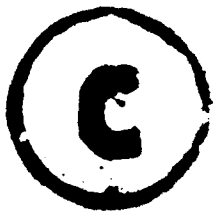
NO. 8.

MEDICO, SURGICAL, SUGGESTIONS.

August – 1938.



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MEDICO-SURGICAL SUGGESTIONS

Vol. VII. AUGUST 1938 No. 8

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MEDICO-SURGICAL SUGGESTIONS

A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

Editor : Dr. P. R. Venkappaya.

VOL. VII AUGUST 1938 NO. 8

CONTENTS

Annual Subscription : Rs. 5 ; foreign : 10 sh.; Single Copy : As. 8.

Sample Copy for 4 As. Stamps.

Office of the Editor & Publisher: 179, Mint Street, Madras, India.

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MEDICO-SURGICAL SUGGESTIONS

VOL. VII AUGUST 1938 NO. 8

OTITIS MEDIA

G. S. SEED,

Aural Surgeon, The General Infirmary to Leeds.

It has been said that the problem of chronic otitis media is social as well as surgical and is a reproach to the medical profession. Years ago, a chronic discharging ear was considered lightly, especially in childhood and no other chronic suppurating sinus was treated with such levity and inaction.

Recent improvements in the treatment of the acute conditions of the ear, the recognition by patients that persistent otorrhea in childhood is not normal and the establishment of clinics, have resulted in fewer chronic conditions of the ears but there is still room for improvement. (Rodger 1935).

Otitis media in infants warrants special consideration. Le Mee (1937) of Paris has coined the term 'otomastoiditis,' as there is no such thing as a simple infection of the middle ear itself at this age. In an infant, the eustachian tube, the middle ear and mastoid antrum are one single cavity extending from the pharynx into the mastoid. The antrum is relatively larger than in the adult and lies just under the cortex. The eustachian tube is about 15mm long compared with 33mm. in the adult, and of relatively large calibre. The pharyngeal orifice at birth is at the level of the soft palate and the tube is horizontal in direction. The contents of the middle ear are reinforced by a myxomatous lining which readily becomes infected, especially if aeration has not proceeded normally. It will easily be seen that infection readily passes along the eustachian tube and if the myxomatous embryonic tissue remains, abscess formation easily occurs.

In the first stage the eustachian tube is infected and the otosalpyngitis is responsible for the pain and fever during the course of a rhino-pharyngeal infection. The reaction of the tympanic membrane is shown firstly by injunction of the drum, the presence of enlarged vessels along the handle of the malleus and radiating from the periphery of the drum. Later the normal landmarks of the drum—

the handle of the malleus, the anterior and posterior folds and the cone of light—disappear and the drum becomes red, opaque and bulging. The diagnosis of the above is simple, if uncomplicated, and everything points to an ear infection.

However, there are cases in which the otitis media is not primary and then diagnosis is often difficult. I might mention gastro-enteritis as an example of a primary cause of infection. It has been shown by post-mortem records that about 80 per cent. of these cases have otitis media. Broncho-pneumonia and pink disease also show a high incidence of otitis media. When there is a known associated febrile condition, it is a persistence of the toxæmia in spite of the subsidence of local signs and the temporary character of the relief, resulting from the treatment of the digestive or chest symptoms that leads one to suspect the presence of otitis media. Broncho-pneumonia and pink disease also show a high incidence of otitis media. When such as rolling the head on the pillow, pain on swallowing or sucking, there may even be tenderness over the eustachian canal. The appearance of the tympanic membrane is often puzzling ; there may or may not be the classical red bulging membrane, which readily discharges when paracentesis is performed, with marked clinical improvement. More commonly, the tympanic membrane is grey, lustreless in appearance with no actual bulging, what one might call a grey boggy appearance. In older children it may have the appearance of frosted glass.

I should like to stress the fact that about 40 per cent. of cases are bilateral and the opposite ear should always be examined as more anxiety may be caused if the temperature and pain do not cease after one tympanic membrane has been opened.

It used to be thought that the majority of cases of otitis media in infants were of tuberculous origin. J. S. Fraser and Logan Turner (1927), of Edinburgh, made the statement some twenty to thirty year ago, that 50 per cent. of all cases of otitis media in infants under one year of age and 27 per cent. in the second year were tuberculous. Pathological examination in about half the cases and local signs in the rest verified this. Recent statistics show that only about 5 per cent, of case of otitis media can be considered as tuberculous. Whether this is due to better living and the increased purity of milk, one cannot say. We rarely find evidence of tuberculous infection at the General Infirmary at Leeds, unless associated with generalised tuberculosis or with such signs as facial paralysis, etc.

In older children, otitis media runs the usual course but there are various types which require special mention. One type is that in which the discharge commences with very little previous pain.

(1) Children who have had repeated attacks of otitis media have little pain at the commencement; this is due to the fact that previous perforation of the tympanic membrane has either not

healed or is replaced by a thin scar which ruptures under much less tension than a normal case.

(2) In measles and scarlet fever, there is much sloughing of the tympanic membrane and little acute pain, the only sign being an increase of temperature and purulent discharge.

(3) Also in septicæmia and pyaemia pain is not a predominant feature.

(4) Infection with streptococcus mucosus gives extensive bone destruction with slight local and general symptoms. The tympanic membrane shows a pallid infiltration and in some cases there is no perforation.

In older people the first sign of otitis media in the tympanic membrane is a retracted drum ; this is due to blockage of the eustachian tube with absorption of the air in the middle ear.

Finally in the diagnosis of acute otitis media, every symptom must be taken into account : *viz.* general symptoms of toxæmia, pain, the appearance of the tympanic membrane, temperature and finally, loss of hearing. Tenderness over the mastoid, which is due to a hyperæmia of the mastoid cortex, may be present in cases of acute otitis media and must not be confused with mastoiditis.

Examination of the drum in some cases is difficult, owing to the presence of desquamated epithelium. As gentle syringing is useless and violent syringing too painful, a swab of 5 per cent. cocaine helps considerably both to shrink the tissues of the meatus and to help in the removal of debris.

Influenzal cases, especially if very acute, may cause confusion in diagnosis ; the outer epithelial layer of the drum is raised into a hæmorrhagic bulla. The rare cases of Hunt's syndrome must not be overlooked. The ætiology of the latter is an inflammation of the geniculate ganglion of the facial nerve. Cases are characterised by the sudden onset of intense pain in the ear, the appearance of vesicles on the posterior part of the drum and swelling of the meatus. These cases are best left alone, as in two or three days facial paralysis will develop and the operation would be blamed for the apparent sequel. The eighth nerve may also be affected, giving rise to deafness.

Local Treatment of Acute Otitis Media.

In the early stages before there has been discharge, there are two methods available :—

1. To leave the tympanic membrane alone, using drops such as glycerine C acid carbol 5 per cent. or cocaine. The former should not be used for long owing to its producing a desquamation of the epithelium of the meatus. This is not good treatment.

2. Myringotomy : The term ' myringotomy ' is used as opposed to paracentesis, which means a puncture of the drum whereas myringotomy indicates an incision of the membrane. Myringotomy is

undoubtedly the best form of treatment. The chief indication is the presence of pus in the middle ear, as shown by the bulging tympanic membrane.

Other indications are :—

1. High temperature and toxic state of the patient.
2. Intense pain with infection of the tympanic membrane.
3. Tenderness over the mastoid.

Spontaneous rupture may involve a sloughing of a large portion of the tympanic membrane, too large for restoration and badly situated for drainage. Healing is by fibrosis. Myringotomy, therefore, gives quick relief and better drainage. There is healing with a minimum of scar tissue and less liability to mastoid infection. One should not hesitate to perform a myringotomy in children.

The operation is performed, usually under a general anæsthesia (ethyl chloride). Local anæsthesia (Bonain's solution—cocaine and carbolic) may be used, but is unsatisfactory. A curved incision should be made in the posterior part of the drum from below upwards extending to the attic and along the meatal wall. An incision from above outwards may dislocate the stapes or puncture the jugular bulb. Kerrison advocates syringing one hour afterwards. This helps to remove the clots but is painful. (Kerrison, 1923).

After treatment : A different kind of pain is often experienced due to the clot tearing against the incision. In children and in infants, there may be little discharge for a day or so. The discharge is usually blood-stained for the first few days and then becomes purulent, and in favourable cases becomes more serous if the improvement is maintained.

General treatment is important. No nasal syringing should be advised but inhalations are useful to relieve the congestion and promote some discharge down the eustachian tube.

Two forms of local treatment :

1. Dry method—using a wick down to the perforation, the ear being cleaned once or twice daily with sterile wool. Ointment of boric acid and zinc oxide in equal parts is used to prevent otitis externa.

