

MEDICO-SURGICAL SUGGESTIONS

Vol. VIII.

SEPTEMBER 1939.

No. 9.

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MEDICO-SURGICAL SUGGESTIONS

A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

Editor : Dr. P. R. Venkappaya.

VOL. VIII

SEPTEMBER 1939

No. 9

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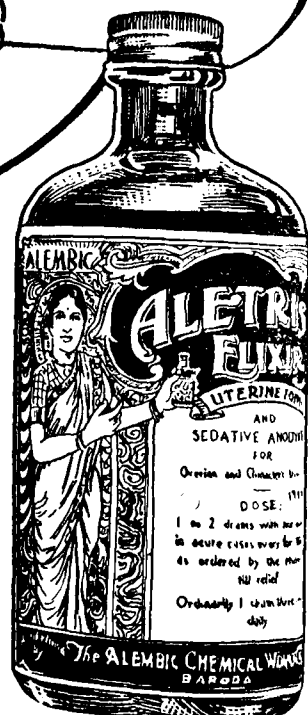
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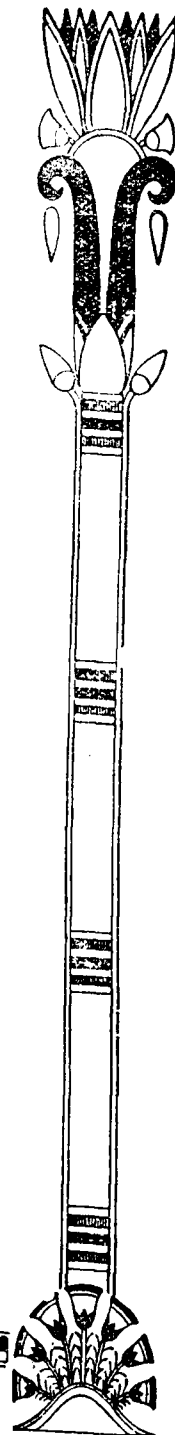
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NO. 9

Original Articles.

INTERPRETATION OF ACUTE ABDOMINAL PAIN.*

BY DR. P. KRISHNASWAMI.

Sarojini St., Theogaraya Nagar, Madras.

INFLAMMATORY LESIONS.

1. Acute appendicitis.
2. Acute cholecystitis.
3. Acute pancreatitis.
4. Acute salpingitis.
5. Acute diverticulitis.

PERFORATIVE LESIONS.

1. Perforated duodenal or gastric ulcers.
2. Perforated typhoid ulceration.
3. Rupture of an ectopic gestation.
4. Trauma.
5. Perforation of the gall bladder.

OBSTRUCTIVE LESIONS.

1. Renal colic.
2. Gall stone colic.
3. Acute intestinal colic.
4. Torsion of an ovarian cyst.

Appendicitis.—This is the most frequent cause of abdominal pain. The syndrome, general pain, nausea, vomiting, muscular rigidity, elevation of temperature and localised tenderness gives us relatively a good picture of acute inflammation of the appendix. This accompanied by the increased leucocytosis and negative urine makes a diagnosis as positive as we can have by the means now at our disposal. There are three signs which have been found both useful and reliable in arriving at an early diagnosis.

1. *Blumberg's sign*—(Or the peritoneal rebound test) is executed by the patient lying supine and with the knees flexed. The examining fingers are pressed slowly and firmly into the abdominal wall over the site of the suspected lesion and are suddenly withdrawn.

* Continued from August 1939 issue of the Journal.

This abrupt release of deep abdominal pressure will produce excruciating pain if the parietal peritonium is irritated and inflamed.

2. *Meltzer's sign*.—With the patient lying on the sound side the fingers are pressed deeply over the site of the appendix and the patient is requested to flex the thigh on the abdomen with the knee extended. This causes pain because the diseased appendix is caught between the anterior iliopsoas muscle and the examiners fingers.

3. *Livingston's sign*.—The skin of the triangular area bounded by a line connecting the highest point of the right iliac crest the right pubic spine and the umbilicus and back to the crest of the ilium is sharply pinched and slightly twisted at the point of maximum tenderness which usually falls at the centre of the triangle and never extends beyond its borders.

