:	Malignant haemangioma. Plasmo-cytoma (solitary malignant myeloma).
Epithelial	:	Squamous-cell carcinoma. Basal-cell carcinoma. Adeno-carcinoma. Papillary-carcinoma.

Endothelioma and sarcoma in the larynx are encountered in about one per cent of all cases of malignant disease occurring in this region.

Incidence.—It is rare in persons under 40 years of age, though cases have been reported in teen age patients. Laryngeal cancer is most common between 40 and 50 years of age.

Sex.—Sex is likewise an important factor. It is predominantly male. In a series of almost 5,000 deaths by cancer of the larynx reported during a 4 year period, it was found that 13·3% of cases occurred in women and 86·7% in men. In a series of almost 700 patients, of Chevalier Jackson, with malignant disease of the larynx, 92·3% were men and 7·7% women.

ETIOLOGY

Nothing positive can be said of the origin of cancer of the larynx. The predisposing factors are heredity, long continued irritation, excess voice used or abused, abuse of alcohol and tobacco, syphilis etc. without sufficient definite proof. Pachydermia of the larynx does not seem to be a pre-cancerous condition although leucoplakia definitely is. Malignant disease may coexist with both tuberculosis and syphilis. Chevalier Jackson gives the etiological factor of cancer of the larynx in a formula which may be simplified as follows: A + S + C + I + H + XYZ = E. A stands for age, S for Sex, C for senile changes in epithelium, I for irritation, H for heredity and X, Y, Z for unknown factors, E stands for etiology.

Age is a factor because the age incidence of cancer of larynx in the experience of different investigators has been shown between 40-50 though it has been reported in teen aged patients. There is no proof that benign growths have any special liability to undergo malignant degeneration or that this transformation occurs particularly after intra-laryngeal operations. The fumes of petrol engines may have an influence.

PATHOLOGY

Sarcoma of the larynx is rare. Clerf reported only 8 cases of sarcoma of the larynx and 740 cases of carcinoma, a ratio of

1 to 92. Adeno-carcinoma occurs in ventricle and also in the subglottic area. Mackenty gave relative frequency of various forms of malignant tumours arising from the epithelial layer as follows:

Squamous carcinoma	...	96 per cent
Basal-celled carcinoma	...	2 per cent
Papillary carcinoma	...	1 per cent
Adeno-carcinoma	...	1 per cent

Histology.—Microscopically cases of squamous epithelioma can be graded and this grading is of value for not only determining the type of treatment but also prognosis. Broders in 1920 divided squamous epithelioma of the lip into four groups according to the degree of differentiation shown by the cells of the tumour. This classification is in common use since that time to sub-divide the squamous cell tumours of the larynx. Broders suggested the division into four groups:

Grade		*Percentage of cells undifferentiated*
i	...	... 0-25
ii	...	... 25-50
iii	...	... 50-75
iv	...	... 75-100

Many surgeons and pathologists, says Max Cutler, believe that the more undifferentiated cancers have a worse surgical prognosis and some clinicians are influenced by the histological grading in their choice of treatment.

Intrinsic growths.—Intrinsic growths show less tendency to invade lymphatic glands at an early stage. It is this feature that gives malignant growths in this region favourable prognosis for surgery as compared with malignant disease in other regions.

Glottic growths may arise in the ventricular bands or in the ventricle of the larynx. They are not common and may reach the size eventually invading the epilaryngeal area.

Cordal growths are commonest of all the laryngeal growths. These arise on the neighbouring edge of the vocal cord. It is not reported that the growth commences on the vocal process of the arytenoid or in the arytenoid area.

Favourite area of the cord.—The central portion of anterior half is the favourite location; and the two extremities are generally quite free in early cases. The disease tends to spread forward to the junction with the opposite cord where it remains temporarily arrested. It is stated that it is slower in spreading backwards.

Mobility of the cord.—Semon pronounced in 1886 that a malignant growth usually causes a considerable impairment of the mobility of an affected cord at a very early period. Impairment of mobility is certainly not an early symptom but an advanced symptom of the carcinoma of the vocal cord.

Sub-glottic growths.—As regards sub-glottic growths the frequency appears to occupy a position between the other two growths.

Epilaryngeal or extrinsic growths.—This type differs from the intrinsic growth in producing symptoms at a later stage, but metastasising earlier than the intrinsic growth due to its situation. Extrinsic growths are more amenable to surgical removal than the growths of the laryngo-pharynx.

Pathologically, cancer of the larynx appears as a primary growth originating in the organ itself. Occasionally it is secondary to a neighbouring malignant neoplasm. Histologically majority of the tumours are squamous carcinoma because of the high frequency with which they originate from the true vocal cord. Very rarely anaplastic type appears.

SIGNS AND SYMPTOMS

The symptoms of cancer of the larynx will depend upon the location of the lesion. It is evident that if a tumour arises on the vocal cord, hoarseness will be the early and most important

symptom. If it is in the ventricles or on the under-surface of the ventricular bands, hoarseness will develop a little later. If the tumour arises on the extrinsic area as on the upper surface of the ventricular bands, the ary-epiglottic folds, the hoarseness may be a very late symptom or even it may not develop at all. But in the extrinsic area, the usual early symptoms are a sensation of discomfort, a tickling sensation or a feeling of lump in the throat, though a little later pain on swallowing and pain on talking may develop.