2. Wet method—gentle syringings with dilute boric lotion. Hydrogen peroxide is used when the discharge becomes thick, causing the debris to float up and thus promoting better drainage. It should not be used in excess as otitis externa may be caused. Later, when the discharge becomes less spirit drops may be used.

Eustachian inflation and politzerisation are useful in the later stages if the naso pharyngeal catarrh has gone.

INDICATIONS FOR MASTOID OPERATION.

1. *Absolute indications, i.e.*, independent of the duration of the disease are those in which there is no doubt that the mastoid should be opened, *e.g.*, cases with complications such as lateral sinus thrombosis, meningitis, brain abscess, facial paralysis, labyrinthitis.

2. *Relative indications* :

Observe the following points :—

(*a*) *Secretion*, type, amount, pulsation, cessation of discharge with pain.

(*b*) *Hearing*, test this every two or three days. In a favourable case the hearing should gradually improve.

(*c*) *Tympanic membrane* : In the early stages the tympanic membrane is red, œdematous, with nipple formation at the site of the perforation and with sagging of the posterior wall. When the case is resolving the landmarks of the tympanum slowly reappear.

(*d*) *Pain* : A deep-seated pain suggests the presence of a deep extradural abscess.

(*e*) *Tenderness* especially over the antrum and tip.

(*f*) *Temperature* occasionally rises in an uncomplicated mastoid but its absence does not mean that the mastoid is not infected.

(*g*) *General signs and symptoms*, such as loss of appetite, insomnia, etc. are important.

In early otitis media, there should be many signs to indicate operative treatment and in old otitis media, few signs.

When called in to see a case of otitis media, one should ask :—

1. How old is the otitis media ?
2. The quantity, quality and intensity of the symptoms.

The time limit for discharge in the prevention of chronic otitis media is about four to six weeks. It is important to keep to the above limit. Some cases may clear up after this but in order to preserve good hearing an operation should be undertaken at this time. A cellular mastoid may be left longer than a sclerotic mastoid. In children, attention should be given to the question of adenoids and in adults, to nasal sinus suppuration.

CHRONIC OTITIS MEDIA.

Korner's law, that complications are in the next neighbourhood to the primary focus, can be well applied to tympanic perforations.

Tubo-tympanic or eustachian type of perforation : Common in childern. History of recurrent discharge, cold, sore throat, pain, rupture.

In a healthy child it rapidly clears up, whereas a child with poor resistance takes a long time. Discharge is stringy and tenacious. There is usually a history of sore throat, a recurrent discharge and cold. The tympanic membrane ruptures spontaneously. There are usually no complications, of mastoiditis the infection being limited by the ligament of Trolisch. (MacLaggan, 1937).

Treatment : That of acute otitis media.

1. In resistant cases, silver nitrate, 5 per cent. used with the fistula method, gives good results. Eustachian catheter washings advocated by some but this is painful. Removal of adenoids or tonsils and adenoids helps to lessen the danger of reinfection.

Meso-tympanic type of perforation :

This is a large central perforation not extending to the tympanic ring. The chronicity is due to the persistence of infection of the middle ear mucosa. This is subsidiary to tubal or mastoid infection but persists after original focus has been eliminated. There is persistent scanty muco-purulent discharge but less mucous than in the previous type.

Method of treatment : No radical mastoid. Operation not advised as the hearing is good and cavity lined with mucosa. Wet or dry methods used as in acute otitis media. Intra-tympanic syringing is useful as there is always an accumulation of debris on the floor of the middle ear.

1. Iodine and boric powder introduced by Lederman (1930) some years ago requires individual attention. He suggests that irrigations are forbidden because these cause a maceration of epithelium which becomes sodden. The canal and middle-ear cavity are cleaned out as well as possible with wool applicators, either straight or curved. Granulations are cauterised or removed. Iodine and boric powder (75 per cent. Iodine and boric powder) is insufflated. This is an intimate association of iodine with boric acid ; the iodine solution mixed with dry, finely powdered boric acid. The action of the powder is due to liberation of iodine as the boric acid dissolves in the secretion. There is no danger of retarded drainage and no caking. Alternate daily treatment is advisable.

2. Zinc Ionization : This is a means of disinfecting the middle ear and the treatment is by a medical attendant. It depends on accurate cleansing of the middle ear and meatus. Zinc sulphate solution is used and a curreut of two to three milliamps. Two to three treatments are required.

The above method is contra-indicated in an acute infection and in chronic mastoiditis, cholesteatoma and labyrinthine suppuration. (Friel 1922).

Attic type of perforation.

There is a seropurulent or purlent discharge. The perforation is in Shrapnell's membrane and associated with cholesteatoma. There are two theories of the production of cholesteatoma, (1) due to squamous metaplasia, and (2) due to an ingrowth of epithelium from the meatus. These cases are very liable to complications.

Treatment is by radical or conservative mastoid operation.

General type of perforation.

This follows an initial virulent infection such as scarlet fever, etc. There is a foul discharge and often polypi present. Each case should be treated on its own merits. The condition of the opposite ear should be taken into account and the radical operation suggested if the following symptoms predominate : Profuse discharge, rapid

recurrence of polypi, headache, painful attacks, vertigo, facial paralysis.

Mastoid type or antrum perforation :

The cause of the chronicity lies in the mastoid cells. Persistent discharge is accompanied by attacks of pain, temperature and cessation of discharge, due to an exacerbation of inflammation and an obstruction of drainage.

Examination : A purulent discharge, not stringy. Posterior perforation extending to the tympanic ring X-ray shows a mastoid infection.

Treatment : By simple ortical mastoid.

(*University of Leeds Med. Magazine Vol. 8 No. 2.*)

TROPICAL ABSCESS OF THE LIVER

BY

R. L. SPITTEL, F.R.C.S. (Eng.)

Consulting Surgeon, General, Hospital, Colombo.

During this century there have been two miracles in the field of therapeutics, emetine and salvarsan. Of the two the action of emetine is in appropriate cases more certain and speedy. It not only cures liver abscess but also prevents it ; with the result that there has been an enormous reduction in its incidence. A disease which was once common, is now rare except perhaps among the poor who are apt to neglect symptoms. In the British Army there has been a 73 per cent. reduction in the incidence of liver abscess. This reduction is due to two factors : (*a*) The treatment of dysentery with emetine. (*b*) The routine examination of stools. The symptoms of amoebic colitis are so varied that it may mimic a wide range of diseases such as appendicitis, cholecystitis, peptic ulcer, etc. Only the routine examination of stools microscopically will prevent unnecessary operations in these cases. Hence it is necessary for a surgeon in the tropics to be a tropical physician as well.

In addition to a reduction in the incidence of liver abscess there has been a great reduction in mortality. At one time hepatic abscess was a most dreaded disease with a 50 per cent. mortality, now the mortality is below 10 per cent. Of my 55 cases in days when liver abscesses were much bigger than they are now I lost 7.—A mortality of 12 per cent.

Etiology.— Age 70 per cent. occur between the ages of 20 and 40. 5 per cent. only below 20 or over 50. (Rogers).

Sex—Males show a remarkable frequence. In my series there were 37 males to 4 females. Commonest ages 30-45; youngest 19; oldest 60.

Racial Distribution—Sinhalese 41. Tamils 5. Moors 4. Burghers 1. Cochins 1.

Routes of Invasion are said to be six, via—(1) Portal vein. (2) Heptic vein. (3) Bile ducts. (4) Direct extensions from external wounds. (5) Hepatic artery. (6) Lymphatics.

It is now generally accepted that the commonest mode of infection is by embolism in the intra-hepatic portal veins from foci in lower bowel.

Clinical Groups.—(1) Presuppurative hepatitis is the early congestive stage. The liver may be enlarged even up to three finger-breadths. There is fever and sweating. The patient goes to a doctor usually only after 2-4 weeks. The diagnosis is not difficult. Treatment is by emetine.

(2) Acute abscess is most typically seen in acute sloughing amoebic colitis where the colon and caecum are thickened and tender and present a sausage-shaped mass. There is a high remittent temperature, profuse sweating, acute pain in the epigastrium and right hypochondrium, a rigid and tender abdomen, and diaphragmatic pleurisy. Clinically it resembles an acute abdomen very closely. With emetine symptoms disappear like magic; the anxious face becomes placid, and the patient often is practically normal in about 10 days.

(3) Chronic abscess is usually single, occasionally multiple. Perhaps several small foci conglomerate to form one abscess with a dense fibrous wall. It may contain anything up to 6 pints of pus. An old encysted sterile liver abscess has clear fluid and granular debris, but no pus. Here probably a natural cure has taken place after death of the amoebae.