Acute cholecystitis.—Is due to the bacterial invasion of the gall bladder and is characterised by mild ache under the right costal margin which rapidly develops into an excruciating and constricting pain. Vomiting and a rise in temperature follows. There is usually an associated referred pain which radiates to the right shoulder or scapular region. This sign is constant and reliable. The history of previous attack, chronic indigestion, gas eructation and pressure symptoms following meals all aid in establishing diagnosis.

Acute pancreatitis.—A rare affection carries with it a high mortality. Severe agonising pain limited to the epigastrium, symptoms of shock are super added. The diagnostic point is the extreme local tenderness and not the pain. The sufferers are so to say frozen into statuesque immobility.

Salpingitis.—May be sudden in onset but the history and the pelvic and bacteriologic examinations are usually sufficient to make a positive diagnosis.

Acute diverticulitis.—Occurs much more frequently than is commonly supposed. It occurs mostly in the descending and pelvic colon. It is often associated with obstructive lesions such as carcinoma and stricture. The pain is similar to that of acute appendicitis but is felt in the left side.

PERFORATIVE LESIONS.

Perforated duodenal or gastric ulcers.—Pain is sudden unparalleled in its onset. It is used to be said "The diagnosis of this condition can be made in the dark by merely placing the hand on the abdomen." The abdominal respiratory excursions are scarcely perceptible. The patient lies flat in bed in a fixed statue like attitude. He will complain of a lancinating agonising burning pain occurring during a period of activity rather than at rest and is continuous. He may state in a short time the pain seems to pass down to the right side of the abdomen as if a burning liquid were slowly trickling down.

Typhoid perforation.—Usually occurs in the third week of the disease and are both sudden and unexpected. The pain is sharp, severe and paroxysmal in character and is located in the hypogastric and to the right of the middle line. Sudden drop of temperature is noticed.

Ruptured ectopic gestation.—is exceedingly treacherous and it may strike insiduously or suddenly and prove rapidly fatal. There may be elicited a history of a missed menstrual period followed for from ten days to two weeks by irregular bleeding with cramping pains which become progressively worse. There is as a rule a pronounced leukocytosis.

Trauma.—History of an injury and the presence of a wound.

Perforating cholecystitis.

OBSTRUCTIVE LESIONS.

Renal colic.—It is intense and colicky and has its origin at either costal margin. The pain gradually moves downwards into the thigh. Patient is restless and bends forward applying manual pressure over the abdomen.

Gall stone colic.—The three F's, Fat, Fair and Forty are to be remembered. Pain is sudden starting intermittent and constricting in nature. The pain is definitely in the gall bladder area and referred to the right side of the shoulder blade. It usually succeeds dietary indiscretion and vomiting quickly follows. After the stomach is emptied uncontrollable retching persists with the production of small amounts of bile. There is a history of repeated attacks, epigastric distress, fullness, belching after eating heavy food. Jaundice may or may not be present.

Acute intestinal obstruction.—Pain is wave like, colicky and severe. Peristalsis is visible and vomiting persists even after the administration of sedatives and often of faeculent character. The clinical picture depends on whether the obstruction is high or low in the gut and whether it is partial or complete.

Torsion of the pedicle of the ovarian cyst.—A growth fairly moveable mass can be palpated at the site of the tenderness.

(to be continued.)

Skillful workmen need not travel afar to earn their bread. JAPANESE PROVERB.

NEWER METHODS OF TREATMENT OF TYPHOID FEVER.

BENODE BEHARI SEN, M. SC., M. B., *Calcutta*.

In an endeavour to cut short the course of typhoid fever workers in different parts of the world have put forward, from time to time, different methods of treatment. Pedro T. Lantin of the University of the Philippines tried blood transfusion in typhoid fever. He removed 150 c. c. of blood from his patient and at once directly transfused 200 c.c. of blood from a donor. Some of his cases developed chill or chilly sensation a quarter or half an hour after the transfusion lasting for several minutes. It was followed usually by a momentary rise of temperature which declined to normal or subnormal in a short time, sometimes accompanied by sweating. He observed a decrease in temperature usually from two to four days. There was a decided improvement of the pulse and a gradual subsidence of the toxic symptoms. The patient himself felt a general sense of well being. Becart and others also tried immuno-transfusion in typhoid fever with good results.

