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MEDICO-SURGICAL SUGGESTIONS

Vol. VI.

FEBRUARY 1937

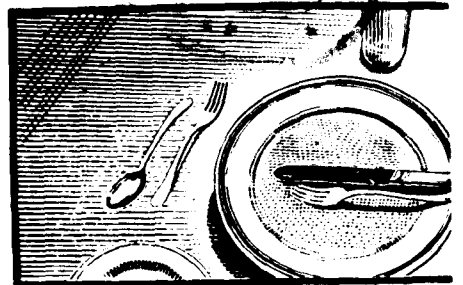
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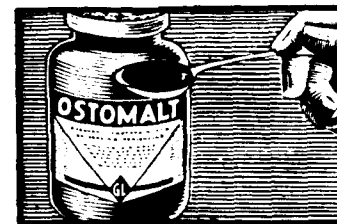
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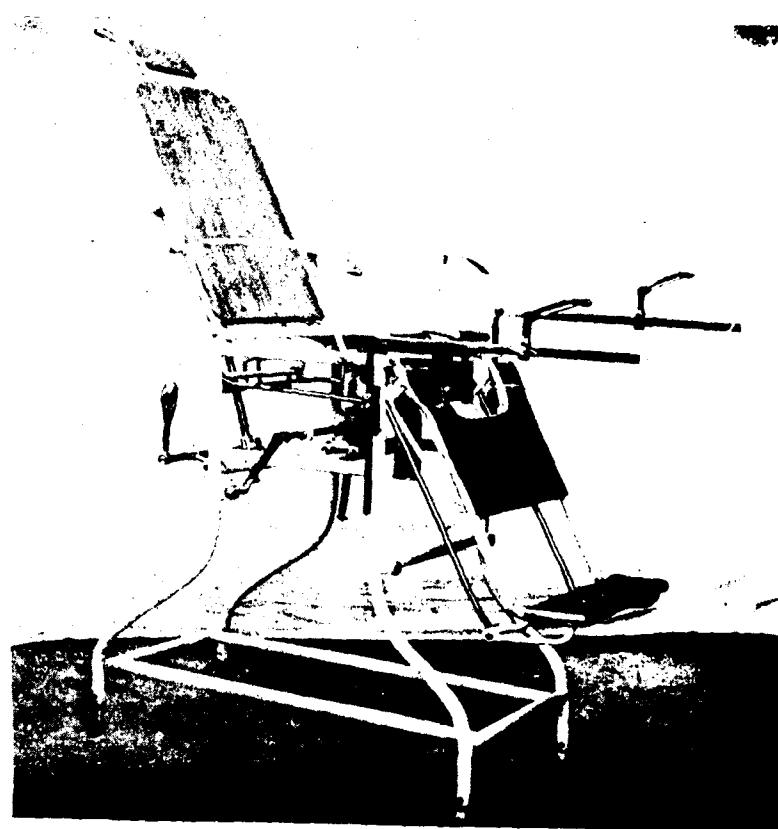


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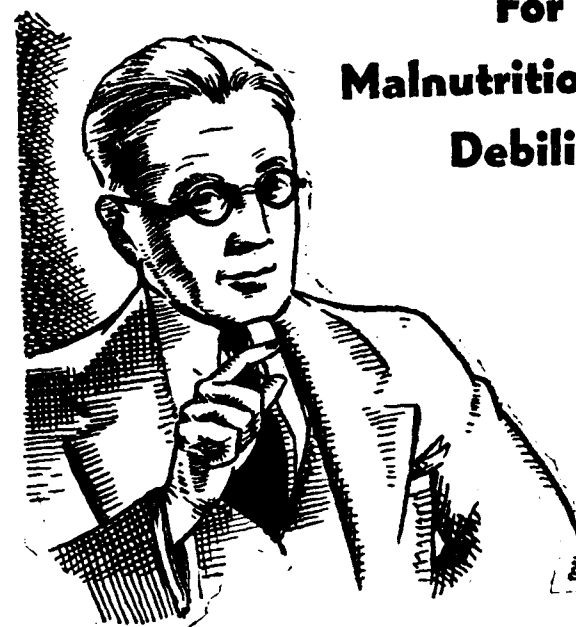


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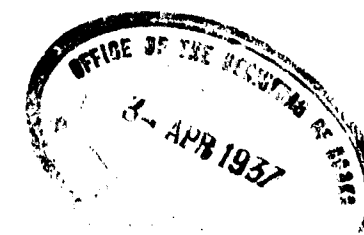
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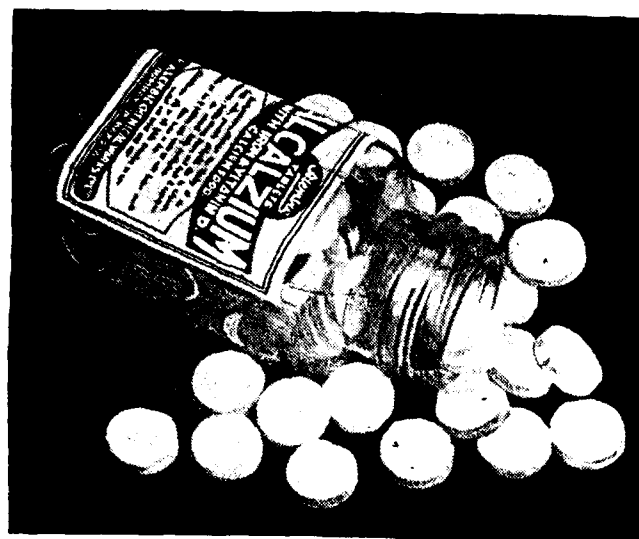


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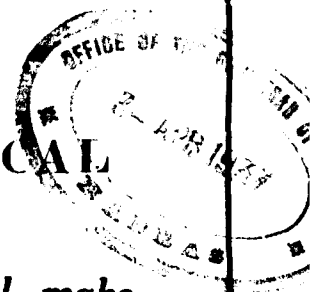
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MEDICO-SURGICAL SUGGESTIONS

A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

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Original Article INFANTILE ECZEMA

BY DR. S. THAMBIAH, M.R.C.P., D.T.M. & H., F.D.S.,

Dermatologist, Government General Hospital, Madras.

Definition.—This is a catarrhal inflammation of the skin with a variable duration and subject to remissions and acute exacerbations. This catarrh may be latent when retained intercellularly, or patent when it appears as exudation or weeping. It is non-contagious and also non-microbic. The aetiology of the disease is not well-understood, though a certain measure of sensitiveness to proteins derived from foods can be established.

Vernacular synonyms.—In Tamil it is called கர்ப்பான் or கடுவான். When it reaches the eczema rubrum stage, it is called செவாப்பா and செவாடுவான். In Malayalam it is known as "Thoda" "தோடா."

Signs and Symptoms.—The earliest manifestation of the disease shows itself as a reddening or roughening of the prominences of the cheeks very much akin to wind-burn or simple shaping. On close inspection it will be readily evident that the reddened area is not dry, but moist; clear serum is seen to ooze from the irregularly fissured and thickened skin. This serous discharge later dries into crusts of variable thickness. The borders of the lesion are indistinct and shade off into the normal skin. In a few fortunate cases the process stays more or less at this stage and then clears up under soothing protective applications. The disease may from the start be acute with a fiery red appearance, gradually making a peripheral extension of the original lesion and also fresh lesions of a minute vesicular or vesiculopapillar character may appear. The latter types on evolution weep and crust in the same way as the original reddened type. A noteworthy point is the ever present itching, and to secure relief, the child resorts to scratching with the finger nails, and rubbing against the dress and bed clothes. Thus the disease spreads slowly or rapidly to other parts of the body as the forehead, the chin and the ears and neck. In much neglected cases, the

wrists, the knees and the flexor and extensor surfaces of the extremities may become involved. On the face, the circum-oral, circum-nasal and circum-orbital areas remain free throughout the disease, while the cheeks, chin, forehead and ears are badly affected. So the distribution of the lesions on the face may have the characteristic mask-like spread. It may also be noted that the palms and soles also escape.

The intense itching and scratching keeps the child as well as the members of the household awake for the greater part of the night with the consequent deterioration of their general health. It is also worthy of note that the child maintains a good general condition during the earlier months of the affection.

Aetiology.—No other disease has had such numerous theories as to aetiology and hence to the methods of treatment. Babies between the ages of 6 months to two years are often affected; at the end of the two years, most of the children become free even without treatment. Teething, vaccination, food irregularities—events of importance present at this period, have been blamed without much foundation. A good many dermatologists of eminence in England are inclined towards an external irritation as the main factor in its causation. A strong hereditary tendency can be demonstrated. Patient inquiry will reveal the presence of eczema, asthma, urticaria, angio-neurotic oedema, migraine etc., in other members of the family. Children with infantile eczema on reaching adolescence, very often suffer from eczema or asthma.

Professor White in England made a study of the stools in obstinate cases of infantile eczema and showed the presence of excessive fat in 60 per cent of cases and excessive starch in 40 per cent; preponderance of sugar in 20 per cent and 10 per cent of proteins. He also concluded that excessive starch was associated with a dry type of eczema and excessive fat with a moist type—points of practical clinical importance.

From the dietetic point of view, different items as the fat, starch, sugar and of late, protein have been indicted and eliminated from the menu with varying effects, on the progress of the disease. Excessive starchy food causes fermentation; the stools are mushy or loose, green and acidic with a sharp penetrating odour.