DIAGNOSIS

The diagnosis of malignant diseases of the larynx will be made after the consideration of the history and symptoms; the examination of pharynx, larynx and neck both by indirect and direct methods, the general examination of the blood and sputum, radiological examination and histo-pathological examination of the portion of suspected disease. Any disease affecting the vocal cord presents common symptoms such as hoarseness, difficulty in swallowing, difficulty in breathing etc. The common conditions affecting the larynx which to a great extent resemble malignant growths are:—benign growths, tuberculosis and syphilis and chronic inflammatory conditions of pachydermia and leucoplakia may give rise to suspicion.

The differential diagnosis is between malignant growths, tuberculosis, syphilis and lupus vulgaris.

TREATMENT

General Principles.—In the treatment of the cancer of the larynx it is aimed to give the greatest possible chance of cure of the disease. The disease left alone is certainly fatal. One would, therefore, feel that there are a few factors to be taken into account in advising treatment:

(1) Relief of suffering; (2) Prolongation of life; (3) Cure of disease although the cure of the disease may be the main aim

of the treatment. The effective treatment of cancer of the larynx is conveniently divided into radiological, radium and x-rays and surgical. The surgical treatment (*a*) removal by laryngo-fissure route; (*b*) removal by laryngectomy; (*c*) removal by lateral pharyngotomy route; (*d*) the removal of the glands.

At first, let us consider radio-therapy which is considered as a form of palliative treatment in such cases as are quite inoperable. The technique and treatment according to Wilson has not however advanced to such a stage that it must be considered as an alternative method of treatment to surgery in any stage. It involves very considerable discomfort for the patient and of course a course of treatment extending over to some 6 to 8 weeks. Max Cutler reported on 118 consecutive patients with cancer of the larynx who were treated by irradiation in Chicago Tumour Institute from the time it opened in April 1958 to December 1942. The main point of issue was under what circumstances should radio-therapy be used for operable cancer of the larynx? More specifically, should radio-therapy (pre-) be preferred to surgical treatment for early carcinoma of the true vocal cord amenable to laryngofissure? Should radio-therapy be preferred to surgical treatment for operable intrinsic carcinoma of larynx when disease is advanced as to require total laryngectomy? He concludes modern radiation therapy is an increasingly effective method of treatment of laryngeal cancer. 42% five year cures and 39% three year cures were obtained in a series of 118 unselected cases. Concentration radio-therapy has resulted in the curing of certain forms of cancer of the larynx hitherto regarded as incurable by irradiation. When the cords are freely removable or only partly fixed by carcinoma, curability is high but when they are completely fixed, cure is less common and laryngectomy is indicated; and he further concludes laryngectomy should be limited to intrinsic lesions with complete fixation of the cords occurring in good surgical subjects of good life expectancy. It is reasonable to expect that further improvement in technique of irradiation and earlier diagnosis will further diminish the necessity for total laryngectomy. We cannot

forget Henri Coutard as the leading investigator who has differentiated cancer of the larynx into two main varieties, clinical and histological and how one group can be treated successfully and easily by x-rays while the other is not curable by radiation. He also showed that one type tends to recur after an average of 6 to 8 years interval of freedom.

The following methods are used in radio-therapy treatment of the carcinoma of the larynx:—

(*a*) Radium needle implantation, Finizi-Harmar technique;

(*b*) Open irradiation with partial removal of the thyroid cartilage;

(*c*) X-ray therapy and

(*d*) Tele-radium.

Surgical Treatment.—Laryngofissure, total laryngectomy and total laryngectomy with block dissection of the neck.

AN APPEAL

Dear Sir/Madam,

At a meeting of the old students, friends and admirers of late **Dr. M. R. Guruswamy Mudaliar** held on 20th September 1958, at the Madras Medical College, a committee was formed to collect funds to put up a suitable memorial. It was decided to build a Library block in the Madras Medical College. In view of his services rendered to the Public and the Medical Profession, we request you to donate liberally for this good cause.

Contributions may be sent to Dr. B. M. Sundaravadanan, marked "Dr. M. R. Guruswamy Mudaliar Memorial Fund".

Thanking you,

Yours faithfully,

(*Sd.*) *B. M. Sundaravadanan,*
Secretary.

IN MEMORIAM

DR. M. R. GURUSWAMY MUDALIAR, B.A., M.D., D.SC.

Born : 1880 *Died : 1958*

News and Notes

The Madras Medical Service has sustained a severe and serious loss in the sad demise of Rao Bahadur Dr. M. R. Guruswami Mudaliar, B.A., M.D., C.M., D.SC., our most esteemed and beloved member. Glowing tributes have already been showered on him by the discriminating public of the State and the Country. At various times whether as Professor and Physician of the premier medical institution of the State, President of the Madras Medical Service Association, President of the Association of Physicians of India, Academician and Senator of the University of Madras, Legislator of the State or as Adviser to the College of Indigenous Medicine, he performed the different duties with pride and pleasure. Deeply religious and equally interested in allopathic and indigenous medicines, he gave of his best to the sick and the needy, professionally and intellectually. Physically, he is no more now with us, yet spiritually he sustains us.