"Of considerable interest to clinicians have been recent studies of the relation of vitamin-C, to infectious diseases, to immune and anaphylactic phenomena and to hemorrhagic conditions. There has been much speculation as to the role which vitamin C may play in infectious diseases, particularly in regard to the possibility that a state of partial vitamin C deficiency may predispose to the development of an infection and that vitamin-C has definite influences on the mechanism of resistance to infection including a significant action on the function of the cortex of the adrenal gland." (Wilder-Wilber, 1938.) 'However, in a recently published article, Jusaty reported the finding that cevitamic acid under certain conditions is a stimulant to the production of specific antibodies.'" (Editorial, *J. A. M. A.*, 1937.)

We have seen cases of profuse intestinal hemorrhage of enteric fever checked by one injection of *L*-ascorbic acid after failure of neohemoplastin and similar other hemostatic preparations. 500 mgm. or more of *L*-ascorbic acid in 24 hours is necessary for hemostatic effect.

The influence of adrenal cortex, not only in infantile biliary cirrhosis but also in typhoid fever has been under investigation by recent workers. The adrenal cortex having been the source from which hexuronic acid (now known as *L*-ascorbic acid) was first isolated, it may be presumed to influence the course of typhoid fever by virtue of its vitamin-C content.

Non-specific immune therapy has been tried by some without any effect on the course of the illness. Injection of milk, sterodin (containing bile lipoids and pathogenic bacterial lipoids), omnadin, etc. has, with some, only a moderating influence on the range of temperature.

The *British Medical Journal* editorially commented on the sulphanilamide as follows: "Another remedy which seems to merit

From the Biological Research Department, Union Drug Co., Ltd., Calcutta.

more attention is sulphanilamide. This drug has a curative action in typhoid infections in mice comparable to the strepto-infection." The value of sulphanilamides as specific has yet to be proved in actual typhoid cases. They may, however, usefully be employed in this disease to cut off complicating streptococcal infection.

Of late Felix's serum has come to the forefront as a very useful remedy in typhoid fever. Mc Sweeney reported 61 cases of typhoid fever admitted to Cork Street Hospital in Dublin and treated by Felix's serum. The usual route of administration was intramuscular, but intravenous route was also adopted in some very toxic cases and intrathecal route in cases presenting meningeal symptoms. Thirty three c. c. of serum was administered on three successive days, totalling near about 100 c. c. in each case. In this series, there were ten deaths, of which three patients were absolutely refractory. All these patients died in typhoid state with the usual concomitant hypostatic pneumonia. The effect of the serum on toxemia was in general found to be more marked than on pyrexia (Mc Sweeney, 1937.)

It has been found by McSweeney and others that Felix's anti-typhoid serum containing O. and Vi-antibodies exert two separate and distinct effects, viz. (a) the Vi-antibody confers protection against infection with highly virulent strains of *B. typhosus* by suppressing the multiplication of the organisms; and (b) the O-antibody appears to be chiefly responsible for effecting the neutralisation of the endotoxin of *B. typhosus*.

From 1914 to 1920 considerable trial was given to intravenous injection of typhoid vaccine in typhoid fever. From half an hour to one hour after the injection, there occurred a chill lasting for 10 to 20 minutes the temperature rising to 104° F to 107° F. and then falling sharply to normal or subnormal, usually with marked sweating. There were nausea and vomiting and profuse liquid diarrhoea in cases where constipation had previously been present. This last is a symptom that is unknown in 'phage-shock.

Intravenous administration of T. A. B. vaccine (killed) has of late, been pushed forward by A. Piraino in Italy with some amount of good result. There is a high rise of temperature with consequent stimulation of the defensive mechanism of the body. This has a moderating influence on the dangerous symptoms but it does not appreciably cut short the course of the disease,

Bacteriophage specially prepared for intravenous use is a better curative agent. It is not as rich in proteins as the vaccine and it contains a specific active principle which interacts with the infecting organism and helps the opsonic action of the blood cells. For the origin of intravenous 'phage therapy, we are indebted to McNeal and Frisbee, who first tried it in staphylococcal septicemia. If we realise that the symptomatology of typhoid fever is due to its

bacteremic character, we cannot rationally depend upon oral 'phage therapy alone because we must as well attack the infection in the blood stream by intravenous administration of 'phage.