Pathology.—70 per cent of the chronic abscesses are single. Of these only 16 per cent. are in the left lobe. They are smaller and frequently involve neighbouring structures, such as the lung base, pericardium, stomach, lesser sac, and soon become adherent to the abdominal wall giving rise to hour-glass abscesses.

When the abscess is in the right lobe it may adhere to the diaphragm and allow the pus to escape below or above the diaphragm causing either a subphrenic abscess or an abscess of the base of the lung. Less often it opens into the hepatic flexure of the colon, duodenum, peritoneum, pericardium, inferior vena cava, or comes out on the surface below the lower ribs simulating a lumbar or appendicular abscess.

Symptoms.—Often the only symptom is fever of several weeks' duration without any pain or tenderness over the liver. It is a good rule to have amoebic hepatitis in mind in all cases of obscure fever.

Sometimes it may be quite symptomless, and fever may be absent. At other times the only symptoms may be wasting and sweating. Some of these insidious cases are dramatically brought to light by the coughing up of a copious amount of blood-stained expectoration. Some cases resemble pleurisy; others commence with pain in right hypochondrium, breathlessness and cough.

Diagnosis is made by the history and examination of the stools. Clinically many cases of amoebic colitis may present only a diarrhoea sometimes constipation and even normal bowel action. Blood examination reveals only a moderate leucocytosis with little or no increase of polymorphs. The signs of pus are fluctuation (left lobe abscess), local tenderness on gentle fist percussion or finger pressure between ribs, and local oedema. Enlargement of the liver with a recent history of diarrhoea or dysentery should make one suspect liver abscess. Sometimes the abscess may go on for years without being recognised. The same is true of amoebic colitis which may mimic any abdominal disease. Between these two types there may be all grades of sub-acute abscess.

Amoebic abscess of the liver has to be differentiated from:—1. Subphrenic abscess. 2. Duodenal ulcer with localised peritonitis. 3. Cholecystitis. 4. Suppurative nephritis and perinephritis. 5. Appendicular abscess. 6 Typhoid fever. 7. Acute abdomen. Fever. chills, localised pain, enlarged tender liver and spasticity of the right rectus constitute a syndrome which leads to diagnosis of acute inflammation of liver. Nausea and vomiting are characteristically absent. They are usually present in cholecystitis, pancreatitis, ruptured ulcer and other conditions accompanied by intraperitoneal irritations (which also happens if the liver abscess involves subhepatic structures).

In subphrenic abscess pain is more severe and radiates to the scapular regions aggravated by deep respiration. There is a preceding history of appendicitis, cholecystitis, perforated ulcer or some other type of intraperitoneal suppuration.

Skiagraphy reveals an elevated and fixed diaphragam giving the location of the abscess. A lateral thoracic skiagram should be taken as well. These seldom fail to differentiate diseases below or above the diaphragm. Filling an aspirated abscess carefully with lipiodol or sodium bromide solution gives a picture of its form and extent. In gall bladder disease, flatulence, nausea and vomiting, pyrosis, belching, aversion to fatty foods are the typical prodromal symptoms. Pain is localised to the gall bladder, is intermittent or coliky and often excruciating; frequently it radiates upwards. The gall bladder is enlarged in acute cholecystitis, not in liver abscess.

Suppurative nephritis is often simulated; loin pains being sometimes the only symptom of liver abscess as occasionally in appendicitis.

Treatment.—Emetine is the great stand-by. In a patient with a history of dysentery or diarrhoea, persistently obscure abdominal symptoms, even though stools be negative for amoeboe and cysts, justify a diagnostic course of emetine; just as in syphilis, when symptoms suggest its existence, although the Wasserman and Kahn reactions may be negative, if there is a previous history of chancre one is justified in applying the therapeutic test. Both these diseases are fraught with such serious consequence to the body and at the same time are so amenable to specific drugs that the patient should not be deprived of their benefit. This is a generalisation that applies to amoebiasis whether latent in the liver or the colon. A preliminary course of emetine should always precede operative treatment. Emetine often averts an unnecessary operation. A liver enlarged up to 3 fingers below the costal margin may still be in the pre-suppurative stage, and will then subside rapidly with a few doses of emetine. Besides, aspiration at this stage may result in fatal haemorrhage. Even when several pints of pus are present emetine may cause its absorption.

As a rule, when the abscess is large operative treatment is required, and the type of operation is determined by: (1) the fact that the pus of liver abscess is generally sterile; and (2) the proneness to infection and secondry sepsis of the abscess cavity in such a vital organ as the liver.

In the pre-antiseptic days aspiration was the treatment. With the introduction of antiseptics, open operation became the fashion and the mortality rose to 58 per cent. Then Rogers added emetine to aspiration and reduced the mortality to 10 per cent.

Course of case with open operation followed by sepsis.—The patient does well for a few days, then the temperature begins to rise. A slow and sure death follows as a result of septic poisoning. Routine open operation is now obsolete except for exceptional cases.

The treatment of choice is by emetine combined with aspiration if necessary. Give emetine for a week. If there is no improvement, instead of courting disaster by waiting, aspirate. If fever and leucocytosis persist, repeat aspiration after a week. A large abscess may require 2 to 4 aspirations at weekly intervals. The amount of pus dwindles gradually. Aspirations could quite easily be done under a local anaesthetic in the ward itself. Chloroform has a deleterious affect on the diseased liver.

Exploration.—In exploring, Cantlie's rules must be observed: (1) Do not thrust a needle further than 2½ inches for fear of wounding large blood vessels. (2) Not more than six punctures should be done. The site of puncture should be at the point of maximum tenderness where the abscess points, or where there is pleurisy or oedema. The commonest site is in 8th intercostal space in the posterior axillary line. If there are no signs of localisation in the

anterior abdominal wall, use the transpleural diaphragmatic approach, since the majority of liver abscesses point up towards the dome of the liver.

In my series, 50 cases were opened in the intercostal region: 14 in the epigastric region. Sometimes both routes have been utilised. The quantity of pus varied from 1½ to 5½ pints. Open drainage in two stages as in lung abscess may be practised, suturing the diaphragm to the wound: or the transpleural diaphragmatic retroperitoneal approach with rib resection. Cultures should be made of the pus at the first aspiration to note whether there are any septic organisms. If cocci are present syphon drainage should be done, also when repeated aspiration fails. A small incision is made accommodating a close-fitting rubber tube which is immersed in a bottle filled with lotion. An old finger stall snipped at the distant end and tied to the end of the tube forms a fine valve safeguarding infection. Primary suture after opening and swabbing out the cavity greatly reduces convalescence in a minority of cases.

Specific Treatment—Emetine ½–1 gr. for 12 days. Never more than 12 grains should be given in one course for fear of toxic effects. It may be necessary to follow up with a shorter course later. After a course of injection give emetine bismuth iodine by the mouth to clear up bowel infection and prevent relapses.

Other helpful measures to stamp out bowel infection are saline lavage followed by yatren. To safeguard against anaemia and a tendency to sprue, campolon or hepatex injections and the administration of marmite, iron, arsenic and calcium parathyroid are indicated in the more chronic cases.

(*The Journal of the Ceylon Branch of the British Med. Assn. Jan. 1938.*)

DENTISTS MOST NEGLECTED OBLIGATION AND PRACTICE WITH REGARD TO CHILDREN'S TEETH.

BY PROF. AMIN MAHER

I do hope I may bring to every one of you a message which will awaken you to the urgent demand for a greater regard for this crying need; a message which will help you to become a better, happier and more useful dentist in your community.

We are all called upon to do much towards having and maintaining the healthiest, happiest and most useful childhood possible. To-day the child is needing and demanding the service, advice and attention of the dental profession more than ever before. The only way we can hope to deal successfully with the existing predominance of dental defects is by preventive measures which must be taught.

We must come to realise that we are teachers as well as operators. We must teach the child early in life, we must teach the parents the importance of good teeth to good health. We shall fail if not each one of us realises this important fact and will faithfully strive to fulfil to the utmost this neglected obligation; we must realise that our duty and responsibility to humanity is not confined to caring for the diseased condition of the teeth and mouth only but toward making and keeping our people the healthiest people they can be.

The amazing progress in medicine well demonstrates that most of our dreaded illnesses can be overcome and many others eliminated by simple preventive measures.

It is our privilege to serve the parents, the children, small and large, and more, it is our good fortune to see them before they are sick or beyond being helped.

No well-known physician undertakes to relieve or cure a patient suffering from some focal infection, from maladies of the heart, lungs or kidneys, without first having his patient given a complete dental examination. I am wondering if we all fully appreciate just what our part is and should be towards the public. Do we realise that dentistry is neither an occupation, nor a trade, but a profession with a great responsibility?