May his soul rest in peace!

Though belated, it is with great respect and affection we offer our felicitations to Dr. R. V. Rajam, M.S., F.R.C.P., now F.R.S. of the University of Edinburgh. Throughout his professional career he has maintained the highest traditions of medicine, and has endeared himself to one and all by his hard work, excellence of intelligence and service to students, colleagues and the peculiar segment of the suffering humanity. He deserves praise on the honour conferred upon him and our best wishes go to him for continued activity in the medical profession.

We offer our grateful thanks to the electorate of the graduates' constituency for having returned the big two of our most respected members to the legislature. Sir A. Lakshmanaswamy Mudaliar, B.A., M.D., D.SC., F.R.C.O.G. and Dr. P. V. Cherian, F.R.C.S., have once again taken up their honourable places in the Madras Legislative Council, and we are most happy to note that our interests are safe in their hands.

The Service has been honoured once again by the re-election of Dr. P. V. Cherian, M.L.C., as the Chairman of the Legislative Council. Our best wishes go to him for a further successful period of Chairmanship now and in the years to come.

DIRECTORATE OF MEDICAL SERVICES

Dr. P. Natesan, Assistant Director of Medical Services, has retired, but has taken up the post of the organiser for the establishment of the new Medical College at Tanjore. We are very grateful to him for all the guidance given to us during his period and we wish him the best of success in his new post.

Dr. K. P. Sarathy, M.B.B.S., M.SC., and Dr. U. Maruthi Rao, M.B.B.S., D.L.O., have both entered the Directorate of Medical Services, Madras, as Assistant Directors of Medical Service. We offer them our respectful felicitations and wish them all success in their offices.

DEANS

We thank Providence for the speedy restoration to health of our beloved Dean, Dr. R. G. Krishnan, F.R.C.S., who has joined duty after a period of illness. We are grateful to the attending Surgeon and congratulate him on his successful management.

We welcome Dr. S. Balasubramaniyam, Dean of the Stanley Medical College, Madras, after a successful period of service in the different districts of the State.

We bid farewell to Dr. Latif Khan, Dean of the College of Integrated Medicine and welcome Dr. Subbaraman, Dean of the Integrated College of Medicine.

RETIREMENTS

Dr. G. S. Viswanathan, M.D. has retired from the Pathology Department of the Madras Medical College after a strenuous period of professional duties. We wish him the best of happiness and hope that his services will be available to the profession both inside and outside the service.

Dr. M. D. Anantachari, M.D., has retired after a brilliant career as Physician, Professor and Principal of the Madurai Medical College. He has been well known for his humour with which he conducted the difficult duties.

Dr. N. Vaidyanathan, M.D., has retired from the Medicine Department of the Stanley Medical College and Hospital, Madras, after meritorious service. As Physician and Professor, he will be long remembered for the moulding of the medical students of the Stanley Medical College and the Madras Medical College. We offer him our best wishes for a pleasant sojourn, and trust he will continue to serve the public and the institutions from outside the service with greater freedom.

NEW PROFESSORS

It is with great pleasure we record the appointment of Dr. Vedachalam, M.D., as Professor of Pathology, Madras Medical College and Dr. (Mrs.) V. C. Anguli, M.D., as Professor of Pathology, Stanley Medical College, Indefatigable workers, enthused with the spirit of getting at nothing better than the best, they have commenced their work with zeal and we wish them all success.

We also welcome the appointments of Dr. Victor, M.D., as Professor of Medicine and Superintendent of Erskine Hospital, Madurai, Dr. M. G. Prabhu, M.D. Professor of Medicine, Stanley Medical College, Dr. K. Ramachandran, M.D., Professor of Therapeutics, Madras Medical College, Dr. George, M.B.B.S., M.SC., Professor of Physiology, Stanley Medical College.

TRAVEL FELLOWS

We extend a hearty welcome to the following members of our profession who have returned from their foreign study/tour:

1. Dr. (Mrs.) S. Abraham, M.D.
2. ,, Sadasivan, M.S.
3. ,, Ramamurthy, M.S., F.R.C.S.
4. ,, S. P. Vedachalam, M.D.
5. ,, N. R. Ratnakannan, M.D.
6. ,, T. T. Ramalingam, M.S.
7. ,, (Miss) Marikayar, M.D.
8. ,, (Mrs.) F. Mathuranayagam, M.B.B.S.
9. ,, Moses, M.P.H. (Prof. of Hygiene).

We wish the following officers a safe journey, pleasant stay and speedy return home to give us the benefit of their knowledge and experience gained in their foreign study/tour:

1. Dr. A. S. Thambiah, M.R.C.P., D.V. F.D.S.
2. ,, Thiruvengadam, M.D.
3. ,, G. Subramaniam, M.B.B.S.

BUILDINGS

New buildings in the M. M. C. campus and the environs are fast coming up and it is hoped that before the issue of the next number we may be able to have the Physiology Block, the Chemistry Block and the Men Students' Hostel for the Madras Medical College.