In 1932 McNeal and Frisbee treated by intravenous 'phage fifteen cases of staphylococcal septicemia, a dangerous condition which in spite of all methods of treatment and a mortality of about 85 to 90 per cent. They subsequently treated 163 patients by the intravenous method with good results. They are of opinion that production of 'phage shock' is necessary for stimulating the defensive mechanism of the body. They began with a small initial dose and worked up in arithmetical progression (0.5, 1.2 3 4.5.6.7.8.9.10 c. c. up to 10 c.c with an interval of 45 minutes between injections. Finally the 10 c. c. dose was repeated till about 100 c. c. were administered. If a shock was produced by any dose of the series a rest period was allowed for 8 to 20 hours to be followed by half the reactionary dose, repeated for a pretty long time. The shock was produced only when the amount of bacteriophage had reached a proper quantitative proportion to the bacteria in the blood. If the blood stream was sterile, one might fail to produce a reaction even with large doses of bacteriophage. They considered that though serious cardiac and pulmonary diseases call for great caution; some reaction should always be produced for a curative effect.

The author, along with Goswami (1939), observed a number of cases of typhoid fever after intravenous administration of veno typhoid phage. The reaction, if any, occurs in about 45 minutes to one hour after the injection. The picture agrees in toto with the description given by McNeal and Frisbee (1936) which runs as follows:

"The shock reaction may be forecast by a slight rise in temperature. Often, however, it begins without warning by complaint of feeling of cold, clattering of the teeth, and general and highly distressing rigor. After shaking for 5 to 10 minutes, the temperature is ordinarily between 104° and 107° F. The patient suddenly ceases to shake. He becomes rosy and breaks out in profuse perspiration. The temperature falls rapidly in an hour and by the next morning, may be below 99°, or even below 98° F. After the chill ceases, the patient ordinarily feels at peace with the world and usually goes to sleep and remains quiet for several hours. We believe that the shock reaction is not due directly to the substances contained in the bacteriophage itself but that it is brought about by an interaction, probably opsonic, between 'phage and accessible bacteria."

There is no index by which the reactionary dose could be determined beforehand particularly because diluted 'phage preparation is injected in every case. But unless and until such typical reaction takes place, we cannot be sure of making the blood sterile.

Bower (1938) has described a method of treatment of typhoid fever by intravenous injection of typhoid 'phage by a process which

is a modification of McCleave's (unpublished). Bower's method is as follows:

"When a case of typhoid fever is admitted into the hospital, after confirming the diagnosis by culture and serological methods, treatment with 'phage-lysed filtrate is instituted. This consists of giving the contents of one of the vials (1 c.c.) intravenously. We select a time in the fever cycle when the patient's daily temperature is generally lowest, usually in the morning. The results are startling. The fever rises sharply, usually reaching 106° F. and we have seen it reach 108° F. It then comes to normal or subnormal but for a period of twenty-four hours may oscillate and a twenty-four hour variation of as much as 10° has been noted. This phenomenon will be missed if the temperature reading are not taken at fifteen to thirty minutes' intervals, for the very striking thing about this reaction is that generally the patient presents no change in appearance, no evidence of shock, no evidence of increased sickness, and if you are to throw your thermometer away you would not know that these phenomena were occurring. There is usually a slight chill at the onset of the rise in temperature (but very rarely a true rigor such as occurs in Gay's intravenous vaccine treatment) and this chill is occasionally absent. Following the treatment the temperature in the majority of cases returns to normal and stays there. The patient has been cured by a crisis. In a certain number, a secondary rise in fever gradually occurs. If left alone without further treatment nearly all of these cases go on to a rapid recovery, with a picture markedly modified for the better, the entire duration being much shortened. However, if a second dose of the 'phage filtrate be given to members of this second group a goodly number of them are cured by crisis. If a second dose does not produce a cure, our experience indicates that additional injections are of no benefit, for in only one instance did a third dose produce any change in this case the desired cure by crisis".