Fellow members, we cannot fulfil this obligation by merely being dentists or by treating, filling and extracting teeth for those who come to us; but we can and will fulfil this mission by doing more honest, sincere giving of real service, by teaching and telling day after day, by being the leaders to whom comes this call of little children so affectingly and unmistakably clear.

Progress is the law of the univers

Anyone who will not bend his will to this law not only handicaps himself, but grievously wrongs and deprives all those whom he should serve. How will you answer this challenge which comes to every one of us? Is the dental profession to make good?

One view of our instruction of the people is related to the necessity of caring for the teeth of children and considerable stress has been placed upon the importance of preserving the deciduous set.

Now comes a very peculiar angle to the question and one which must be faced with some degree of frankness. The fact is instead of telling the people that the deciduous teeth must remain until such time as their successors are due to appear, it is too frequently the case that, when parents take their children to the dentist, they are told that as the deciduous teeth are so soon to be lost there is no necessity to insert fillings or to put forth any extra effort to save them. The result of such a statement will cause doubt and confusion in the minds of the parents. If any fact is well established in dentistry it is that the deciduous teeth have an important function

and a definite field of usefullness, and that they should be preserved till their function is fulfilled.

If a practitioner is unsuited by nature or temperament to properly care for children, he should be honest about it, and should turn them over to others who are in every way well qualified to perform this service and who are glad to do it. There should be greater harmony between teaching and practice in this important matter, and unless we all participate in doing so, we would better refrain from educating the public any further on these lines.

Caring for children's teeth.

May I suggest certain ideas, principles and practical, simple measures whereby I have served most of my child patients.

I believe if one is to succeed with children's practice he must imagine that he is of the same age as the child he is serving, remembering that the child's thoughts, fears and distrusts are caused by previous unfair treatment, by parents threatening, or experiences recited before the child by his elders; all these foremost in his mind and it should be ones duty to gain the confidence and trust of the child before serving him efficiently. Tell the children the truth, do not lie to them, for they never forgive nor forget even in adult life. If it is necessary for you to cause pain to a child, explain to him why, gain his co-operation, explain to him the bright reward in comfort, usefulness, ability to play and enjoy life.

The operation that really impresses a child most, the one which materially shows results and induces interest and care on the part of child, is a through oral prophylactic treatment. But how often do we see and examine children for whom a dentist has supposedly just cleaned their teeth; the anterior six teeth, upper and lower, are well polished on the labial surface, but the lingual and palatal surfaces are still coloured with a yellowish stain and unclean.

I wonder how many of us give a real oral prophylactic treatment before beginning extensive dental work and how many just throw in a half-hearted cleaning after the other work is completed, usually free of charge which is exactly what it is worth, failing to impress the patient with the importance of properly keeping the teeth and mouth clean. If you give a real prophylactic oral treatments a child you tender a service, you gain his confidence and respect, there being no pain to the work, he will understand you are trying to help him instead of merely trying to hurt him. Because psychology plays a big part in any dentist's practice, especially with children. My order of work is first to thoroughly scale and polish all the surfaces of every tooth; secondly fill at the teeth which can be saved beginning with the simplest cavities, then by natural progression getting to the more sensitive and painful cavities and preparations; each time I find the child understands, appreciates, and co-operates better with me for his benefit and my success. Put

off until the last the most painful work and all extractions, ever being mindful of the child's psychology.

My fellow members, while you are working for a child, if never before in your life, be patient, kind, gentle and sympathetic. All the time you are operating explain the reasons for the proper care of the teeth. Use simple illustrations, do not suggest the bad, painful aspects, but stress the good. Always instruct a child how to brush his teeth and gums properly and effectively, the importance of caring for the deciduous teeth, first molars and diet. Tell them why they should choose certain foods, why they should masticate thoroughly all the food on both sides of the mouth.

May I urge you to use new sharp burs, smooth stones, sharp chisels and excavators, in your cavity preparation. Allow the child to rinse his mouth often, talk to him all the time to take his mind off his troubles. Explain all you are doing and encourage him to ask questions.

I need not review the importance of saving the deciduous teeth. You all well know they reserve spaces along the dental arches, afford an efficient masticatory apparatus to aid the digestive system at the time when this aid is most needed, because a child's digestive and nervous system is in a stage of growth, progression and enlargement, and any extra work thrown upon it causes serious retardation. Take care to fill each deciduous tooth with a permanent filling, for attrition and mouth fluids soon wear out and disolve temporary stoppings. If a tooth is too badly broken down or decayed to be filled, but is one which I believe will give several months service if kept clean, I always explain the case to the child and parents, emphasising the importance of keeping the tooth clean, and free from food. At the first sign of trouble or uneasiness they are to return immediately. This tooth I smooth up, treat the floor with silver nitrate and where possible insert a temporary filling.

All very loose teeth, teeth bordering on abcessing teeth having a fistulae and gum boils I immediately remove.

Please allow me to again plead with you to save every deciduous tooth possible. Do not tell the patient it is soon to be shed when it will give service for several years. Help the child to build up an immunity to decay, by filling and preserving his first teeth, furnishing a healthy surrounding into which his permanent teeth may erupt. Instruct a child to care for his teeth, to return at least once or better twice a year for examination.

I succeed with my children's work because I take personal interest and pride in every operation I do. I never, under any circumstances, permit a child's parent to come into my operating room while I am serving the child. My reasons are many. The parent usually threatens or frightens the child or else shows too much sympathy and tries to buy the child off. With the parent

present you cannot be as firm and positive as you should like to without being misunderstood, and lastly you encourage the child to be more brave and proud of himself when you allow him to come to the surgery alone.

I use local anesthesia in all sensitive cavity preparations and for every extraction. Always ask the child to return after an extraction even though you do not feel you will have to see him. It makes him feel important and saves you any further trouble from infection and future complaints

I must mention again the splendid opportunities you daily have to fulfil your profession' sduty and obligation to the people by discussing with mothers the most important part they have in furnishing their children with good teeth.

Stress the importance of well balanced and sufficient diet to mothers for themselves and the children, remembering those foods which help in tooth formation, fresh milk, green vegetables, fresh fruits, whole wheat bread etc. etc. Implore the aid and co-operation of the parents in reminding and encouraging their children to choose proper foods, to chew those foods well, to brush their teeth properly. Impress upon parents and children the necessity of going to the dentist often to avoid aches and bad dental operations. Have all the children brush their teeth at least twice daily, night and morning. Start a child caring for his teeth with his parents help at two years of age. Take a personal interest and watch what big profit it will pay in every way.

May I repeat finally, children are much nearer the truth of things than we are for their instincts are not perverted by the superfine wisdom of their elders. They give themselves up to a full vigorous activity.

(*The Journal of the Egyptian Med. Assn. April 1938.*)

THE TREATMENT OF PULMONARY TUBERCULOSIS WITH LIPOIDS.

"Beitrage zur Klinik der Tuberkulose and spezifischen Tuberkulose-Forschung," Vol. 66, No. 5.

HELPIN.

Much and Deyke were the first to demonstrate the antigenic character of the fatty substances of the tubercle bacillus. They separated these substances into two groups: (1) the ether-soluble neutral fats and-wax-like fatty alcohols (N-group) and (2) the fatty acids and lipoids which are only soluble in alcohol. These two

groups are well differentiated chemically as well as immunobiologically. The intracutaneous partigen test makes it possible to gain a fairly accurate idea of the relations and reactivity of each of the groups. Thus the significance of the lipoids for the organism's powers of resistance and general condition could be indicated. The increase of fatty and lipoid antibody formation can be extensively influenced by administration of non-specific neutral fats and lipoid substances. From this alone it may be concluded that administration of properly selected fatty substances will not result solely in raised metabolism and a gain in weight.

It is also known that relations exist between lipoids and the vegetative system, cholesterine and lecithine behaving antagonistically in the sense of the potassium-calcium antagonism. To be sure, the details of their function in this respect, and particularly the significance of their constancy and fluctuation, have not yet been adequately investigated.

It has been proved that lecithine has an assimilatory action and that it exerts a catalytic influence on the processes in the cells. This means that it not only encourages a gain in weight but also stimulates metobolism as a whole. The effect of lecithine on ferment formation at the same time helps to surmount another obstacle in the path of active therapy, the ferment deficiency and ferment debility in the digestive tract very frequently observed in the course of chronic affections. The capacity of lecithine to combine with toxins, as well as its other properties, depends on its physical-chemical state (Freiwirth). To be effective, as Much and Magat point out, lecithine must be in a state similar to that of the hydrophilic plasma colloids. While this state can always be attained by emulsilying lecithine in glycerine, the stability of the emulsion must be provided for by adding suitable salts. The preparation **Helpin**, introduced into therapy by Magat, is a biological lecithine-glycerine emulsion suitable for this purpose, containing the electrolytes NaCl, CaCl, KCl, and NaHCO. Since oral administration of lipoids produces no lasting influence on either the lecithine or cholesterine level in the blood, it may be assumed that the substances are broken down by the digestive ferments and that their decomposition products do not act in the same manner. Hence the preparation of this type, if its action is to be constant, must be given parenterally.