Elsewhere we have published an appeal to members of our service and those in the profession, for munificent donations for the erection of a memorial building to house an up-to-date Library to perpetuate the memory of late Dr. M. R. Guruswami Mudaliar, B.A., M.D., D.SC., in the Madras Medical College where he graduated, served and brought name and fame for the institution.

Madras has been very fortunate to have had several important conferences under the auspices of the Tuberculosis Association, the Orthopaedic Association and the Association of Industrial Medicine, all of an all India character.

We have recently had distinguished ophthalmologists from abroad as visitors to our Ophthalmic Institution at Madras.

UPGRADED INSTITUTES

We are glad to welcome Dr. A. Anantanarayana Ayyar as Director, Institute of Anatomy and Dr. Manjunatha Rai as Director of the Barnard Institute of Radiology.

A new Diploma Course in Orthopaedics has been instituted by the University of Madras. Dr. M. Natarajan, F.R.C.S., is in charge of the Orthopaedic Department and we wish him all success.

Prof. M. G. Rao of the Dental Department, Madras Medical College. relinquished his duties and the post has been filled by Prof. Ramachandran, We wish them well.

PROCEEDINGS

of the Annual General Body Meeting of the Madras Medical Association held on 7-7-1958 at the Madras Medical College

The Annual General Body Meeting of the Madras Medical Association was held on Monday the 7th July 1958 at the Madras Medical College with Dr. R. Subramaniam, M.D., M.R.C.P. (Eng.), President, in the chair.

The Annual Report for the year 1957 which was circulated to all members was unanimously passed, duly seconded by Dr. T. V. K. Iyengar. Then the audited statement of accounts for the year ending 31st December 1957 which was seconded by Dr. K. P. Anandan was also unanimously passed by the members. There were no objections.

The Secretary of the Association, Dr. T. Janardhanan said that there was a lot of arrears of subscription due by the members and requested them to clear off the arrears of subscription by way of cheque or M. O. at a very early date. He said that in addition to the subscription paid by the members, the Association was getting advertising charges from different firms in connection with the publication of the Madras Medical Journal. He requested the members to see that the subscriptions are paid regularly and also stated that the Auditor has requested to enforce Article 5 which runs as follows :—

"5. *Removal of members*: The name of any member whose subscription is in arrears for over three years shall be liable to be removed from the list of members at a meeting of the Executive Committee; but he shall be eligible for re-admission on payment of all arrears ".

He also said that it had been decided to move in the next Executive Commitee meeting to remove the names of members who were in arrears for more than 3 years.

Dr. A. Srinivasulu Naidu said that the Auditor's suggestion cannot be accepted. He said that if no amount was collected from the members for 3 years it was lapsed and that beyond 3 years we could not claim the amount.

Dr. R. Subramaniam said that the Secretary had stated that the delay in publishing the Journal was due to the non-payment of subscriptions regularly; he was of opinion that it was due to lack of *contributions also from members*. He said that we should have 3 issues of the Journal in a year and any manufacturing concern will give their advertisement. He requested the members to write, periodically, articles for the Journal which need not be of a very high order. He said that the Director of Medical Services was publishing the Medical Bulletin. It would be absolutely redundant if members write for the magazine. So he requested that all members should write some article which might be of use to General Practitioners. He said that there was no use of bringing journals once a year or twice a year. It is upto the members who are highly educated and intelligent to write at least one article every year and it was not difficult to write one article a year.

NOMINATION FOR APPOINTMENT OF AN AUDITOR

Dr. T. Janardhanan said that the present Auditor was living in Old Mambalam and was not easily accessible. He said that the auditor had not been auditing the accounts in time. He also said that it was very difficult for the Association to get on with the registration under the Companies Act, and said that the principle under which the new Act had come was for profit making concerns. He said that when we were holding meetings etc. they wanted intimation to be sent under the Indian Companies Act that we hold our meetings at regular intervals and that we were not a

profit making concern. Every time, he said, when there was a change in the executive committee members etc., we had to pay a sum of Rs. 2/- for changing the same. He said that this had to be considered at the executive committee meeting and said that in the meanwhile we would like to have another Auditor closeby like G. T. He said that he would be thankful if anybody knew a Chartered Accountant who will help us in auditing accounts of the Association and the auditor has to be appointed by the General Body as the Executive Committee cannot appoint an Auditor. Dr. N. V. Gangadharan proposed the name of Mr. Gopalakrishnan, 310/11, Linghi Chetty Street, G. T., Madras to be appointed as Auditor for the Association for the year 1958 and it was unanimously agreed to by the General Body.

Dr. T. Janardhanan then informed that the following nominations for the year 1958-59 have been received for the Executive Committee :

President :

1. Dr. R. Subramaniam

Vice-Presidents :

2. Dr. S. Govindarajan
3. ,, T. V. K. Iyengar

Members of the Executive Committee :

4. Dr. S. Gnanadesikan
5. ,, K. P. Sarathy
6. ,, P. N. Rangiah
7. ,, P. D. Kannivelu
8. ,, T. Janardhanan
9. ,, T. K. Shanmugasundaram
10. ,, N. V. Gangadharan

He said that there were two vacancies in the Executive Committee and requested the General Body to suggest two names to be included in the Executive Committee.

Dr. S. P. Vedachalam and Dr. N. R. Ratnakannan were unanimously elected in the above two vacancies in the Executive Committee.