A more or less similar effect is produced by sugars. The combined action of fats and protein produces an intense sensitization and aggravation of the pre-existing eczema. The fatty acid split off from the neutral fat consumed irritates the intestinal mucous membrane making it more permeable to the protein and other substances, which, when absorbed, may cause the eczematous process. "There is evidence to show that proteins particularly may be absorbed and digested through the intestinal mucous membrane and may give rise to sensitization." This form of sensitization to

products of protein is termed "allergy." Its presence in various substances can be demonstrated by intracutaneous, percutaneous and patch tests, employing a large range of allergens. But unfortunately, protein sensitization does not solve the problem of all cases of infantile eczema; yet there appears an intimate relationship between infantile eczema and protein sensitization; the exact nature of this is not determined.

There is also a certain amount of racial peculiarity in this disease; children of coloured races are less affected by this malady. In South India, I have not seen so many children with infantile eczema at the out-patient clinic of the General Hospital, as I have seen at Leicester Square. Perhaps overfeeding is not seen among the hospital class of children.

Pathology.—The pathology of infantile eczema, eczema in adults and dermatitis (due to known external irritants) is fundamentally the same. The main brunt falls on the epidermal structure. The prickle cell layer is oedematous and increased in depth owing to intercellular and intra-cellular retention of exudation and proliferation of the rete-cells. Fluid collects in small crypts, more so below the stratum corneum layer, and when sufficiently large appears as vesicles and blebs. The roof of the vesicles and blebs gives way and exudation becomes prominent. Owing to the oedema of the prickle cell layers (rete), the orderly cornification of the stratum corneum is interfered with. Keratin is not formed and the individual corneal cells retain their nuclei in addition to their coherence to one another. Normally the cells have no nuclei, they separate off cell by cell and are shed off cell by cell. In long standing cases scaling is prominent—an indication of altered cornification (para-keratosis).

Corial changes are not so prominent. Blood and lymph vessels are dilated. Old cases show cell infiltration as well. Perhaps the process started as a change in the papillary and subpapillary region which later affected the epidermal structures more.

Treatment.—Mild cases may be treated at home; severe ones require hospitalization and efficient nursing. To prevent scratching and rubbing, restraining devices have to be used. The Edinburgh device or the method proposed by White of Boston may be adopted. Soap and water aggravate the lesions. Saturated solution of boric acid may be used for cleansing purposes. Starch bath is comforting to the patient. Crusts may be efficiently removed by means of olive oil, soaps or cold cream.

From the dietetic point of view, and the assumption that the protein of milk caused the eczema or aggravated it, L. W. Hill of Boston proposed a protein-free diet and introduced a preparation under the name of "Sobee" (Mead Johnson & Co.). It is made up of Soya Bean flour (67.5 per cent), barley flour (9.5), Olive oil (19.0), sodium chloride (1.3) and calcium carbonate (2.7). Olive oil supplies the fat

and the last two items, the mineral deficiency of Soya Bean (Calcium, Sodium and Chlorine). Sobee is not sweetened and sugar may be added according to the tolerance of the patient. Cod Liver Oil and orange juice may supplement the vitamin deficiency in older children. A level tablespoon of sobee added to an ounce of water will provide the full strength mixture giving a caloric value of 17. For weaker children a dilution less than indicated above may be used. This diet has yielded much satisfaction in very severe cases. In less severe cases evaporated milk and milk heated, varying from 6 to 8 hours, have been advocated and used with good results. The protein of the milk is altered or denaturized in such a way that no injurious effect can arise to a sensitized child.

Local Treatment.—Any external application which is soothing and protective will answer the purpose quite well. If weeping is predominant, an ordinary calamine solution or $\frac{1}{2}$ per cent aluminum acetate in water is all that is necessary. When drying becomes marked, cold creams may be substituted. An efficient cold cream can be prepared by adding 3 to 4 drams of zinc oxide to an ounce of well prepared caron oil. It is better to incorporate a dram or two of lanoline or laceranum to keep the cream in a homogeneous mass, and this also will be of help if any acid preparations have to be added. Among the proprietary preparations, I have found Crooks Colossal Lacto-Calamine and ordinary calamine solution to answer the purpose. The former can be diluted with an equal quantity of warm water without lessening its efficacy. Lassar's paste without salicylic acid is a better protective in that the paste when applied will stick better and cannot be easily dislodged. If scaling is predominant, 2 per cent calomel in Ung. Aqua Rosae or 20 minims of Liq. Carb. Diterg in an ounce of Laceranum is all that will be required. Steam distillate of tar under the trade name of 'tara-alba' may be used in refractory cases.

In spite of the above figuring and planning as regards treatment, a few cases remain without being benefitted in the least by treatment. In these cases, it is wise and proper to improve the general health of the child, so that growth may not be interfered with. The physician should remember that this is a self-limited disease and when treatment of the eruption is not yielding to external applications, it is better to treat the individual without imposing much dietetic restrictions.

(A paper read at the Maternity and Child Welfare Conference, Madras 1936.)

Selected Articles

THE TREATMENT OF PNEUMONIA IN EARLY CHILDHOOD

BY E. P. COOK, M.D., F.A.A.P.,

San Jose, California.

Knowledge gained in recent years of the etiology and pathology of the pneumonias has not given striking decrease in mortality. With no specific remedy, the problem is a challenge to our therapeutic ingenuity and resourcefulness. Many agents of worth are used. I purpose to assemble and co-ordinate these procedures into a systematic plan of treatment. In the foreground is the careful management of the child as a whole, rather than treating exclusively the major pathological process.

The upper air passages and even the lungs are inhabited by a great variety of micro-organisms; broncho-pneumonia develops under a variety of conditions. Infectious diseases are the most important group of predisposing causes. Measles, whooping cough, and influenza are familiar examples. Simple infections of the respiratory tract, the so-called mixed respiratory infections, and bronchitis are also of the utmost importance. There may be great difficulty in determining whether or not a bronchitis has advanced to a point where it should be called bronchopneumonia. Fortunately, treatment does not depend thereupon; we must be guided by the degree of illness as evidenced by toxemia, fever, and general prostration.

The clinical course of a primary infection is fairly definite. The abrupt onset with fever, prostration, and rapid pulse denotes an acute infection. The appearance of cough and dyspnea will direct attention to the lungs, where the initial signs of faint or impure breath sounds over a localized area are followed in a day or two by bronchial breathing.

Prophylaxis: Pneumonia is easiest to treat by preventing. It is not controllable by the ordinary public health methods of isolation, quarantine and supervision and water supply. Undernourished and delicate children should be carefully protected from sudden lowering of the body resistance by chilling, and from contact with individuals suffering from respiratory infections or other infectious diseases, particularly measles, whooping cough, and influenza. Persons with acute or chronic upper respiratory infections should be kept away from the premature and congenitally weak infants. Mild, apparently insignificant upper respiratory infections should never be ignored.

I consider it of the utmost importance, though frequently accomplished with difficulty, to put children to bed when they have fever

until entirely well. Too often mothers allow the pleas of the children to overrule their judgment and slight colds become serious by reason of exposure and fatigue. Furthermore, it is common for parents to allow children to get up as soon as the temperature becomes normal. The only safe rule is that an afebrile period of at least 48 hours should elapse after a respiratory infection before a child is allowed out of bed. Even then it should be a matter of one or two hours the first day, with a convalescent period of three days before he is allowed to go to school. A child has no judgment in conserving his strength and the minute he is up he goes at top speed until exhausted.

Nursing Care: I know of no other disease in which it is more necessary to have a capable, quiet nurse or attendant who understands children and the value of sick room serenity and efficiency. With the hospital patient this is taken care of automatically; but the majority of cases are treated at home and by a mother usually willing and cooperative, always anxious, but often lacking in nursing experience. Children are quick to sense and respond to the nurse who is quiet, confident, and hopeful. Indecision, lack of confidence, over anxiety, and tears, have no place in a sick room. We must not deceive ourselves by thinking that a child is too young to notice these things and be affected by them.

A graphic temperature chart is suggested in every case as a most valuable aid in following the course of a fever, and may furnish the first indication of a complication.

Warmed fresh air is vital to the patient's well being. The air should be warmed to a temperature of between 65 and 68 degrees as actually recorded by a thermometer placed near the child. Such a temperature permits light clothing. It is exhausting to a hot, restless child to struggle under many layers of clothing and bed covers, lifting the added weight with every inspiration.

In addition to warming, the air also may be moistened to advantage. Plain unmedicated steam is very effective, or any of the usual volatile oils may be added to the water. Inhalations may be given for 30 minutes at intervals of every two to three hours and preferably under a canopy. It is not advisable to use a closed tent because of the extreme heat which develops, with perspiration and possible chill afterwards.

Inhalations should be continued as long as there is distressing cough or scanty secretions. The milder cases may be sufficiently relieved by simply allowing a kettle to boil constantly in the sick room.

Diet: It is possible to give specific instructions regarding diet, but these vary with the individual child. Bearing in mind the possible protracted course of the disease, it is necessary to encourage as much nourishment as the digestive apparatus can tolerate. The

foods should be bland and easily digestible. These may include, milk, broths, soft eggs, pureed vegetables, creamed vegetable soups, scraped beef, jelly, junket, custard and fruit juices. Milk is sometimes vomited but this may be avoided by boiling and diluting it, or giving evaporated milk with lactic acid. In general, it is better to offer smaller amounts of food at four hour intervals than three large meals a day.

Counter irritants: The use of counter-irritation is beneficial when pleural pain and cough are prominent. Mustard plasters are perhaps most effective. Variations in the strength of mustard and the sensitiveness of the skin make it impossible to give definite instructions regarding proportions of the ingredients until a trial has been made.

Hydrotherapy: A maxim which I have always thought particularly apt is "plenty of water inside and out." A child will rarely voluntarily take sufficient to meet the demands of his toxemia. Further intake may be encouraged by offering orangeade, lemonade, canned fruit juices or bottled soda water, given as such or diluted with water.