The development of a method of preparing pure tubercle bacillus lipoid, as in the F substance of the partigens, makes it possible to test the effect of a non-specific lipoid on the formation of specific lipoid anti-bodies. And in practice, a definite increase in the F titre during the course of treatment with **Helpin** is observable in almost all cases, and we are justified in regarding this, in harmony with the observations referred to at the beginning as a prognostically favourable sign. A consideration of the protein and neutral fat fraction in

the skin analysis reveals a similar, though quantitatively not very pronounced, influence of the aforementioned lipoid mixture : this is to be interpreted in the sense of a general increase in defensive capacity rather than as the strange specific non-specific ferment effect suggested by Wassermann

The increased leucocyte count, almost always a favourable sign, is to be interpreted in a similar sense. To be sure, as Much points out, not merely one type of cell may be the donor of specific lipases. The whole skin organ (especially the subcutaneous connective tissue) and connective tissue in general take part in this immune process. But the lymphocytes are from some quarters (Bergel) attributed a special significance in the battle against tuberculosis.

Simultaneously with the improvement in the defensive forces a very favourable influence is also exerted on the conditions of the secretions and ferments in the digestive juices. This is revealed by continuous investigations, which can be carried out on a large scale with sufficient accuracy using simple methods (the Sahli desmoid test). The stability of the gain in weight can be determined not only by gas exchange experiments but even better and more conclusively by clinical evalution of the entire picture. Instead of reporting detailed case histories, we are attempted to give an idea in the value of treatment with **Helpin** by means of the appended tabular survey of several selected characteristic cases.

Naturally only those cases are presented in which the action of **Helpin** was obvious and the success of the cure striking. The fact that some cases react less favourably and others not at all does not speak against the preparation but must nevertheless be pointed out. On the whole, its action, especially in regard to putting on weight, is prompt and dependable. For evaluating the results we have mainly chosen objective symptoms. The influence of treatment on these symptoms is of course not always direct. Often their improvement comes as an indirect result of a generally improved condition. The most remarkable aspect is the elevation of the F reactivity throughout treatment, indicating a direct relationship.

Examination of the blood picture was carried out, both at the beginning and termination of the treatment, in accordance with the method introduced by Schilling. To determine the sedimentation velocity of the erythrocytes we used the simplified Poinddecker method, the simplest procedure which does not involve a sacrifice of accuracy. The sedimentation value, F, is read in millimetres from the 5 cc column of blood after three-quarters of an hour). We have rated the cutaneous titre according to the weakest concentration which gives a positive reaction, 1 denoting a dilution of 1 : 100,000 and, 2, 3, and 4 dilutions of 1: 1,00 ,000, 1: 10,000,000, and 1 : 100,000,000 respectively.

The following may be stated as to treatment of the various forms of tuberculosis :

1. In exsudative cases, improvement, as indicated by the blood count and sedimentation velocity of the erythrocytes, without omitting all other therapeutic procedure, is materially accelerated by simultaneous administration of **Helpin.**

2. The proliferative cases show the best results when an open air rest cure is combined with specific therapy. Here **Helpin** can be given in conjunction with a tuberculin equally well as with a gold preparation or other activating body. The results are manifested not only in improved general condition and more favourable physical findings but also in the excellent influence exerted on the imunobiologic titre as measured by means of partigens. Incidentally, too little attention is given this testing method, especially as a control value in testing new therapeutic methods.

3. Indurative cases should always be treated with **Helpin** if metabolism and digestion are flagging. It must be pointed out, however, that in order to avoid a vicious circle the ferments which are lacking should be administered orally (acidol-pepsin) until their formation is sufficiently stimulated.

Rise in temperature and focal reactions have never been observed. Unfavourable changes in the blood picture and sedimentation velocity have never occurred. On the whole, *this lipoid preparation* is not only a valuable addition to our pharmaceutic armamentarium but should also prove to be of value when used in combination with a dye-stuff (trypaflavin) or a vaccine against the so-called mixed infections of tuberculosis.

Extracts.

THE TREATMENT OF RARE FORMS OF LEUKEMIA.

R. E. Fricke, M. D., Section on Therapeutic Radiology, and C. H. Watkins, M.D., Division of Medicine: Ever since the original description of leukemia from postmortem findings by Bennet and Virchow in 1845 and its clinical recognition by Vogel in 1851, a satisfactory method of treating the disease has been sought. The exact etiology is still unknown, although we do know that certain of the lower animals are susceptible and in man the disorder frequently follows malaria or a severe pyogenic infection. Without any clue to the etiology treatment has been empirical and directed toward alleviation of the distressing symptoms. Before the advent of irradiation many remidies were tried. Benzol, quinine, tuberculin and nuclein were used to reduce the excessive number of leukocytes, and iron and arsenic were given to combat the anemia. These and

many other remedies did not afford much relief and were found to be toxic and rather dangerous.

Following the elaboration of new methods of staining blood cells and the greater precision of differential counts of the blood, leukemia was divided into myeloid and lymphatic forms, and in both of these types there were acute and chronic stages. Practically all leukemias were classified in these four groups. To this day no form of treatment, even palliative, has been found for the acute forms of leukemia which run the course of a fulminating, overwhelming infection with rapidly fatal outcome.

In 1903, Nicholas Senn reported excellent results in the treatment of a patient with chronic myeloid leukemia by roentgen rays. Renon, Degrais, and Desbouis used radium therapy, and in 1913 reported five cases in which this method of treatment was beneficial. One of the earlier reports in this country was made by Giffin (1917) who reported results in thirty cases in which radium therapy has been in this Clinic. Since this early work, roentgen and radium therapy have been established as the preferable form of treatment for chronic myeloid and lymphatic leukemia. The beneficial effect, however, has been entirely in the realm of palliation. No permanent cures have been reported. Study of the results of irradiation therapy has revealed no definite prolongation of life, but the palliation secured has been definite and impressive. In nearly all cases symptoms disappeared completely for months and sometimes for years and the patients were able to resume normal activities for long periods.

Even the usual types of leukemia are seen relatively infrequently. Lewellyn F. Barker, of Baltimore, in his textbook "The clinical diagnosis of internal diseases" estimated that there are only one or two patients who have leukemia in every thousand admissions in a general hospital practice. The chronic form of the disease is fortunately more common than the acute form and chronic myeloid leukemia is more frequently seen than chronic lymphatic leukemia. Irradiation affords slightly better palliation in cases of chronic myeloid leukemia.

In this study we are considering the more unusual or borderline types of leukemia which are recently been separated from the main group. For the diagnosis, a careful study of the history is necessary, careful physical examination, detailed studies of the blood and particularly the ability to recognize the immature blood cells found in this condition. Many of these borderline leukemias present as their initial symptom anemia and a leukocyte count which is within the normal limits or even low. These findings, in association with splenomegaly, may result in confusion of the condition with splenic anemia or Banti's syndrome. If the incidence of ordinary leukemia is one or two to every thousand general hospital admissions, at present only one or two of these borderline types are found in every

hundred cases of leukemia. The diagnosis of these rare types is improving and more cases are being reported each year.

The basis of this report consists of sixteen patients with these rare forms of leukemia treated with radium at the Clinic in 1935 and 1936. Of these sixteen patients ten were men and six were women, whose ages ranged from three to seventy years, the average ago being forty-seven years. Eight patients were given a diagnosis of leukopenic phases of chronic myeloid or lymphatic leukemia. In only two of these eight cases was the lymphatic type found. One patient had a monocytic leukemia of the Naegeli type and seven, types of reticulo-endotheliosis. This last group included several cases of subleukemic splenic reticulo-endotheliosis, a new group described by Giffin and Watkins in 1934.

Once the diagnosis was established in these rare cases with low leukocyte counts, we found that radium was the treatment of choice for satisfactory palliation. Roentgen therapy covered a larger portal and injured too much of the blood forming tissues, and the effect of treatment was usually too sudden and drastic. Our best results have been obtained with very cautions and well-controlled use of radium. The technic was modified from that of our usual radium treatment of typical leukemia with high blood counts. The treatment was directed to the spleen which was enlarged in all cases, but very minute doses were given in comparison to the amount given in the usual case of leukemia. One 50 mg. tube, or at most two, well filtered with lead, was used at a distance of one inch (2.5 c.m) from the skin for a time varying from eight to twelve hours, depending on the leukocyte count, the size of the spleen and the general condition of the patient. Treatment was not continuous, but was stopped or continued according to the results of the daily blood counts. In addition to our daily blood counts, blood smears were studied in detail and the amount of destruction of immature cells was noted. Whenever there was evidence of a decrease in the leukocyte count or an increase in the degree of anemia, radium treatment was stopped until the blood count returned to its previous level. In most of these cases there was an increase in the number of erythrocytes following radium treatment. As a general rule the anemia was practically corrected within a relatively short time and the immature cells of the leukocytic series were eliminated gradually. The differential count usually approached a more nearly normal level.