The President then informed the general body that Dr. T. V. K. Iyengar has sent some resolutions to be placed before the general body and requested Dr. T. V. K. Iyengar to move the resolution.

Dr. T. V. K. Iyengar in moving his first resolution stated that there was a lot of difficulties in rural areas and the position of a government medical officer was a gigantic one. He said that the government medical officers were the target of attack by every section of the people. Under the circumstances, he said, that unless the scales of pay of medical officers are revised it is difficult to get doctors to serve in rural and mofussil areas. He said that the same subject had been moved very often, and since we did not have the desired effect other ways might he tried to mend matters. He said that it was better to increase the scale of pay of the Medical officers conforming to that of other gazetted officers of the provincial services. He wanted to know whether all the members agreed with him on this. He said that the starting pay of assistant surgeons should be Rs. 250/- as that of any other gazetted officer of the provincial service. He also informed that the pay for licentiates was Rs. 150/-. In this connection he said that the scale of pay for the Madras Engineering service was Rs. 260-40/2-580 and the maximum and minimum were advantageous for the engineering service. He said that the medical scales of pay were originally fixed taking into consideration that there would be a large practice for the assistant surgeons. He also informed that our increment was only 25/2 compared with 30/2 and 40/2 of other gazetted posts in provincial service and hence it was not advantageous to us. He wanted that this may be moved as a resolution.

Dr. N. S. Narasimha Iyer said that in the engineering service they became Assistant Engineers only after a long service, and they served as Junior Engineers before becoming Assistant Engineers.

Dr. T. V. K. Iyengar said that medical graduates should come forward for service in rural areas. He appealed to all graduates to come and serve in rural areas and see the conditions and the rural folk. He said that the rural folk are very good people once we understood them and they understood us.

Dr. V. Rajagopalan pointed out that Rs. 50/- given as compensatory allowance should not be cut off. He thought that while we were asking for an increased scale of pay and the authorities might suggest loss of private practice allowance.

Resolution by Dr. T. V. K. Iyengar :—This general body meeting of the Madras Medical Association requests the Government to revise the Civil Assistant Surgeons scale of pay at least in conformity with that of the Engineering Service *i.e.* Rs. 220-20/2-380-40/2-580. The resolution was taken as passed.

Dr. T. V. K. Iyengar in moving another resolution spoke as follows :

He said that there were many difficulties for an Assistant Surgeon working under an officer of another department. He said that at present he

was serving under an executive officer who is a non-gazetted government officer. He pointed out that no facilities etc. were given to him. He said that there should not be any administrative control over civil assistant surgeons by an officer of any other department, and said that we should be under the control of the D. M. O. So he wanted to move a resolution from the Association requesting the Government to remove the administrative control over civil assistant surgeons by any other department.

Dr. T. Janardhanan said that all personal difficulties should be taken up with the Director of Medical Services at first and if no relief was obtained it then could be moved through our Association. It was difficult to know if Dr. Iyengar came under the township rules or under the medical attendance rules.

Dr. T.V. K. Iyengar again insisted on it that it was better to remove the control by the executive officer over the assistant surgeons. He said that even for casual leave they had to ask the permission of the executive officer.

Dr. Md. Ismail said that the assistant surgeons were under the control of the D. M. O's. He said there was no difficulty at all, and wanted to know what the difficulty of Dr. Iyengar was. He further said that the D. M. O's. recommendation is taken by the executive officer and if it was not taken we could certainly report to the D. M. S. He said that all depended upon the individual and if the assistant surgeon's services were lent to the Municipality and if the officer moved smoothly with the executive officer everything would go right. He also pointed out that the executive officer was the man on the spot and the D. M. O. was far away.

Dr. T. V. K. Iyengar said that if it was a Council or a Board we could address the Chairman. But here he said they could not address them but the executive officer. He said that some of the graduates when they came over to rural areas resigned their appointments because of this reason.

Dr. Md. Ismail Saheb agreed there might be some such difficulties but it could not be helped.

Dr. T. V. K. Iyengar again impressed that he was saying all this only for the graduates who would be coming later to serve in rural areas.

Dr. T. Janardhanan stated that serving under a non-gazetted officer was not a thing for discussion. He hoped that Dr. Iyengar was not pressing the point.

Dr. R. Subramanian said that if Dr. Iyengar moved it to the D. M. S. then the Association would take it up, for which Dr. Iyengar said that it was not a personal affair but only a general question and he did not like to take it to the D. M. S.

Dr. A. Srinivasulu Naidu said that it might not be possible to remove the controlling authority unless the M. Os. were provincialised and all the stations provincialised. This he said was not possible.

The above resolution of Dr. T. V. K. Iyengar was then dropped.

Dr. T. V. K. Iyengar moved another resolution in connection with the provision of Quarters to assistant surgeons. He said that the type of quarters allotted was very bad.

Dr. T. Janardhanan read last year's resolution on the above subject and stated that no reply had been received and that we would be pressing the same again.

Dr. R. Subramaniam informed the members that the Government had sanctioned a sum of Rs. 14/- lakhs for construction of quarters for the civil assistant surgeons in the mofussil. He said that the Government had started the construction and it would be started first in the villages where there were no quarters for the doctors.