A sponge bath at a temperature of 90 degrees given under the covers so that the child will not be exposed to the air often results in a refreshing sleep of several hours. An ice bag to the head and a tepid sponge bath can transform a delirious patient into one enjoying a quiet sleep. It is not the hyperpyrexia that needs control, but the accompanying nervous manifestations.

Just a word regarding sponging: Most mothers fear the procedure as one which may cause the child to take more cold. This should not result if the patient is not exposed and the bath begun at a temperature of 95 degrees, gradually being reduced to 90 degrees and even 84 degrees according to the degree of fever. To be most effective the cloth should be wrung fairly dry, the bath continued for 10 to 15 minutes, and the moisture allowed to evaporate on the skin.

Abdominal Distention: This unpleasant occurrence is fairly frequent. When it first appears all food should be withheld for 12 hours and a cathartic given.

Turpentine stupes and enemas will relieve the milder cases. If these are ineffective, 0.5 c.c. of obstetrical pituitrin should be given every three hours, or as needed.

A persistence of the condition after these measures have failed, and they unfortunately will fail sometimes, usually means the development of peritonitis or approaching death as a result of circulatory failure.

Drug Treatment: The parents' importunate demands that something more be done in a critical case may lead us into the error of prescribing useless medication which may irritate and exhaust the

child in the effort to administer it. Furthermore it is apt to turn him against taking nourishment by mouth and make it difficult to give that most needed, if not actually producing a digestive upset. These parental demands may be met by emphasizing the importance of rest, less disturbance, and the hour by hour nursing care. I believe we are well repaid for time spent in education. There are definite indications for drug therapy, and a few simple drugs serve us well.

Children with pneumonia usually cough and this demands consideration. The warmed fresh air, inhalations, and counter-irritation are the first things. Hot drinks are soothing. One ounce of hot milk with a little bicarbonate of soda, given frequently, will often allay a spasm of coughing. In the early stage when secretions are scanty, syrup of hydriodic acid is effective.

Rest and sleep are necessary to conserve strength. Hypnotic drugs such as barbitol and chloral hydrate serve if no pain is present. If there is pain, codein is by all odds the drug of choice. It may be given by mouth or hypodermically. Morphine, while a more powerful, pain relieving drug than codein, is not well tolerated. Young children seem to be much more susceptible to morphine in proportion to body weight than adults. This is probably due to their greater oxygen metabolism with resulting greater effect when this is interfered with by morphine. Further, codein, like morphine, will depress the respiratory centre and raise its threshold for carbon dioxide. There results an increase of CO_2 in the lungs with consequent liberation of carbonic acid which inhibits the growth of pneumococci. Finally, and of great importance, is the fact that codein is not addiction producing.

Cardiac failure has always been most feared in pneumonia. Clinical study has shown that as an isolated event it occurs very seldom. It is commonly associated with terminal collapse with respiratory failure, abdominal distention, acute sepsis and rapid death. For a mild degree of cardiac failure, as evidenced by a too rapid and irregular pulse, caffein, and digitalis are the stimulants of choice. Reserve such stimulation for the time when, and if, indicated. Digitalis is, of course, the choice if auricular fibrillation occurs. Camphor in oil is a drug deserving of the high regard in which it is held, both as a stimulant and because of its bacteriostatic effect upon the pneumococcus. Skepticism and faith, both in the extreme, surround the use of alcohol. We like it in the grave pre-critical period. Brandy, or whiskey, in doses of 20 to 30 drops in sweetened water may be given to a young child every three hours.

Atropine, as a respiratory stimulant and at those times when profuse bronchial secretions seriously embarrass respiration, may be almost life saving. Children tolerate it well. A single dose of 1/400

grain to a child of four years may completely dry up the secretions and overcome the dyspnea and restlessness.

Our list of most useful drugs then includes barbitol, codein, caffein, digitalis camphor in oil, and atropine.

Blood Transfusion: I have long been interested in the effect of blood transfusion in cases of prolonged acute infections, and while it is not advisable to increase the blood volume by any large amount when pulmonary congestion exists, small transfusions, perhaps repeated, are not subject to this objection. Recently four infants under 16 months of age, who had been sick from four to eight days with profound toxemia and prostration of severe bronchopneumonia, were given amounts of blood varying from 85 to 125 c.c. Each one showed a prompt decline of temperature with such improvement in the general condition that they were convalescent within a week.

Serum Therapy is an attempt to confer immediate immunity on the patient by administration of a serum which contains a large amount of the immune bodies which the patient is trying to develop. These immune substances are all anti-bacterial rather than anti-toxic. No toxin-antitoxin mechanism has ever been demonstrated in lobar pneumonia.

Until recently specific therapy has not been practical due to the time necessary for typing the pneumococcus. If two or three days must elapse while waiting for a report from the laboratory the patient's condition is often such, one way or the other, as to render serum of little value. The rapid Neufeld reaction for typing as proposed by Sabin is simple, well within the powers of the small hospital with moderate laboratory facilities or even the clinician himself.

The first requirement is to obtain sputum directly from the lungs. A sterile swab passed low in the throat will usually induce a cough and catch the sputum. Older and co-operative children will expectorate the raised sputum. Kernels of sputum are spread on cover slips with a two mm. platinum loop, and an equal quantity of undiluted rabbit serum (type I serum to one, type II to another, etc.) and a loopful of Loeffler's alkaline methylene blue added to each. The cover slips are then inverted over hollow-ground glass slides and examined after two minutes with an oil immersion lens and artificial blue light. In a positive reaction the capsule becomes swollen, is refractile and does not take the stain; the organism within it is stained blue.

The clinician may find himself confused regarding the types of pneumococci, their relative frequency in lobar pneumonia, and the importance of each type. This is particularly true when one attempts to correlate the statistical studies made in various places and at different times. Three distinct serological types have been demonstrated: Types I, II, and III, and a mixed group, IV, containing all other strains of pneumococci which fail to react with the respective

type antisera. Group IV has been further divided into twenty odd types. Six different observers, three in the United States and three in England, have recorded the frequency with which the different serological types occurred in each of their series, as follows:

Type I varied from 25 per cent in one series to 45 per cent in another; type II from four to 32 per cent; type III from 28 to 52 per cent.

These figures indicate that the incidence of the various types vary widely from place to place and from time to time, but in contrast to adults, the majority of pneumonias in infancy and childhood are due to the new types identified from the old group IV. Mortality appears to be highest with type IV and lowest with type I, while group IV tends to have a lower mortality than any of the three main types.

Commercial antipneumococcus serum is readily available for types I and II and there seems to be little doubt as to its efficacy in type I even though there is little statistical evidence that the death rate has been decreased by its use. Serum is also available for types III, IV, V, VI, VII, VIII, IX, XIV, XV, XVIII, XIX and XXII.

Before administering serum it is of the utmost importance to determine whether or not the patient is sensitive to horse serum. A history of hay-fever, asthma, or urticaria, or any previous injections of horse serum, would mean a possible sensitiveness. In addition the patient should be tested with the serum to be used. The intradermal test consists in the intracutaneous injection of 0.02 c. c. of serum diluted one to 10 with normal saline. An irregular urticarial wheal surrounded by a zone of erythema denotes sensitiveness. The conjunctival test one or two drops of undiluted serum directly into the conjunctival sac, shows sensitiveness, by reddened and injected conjunctivae within 15 minutes.

If the tests reveal only a slight sensitiveness, serum may be given in graduated doses at half-hour intervals, beginning with a very small amount. A syringe loaded with adrenalin should always be at hand in case of a reaction. (It is also wise to have a tourniquet. Ed.) If both the intradermal and conjunctival tests are positive, the patient is so highly sensitive as to render inadvisable the administration of serum.

After 20 years the results of serum therapy are not such as to recommend its widespread use in pediatric practice. This is due chiefly to the natural low mortality of lobar pneumonia in children, and the relative infrequency of type I infections.

Oxygen Therapy: I always regard this as the ace-in-the-hole when a child becomes critically ill with pneumonia because it affords such rapid relief from the exhausting dyspnea and restlessness. It really seems to be life saving, though difficult to prove.

The primary purpose of oxygen therapy is to combat anoxemia. Normally the oxygen content of arterial blood is approximately 90 per cent of its total capacity and in venous blood approximately 70 per cent. Under normal conditions the body is able to take up its required amount of oxygen from air with its one-fifth oxygen content. During pneumonia this ability is decreased, resulting in anoxemia—increased unsaturation.

There is a definite relationship between the degree of cyanosis and the per cent of arterial unsaturation. Cyanosis is the indication for oxygen therapy. For practical purposes detectable cyanosis of the finger nails and lips represents approximately 10 per cent unsaturation, definite cyanosis 15 per cent, and marked cyanosis 20 per cent or more. It is most important to watch carefully for early cyanosis in order to institute oxygen therapy at the proper time, thereby preventing serious toxic changes which occur from anoxemia.

The dosage of oxygen to be most effective is fairly well established. A concentration below 30 per cent is rarely of value, while 30 to 35 per cent will generally lessen cyanosis, and the optimum is between 40 and 60 per cent. The most desirable pressure is two and one half times that of the atmosphere, or 50 per cent.

Concentrations of 35 to 38 per cent may be obtained by a nasal catheter with a high-pressure oxygen tank and calibrated reducing valve. With a double catheter 5.0 litres may be administered, the inspired air containing approximately 38 per cent oxygen. The terminal one inch of catheter should be perforated with several small holes. The funnel methods of giving oxygen from a low pressure tank is practically useless.

To administer the optimum concentration it is necessary to use an oxygen tent. This equipment is well within the means of a small hospital or the private practitioner. The operation is so simple that a nurse can be instructed in its proper use in a few moments.