Bower's method is more heroic than the author's, as the latter starts with a diluted dose and gradually increases the dose, so that the chances of a very heavy reaction in the very first dose are more remote. Moreover, Bower's description of reaction falls a little below that obtained by the author whose picture is one typical of malaria with cold, heat and sweat stages. Again Bower says that 'phage is adsorbed by one drop of serum or blood and thus cannot possibly be responsible for this dramatic action and he cannot explain the result thus obtained in any other way. The author's experiment tells a different tale (Sen, 1938). He showed that though certain amount of adsorption does take place, the total number of 'phage corpuscles is not adsorbed. Goswami (1936) tried this upon human subjects suffering from typhoid fever in the author's method and concluded that it is the 'phage corpuscle which is mainly responsible

for this dramatic effect, as inactivated ('phage ampoule, put to 75°C. for half an hour) 'phage is without any beneficial result. Banerjee (1939) and Goswami (1939) have given the author's improved combined method of treatment a better place, as this cuts short the course of the disease definitely without any alarming reactions.

The improved method of treatment of typhoid fever would be a combined serum and intravenous 'phage therapy. On the first day of treatment 10 c.c. of concentrated antityphoid serum (prepared by Felix method) is to be injected intramuscularly in the morning to be followed after two hours by intravenous administration of venotypoid 'phage dose 1. The dose 2 is to be injected in the afternoon. Next day 10 c.c. of serum should again be injected in the morning and venotypoid 'phage dose 3, two hours afterwards. The same evening venotypoid 'phage dose 4 should be given intravenously. On the third day in the same way 10 c.c. of serum and venotypoid 'phage dose 5 in the morning and dose 6 in the evening are to be administered. This method is followed till the reactionary dose is obtained. When a typical reaction has occurred all treatment is to be stopped for 24 hours. The dose that causes the typical reaction is then followed by one-fourth of the subsequent dose (so as to get half of the reactionary dose). The injections are continued for three more days (*i.e.*, six doses more) as otherwise there is chance of secondary septicemia due to an invasion of blood stream by typhoid bacilli which may be lurking in the spleen, bone marrow, etc. When all the six doses are finished, one-fourth of the sixth dose is continued for the remaining period. The object of the serum injection is to avoid a very high reactionary rise of temperature, which is common with venotypoid 'phage alone, due to the interaction of the 'phage with the bacilli, and consequent liberation of toxic lytic products. The anti-endotoxic serum previously injected will neutralise this toxic lytic product to some extent. The reaction lasts only for 15 to 30 minutes. Ten c.c. concentrated serum is daily pushed for three days, in every case with or without reaction. A reaction for the second time is obtained in some cases where after the preliminary sterilisation of blood, a recurrence of septicemia has taken place. But in most cases, in spite of pushing bigger doses, there is no reactionary rise of temperature, once the blood has been rendered sterile.

In cases complicated with streptococcal septicemia, or other infections, though the typical reactionary rise of temperature with rigor occurs the fall is not so sharp and is never below 107°F. These cases require treatment for the other concurrent infections. Intensive oral administration of typhoid 'phage or enterophage is to be recommended along with the intravenous injections in all cases coming under treatment after the first week for the local treatment of the ulcer.

We have so far collected as many as 50 bacteriologically positive cases treated by intravenous typhoid 'phage prepared specially in our laboratory, which contains practically no proteins (Goswami 1939). In a few cases the rise of temperature was up to 107°F. which made the physician nervous. This necessitated the experiments by combined serum and venophage therapy which has proved to be satisfactory. But in no case, we have yet experienced any mishap due to a high reactionary rise of temperature. There were two cases out of this series which, after the typical reactions ran a protracted course. On enquiry, it was found that those cases were not followed up by further injections after the reaction. In a few cases, reactions have been reported after a few injections of the subsidiary post-reaction quarter-doses. These are cases of recurrence of septicemia by organisms from the spleen and bone marrow. In such cases further injections are recommended.

Though the method of treatment is useful in all stages of this disease it will always be advantageous to start this therapy early, when toxic injuries are less marked and ulcers are less numerous and less extensive. It is important to start treatment early as in late cases, the intestinal ulcers become more prominent and resistant, threatening hemorrhage or perforation.