Dr. S. Govindarajan said that there was a suggestion here to pass a resolution for the allotment of quarters on the same lines as allotment of quarters to officers elsewhere. The following resolution was moved by Dr. S. Govindarajan :

> "That this Association presses that in the allotment of quarters to the medical officers the type of quarters allotted should be in conformity with similar quarters allotted to officers of similar status in the other departments".

The above resolution was seconded by Dr. T. K. Shanmugasundaram and the resolution was unanimously passed.

Dr. T. V. K. Iyengar then dealt with the transfers of civil assistant surgeons. He said as far as possible transfers of assistant surgeons should be avoided in the middle of the term of the academic year.

The following resolution moved by Dr. S. Subramaniam and seconded by Dr. K. Sivaram Mudaliar runs as follows:

> "The Association resolves that the cadre of Senior Assistant Surgeons be raised to a minimum of 50 so as to include all important taluk centres, from the present strength of 25".

Dr. T. Janardhanan said that between the categories of Civil Surgeons and Civil Assistant Surgeons another category was being created now, and officers who are promoted to D. M. O.'s post are put under this category.

Dr. A. Srinivasalu Naidu said that there were 1200 Assistant Surgeons and that we might suggest fixing up a percentage.

Dr. T. Janardhanan agreed with Dr. Naidu that a percentage might be fixed.

Dr. T. K. Shanmugasundaram drew the attention of the members to the scales of pay existing in Kerala for medical officers *i.e.* 450—600. He said that the postgraduates in the Madras Medical Service got only a very low scale. He said that such persons who possessed postgraduate qualification and did teaching work should be eligible for such a scale.

Dr. R. Subramaniam stated that Government had agreed to increase the scales of pay for teaching staff and the Central Government had also agreed. He said that money had already been set apart.

The above resolution of Dr. S. Subramaniam was modified as follows:

> "It is resolved that the cadre of S. A. S. at present being created should be at least 20% of the total strength of the Civil Assistant Surgeons".

The above resolution was passed unanimously.

Dr. R. G. Krishnan, discussing Dr. Shanmugasundaram's point said that it was highly superfluous to pass a resolution because the Government of India were increasing the pay of professors, tutors etc. and said that all would get more.

Then Dr. T. K. Shanmugasundaram withdrew the resolution.

Dr. A. R. Menon said that the R. M. Os. were not allowed surgical operations.

Dr. R. Subramaniam in reply said that if the R. M. O. approached the Surgeon or Physician, he would be quite welcome and could do the operations. He also said that there was nothing to prevent R. M. Os. from doing operations.

Dr. N. S. Narasimha Iyer said that the R. M. Os. when they were posted here should take much interest on the surgical or medical side in collaboration with their colleagues on the surgical or medical side.

Dr. R. G. Krishnan said that when he was the R. M. O. at Vizag under Dr. Ebden, he was asked to do all surgical cases. He stated that all depended on how the R. M. Os. moved with the Surgeons.

Dr. S. Balasubramaniam also stated that the R. M. Os. were quite welcome in the surgical or medical units and they may do operations in collaboration with the Surgeon or Physician of the unit. But he said that R. M. Os. could not be posted to units as they had administrative work.

Dr. R. Subramaniam once again reiterated that if the R. M. Os. wanted to do any work on the surgical or medical side nothing prevented them from doing this.

Since there were no other resolutions for discussion, the general body dispersed for dinner.

Dinner over, Dr. R. Subramaniam after welcoming the Hon'ble Minister for Health, the Director of medical Services, and Dr. N. S. Narasimha Iyer and other members present stated that the scales of pay of medical officers were very low. He said that even if 1931 scales of pay were given it would be great relief. He also said that before the Independence the Association was consulted in matters of policies but that after the Independence for some reason or an other the Association was not consulted though it had been recognised by Govt. that we remained as loyal servants of Government. He stated that if the Govt. consult us 'we will let you know what we feel about your policy which will help you to get better service and better co-operation'. He also said that there had been of late a grievance among the married officers. He recalled that last year he had referred to one of the conditions pertaining to the European members of the I. M. S. They periodically went abroad to their native place to see what was happening in their own country. He said when they came back they were useful. He pointed out that there seems to be an impression that it was a waste to depute senior officers to go abroad. He did not think so for in his opinion the officers on their return would implement what they had seen. Dr. R. S. reminded the members that the Director of Medical Services had told us that dispensaries would be equipped better. He mention that even last week he had received a letter from a Cilvil Asst. Surgeon saying that there were no chemicals etc. If the medical stores could not supply they should be instructed to purchase locally.

He said our men were prepared to go to villlages provided they were reasonably equipped. He said we could not have helicopters but we could certainly have a jeep and go to villages. He said that our usual custom is to invite one of our elder members to talk to us. The secret was we in service could not talk freely and naturally we had to maintain a certain amount of restraint. Therefore we preferred one of our elder members. To-day, he said: "We are very lucky to have in our midst Dr. N. S. Narasimha Iyer who has been with us in this hospital for nearly a quarter of a century and his name is quite familiar to those who had been his students of this college and hospital. He has been a keen and willing surgeon of this hospital and even now he attends our clinical meetings regularly. We are particularly thankful to our Health Minister for having put himself to great inconvenience and I hope he will go back with ideas to implement the same. Thank you Sir".