It should be remembered that the body stores no oxygen; so if oxygen is needed, the need is constant. The tent provides a method whereby oxygen enriched air may be continuously circulated at the optimum concentration, cooled to the desired temperature, and with the carbon dioxide content maintained at one per cent or less. Any increase over one per cent stimulates respiration which is usually not desired. A simple testing apparatus accompanies the tent, by means of which the tent air can frequently be tested for both its oxygen and carbon dioxide content. The latter should be kept at a concentration not exceeding one per cent in order to avoid over-stimulation of the respiratory center.

On placing a restless, dyspneic, cyanotic child, with frequent pulse and respiration, into a tent, the beneficial effect is prompt and sometimes spectacular. The pulse and respiration become slower,

the temperature often drops two degrees or more, breathing becomes easier, and increased comfort is followed by much needed rest. Cyanosis is relieved as the arterial oxygen saturation increases, and it will frequently prolong a life until such time as the child can build up his immunity.

COMPLICATIONS.

Dehydration: Some of the sickest children I have seen have been those who developed marked dehydration. Mention has already been made of forcing fluids by mouth. If a satisfactory amount, which means from one to two quarts a day, cannot be given in this manner, we must resort to infusion. For this purpose we prefer Ringer's or Hartmann's solution, which can be given in amounts varying from 200 to 500 c. c. every eight, 12, or 24 hours, with complete absorption and without irritation. The giving of fluids by rectum is unsatisfactory with children. A few ounces may be retained at first, but repetition of the procedure results in such irritation of the rectum that further retention is impossible.

Otitis Media: Infection of the middle ear is always possible when there is an infection in the upper air passages; in pneumonia it is a most frequent complication. The only certain way to detect the condition early is by frequent examinations of the ear drums. Otitis media may and frequently does occur without pain; the ears are objects of suspicion when there is a sudden rise in temperature, increasing restlessness, rolling of the head from side to side, or the definite complaint of earache.

Pain alone is relieved by the application of dry or moist heat. Carbolyzed glycerine is a favorite remedy and causes local anesthesia of the drum membrane which is particularly useful if paracentesis becomes necessary.

To irrigate or not is a matter of personal preference. I favour it, providing the procedure can be carried out without too much antagonism from the child.

An ear drum which shows increasing redness and swelling, and is painful, should be incised early. If carefully performed it will not introduce outside infection and does allow the escape of gas and serum. Prompt healing and relief of symptoms usually follow.

If distinct bulging of the drum membrane has occurred, paracentesis will be followed by drainage of pus for from a few days to three weeks and occasionally longer. During this period douching should be carried out carefully, and the external ear kept scrupulously clean to avoid the development of furunculosis.

Pyelitis: Urinary tract infections frequently follow a focus in the respiratory passages and while pyelitis is not a common sequel of pneumonia, examinations of the urine are the only means to detect its presence. A moderate albuminuria is to be expected but persisting pyuria demands the recognition and treatment of pyelitis.

Empyema: The treatment of this complication which we have found most effective is similar to that so ably described recently by Mason. When the pleural effusion assumes the character of frank pus, as determined by repeated aspirations, open drainage by rib resection has been followed by the lowest mortality and most rapid obliteration of the abscess cavity.

Meningitis and Meningismus: Symptoms of meningeal irritation demand early spinal puncture for two reasons: It is the only way by which we can differentiate meningitis from meningismus, and it is good treatment in either case. Repeated spinal drainage offers the best hope of relief in meningitis, and will alleviate the marked nervous symptoms of meningismus.

CONVALESCENCE

Children with pneumonia should be kept in bed at least one week with a normal temperature. This time should be extended for the severe cases and those with persisting cough, but in any case the child should feel perfectly well before he is allowed to get up. Recurrences are thus avoided and ultimate complete recovery hastened. Exercise at first should be limited and the initial period out of bed should be no longer than 15 to 30 minutes. This is gradually increased each day as returning strength permits. In allowing him to be out of doors, it must be remembered that he has become accustomed to the atmosphere of the house and fresh air periods must be carefully guarded and of short duration.

The diet need not be limited and the appetite is usually such that it is not necessary to force food. Cod liver oil is one of the best reconstructive tonics; syrup of ferrous iodide or iron and ammonium citrate should be added if the infection has been prolonged to the point of producing a secondary anemia.

SUMMARY

The treatment of pneumonia necessitates meticulous care—care which safe guards by early treatment of simple respiratory infections, which recognizes all possible complications and which is painstaking and tireless in surrounding the patient with all possible hygienic protection. The fundamental principles are proper rest, fresh air, food, hydrotherapy, oxygen, and symptomatic medication.

I know of no other disease in which the following words of a wise clinician are more appropriate: "Never despair of a sick child".

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DIFFICULTIES IN THE TREATMENT OF DIABETICS

BY B. EPSTEIN, M.B., CH B. (WITWATERSRAND),

Pretoria.

On account of the short notice that was given me to work up the subject for to-night's lecture, I have resorted to a review of types of cases that I have personally treated. It is interesting to make an analysis of the difficulties met with, difficulties that you have all undoubtedly experienced. I hope you will forgive me if I traverse familiar ground, but it is very useful at times to discuss matters of everyday interest.

I have sub-divided this talk into its medical, economic, and sociological aspects.

Medical: A simple case of diabetes is very easy to treat. The patient is given a basal diet for five to seven days, or a maintenance diet if he has to carry on with his work. If there is no sugar in the urine at the end of this period, he requires dieting only. If sugar is present insulin is essential. There are, however, very few cases as simple as this. Every case is different and one almost always meets with some deviation from the normal.

The commonest complication met with is acidosis, and it is very important to distinguish between the two tests for the ketone bodies. The nitroprusside or Rothera's test is the more delicate one, and therefore a positive result is not of such serious import as the ferric chloride or Gerhard's test. Should the latter be positive, the patient must be treated for an impending coma. In the former instance it is, of course, also essential to eliminate the acidosis speedily, but the danger is not so great. Usually one can accomplish this within 48 hours by administering insulin and glucose and keeping the patient on a fat-free diet. Recently I had a diabetic who was also suffering from hyperthyroidism. In spite of large doses of insulin and a fat-free diet, it took over two weeks to eliminate the acidosis.

Coma is always associated with acidosis. One must aim at the elimination of the ketone bodies, at the same time, of course, reducing the blood-sugar to normal limits. Coma is now not such a common condition as it used to be.

As you know, it is due to the incomplete oxidation of fats, caused either by too much fat in the diet or the inability of the glucose to be utilized for its combustion by the lack of insulin. The modern diet is essentially suitable for complete oxidation of fats, and those cases one sees now are due either to gross neglect or the intervention of septic complications. Diabetic coma is one of the few medical emergencies where the physician can save life and enjoy the pleasant sensation that the surgeon so often experiences in extirpating an offending organ.

Diabetics are very liable to certain septic conditions such as boils, carbuncles, pneumonia and the sepsis complicating gangrene. Infections are always very dangerous to diabetic because the sugar tolerance is lowered and larger quantities of insulin are required. One of the best treatments for boils is magnesium sulphate paste. The vogue for incising boils is passing and is condemned by Wilkie of Edinburgh. The surgical treatment of carbuncles is simple—a crucial incision well beyond the margins and the undercutting of the flaps. The late Dr. C. F. Beyers, of Johannesburg, used to excise the whole area with an electric cautery and then make multiple punctures in the base. I saw excellent result by the method. The medical treatment is, of course, the most important, because the insulin requirements immediately rise and acidosis with the danger of coma develops. I have used 240 units of insulin daily in one case. A month later the patient was on a liberal diet, without insulin and quite sugarfree. Joslin says that mortality rate is 1:5. Pneumonia is much more serious in diabetics than in nondiabetics, because in addition to the toxæmia of the infection there is superadded the great risk of coma. The treatment is the same as for surgical diabetes—large dose of insulin with glucose to counteract the coma. Similar lines of treatment must be adopted in gangrene. In these cases the difficulty is usually the surgeon, who wishes to save as much of the limb as possible and waits for demarcation, forgetting that the gangrenous condition is a fertile source of coma and that the action of insulin is interfered with by the sepsis and the toxæmia present.

A condition not in any way dangerous but difficult to treat is diabetic neuritis. I demonstrated to this Branch last year a patient who had a paralysis of the abducent nerve. Subsequently he developed a facial paralysis. Both of these conditions lasted many months. I have also had a case of neuritis of the radial nerve that caused me a considerable amount of trouble for about a year before improvement set in. Recently I have had several cases with involvement of the sciatic nerve. The textbooks tell us that we need only reduce the sugar to normal limits and the affection is cured. My experience is the direct contrary to this. One of my sciatica cases did respond quickly to the use of insulin, but in all the others treatment with heat and electricity had to be used. Diabetics are, of course, subject to rheumatic conditions the same as any other individuals, so one cannot assume that every case of neuritis in a diabetic is necessarily due to the hyperglycæmia.

Pregnancy in a diabetic is a difficult problem; so many women miscarry, or have abnormal fetuses, or give birth to overweight infants. Diabetic women are also more subject to the toxæmias of pregnancy and puerperal sepsis. A peculiar phenomenon is the

liability to hypoglycæmia and insulin should be given under careful control.

It is surprising how many diabetics are overweight and this in a condition known as a "wasting disease." In spite of the use of insulin and low diets, I have found it difficult to reduce the weight in several cases. One woman weighed about 350 lbs., and it is impossible to reduce it below 240 lbs. Two others are over 180 lbs. with similar results. These cases are over 40 years of age. Perhaps thyroid might help. I have not tried it.

Native diabetics present an interesting and separate problem. It is usually impossible to diet them, but fortunately they are not very subject to diabetes. I have had four cases. One died in coma in this hospital; another died in coma because he refused to go to hospital; a third is an intelligent native who is on diet; and the fourth is a female who is married to a European. She gets insulin and is fortunate in living near a mission station where her urine is examined daily and the amount of insulin adjusted to her needs.