Recently, several encouraging reports have been received from private practitioners from different places who have used venotypoid phage without concentrated typhoid serum. But in our opinion the combined method with venotypoid 'phage and concentrated typhoid serum definitely reduces the distress of the reaction stage.

Writing on bacteriophage as a therapeutic agent Greenwood, Hill, Topley and Wilson have mentioned (in their special report to the Medical Research Council on epidemiology of mouse typhoid in the year 1936) that "living bactericidal agent, acting specifically on the particular pathogenic organism concerned and self-propagating so long as the bacterium itself was spreading among the host at risk, would, indeed, be too good to be true. So far as our experience is concerned, the dream remains a dream". They have subsequently recorded (in the same report) their complete surprise at the significant findings of Andrews and Elford (1932) and have admitted the possibility that there may be some limiting concentration of 'phage or level of 'phage activity below which no effect whatever may be produced, while if this level were exceeded a dramatic effect might be obtained.

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THERAPY OF COUGHS.

This is one of the series of articles on "Therapy of the Cook County Hospital" published in the *Journal of the American Medical Association*, under the editorship of Bernard Fantus, M.D.

Coughing may become a part of a vicious circle, for violent coughing irritates bronchial tissue, and such irritation leads to further coughing, which may continue indefinitely unless the vicious circle is checked by appropriate treatment of the cough.

Treating a cough does not mean "checking it" excepting in a small percentage of cases, for most coughs are useful.

THE USEFUL COUGH.

A useful cough should be assumed to be present unless it is obvious that the cough is useless. A useful cough is one that has secretion to be brought up. It is one of the two means by which drainage from the bronchial tree is maintained, ciliary action being the other one. As the first principle in the treatment of all infections is to maintain drainage, the cough is presumably useful, whenever bronchial or pulmonary infection is present or assumed to be present.

There are three kinds of useful cough: the "tight" cough, the "loose" cough, and the "insufficient" cough. All three kinds of cough may occur in the course of a single case of bronchitis, and each of them requires different treatment. Just as in war the situation may change from day to day, what was good therapeutic tactics one day may be all wrong the next. Most cases of bronchitis, as inflammations, of mucous membranes in general, go through at least two stages, the stage of dryness and the stage of secretion, and it certainly is worse than foolish to keep on with measures that increase secretion when the cough has become loose.

The "Tight" Cough—A tight cough requires, of course, to be "loosened up," and the single most important agent for this purpose is water: water from within (by ingestion) and water from without (by inhalation). When such a cough occurs in the early stages of a bronchitis, modifications of the blood supply to the skin of the chest and of the body as a whole may have well defined therapeutic potency. As in cases of such a cough the mucous membrane is likely to be very irritable, irritants of all kinds, such as menthol inhalation, must be avoided in its treatment.

Water Drinking: To emphasize, in this manner, the importance of the water as an expectorant might seem redundant were it not for the fact that this, the cheapest of all remedies, is most often omitted from prescriptions. When the patient is "dehydrated," can a cough be otherwise than dry? And yet, in the hospital, nurses will conscientiously administer, every two hours, a dose of cough medicine without water or in just a little bit of water, and let the

patient go thirsty in the interval. There should be at the bedside of every patient a carafe of water covered with a drinking cup, so that the patient can help himself to water whenever he needs it; and there should be an attendant—it need not be a nurse—in every ward whose chief business it is to keep the carafe of every bedfast patient filled with fresh cold water, and to help those patients who cannot help themselves to take some water at frequent intervals. The sicker the patient, the less water he can or should take at one time, but the more frequent should he be given it.