Oration by Dr. N. S. Narasimha Iyer, F.R.C.S.—Dear Friends, Hon'ble Minister, Director of Medical Services, President of the Association, Fellow members of the Service: I thank the President and the Executive Committee for the trust imposed on me. I will use my words with caution so that they may have some weight. I have been attending the deliberations of our Service Association from 1929. I know the ups and downs of the service. I know what service members feel and I know what the Director of Medical Services feels in his administration. I know what the Minister of Public Health has to do. He is a politician and has to satisfy the elected house of parliament So bearing these in mind I like to tell you something and you will not mistake me if you do not entirely agree with me in my views. I became a medical officer in 1909. I will tell you the conditions as they existed then. We had 65 I.M.S. officers in this province. It comprised Andhra Pradesh, Malabar and Mangalore. There were only 2 Civil Surgeoncies open to the Provincial doctors. The rule was that a man should become a M. D. to become a Civil Surgeon. The Health officer of the Madras Corporation was also an I.M.S. officer. There were no women Civil Surgeons and the only post occupied by a woman was one under Dufferin Fund scheme, then in the Gosha Hospital. We had S. A. S., Civil Apothecaries Military Apothecaries, Military Asst. Surgeons, Civil Asst. Surgeons. The Civil Asst. Surgeon's post was a gazetted post only when he held the post of A.D.M.O. The post was made a gazetted post so that he may sign the bills to the treasury. The mofussil Asst. Surgeons were not called Asst. Surgeons. They were called Apothecaries and the number was only 600 for the whole province. There were probably 50 to 55 private practitioners of whom 25 were in districts. That was the state of affairs. So every man had an handsome income although the salary was comparatively low. They had their discontent. In

1912 the Islington commission toured India and all the services were discussed. Two Asst. Surgeons, one of them who is alive now with us presented a memorandum in the name of the committee. That was the origin of the Madras Medical Association. In 1912 they introduced the House Surgeoncy Scheme. Till then Final Year Students had the great privilege of working something like an Assistant at that time. A man who did one year of House Surgeoncy got 100 marks, and they recruited men like that. Soon after that the first world war came. Many offices were depleted and Asst. Surgeons who had put in 7 years became D. M. O. Dr Guruswami Mudaliar would not have been appointed in this hospital but for the first world war. Rs. 100, 150/-. 200/-. was the scale of pay. Rs. 300/- was the scale of pay for Civil Surgeons. A competitive examination in Medicine, Surgery, Midwifery, and Jurisprudence was held for recruitment and distinguished men like Dr. Rangachari had written the examination and got Rs. 150/- as pay. That was the condition of the service. After the first world war things opened up gradually. A Lee Commission was appointed in 1927 and 27 officers of the I.M.S. were placed at the disposal of the province. The other officers came as a matter of succession in the Provincial Civil Service and there were nearly 25 to 30 appointments because the medical colleges were not opened up. This was the position. The I. M. S. men did their very best for this province and you will find in our library lots of old books written by them. They had produced about 22 reports on indigenous drugs. Dr. Mohideen Sheriff and Kandaswami wrote the book on indigenous drugs. They had no ill-will towards indigenous system of medicine. At this time I may tell you that the Missionaries opened up Medical Schools at Vellore, etc. The men who had passed the examination were registered under the Medical Registration Act in 1914. The British administration at this college opened up medical schools at Vizag, Tanjore and Royapuram. After the Minto Morley reforms, provision for more doctors came. Our medical colleges are built up on these institutions. Many Andhras did not take to Medicine. The first M.B.B.S. man is still alive—Dr. Pattabhi Sitaramayya. The first Hindu lady is Dr. Muthulakshmi Reddi. This will give a background as to how we have built up our own medical institutions subsequently and what a great demand for Medical Schools and Colleges exists, and how Andhra has established 5 colleges within a very short period of 5 years. This has got a moral bearing. This is a great problem for any Public Health Minister because we should first stand on principles. Are we going to preserve the systems of Medicine on Socialist pattern of society? This is a point which they must think over very very seriously.

The people demand Ayurvedic System of Medicine which has been founded in 1925. I need not express opinion on either side. I have brought this to your view, and it is upto you to advise. I have ready the available literature on indigenous drugs. Wherever you go there are failures in English medicine. But it is a very sincere view based on conviction.

Well Gentlemen, then the Montagu Chelmsford reforms came. The first Public Health Minister, Raja Saheb of Panagal introduced great reforms. The reforms are the abolition of the grade examination, institution of a postgraduate course for 6 months which was not carried out after 1922 because these senior doctors complained that their teachers in M. M. C. and Government Ophthalmic Hospital are much junior to them and they are not willing to be trained by them. The services got a time scale of pay. But soon overseas study leave encouraged people to go to England, and that scheme fell through afterwards because of the financial stringency. There was a severe retrenchment in the Asst. Surgeons Cadre. Already there were 1200 men in the service; the majority of them did not earn a 20 years pensionable service, and they must be confirmed so that they may be able to earn a decent pension. That is a very important grievance. This difficulty is there and I know the D. M. S. is taking interest on this point, and this is a point which should be remedied very early.