There are many more difficult cases to be encountered but time prevents me from discussing them, as I wish to deal with the other aspects of this subject.

Economic: The successful treatment of diabetes depends to a great extent on the economic position of the patient. The better financial position the patient is in the more educated he is likely to be and the easier it is to receive his co-operation. Thanks to the intervention of the Union Department of Public Health, the price of insulin has come down considerably—to 1s. 6d. and 2s. 6d. for 100 units and 200 units respectively. This still allows 50 per cent. and 25 per cent. profit on an article essential to life. I think that insulin is sufficiently important to be sold by public Institutions at cost price, and so should hypodermic syringes—100 per cent. is the usual profit for a syringe.

Another important economic difficulty is the fee for investigation, and now I am speaking of the average middle-class-patient and not the hospital class. It is unfair to a diabetic to be treated without an investigation of the leak point of glucose. This requires at least six estimations of blood-sugar and urine-testing. The fee is £5 5s. in Pretoria. I do not consider it an excessive fee for the work done, but it is impossible for many patients to undergo the extra expense. Just as the Health Department provides a free service for Wassermann and other tests, so should there be some concession to the diabetic. The importance of sugar-tolerance curves has been demonstrated to me on many occasions. In one case, which a well-known Johannesburg physician was treating by diet only, I found the leak point to be 0.28, the normal being 0.18, so that whenever sugar appeared in the urine one could be sure of a high blood-sugar. She is now getting 35 units of insulin per day, and this has cleared

up a long-standing sciatica. Without this investigation insulin was definitely contra-indicated.

Sociological: While the actual treatment of diabetes in South Africa is on a par with that of the rest of the world, yet in the matter of public education we are hopelessly behind. The population is perhaps too small for such ambitious schemes as diabetic schools, restaurants, or clubs, but a tremendous amount of propaganda could be broadcast by means of the press and the radio. Although the cause of diabetes is not definitely established, we do know something about its etiology, and once a person has developed it we can educate him to prevent complications. Diabetes is a lifelong disease of a hereditary nature, in which the patient should be able to carry on his ordinary mode of living. He is an economic asset to the State and not a loss, as in the incapacity of other illnesses.

I wish the nursing profession were more interested in diabetes. Short of examining the urine for sugar and the administration of insulin, so often stupidly measured in minims and not in units, one finds, with the usual exceptions, very little co-operation on the part of sisters and nurses. One sister once said to me, "Please, doctor, leave me alone. I know nothing and want to know nothing about this patient's diet. There is a dietitian in the hospital. Go to her." The dietitian in the hospital is a most useful person, but her importance is not sufficiently appreciated by the authorities. As you are aware, diabetics should know everything about their disease and all about their foods—its weighing, composition and method of preparation. The dietitian is the expert on this subject and her knowledge should be utilized for that purpose. I used to request her to go to the ward with a diet sheet and discuss it fully with the patient. The dietitian was always keen on this co-operation with the doctor and she was a most useful ally. Unfortunately the authorities did not approve of this scheme, and I was informed "that the function of the dietitian is in the kitchen and not in the ward. The Sister can do the teaching"—an attitude that is not only wrong but medieval in conception.

Contemporaneously with the propaganda in the nursing profession, the public should also be taught certain fundamental points.

1. That insulin is at present the only reliable and safe drug used in the treatment of diabetes.

2. That insulin is not habit-forming as many people believe, and that there are any number of patients who require it only to tide them over acute stage of disease.

3. That extracts of plants have so far not proved to be of use.

4. That patent preparations given by mouth have no action on the blood-sugar except in the case of those like synthalin containing guanidine which is toxic to the liver. These substances are extensively advertised in the press and their sale should be prohibited.

I look forward to the day when in South Africa we can boast of a medal such as has been given by the Boston Hospital "to those individuals who have conquered diabetes by living longer with it than they were expected to live without it."

(*South African Medical Journal*, Dec. 1936.)

TETANUS

TREATMENT BY ANTITOXIN INTRACISTERNALLY

BY P. M. SCHUNK, M.D.

Sheridan.

Considerable controversy exists concerning the comparative value of various methods of procedure in the treatment of tetanus. Opinions vary chiefly as to the best method of administration of antitoxin.

It is generally agreed that the disease is caused by a B tetanus infection liberating a toxin which circulates in the blood stream, from which it is picked up by the motor nerve end plates and thence transmitted up the axis cylinders and perineural lymphatics until it reaches and becomes firmly fixed in the motor cells of the central nervous system, there causing irritative phenomena which result in tonic and clonic spasms. Death is due to asphyxia caused by spasm of the respiratory muscles.

Inasmuch as the purpose of tetanus antitoxin is to neutralize the liberated toxins, the question arises as to how this can best be accomplished. Wainwright states that intraspinal injections are harmful. Bates does not give serum intravenously because of the greater probability of anaphylactic shock than by intraspinal, intramuscular, or subcutaneous administration. Miller and Rogers use the intravenous route most often, then in order of frequency the intramuscular, intraspinal, and local routes. They state that patients without spinal injections do as well as those given serum intraspinally. Klemmer and Crosland report a 68 per cent mortality in those receiving serum intraspinally in conjunction with other methods of treatment, while for the remaining cases, including those receiving no serum whatsoever, the mortality was 58 per cent. Fantus recommends intrathecal injection only for severe cases, reserving cisternal injections for head injuries and questions the efficacy of the latter. Calvin and Goldberg report a 70 per cent mortality with, and a 56 per cent mortality without intrathecal injections, there being no decrease in mortality despite the ever increasing amounts of serum used. Boyce and McFetridge state that intraneural injections of the serum is the most logical method of fighting the toxin, but that the presence of toxin in the spinal fluid is not definitely established. Smith and Call report a case in which the spinal fluid became cloudy after the intraspinal administration of serum. No serious complications developed. They regarded it

as a serum meningitis. Silverthorne and Hart report two cases with recovery in which tetanus anti-toxin in 5 per cent glucose and normal saline was administered by the continuous intravenous route. They recommended that 20,000 to 70,000 units be given per half hour regardless of the total amount injected. They gave a ten-year-old boy a total of 2,867,500 units by this method, which is the largest amount administered to any one patient reported in the literature read. Taylor uses all routes of administration and sees no particular advantage of one over the other. Yodh cites work done by the British war office committee which indicates the greater effectiveness of intrathecal administration. He reports three groups of cases of his own. The first group received intramuscular and intravenous injections only, the mortality being 65.6 per cent. The second group received large doses of serum intravenously and intramuscularly along with intraspinal injections, noting a mortality of 50 per cent. The remaining 112 cases were given anti-toxin intracisternally, besides the other routes, with a mortality of 25 per cent. He concludes that cisternal puncture is more efficacious than the other methods because it reaches nearer the vital centers.

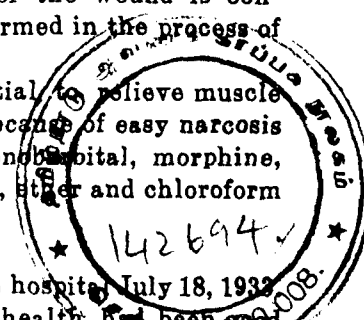
All authors agree on the importance of the care of the local wound. The wound should either be completely excised or all necrotic tissue removed and a complete exposure to the air should be made. Bates injects 2 or 3 per cent phenol around the wound and along the nerve trunks for sterilization. Caution is given that cauterization of the wound is contraindicated because more necrotic tissue is formed in the process of healing.

Sedatives in liberal amounts are essential to relieve muscle spasm. Boyce and McFetridge favour avertin because of easy narcosis and its harmlessness in repeated doses. Phenobarbital, morphine, sodium amytal, choral hydrate, paraldehyde, ether and chloroform anesthesia are recommended.

CASE REPORT.

W. B., male, aged 20, was admitted to the hospital July 18, 1933. His family history was irrelevant. His past health had been good except that six weeks previously he had had an appendectomy done for acute appendicitis. He recovered from this rapidly and was working part time until July 15, 1933, when he crushed his right thumb in the endgate of a truck. He received the usual first aid treatment and had no further trouble until the evening of July 17, when he complained of pain in the thumb radiating up into his arm. On the morning of July 18, the muscles of his neck became rigid, the rigidity rapidly extending over his whole body.

Examination revealed total unconsciousness, a normally developed physique, extreme rigidity of all his voluntary muscles producing a marked opisthotonus. Breathing was labored and there was a moderate cyanosis. The right thumb showed evidence of a



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crushing injury. A hematoma had developed beneath the nail. The temperature was 100.2 degrees rectally, pulse 80, and respirations 24. Examination of the heart and lungs was negative. A catheterized urine specimen showed no abnormalities. A leucocyte count revealed 10,650 cells per cubic m.m. The spinal fluid was clear, showed 2 cells per cubic m.m. and a negative Nonne. A diagnosis was made of acute tetanus.

The thumb nail was removed as well as the underlying necrotic tissue and 10,000 units of tetanus antitoxin were given intravenously immediately. The rigidity and opisthotonus persisted in spite of morphine sulphate grain $\frac{1}{4}$ being given four times in six hours. Finally sodium amytal grains $7\frac{1}{2}$ were given intravenously. The patient relaxed and breathing became less labored; the cyanosis decreased.

On July 19, 30,000 units of tetanus antitoxin were given intravenously and 10,000 intraspinally. Sodium amytal grains $7\frac{1}{2}$ were given intravenously two times to control the spasms and opisthotonus. A serous and bloody discharge from the thumb developed. Finally 15 cubic centimeters of spinal fluid was drawn off by cisternal puncture and 10,000 units of tetanus antitoxin given by the same route. The spinal fluid was cloudy—evidence of serum meningitis following the intraspinal injection. The temperature reached 103 degrees.