Following treatment the patients were sent home for three or four months. Fifteen of the sixteen patients showed improvement in the condition of their blood and amelioration of their symptoms. The one exception was a man, aged forty-seven years, who suffered from an acute reticulo-endotheliosis following a severe attack of acute tonsillitis four weeks previously. Radium treatment was begun, but was abandoned after twelve hours as the patient was failing rapidly. He died two days later. Too little treatment was applied to have affected the disease one way or another.

SUMMARY AND CONCLUSIONS.

The hematologists have succeeded in isolating a new and rare form of leukemia, which we feel may not be so unusual, and with better understanding of the condition, may be more often recognized. The diagnosis depends mainly on the ability to recognize the immature cells in the blood picture.

In the differential diagnosis many diseases have to be ruled out which bear several points of similarity. Among these are aplastic anemia, purpura hemorrhagica, agranulocytosis, Banti's syndrome and hemolytic jaundice. The differential diagnosis is most important as in these conditions irradiation is not only contraindicated but may prove decidedly injurious.

In the treatment of these rare types of leukemia, splenectomy has been tried in the past but has not helped the condition. Roentgen therapy also has been used and often found too drastic because as a rule it covers too large a portal and causes some injury to the blood-forming tissues. The best therapeutic agent has been found to be cautious limited radium treatment which is well controlled by examinations of the blood. This has proved of decided value in producing effectual palliation.

A TALK ON CONDITIONS NOT UNCOMMONLY CONFUSED WITH ANGINA PECTORIS.

F. A. WILLIUS, M. D.
Section on Cardiology.

The diagnosis of the anginal syndrome of coronary sclerosis not infrequently rests solely on subjective phenomena of the disease. Abnormal physical signs and incriminating roentgenographic and electrocardiographic evidence may be absent. Under such circumstances, the recognition of this important disease must be established by careful elicitation and interpretation of symptoms and elimination of other diseases that may simulate cardiac disease.

The subjective phenomena of the anginal syndrome vary in different individuals. At times the abnormal sensation is said to be a severe pain, again a sense of pressure or oppression, sometimes a feeling of constriction and occasionally the patient encounters difficulty in distinguishing clearly between oppressive discomfort and shortness of breath. At other times the abnormal feeling is described as a burning sensation, as "heart burn," and as a sense of

choking. These variations in the subjective manifestations of the disease have been explained in various ways. Differences in patients' appreciation of the sense of pain warrant careful consideration; thus each individual's appreciation of pain should be classified. The hypersensitive individual is at one extreme, the hyposensitive individual, at the other and there are many intermediate types. Varying degrees of coronary atherosclerosis, likewise, have been considered as an explanation of these subjective differences but correlation between clinical observations and postmortem findings has not substantiated this explanation.

It is important to recognize the fact that the discomfort of the anginal syndrome appears with few exceptions when additional work is imposed on the heart. These overloads may be the result of numerous influences such as physical exertion, emotional stress, rapid eating, overeating, flatulence, and so forth. The abnormal sensation is usually of relatively short duration; it rarely lasts for more than ten or fifteen minutes and usually it lasts far less. It frequently disappears promptly when the patient rests, is often relieved by eructation of gas and in the majority of instances by the administration of the nitrites.

The discomfort is described invariably as beneath the sternum; sometimes it is high, at other times it lies beneath the lower end and not infrequently the entire anterior midportion of the thorax may be the seat of discomfort or pain. In some cases the sensation is in the epigastrium and again in the neck. The projection and distribution of the painful sensations are variable; these sensations may appear in the left arm, sometimes in the right arm and again in both arms. Sometimes the pain extends into the abdomen, at times, but less commonly into the back and occasionally into the jaws and face. These characteristics and vagaries of the anginal syndrome must be recognized in order to permit its identification when objective evidence of cardiac impairment is lacking.

A common error results from misinterpretation of the pain and soreness or inflammatory disease of the wall of the chest. This condition is designated by various names such as myositis, fibrositis, fibromyositis, rheumatism, intercostal neuritis and neuralgia. Ordinarily, the painful sensations arising from this source are of rather long duration, often lasting for hours at a time; they occur when the patient is resting as well as active and are likely to be augmented by deep breathing, coughing and sudden movements of the upper extremities and torso. At some time during the course of the trouble, regions of localized tenderness may be found on application of firm pressure over the ribs or sternum and in the intercostal spaces. As a rule, the eradication of foci of infection, such as periapical dental sepsis and tonsillar infection results in complete relief.

From time to time the true explanation of another erroneous diagnosis of anginal syndrome is found in the presence of a spondylitis

of the thoracic portion of the spine. Distribution of pain in the thorax and over its anterior surface is not uncommon as painful impulses are caused by impingement and irritation of spinal nerves by the hypertrophic arthritis. Under these circumstances, the pain is likely to occur on motion of the spine and when the patient is recumbent, particularly when considerable relaxation of the spine occurs and certain degrees of abnormal curvature result. Careful roentagenographic examination will permit the recognition of spondylitis.

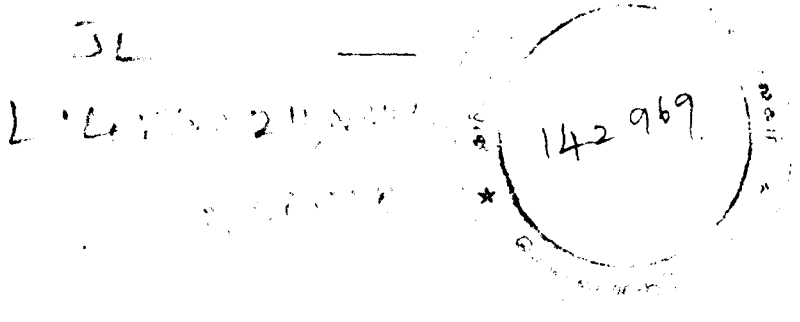
From time to time acute painful seizures of cholecystic disease may simulate the anginal syndrome of coronary disease. This is particularly true when the pain is situated in the epigastrium and when flatulence is marked and causes distress well up in the sternal region. Here again the duration of the pain tends to distinguish the two conditions and a consideration of coronary thrombosis becomes of great importance. Differentiation of these two diseases will not be undertaken in this discussion. The results of administration of nitrites are not of value in distinguishing the two conditions as they tend to relieve both.

Occasionally chronic perforating ulcers of the duodenum or stomach have resulted in painful seizures that have been erroneously diagnosed as representing the anginal syndrome. Needless to say, the careful elicitation of past history and roentgenologic examination of the stomach and duodenum will usually make the correct diagnosis apparent.

Not infrequently, patients with diaphragmatic hernia come to the Clinic because the existence of an anginal syndrome has been suspected. Here again, the careful taking of the history and the roentgenographic findings permit recognition of the true condition.

I distinctly recall a patient who was referred to the Clinic because of severe pain in the left side of the thorax. The pain was quite severe and fairly continuous and a tentative diagnosis of the anginal syndrome had been ventured by his physician. The day of his arrival at the Clinic the typical skin lesions of herpes zoster developed.

Other examples could be cited in which the pain of other lesions has been incorrectly interpreted as indicated the presence of the anginal syndrome of coronary sclerosis.



HOW DOES A CARCINOMA OF THE STOMACH PRODUCE PAIN?

A. B. Rivers, M. D., Division of Medicine, and T. J. Dry, M. B., Section on Cardiology: There is still much in regard to the pathways and mechanisms of production of pain in the abdominal viscera which needs clarification. Ordinarily, these are insensitive to the mechanisms responsible for pain on the surfaces of the body. It is surprising that extensive carcinoma of the stomach may fail to indicate its presence by the production of pain, and yet at other times a small lesion no longer than the usual benign ulcer involving this organ produces severe pain which often extends to secondary regions in the thorax or even to the left shoulder.