I mentioned in the beginning that only the Asst. D. M. O's. are gazetted officers and the rest were non-gazetted. I have a suggestion to make. If they are willing to accept the position of the N. G. Os. they will be able to get concessions which are open to N. G. Os.—free education of children, medical concession etc. If the Government is not in a position financially, this may be taken as a temporary measure.

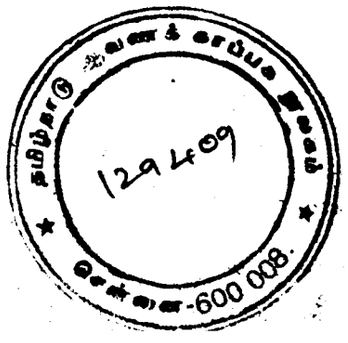
This I would like to bring to the notice of the Minister. So much so it was very difficult for the service members who get discontented in the matter of recruitment.

The open competition was stopped and some 200 members returned after doing temporary I. M. S. service in the world war. The war stopped in 1919 and demobilisation took place in 1920. They all came as Asst. Surgeons in the service, and there were in all 65. In 1925 they appointed two members as Asst. Surgeons and from that time again some recruitment went on competitive examination basis till 1929 when retrenchment came. Their first discontent was that they were retrenched from the profession. The second world war came. Before the second world war the profession was

in a very bad way. The members of the Madras Medical Service represented as fully as possible. There were nearly 1200 in Madras City as practitioners. Half of them were starving. I have served in a place 65 miles away from Railway Station in the middle of a jungle, living in the P. W. D. quarters, tigers passing in front of my house. We did very hard work. Gentlemen I wanted to tell you that the I. M. S. officer did honest work. That is another side of the picture. His private practice has dwindled. But his services were of great value with regard to the scientific aspect. Are they going to submerge their grievances and offer this to the service of this state? It is now a healthy state. It is for you to solve the problem and help the Minister and the D. M. S. in the matter of recruitment. They will try to give all help to you. They will understand your problem and I think I am representing your case very favourably. It is upto him to help you. In our own province I want to tell you the origin of the Sanitary Inspector class was 15 days training during the time of plague in 1923. The Sanitary Inspectors course was for 15 days, later on 3 weeks, 6 months and now one year. Col. King was the Editor of the Bulletin of the London School of Tropical Medicine. It is only after the plague epidemic in 1919 the Government of India opened up a Public Health Department. Before that the Surgeon-General was called the Public Health Commissioner. The real public health department was opened up in this province in 1922 after the Montagu Chelmsford's with a District Health Officer and Municipal Health Officer.

The community project is a very good thing. How to man it? I had done that job in 1914 in many places. I was on plague duty in Nilgiris and Kurnool. I know the whole of Coonoor taluk inside and out, and women doctors who are posted in community projects should give advice in Family Planning, because this country requires limitation of population".

We are very grateful to the many willing contributors to this issue, particularly to our friend behind the scene–Dr. N. B. Janardhanan, B.Sc., M.B.B.S., for his indefatigable effort and energy put forth by him to bring out this bumper issue.



The Treatment of Reactions to Penicillin

Before giving penicillin, or recommending an injection of penicillin to be administered, it should be the responsibility of the physician to ensure that the following drugs are available for immediate use. It is also advised that those drugs be kept on a tray or in a box, and that routine care be used to ensure their sterility and potency.

Drugs and equipment considered essential

(1) 1 in 1000 solution of adrenalin hydrochloride.

(2) ampoules of nikethamide (coramine)—two (2).

(3) an antihistamine preparation for intramuscular injection (*e.g.* Benadryl, Piriton or Chlortrimeton).

(4) 2 × 2 ml. syringes and hypodermic needles.

Drugs also recommended if locally available

(1) Cortisone for intramuscular or a suitable hydrocortisone preparation for intravenous injection.

(2) Aminophyllin up to 0·5 g. for I.V.I. in slow i.v. injections.

Procedure

Immediately on appearance of signs of a reaction, the patient should be laid down flat. From 0·3 to 1·0 cc. (5 to 15 minims) of adrenalin should be given into the upper arm, followed by 2·0 cc. of coramine.

If immediate improvement is not obtained, or the patient's condition deteriorates, then the adrenalin should be repeated, or cortisone (25-100 mg.) given intramuscularly or hydrocortisone hemisuccinate given intravenously.

Other recognized therapy for severe shock should be instituted and where possible the patient should be admitted to hospital.

In cases showing angio-neurotic oedema, urticaria or conjunctival congestion, the antihistaminic preparation should be given by intramuscular or intravenous injection.

Where coughing, dyspnoea, respiratory distress and substantial discomfort are pronounced, an intravenous injection of 0·5 gm. of aminophylline should be administered.

—Extract from W.H.O. report for information of members of the Madras Medical Service.

Statement about ownership and other particulars about newspaper, THE MADRAS MEDICAL JOURNAL to be published in the first issue every year after the last day of February.

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I, Dr. T. Janardhanan, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Dr. T. JANARDHANAN,

Honorary Secretary.

28—2—1957.

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