After the intracisternal administration of serum, there seemed to be a very definite improvement in his condition. The temperature was lower, there was better relaxation, less labored breathing and less cyanosis. Spasms were completely controlled from this day on by giving sodium amytal grains 6 per rectum. On July 20, 30 cubic centimeters of spinal fluid were withdrawn and 20,000 units of antitoxin were administered intracisternally, along with 20,500 units intravenously. July 21, 10,000 units were given intracisternally. On July 22 he was fully conscious for the first time. He complained of a severe headache which was relieved by cisternal drainage. The only muscular rigidity remaining was confined to the neck. Antitoxin, 20,000 units, was given intravenously on this date. July 23, the cistern was again drained. Rigidity of the neck was gradually lessening. July 24, 20,000 units of antitoxin were given intravenously. July 25, there was a generalized muscular serum rash and a marked lymphadenopathy which disappeared in a few days. On July 26, the rigidity was still occasionally noticeable and 20,000 units were administered intravenously. A gradual convalescence followed, marked particularly by a generalized muscular tenderness and slow healing of the infected thumb by granulation. He left the hospital on August 15, 1933. A complete physical and neurological check-up on February 19, 1934, revealed no abnormalities.

COMMENT.

A total of 170,500 units of antitetanic serum was given to this patient, 10,000 intraspinally, 40,000 intracisternally, and 120,500 intravenously. Definite improvement was noticeable only after the intracisternal administration of the serum. Previously the intraspinal and intravenous routes seemed to be of no avail.

To give the serum intracisternally the patient lies on his side in bed, while an assistant holds the head in as much of a flexed position as the muscle spasm will allow. The spinous process of the atlas is located by palpation. The spinal puncture needle is then inserted in the midline immediately dorsal to the spinous process of the atlas in the direction of the external auditory meatus. A sensation of passing through a membrane is felt on the needle as it passes into the cisterna magna. If the edge of the occipital bone is felt by the needle, it is directed a little more downward. The required amount of spinal fluid is allowed to drain out and the serum injected by the syringe container and suitable connections. This particular patient vomited after each cisternal puncture.

Besides demonstrating the probable value of the intracisternal administration of antitetanic serum, this case illustrates the great benefit to be derived from sodium amytal used intravenously to control the spasms. Morphine hypodermically and magnesium sulphate intramuscularly, repeatedly used, had no appreciable effect. After each injection of sodium amytal intravenously in doses of seven and one-half grains, there was almost complete relaxation, breathing was easier and cyanosis decreased for a variable length of time. We believe death from asphyxiation would have been inevitable except for the use of this drug. As the patient improved rectal and oral administration was sufficient.

CONCLUSIONS.

1. Local treatment of the wound and relief of muscle spasm is generally conceded to be of paramount importance in the treatment of tetanus.
2. Sodium amytal given intravenously is of great value in controlling muscle spasm.
3. Various opinions exist as to the most valuable route of administration of antitetanic serum.
4. A case is reported in which the intracisternal administration of serum seemed to be the deciding factor in combating the disease.

(Colorado Medicine Feb. 1936.)

Extracts

SCARLET FEVER.

(S. SEN & K. C. CHAUDHURI: *Indian Journal of Pediatrics*. 1936. iii. 161).

It is generally believed that scarlet fever does not occur in tropical and subtropical countries. Although it is certainly a disease of temperate climates, it may attack all races. Rogers thought that scarlet fever is an imported infection in this Indian population have been reported in the past, the first authentic report was by K. C. Bose in 1889. In 1931 Patel described a series of cases from Bombay and came to the conclusion that scarlet fever is an indigenous disease of India; he thought that because the course of the disease is generally mild in the tropics, and the scarlet colour of the rash, which, when faint, is not noticed much in the brown or dark skins, and sore throat and other symptoms are taken as due to influenza, that the real nature of the disease is missed. S.K. Chatterjee reported three cases in a family in Calcutta in 1934.

The authors describe three cases of scarlet fever seen by them in Calcutta during the years 1934-36.

The main diagnostic features of scarlet fever are sudden onset with fever, vomiting, and sore throat, characteristic punctate erythematous rash all over the body, except the face, forehead and scalp, appearing a day or two after the initial rise of temperature, strawberry or raspberry tongue, and desquamation towards the end of the first week. As neither convalescent serum nor Dick toxin was available in Calcutta, the authors could not carry out Schultz-charlton blanching reaction and Dick test, which are undoubtedly of great value when the course of the disease is atypical and the diagnosis doubtful.

Certain, drug rashes such as by belladonna, quinine, iodides, salicylates, etc. may give rise to confusion in diagnosis, but they can be easily eliminated by their irregular distribution, their definite edge, and frequent involvement of the face and forehead. Erythema scarlatiniform closely resembles scarlet fever but desquamation begins as early as the second day of the attack, erythema persists for 3 to 4 weeks, and it is not infectious.

Haemolytic streptococcus is the causative organism of scarlet fever. The haemolytic streptococci have three pathogenic characteristics: a pyogenic property, an invasive property, and a rash-producing (erythrogenic) toxin. The erythrogenic toxin is common to all haemolytic streptococci and is of one type; it is undoubtedly most actively produced by those strains associated with scarlet fever. The development of scarlatinal rash, however, depends not only on infection of the throat with a haemolytic streptococcus of

sufficient virulence and producing an adequate amount of Dick toxin, but also on the presence or absence of an adequate amount of anti-toxin in the patient's circulation to neutralise it.

The general treatment consists in rest in bed, fluid diet, tepid sponging, and symptomatic treatment for restlessness, insomnia, sore-throat, etc. One of the greatest advances in treatment of scarlet fever in recent years was the use of specific antiscarlatinal serum. As in all serum therapy, the sooner the treatment is begun, the better is the result. Ten to 20 cc. of the concentrated serum injected intramuscularly is usually an adequate dose. It is seldom necessary to give more than one injection, and it is unwarranted in mild cases. Passive immunisation is obtained in 24 hours by the intramuscular injection of 10 to 20 cc. of the specific anti-serum, but it lasts only for 3 to 4 weeks. Active immunisation by repeated intramuscular injection of the specific streptococcal toxin requires one month to develop but lasts for several years.

INTRAVENOUS TREATMENT OF MENINGOCOCCIC MENINGITIS WITH MENINGOCOCCUS ANTITOXIN

ARCHIBALD L. HOYNE, M.D., CHICAGO. *Journal A.M.A.* Volume 107, Number 7, August 15, 1936.

A survey of the literature and the official statistics of cities and states shows a surprisingly high death rate prevailing for meningococcus meningitis. The statistics which follow are typical. At the Cook County Hospital in Chicago, during a period of nineteen years prior to 1934, the fatality rate for meningococcus meningitis has varied from thirty-five per cent to ninety per cent, and has averaged over fifty per cent. All of these patients received serum intraspinally; occasionally other types of injections were made, but they were only resorted to as auxiliary measures.

Age seems to greatly influence the fatality rate, being comparatively low, or 12.9 per cent, in children under ten years of age, and increasing proportionately with age.

The question which is foremost in the mind of the author is "Are we justified in calling a meningococcic meningitis an acute infectious disease of the nervous system? Is it not perhaps a systemic infection of which the meningitis is a complication?" This thought was presented by Herrick twenty years ago, when he suggested the term meningococcia for the entity, claiming that the disease travels through the body in the blood stream, and that the meninges are thus infected. This interpretation would, we feel, account for the poor and incongruous results of the present accepted treatment—intraspinal injection of the serum—and upon it we have based our present mode of treatment which is as follows:

Immediately on admission to the hospital a blood culture is taken. If the patient has petechiae, the blood culture is nearly

always positive. Should there be little or no rigidity of the neck a lumbar puncture is not performed. Preparations are made for intravenous therapy, and later, after the blood culture has become negative, a spinal tap is done to confirm the clinical diagnosis.

Antimeningococcus serum or meningococcus antitoxin was given to alternate patients in order to compare therapeutic effects. This was done irrespective of age or severity of infection. Whether meningococcus serum or antitoxin is to be injected, it is given diluted in ten per cent dextrose in physiologic saline of at least twice the volume of the therapeutic agent. From five to fifteen minims of epinephrine is added to the mixture. It is then administered by the gravity method at a flow of about sixty drops per minute at body temperature. Any vein in an extremity may be selected—the part should be immobilized on a splint.

When antitoxin is used, 50,000 units for a child to 100,000 units for an adult is usually given as an initial dose. If one of the standard antimeningococcus sera is selected, the dose is generally from 150 cc. for a child to 200 to 300 cc. for an adult. Either treatment may be repeated at twenty-four hour intervals if it seems indicated. Frequently only one large dose will be required; however, the author recently gave 100,000 units of antitoxin for consecutive days, to a woman who had been ill six days before she entered the hospital in coma. She made a complete recovery and was discharged from the hospital in twelve days.

Most of the patients developed urticaria in five to seven days, but no serious reactions have been encountered: none have been more severe when the agent was diluted as described, than those occurring when undiluted serum is injected intraspinaly.

The patients treated during 1934, 1935, and 1936 have received no intraspinal treatment, and the fatality rate for all cases was only 11.8 per cent. The fatality rate for the forty-three patients who were twenty years old or less, was only 2.3 per cent. For the thirty-one antitoxin-treated patients, irrespective of age, the fatality rate was 6.4 per cent. The fatality rates for all serum treated patients was 14.2 per cent. This wide difference in apparent therapeutic efficiency between the antitoxin and serum groups is not usually so marked. The number of meningococcic patients treated exclusively by the intravenous route was ninety-six, and the fatality rate for the combined groups was 15.9 per cent.