Inhalation of water vapour is often incorrectly spoken of as "steam inhalation." Water vapour inhalation is probably not so much a direct way of softening tenacious mucous as it is a way of soothing the inflamed respiratory mucous membrane. It is to the irritated respiratory mucosa what the poultice is to the skin; an application of warmth and moisture. Patients suffering from acute inflammations of the larger respiratory passages—whether of the pharynx, larynx, or bronchi—do best when in a warm atmosphere supersaturated with moisture. Suffocative spasms, as of croup, or asthmatic attacks in bronchitis may thus be not only relieved but also prevented. The inhalation of water vapour may also have a prophylactic value against bronchopneumonia or prevent its extension. Hence, in all critical cases, provisions should be made to moisten the atmosphere as liberally as possible by means of a "bronchitis kettle," the "steam tent," large pans of water put on "radiators," or moist sheets hung up in the room. One should keep the relative humidity high above 65, by whatever means available. It is obvious that keeping the atmosphere constantly moist will be more valuable than intermittent "steam" inhalation, but also that the latter is better than none at all. Medication of the steam is probably of little intrinsic value. If the medicinal addition is made too strong—as of a volatile oil—it may be harmful to the acutely inflamed membrane. Having a teaspoonful of Tincture of Benzoin added to a pitcher half full of steaming water over which the patient holds his face while breathing deep may make "medicine-minded" persons carry out this treatment more conscientiously (every two hours) than if unmedicated steam inhalation is prescribed. No patient should go out into dry cold air shortly after a "steam inhalation," as this seems to make the membrane particularly sensitive. Smoking not only by the patient but also by others in the sickroom of a bronchitis patient should be strictly tabu.

"Solvent" Expectorants: There are three salts that deserve special recognition and discriminating application as expectorants in the therapy of the tight cough: ammonium chloride, sodium citrate, and potassium iodide. In addition the use of ipecac, as probably the best representative of the "nauseant" expectorants, might be worthy of discussion here,

PRESCRIPTION 1—*Ammonium Chloride Cough Syrup.*

R Ammonium chloride ... 10.00 Gm.
Syrup of Cherry* to make 120.00 cc.

M. Label: Teaspoonful in a cupful of water every two hours.
(To "Loosen" a "tight" cough.)

*The Syrup of Cherry recommended here will be official in N. F. VI. It is much more pleasant than the Syrup of Wild Cherry, which, made from Wild Cherry Bark, is often nothing less than nasty. The doctor who will take the trouble of comparing the two syrups will soon forget to use the word "wild" in his cherry syrup prescriptions.

All the halides of the alkali metals have a tendency to appear rapidly on the mucosae of the body, carrying fluid with them; and is good reason to believe that ammonium chloride is the best of these for the purpose, provided it is given in liberal doses 0.3 Gm. every hour, or at least every two hours for the effect does not last long. It must be given in a cupful of water, as ammonium chloride has a dehydrating effect when fluid is restricted. As a vehicle (prescription 1) Syrup of Cherry should be preferred to the Syrup of Wild Cherry so frequently used in cough medication.

For a child prejudiced against "medicine," it might be better to prescribe the remedy with Syrup of Acacia (prescription 2) as a vehicle and to employ the following "trick" to overcome the prejudice: Have the mother start with a teaspoonful of maple syrup in a wineglassful of water and give this "syrup water" for the first dose or two. Gradually increasing doses of the medicine are then smuggled into the syrup water and are likely to be taken with relish. Of course, syrup in excessive quantities or concentration should be avoided, as it may derange digestion and spoil appetite. The employment of a cough "linctus," a medicine so thick and sticky that it has to be licked from a spoon, is properly a thing of the past.

PRESCRIPTION 2—*Ammonium Chloride for Child 5 Years of Age.*

R Ammonium chloride ... 2.00 Gm.
Syrup of Acacia ... 60.00 cc.

M. Label: Teaspoonful in water every two hours (for "tight" cough.)

PRESCRIPTION 3—*Sodium Citrate.*

R Sodium citrate ... 30.00 Gm.
Water ... 30.00 cc.
Syrup of Orange ... to make 120.00 cc.

M. Label: Teaspoonful in glassful of orangeade or lemonade every two hours (in febrile bronchitis).

Sodium citrate should probably be preferred to ammonium chloride when the patient has fever, a condition that carries with it a tendency to acidosis, which ammonium chloride might possibly

increase to the disadvantages of the patient. Sodium citrate, in doses of 1 or 2 Gm. (prescription 3) every hour or two, is an indirect alkali; *i.e.* it does not neutralize gastric secretion. It acts as an expectorant when given with plenty of water. It is also a diuretic and in sufficient dosage has a laxative effect, all of which makes it a veritable bronchitis "polychrest." Having a mild saline taste, it is easily disguised by a fruit drink, such as lemonade or orangeade. Its only disadvantages are that it may upset the stomach when given in excessive doses or insufficiently diluted and that it sometimes causes urticaria.