To consider the problems of production of pain in cancer of the stomach it is necessary to review briefly some of the important pathways and mechanisms in the production of pain in the viscera of the upper part of the abdomen. Painful impulses arising in the stomach may reach the cord in several ways. Sensory bundles in the sheaths of the splanchnic nerves constitute one of the pathways of pain. Pain may also be projected to the spinal cord over the sensitive cerebrospinal somatic nerves, branches of which supply the parietal peritoneum, the mesentery of the bowel and the retroperitoneal tissues. If lesions involve the upper portion of the stomach, some impulses reach the central nervous system over the phrenic nerve. These are undoubtedly the most important of the pathways over which impulses interpreted as pain may reach the consciousness.

MECHANICS OF THE PRODUCTION OF PAIN BY GASTRODUODENAL LESIONS

To produce a sensation of pain a stimulus travelling along the splanchnic nerves needs a special type of physical mechanism. This stimulus which is adequate to produce pain is considered to be spasm and in all probability is furnished by contraction of the circular muscular fibers surrounding the viscus. Spasm may be set in motion by various trigger mechanisms. A peristaltic wave, bombarding a closed sphincter, or obstruction in the organ may initiate this spasm. This may also be accomplished by adequate gastric acidity and probably by inflammatory lesions involving the stomach or duodenum. Disturbances in the nervous system which result in unusual peristaltic disturbances causing spasm also may constitute an adequate stimulus. It is obvious when we consider these pain-producing requirements that carcinoma of the stomach in some instances might produce no pain, for some lesions involve rather extensively the body of the stomach but produce no definite disturbances suggestive of mechanical interference with peristalsis or with proper emptying. Furthermore, in many cases carcinoma of the stomach is not associated with hyperacidity or even with normal gastric acidity. In many instances the inflammatory reaction surrounding the lesion is not extensive. With the gradual invasion of tissues by

malignant infiltration the nerves supplying this organ also may be involved and the sensitivity of the organ may be diminished further. If the malignant lesion involves the pyloric region, it usually produces mechanical disturbances which set up spasm and consequently pain. Because this usually occurs early in the course of the disease and because of the position, may malignant lesions involving this portion of the stomach are operable. It is obvious, however, that many of the larger lesions diffusely involving the stomach set up no adequate stimuli which are appreciated as pain and thus will produce no symptoms until such time as they have progressed beyond the stage of operability.

The second mechanism for production of pain originates in the spinal sensory nerves which surround the stomach. It is well to remember that these nerves need no adequate stimulus so that direct invasion either by inflammation or by penetration of a lesion may immediately set up painful stimuli. The spinal sensory nerves supplying the tissues contiguous to the gastro-intestinal tract or part of a nerve which also supplies the muscles of the back as well as the chest and the anterior abdominal wall. Lesions invading the peritoneal portion of this nerve may then set up impulses which are relayed over the entire nerve, thus projecting pain into the peripheral regions supplied by this same nerve. This would account for the shift of pain from the epigastrium or hypergastrium into secondary areas. It is obvious from this that in cases of carcinoma in which the pain, orginally localized to the upper part of the abdomen, now is referred to the back or the chest, the lesions have extended beyond the confines of the stomach and have invaded neighbouring tissues. Such lesions are usually inoperable, regardless of position. An exception is the small gastric ulcer harboring in its depth or peripheral areas malignant changes. In such instances the lesion may still be operable despite the shifting of pain to secondary regions. For pain to be relayed over the phrenic nerves no "adequate stimulus" is necessary. Projection of pain to the tip of the shoulder in such instances is an interesting illustration of referred pain. It will be remembered that impulses passing over the phrenic nerves reach the cord at about the fourth cervical segment. From this same area the supra-acromial, supraclavicular, and suprasternal nerves originate. Consequently, impulses traveling over the phrenic nerves may be relayed into the cutaneous peripheral distribution of this same nerve which would be to the shoulder, clavicle and sternum. Malignancies transmitting impulses over the phrenic nerves are usually inoperable.

When we consider the pathways and the mechanics of production of pain in carcinomas of the stomach, many of the apparent paradoxes relative to the pain caused by such lesions become evident. By careful study of the behaviour of pain it is usually possible to

acquire accurate knowledge regarding the extent of the invasion of tissues by such lesions.

RECENT ADVANCES IN THE TREATMENT OF PNEUMONIA

H. C. Hinshaw, M. D., Division of Medicine: All physicians who treat pneumonia should be familier with several developments which are destined to alter the management of this disease. I refer to the following: (1) classification of pneumococci into at least thirty-two serologically specific types, (2) development of the Neufeld method of rapid, direct typing of pneumococci in sputum, (3) production of effective therapeutic sera which soon will be available for use against several additional types of pneumonia, (4) use of rabbits for the production of therapeutic sera, and (5) use of sulfanilamide and related compounds in treatment.

Serum therapy is available only for cases of pneumonia caused by the pneumococcus. The great majority of cases of lobar pneumonia, a considerable percentage of cases of bronchopneumonia, and an undetermined percentage of cases of postoperative pneumonia are caused by pneumococci.

The time has arrived when every reasonable effort should be made to determine the etiologic organism in every case of pneumonia at the earliest possible moment. Bacteriologic study of the sputum need not await roentgenologic confirmation of the diagnosis. In urgent cases, a bacteriologic diagnosis can be made within an hour or less.

It is absolutely necessary that the type of pneumococcus be determined, because serum is of no significant value except against its homologous type of organism. The specimen submitted for bacteriologic examination must represent exudate expectorated from the lung and it should be examined promptly. It is necessary to instruct both the patient and nurse clearly about the importance of submitting a suitable specimen for examination. Sometimes, it is necessary to examine more than a single specimen.

Blood should be obtained for culture in every case of lobar pneumonia on admission to the hospital and sometimes this procedure should be repeated. Therapeutic approach is greatly modified and the prognosis gravely affected by the presence of bacteremia. Serum is the only effective treatment for bacteremia and the mortality rate continues high in spite of such treatment.

It is stated that the newer types of rabbit serum administered somewhat differently from horse serum and that the usual cutaneous and ophthalmic tests are somewhat less reliable. Rabbit serum is prone to produce an early febrile reaction but, usually this is not serious except among patients who have an unusually high

fever. It is possible to administer rabbit serum more rapidly, in larger amounts, and in fewer doses than horse serum.

The effectiveness of serum therapy is multiplied by early administration and many of the apparent failures are directly attributable to late treatment. For this reason, it is rarely permissible to withhold serum because of mild initial symptoms. There is no dependable method of forecasting the eventual severity of the disease at the onset. The error of delay may permit extension of the disease to other lobes and possibly bacteremia or complications with greatly increased cost and hazard. When serum therapy is delayed until the fourth day or later, the amount of serum required is much greater and in an effort to conserve the patient's financial resources he may be subjected to increased expense.

The apparent high cost of serum is mentioned constantly as a reason for withholding it from patients. When the actual value of serum is realized, this objection vanishes. At present prices, adequate, early serum therapy costs no more than two or three days of oxygen therapy with continuous private nursing service. Actually, it is possible for serum therapy to save expense by shortening the period of hospitalization, by decreasing costs of oxygen therapy and of special nursing and by preventing extremely expensive complications such as empyema.

The effectiveness of modern serum therapy in cases of pneumonia no longer can be a subject for debate. When adequate doses are administered on the first or second day of the disease, it will lead frequently to prompt termination of the disease by crisis. It has long been proved that the mortality associated with pneumococcus pneumonia may be halved by serum therapy. It is now hoped that even more striking results may be realized with newer methods.

Sulfanilamide has not only definite pneumococcidal properties but also definite dangers when used in treatment of this disease. Its tendency to alter the hemoglobin of the blood may seriously hamper the already overtaxed capacity of the blood for carrying oxygen. Instances have been observed in which repeated transfusions were required to restore destroyed hemoglobin. Undoubtedly, sulfanilamide must be used more cautiously in cases of pneumonia than in cases of other types of disease. It is possible that it has a place in the treatment of pneumonia but its limitations and indications must be determined accurately.

Pneumonia continues to be a capricious and deadly disease. The amount of skill and judgment required is increased rather than decreased by the newer methods of approach to its treatment. The literature on the subject is growing rapidly and there are remaining differences of opinion, but I believe that the principles stated above are agreed on by the authorities who have had the greatest experience with the treatment of pneumonia.