The administration of an adequate dose of antitoxin or serum is followed by a marked decline in temperature, often with return to normal within twelve hours. If a satisfactory response is not produced within twenty-four hours, the dose is repeated. Frequently in very severe cases a second dose is administered in twelve hours. Evidence of intracranial pressure is an indication for another lumbar puncture. Often a pronounced reduction in the cell count, and an

absence of meningococci, is noted. This is of interest because it has been thought for so long that destruction of the meningococcus depended upon its coming in direct contact with the serum.

Opisthotonus is common when the antimeningococcus serum is administered intraspinaly. There is more irritation of the meninges due to the presence of a foreign substance; this is demonstrated by the fact that when this method of therapy is used in the septicemic state, the meningitis symptoms become more pronounced. The fact that frequently spinal taps done early in the course of the disease have been negative for meningococci and elevated cell counts, has led the author to consider the toxic aspects of the disease more carefully. Moreover there is always danger of secondary infection and permanent injury to the vertebral column when numerous spinal taps are done.

Suppurative processes are seldom encountered when the patient is treated by the intravenous method exclusively. Panophthalmitis is one of the most serious complications of epidemic meningitis, but it has not occurred in any patient receiving exclusively intravenous therapy. Endophthalmitis, iridocyclitis, and optic atrophy have occurred, but neither eye nor ear complications have developed in any antitoxin treated patient after this form of therapy has been instituted. The few eye and ear complications that developed in the serum-treated patients were attributed to toxic rather than to suppurative influences.

Strabismus and facial paralysis, even complete hemiplegia, are not uncommon complications of meningitis, and have been noted in some of our cases on hospitalization. They all happened to be treated with antitoxin and made complete recovery. Hydrocephalus occurs much less frequently in cases treated intravenously, and so the persistent belief that lack of spinal taps produced the condition seems doomed.

So far the author has no discharged patients who were treated exclusively by the intravenous method, re-enter the hospital because of recurrences. Recurrences were not uncommon in the past in patients who were treated intraspinaly.

BEWARE OF IMITATIONS.

The sale of inferior imitations of branded products in India still goes on and the co-operation of everyone is essential if it is to be eradicated.

In his article on "Drug Adulteration and the Sales of Spurious Drugs in India," Lt.-Col. R. N. Chopra, C.I.E., I.M.S., who has intimate experience of investigating this fraudulent practice, dealt very broadly with the manufacture and sale of drugs and other medicinal preparations that are either adulterated or in no way equivalent to any standard produce put on the market by reputable manufacturers. That is one side of the very difficult problem of placing the

pharmaceutical and druggist trade in India on a properly regulated basis as it is in most other countries.

But, whilst Lt.-Col. Chopra referred to patent and proprietary medicines of a spurious nature with which the Indian market is inundated, he did not devote any attention to the distribution and sale of deliberate imitations of reputable branded products. As the result of our own enquiries and discussions with representatives of the trade we therefore propose to review this situation in order that readers may safeguard themselves against the purchase of imitations of the many thoroughly tested and tried products offered by manufacturers under their own brand and trade names. It is of the utmost importance to manufacturers, traders and consumers alike that only properly manufactured and tested products should be sold. In the meantime efforts to bring instances of malpractice to the notice of the public and the legislature must be continued with renewed vigour. The co operation of everyone, including members of the medical profession, is essential.

BRANDED ARTICLES IMITATED.

Although the manufacture of pharmaceutical preparations in India has made considerable strides since 1919, and especially since 1928, the imitating of branded products produced in India or imported from the great manufacturing houses in Europe and the U.S.A. has greatly increased in those years. The types of articles that are the subject of imitation are naturally those with a good popular appeal and a large sale. These include laxatives, effervescent salines and well-known medicinal preparations and toilet products such as face creams. Since 1935, imitations of packed drugs and chemicals actually bearing the labels of reputable firms, of Indian as well as European origin, made their appearance on the market.

During a comparatively few years one manufacturer of a vanishing cream has suppressed more than thirty imitations of his product which have been discovered. With one exception, it was found that these had been prepared and marketed in India.

As the result of police action in Bombay premises in one of the bazzars were entered and a number of finished articles and materials for the making of fraudulent imitations were confiscated. Following examination, it was revealed that they either had made or possessed the means of making imitations of world famous or well-known brands, including a health salt, a balm, liquid paraffin, a tonic, a baby's sedative, a fever remedy, an aspirin and caffeine preparation and a range of tinctures put up by a prominent Indian manufacturer.

The worst feature of all these cases of imitation is the very poor quality of the counterfeit, both as to the contents and its presentation. All of them have one feature in common, which sometimes may be thinly disguised or, in some cases, blantly obvious. Either the actual name or the shape and colour of the cartoon or the design of the label closely resembles the original.

Nevertheless, most of the imitations are readily detectable, because, even though reproduction of cartoon or label design may be photographically accurate, in the majority of instances the quality of the printing and of the materials used is much inferior to the genuine article. Those responsible for handling proprietary preparations coming from new or questionable sources should for this reason pay close attention to the package. Many of the imitations would not survive the first glance of an intending purchaser in Western countries, much less the more discerning eye of the chemist, druggist or medical practitioner.

There are other ways in which the imitation may be recognised. For example, if the containers are not old original containers bought in the bazzars and refilled, they will certainly be of foreign origin and cheap and poor copies of the original container.

METHODS OF DISTRIBUTING IMITATIONS.

It is quite unnecessary for us to describe here how the imitator produces his wares, but the method of distributing them after they are made should be appreciated by everyone in the trade. They are generally taken round the dealers' shops and sold for cash, or they may even be sold on sale or return terms. The price is, of course, much lower than that of the genuine article.

Occasionally it does happen that an imitation is marketed by individuals of more substance than the "men of straw" associated with this irregular practice. Then the normal methods of distribution are followed, except that the distributors are careful not to sell their products in the cities where the manufactures of the original article have offices or agents. Sometimes the fraudulent traders have either headquarters in an Indian State, hoping thereby to evade the provisions of the law existing in British India.

It has even been discovered that a source of imitations of branded goods was being supported by financial resources far exceeding those of the small man and that someone with unusual knowledge of the trade was responsible for it. After prolonged investigation, both officially and privately, it was found that a prominent and wealthy Indian dealer in drugs in one of the great Presidency ports was the controlling influence behind the scenes. The gravity of such a situation can easily be gauged when it is realised that being able to employ agents in many parts of the country a large quantity of spurious products could be disposed of.

WHAT ACTION IS BEING TAKEN?

As a consequence of the tremendous increase in the practice of imitation during recent years, representatives of all interests concerned in Bombay have already taken steps to counteract it. In 1935 representatives of Indian, British, American, and German manufactures and distributors, as well as Indian wholesale and retail houses in Bombay, met and appointed a committee to make recommendations.

Representatives in other parts of India have also expressed interest and given support to the objects for which the meeting was convened. The committee formed also included a local member of the Government of India Drugs Enquiry Committee appointed several years ago and a member of the (then) Bombay Chamber of Commerce. We understand that the committee made good progress with its work and we shall give information about its recommendations and any resulting official action in further articles. Prosecutions have already been undertaken and will, no doubt, become frequent as more flagrant cases are brought to light. We would therefore emphasise that the situation calls for vigilance and action on the part of everyone interested in the sale and use of such preparations throughout the continent of India.
(*Indian & Eastern Druggist December 1936.*)

INDICATIONS FOR TONSILLECTOMY VIEWED FROM THE POINT OF VIEW OF OTOLARYNGOLOGY AND INTERNAL MEDICINE. G. DOHLMAN. ABSTRACTED

BY H. V. FORSTER FROM ACTA OTO-LARYNGOLOGICA, VOL. XX, 3-4 and Published in the *Journal of Laryngology and Otology*, June, 1935.

The internist sees the patient during his illness and is in a position to observe the development of any complications as they arise, but the otologist who sees the patient in the quiescent stage only hears a description of the case history, and this from the patient himself.

The conception of focal infection has enlarged the field of indications for operations and a certain confusion exists as to the desirability of doing them.

When we carry out tonsillectomy because of repeated acute attacks or for complications in the joints, heart, kidneys, etc., which have followed these attacks of acute tonsillitis, we have definite theoretical and practical indications for interference; and when we examine such tonsils microscopically we find certain signs suggestive of inflammatory change, but we can hardly say what anatomico-pathological state will justify a diagnosis of chronic tonsillitis or indicate that localized complications or a general toxic absorption would take place.

As there is, on microscopical examination, nothing to distinguish with certainty the tonsil of a healthy person from that of a patient subject to repeated acute attacks accompanied by repeated attacks of polyarthrititis or any other complication, we are forced to draw the following conclusions:

1. It is useless to rely on macroscopical signs to judge the normal or pathological tonsil when the microscope cannot decide, and when deciding on operative indications one should neglect the so-called "clinical signs" of a chronic tonsillitis-plugs, hyperplasia

etc., redness of pillars, gland troubles. These only prove past troubles or a more or less accidental irritative condition.

The writer believes, however, that we ought not to refuse to do a tonsillectomy in cases in which the history indicates clearly a relation between repeated tonsillar affections and their complications, even though we do not discover plugs of detritus in the crypts or some other equivalent sign, because we should then waste time looking for evidence by inspection alone.

2. The second conclusion is a physiological one which Hellman has established, that there is a battle going on in the tonsils between noxious influences and a defense mechanism. Chronic tonsillitis is a normal state unknown only in those animals brought up in an environment free from bacteria.

Because of the indecisive frontier micro- and macroscopically which separates the normal from the abnormal tonsil this consideration has led to the erroneous supposition that all tonsils are unhealthy organs and ought to be removed. Another useless argument is that the same functions belong to all the other lymphoid tissue of the alimentary tract and we cannot remove it all by surgical methods.

A more legitimate conclusion would be that in the clinically diseased tonsil we have a mode of pathological reaction which is expressed by repeated acute attacks within the organ itself, and by a pathological permeability to bacteria and their toxins which can lead to a series of complications.

As this is the case it would be better to try and discover the cause of these modifications of tonsil reaction to bacteria which live in the mouth and tonsil tissue. These reactions may also depend on a local lesion of the tissues resulting from previous severe attacks of tonsillitis. In such cases we can expect a good result from tonsillectomy, but the alterations in question may also be a manifestation of lack of resistance of the organism in general, and then if we carry out a tonsillectomy the patient ceases to have anginas, but persists nevertheless, in presenting just as often pharyngitis, rhinitis, bronchitis, etc. Both these categories of patients are no doubt well known to us all.

One could argue that it is not so much poor resistance on the part of the body as the vitality or virulence of the bacteria which are important factors, but if we consider that the sole object of bacteria is not to attack men or animals but to behave according to the nutritive medium on which they find themselves implanted we begin to appreciate the importance of the buccal secretions and the reactionary capacity of the tonsils to bacteria.

In some experiments which the writer carried out he noted, for example, how Gram-positive organisms disappeared from the bacterial flora of the mouth cavity after administration of a diet free from carbohydrates.

When certain favourable results follow the operation of tonsil removal in arthritis or chronic septic conditions there are some factors which should not be lost sight of. Do the rest in bed and enforced starvation have in themselves a beneficial effect? We have also to remember the presence of two bare operated areas in the throat from which a vaccination process may take place.

In conclusion the writer considers that a notologist would refuse to remove the tonsil when, after a careful examination of the case, it had been decided that this organ was responsible as a source of infection for certain pathological lesions, but cases should not be submitted to him for operation on the slender pretext that certain diffuse symptoms originate from it.

The internist must develop a keen sense of responsibility and not propose a "hit or miss" policy or suggest tonsillectomy just because some other line of treatment has failed, neither should the argument be used that the operation is not a dangerous one. Such an argument would be of little use after a possible accident or fatality.

Medical News and Notes

MATERNITY AND CHILD WELFARE CONFERENCE AT MADRAS. Under the auspices of the Health Propaganda Board, Madras, the above conference was held on the 12th and 13th Dec. 1936. It was opened by Sir Charles Scouter who said, among other things, that the duty of the medical profession did not consist merely in curing specific diseases but also in carrying out propaganda for improving the health of the people. Col. Ganapathi, Chairman of the Reception Committee, narrated the many aspects of the Maternity and Child-welfare work and stressed on the urgent need for co-operation of the private and public agencies. It is encouraging to note that he did not decry the Birth Control movement and was sorry that the principle underlying this had not always been properly understood. He observed that the highest birth rates were to be found amongst the poorer sections of the community. Sir Frank Connor who presided over this conference warned that mere talk would not improve public health, but that those who are interested in the subject should set an example by demonstrating to the people how to keep their surroundings healthy. He narrated the poignant story of maternal mortality in India which claim a toll of more than 200,000 mothers greater than that caused by some of the gravest epidemic diseases of India.

Many instructive papers were then read by some of the eminent medical men and women of the city. Dr. Miss Lazarus talked on the training of midwives and urged on the need for a sufficient general education for them, an exhaustive course in many of the subjects such as infant welfare, early recognition of gonorrhoea and

syphilis, cancer of the womb and of the breast, antenatal, intranatal and post-natal care, etc. She also stressed on the necessity of refresher courses to midwives at periodic intervals. Dr. Koman Nair dealt with nutritional disorders of the eye in children. He instanced keratomalacia as an outstanding example of the diseases of the eye due to vitamin A deficiency and alleged that it was a chief cause of blindness in children in the Madras Province. He also mentioned that defective nutrition of the child in utero was responsible for the formation of a variety of cataract known as zonular cataract; and that excessive carbohydrate diet was one of the chief causative factor in phlyctenular diseases of the cornea and the conjunctiva. Dr. Lakshmanaswamy Mudaliar suggested a national Maternity service in South India. Dr. U. D. Gopal Rao discussed the problem of housing conditions as an important link in the chain of maternity service. He regretted the deplorable state of the present housing conditions in the city of Madras and stressed on the imminent need for the abolition of slums and for housing the working class people in tenements with a reasonable measure of comfort.

Review

League of Nations Health Organisation, Eastern Bureau, Singapore. Annual Report for 1935.

The report of the Director for the year 1935 makes interesting reading. Epidemiological intelligence regarding infected port continued to be broadcast among the health authorities of the eastern nations. A course in malariology was organised. Lines of research in certain tropical diseases were discussed among the delegates. A conference on rural hygiene in the Far East was suggested. The report also contains the proceedings of the Advisory Council of the Eastern Bureau, in which there was an exchange of opinion regarding aerial navigation, bacteriophage in the prevention and treatment of cholera, cerebrospinal meningitis, small-pox, dysentery types, and plague vaccination. It is a great pity that India is not represented on this body by an Indian, and a valuable opportunity for knowledge about health problems of other countries is lost to us. The Eastern Bureau of the Health Organisation should insist that its members are chosen from among the nationals of the Eastern countries, who would be genuinely interested in working for the improvement of health conditions in their own countries.

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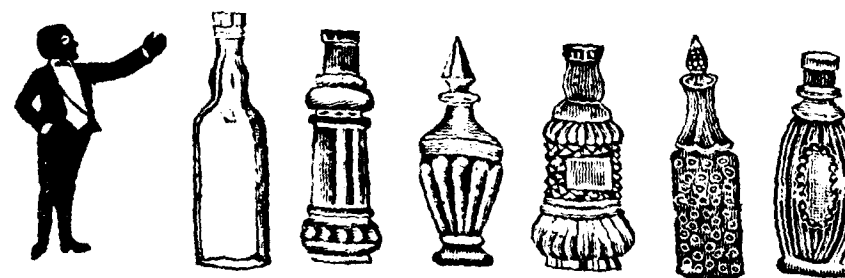
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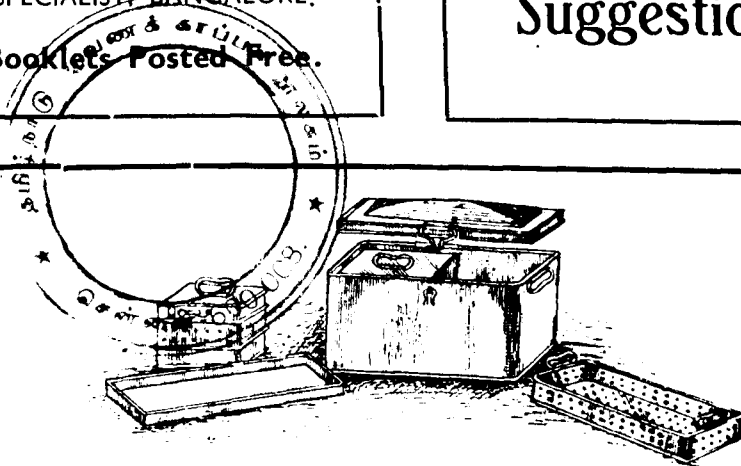
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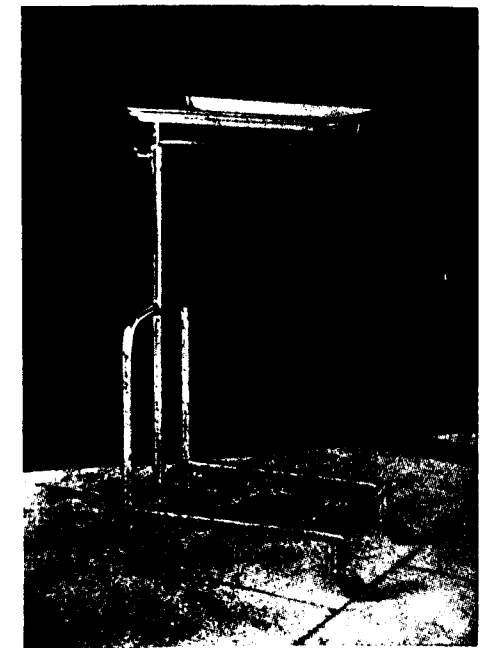
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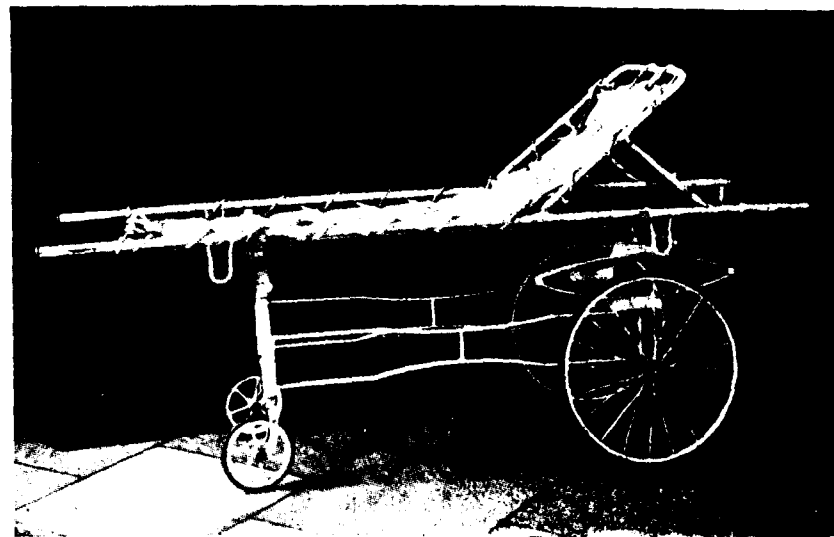
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