CHANGES IN SKIN AND RECTAL TEMPERATURES DURING SURGICAL OPERATIONS UNDER ANESTHESIA

P. W. Searles, M. D., M. S. in Anesthesia, The Mayo Foundation; A series of experiments is being performed to determine the changes in the skin temperature and rectal temperature of tho anesthetized patient during the course of operation. There has been a great deal of investigation of changes in skin temperature caused by a general anesthetic. However, relatively little study has been made of changes in rectal temperature during the course of operation, because of the lack of a suitable instrument for recording rectal temperatures. Dr. Sheard has devised such an instrument for me. By this means, I can follow both skin temperature and rectal temperature during the course of operation. Although the work, as yet, is not complete, certain things have been ascertained. A maximal rise of skin temperature occurs during the stage of induction of general anesthesia and is maintained at a uniformly high level, falling only when administration of the anesthetic is stopped or when the condition of shock supervenes. The rectal temperature changes only when the patient actually loses or gains heat. A number of factors must be considered, the more important of which are the temperature and relative humidity of the operating room. Of course, great loss of fluid such as that owing to hemorrhage or sweating is an extremely important factor in the control of temperature and must be taken into consideration. The ideal room temperature, we have found, is approximately 82° F. (°7·8° C.). The ideal relative humidity is approximately 55 per cent. In general, we have found that increase of the temperature and relative humidity of the operating room above these levels, such as occurs in the warm months of the year, results in elevation of the rectal temperature and loss of fluid through sweating. Decrease of the temperature and relative humidity of the operating room below these levels, for example, as occurs in the cold months of the year, results in lowering of the rectal temperature owing to loss of heat by eradiation and by conduction. Air-conditioning apparatus which could maintain the ideal temperature and relative humidity of the operating room would help a great deal in controlling loss of heat and fluid by the patient.

Medical News & Notes.

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION, PALAMCOTTAH.

(TINNEVELLY BRANCH OF THE INDIAN MEDICAL ASSOCIATION).

Joint Meeting of Pandya & Chera Medical Associations.

A joint Meeting of the Travancore State Medical Association, the Madura Medical Association, the Ramnad District Medical Association, and the Tinnevelly District Medical Association, was held in the splendid Palace of Ramnad on Saturday the 23rd of July 1938, at Courtallam, one of the most charming waterfalls of Southern India, noted for pretty mountain scenery. 47 members of the Travancore Medical Association, 15 members of the Ramnad District Medical Association, 39 members of the Madura Medical Association and 68 members of the Tinnevelly District Medical Association, making a total of 169 Doctors, attended the function. Three of the Distinguished guests were (1) Rao Bahadur Dr. C. B. Rama Rao, Retired Civil Surgeon and one of the Founders of the Tinnevelly District Medical Association now in his 78th year came all the way to attend our Joint Meeting and bless our work, (2) Dr. P. Rama Rau, the distinguished Radiologist of Madras, who came up all the way from Madras, to give us his lucid and informing address, and (3) Dr. D. V. Venkappa, Provincial Secretary of the All-India Medical Licentiates' Association, who also came all this distance specially to attend this unique meeting and to inspire his co-workers for common action. All the members had an early bath in the waterfalls.

Colonel Shastry, requested Dr. C. B. Rama Rau, to declare the Medical Exhibition open, and Dr. Rama Rao did it in an inspiring speech expatiating on the social benefits of such an Exhibition.

The meeting began under the Presidentship of Rao Bahadur Dr. Raman Tampi, M D., the President of the Travancore State Medical Association. The Secretaries of the Medical Association read out the minutes of the proceedings of the previous meetings of their Associations which were passed.

Resolutions congratulating Rao Bahadur Dr. T. S. Tirumalai, B A., M.B. & C.M., D.T.M, & H. (London), on his appointment as Principal Stanley Medical College, Madras, and Dr. Mrs. Poonen Lukose, B A., M.B.B.S., (London), L M. (Rot), on her appointment as Surgeon-General of the Travancore State, were passed *nem con.*

The following resolutions of the Tinnevelly District Medical Association were read out and passed unanimously by the Joint Meeting :—

I. "The Tinnevelly District Medical Association is of opinion that the time has come when the All-India Medical Licentiates' Association and its Branches together with its membership, Funds and Journal

should be entirely amalgamated and merged with the Indian Medical Association, thereby facilitating the formation of a united front for the redrossal of the legitimate grievances of the Licentiates and to unify the Allopathic Medical Profession as a whole."

II. "The Tinnevelly District Medical Association is of opinion that the questien of forming a Provincial Branch of the Indian Medical Association for the Madras Presidency may be considered when an adequate number of District Branches of the Indian Medical Association have been formed in the Presidency."

III. "The Tinnevelly District Medical Association is of opinion that the Indian Medical Association subscription may be reduced from Rs. 3 to Rs. 2 in as much as the membership of the Indian Medical Association has increased appreciably since its formation and as there is every likelihood of more Medical Associations joining the Indian Medical Association *if the subscription is reduced*, and that this suggestion may be sent up to the Central Council of the Indian Medical Association."

IV. "Resolved that the definite number of seats—not less than 10 per cent.—in the Medical Colleges of the Presidency, be alloted to the children of the Alumni of the Medical Colleges and of the old Medical Schools."

V. "Resolved that the Cambridge Senior Examination be recognised as before for admission into the Medical College."

VI. The following were nominated as President and Vice-President of the Indian Medical Association for the ensuing year :—

1. *President* :—Colonel Kukday, I.M.S., (Retd), Nagpur.
2. *Vice-President* : -(*a*) Lieut.-Col. T. S. Shastry, I.M.S , Palamcottah.
   (*b*) Left open for names from
   (c) other provinces.

Consideration of the membership of the Indian Medical Association when persons are transferred to places where there is no Branch of the Indian Medical Association was discussed and it has been suggested that each District Medical Association should have non-resident membership also from amongst their old resident members.

Three cases of Regional Colitis and Ileitis which were operated and treated by Lieut.-Col , T. S. Shastry, I.M.S., at the Government Head Quarters Hospital, Palamcottah, were read out. Lieut -Col., T. S. Shastry, I.M.S., delivered an interesting lecture on Regional Colitis and Ileitis.

Dr. A. L. Ananthanarayana Iyer, M.B.B.S., demonstrated a case of Ataxia, and read notes of the case.

Dr. P. Rama Rau, Radiologist, Madras, delivered an interesting lecture on "the uses of (*a*) Deep X-Ray Therapy and (*b*) Radium Therapy" and also demonstrated Skiagrams and some of his cases. He exhibited one of his old patients—cured of Cancer Tonsil and Tongue and Lymph glands.

Dr. Karunakara Menon of Trivandrum, delivered an interesting lecture on "Deficiency Diseases".

After lunch, Lieut.-Col., T. S. Shastry, I.M.S., moved a vote of thanks to the guests of the other Medical Associations, to the organisers, to the Estate Manager for having permitted us to hold the meeting at the Rajah of Ramnad Palace at Courtallam, and to the representatives of the Medical Exhibition. Dr. M. V. Natesan, on behalf of Madura, Dr. Kesavan Nayar, on behalf of Travancore Medical Association, Dr. Venkappa on behalf of the guests offered hearty vote of thanks to the Tinnevelly District Medical Association for the excellent arrangements and organisation of this unique gathering and wished for many a happy return of the same.

Thereafter an enjoyable Musical entertainment by Sangeetha Vidwan Sri G. N. Balasubramanyam, B.A., (Hons)., brought the happy gathering to a close at 5-30 P.M. Lieut.-Col., T. S. Shastry, I.M.S., proposed a vote thanks to Sri Balasubramanyam, B.A., (Hons)., for his readiness and kindness in giving us the performance.

COCHIN MEDICAL ASSOCIATION.—A meeting of the Cochin Medical Association was held on 21st July at the residence of Dr. A. I. Simon at his residence in British Cochin.

Dr. and Mrs. Simon entertained the members at tea. There was then a meeting, Dr. A. N. Varghese, Civil Surgeon, presiding, Dr. Simon delivered a lecture on "Medicine and allied sciences in the Bible and Post-Biblical literature".

The Association has decided to entertain Lt.-Col. A. J. H. Russel, the Public Health Commissioner with the Government of India when he comes to Cochin in the third week of August to inspect the Port.

Dr. J Ramakrishna Aiyar, Secretary of the Association, proposed a vote of thanks.

CALICUT MEDICAL ASSOCIATION. A meeting of the Malabar District Medical Association was held on 23rd July at the Government Headquarters Hospital with Dr. K. R. Menon, President, in the chair. Dr. E. K. Achan spoke on "Advances in the treatment of leprosy". Dr. C. N. Menon was "at home" to the members.

With a vote of thanks proposed by Dr. C. V. Narayana Aiyar, the meeting came to a close.

NOTICE.

Messrs. May & Baker (India) Ltd., write to inform us and through us our readers that they have received a number of inquiries and telegrams on the medical profession regarding "M & B" 693 This product is still in its experimental stage, and sufficient control and clinical research has not yet been carried out. They have therefore not put it on the market and supplies are not available.

When ordering please mention *Medico-Surgical Suggestions.*

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Published by Dr. P. R. Venkappaya & Printed at the C.C.P. Works, Ltd., Madras.

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