Ipecac is a time honoured remedy in the acute bronchial colds of infants and children. The Syrup of Ipecac may be given in doses of five drops for the first year of life, one drop being added for each year up to the adult dose. It may be combined with either one of the aforementioned salines for possible synergism (*e.g.* prescription 4).

PRESCRIPTION 4—*Sodium Citrate and Ipecac for Child 3 years of Age.*

R Sodium citrate ... 3.00 Gm.
Syrup of Ipecac ... 7.00 cc.
Syrup of Orange Flowers ... 50.00 cc.
Water ... to make 60.00 cc.

M. Label: Teaspoonful in one-half cupful of water every two hours, alternating with small glassful of orangeade or lemonade (in febrile bronchitis).

Iodide the most powerful agent available for producing hyperemia and exciting secretion of the respiratory mucous membrane, these being generally the first manifestations of the administration of iodide, called "untoward" when this effect is not wanted. In the presence of an acute inflammation of this mucosa, the irritative action causing these effects may add insult to injury. Iodide is therefore contraindicated in acute bronchitis. It is only when the acute stage of bronchitis has passed and the secretion is still tenacious and difficult to dislodge—the milder solvent expectorants having failed—that iodide is likely to be useful. It should then be given in rather small doses and at short intervals (prescription 5), which brings out most especially the effect on the respiratory mucous membrane, and with the directions to take it in a tumblerful of water every two hours until the cough becomes "loose" or the nose "starts running," and then every four hours. For a child, syrup of hydriodic acid may be prescribed, the sour taste of which blends well with a fruit syrup as a disguise (prescription 6).

PRESCRIPTION 5—*Iodid cough syrup.*

R Potassium iodide ... 10.00 Gm.
Syrup of Orange ... to make 120.00 cc.

M. Label: One half to one teaspoonful in a cupful of water every two hours until expectoration is free, then every four hours. (To "loosen up" an obstinate "tight" cough.)

PRESCRIPTION 6—*Hydriodic Acid for Child 3 Years of Age.*

R Syrup of hydriodic acid ... 15.00 cc.
Syrup of cherry ... to make 60.00 cc.

M. Label: Teaspoonful in water every four hours. (To "loosen up" the "tight" cough of subacute bronchitis in a child)

Many sufferers from a tendency to chronic cough find that they are more comfortable using iodide more or less continuously than they are without it. In such cases, it is practical—after the desired effect has been secured by more frequently administered dosage—to prescribe it in larger doses (from 0.3 to 0.6 Gm.) three times a day after meals, to be taken in a tumblerful of milk.

A warning must be sounded against the use of iodide in patients subject to tuberculosis. In many of these it tends to increase the destructive factor of the disease and favour its spread. Hence a suspicion even of the presence of tuberculosis should lead one to withhold iodide. Creosote is the remedy of choice in tuberculosis.

Maintenance of Skin Hyperemia: It is not fancy but fact that chilling of any part of the skin, more especially of the chest, causes bronchitis patients to cough more.

Absolute rest in bed is, of course, the prime essential in the therapy of all cases of febrile bronchitis; and this should include the strict use of the bedpan and urinal. Hypostatic congestion should of course be avoided in elderly people by frequent change of posture. If there is no fever, it suffices to confine the patient to a room kept, as nearly as possible, at a temperature of 70° F. As many of these patients do not feel particularly ill, they may rebel at this item of the treatment. To such it should be pointed out that the proper treatment of bronchitis may at the same time be the prophylaxis of pneumonia. The duration of such confinement should be proportionate to the duration and severity of the attack. It should exceed it by a liberal margin of days in all especially threatened individuals, including particularly patients at the extremes of life, those handicapped by systemic disease, and those prone to chronic cough. The general regimen should also include prohibition of visiting, for the less the patient talks, the less he coughs. The diet need not be restricted unless there is a good deal of fever; if there is the diet suitable in fever therapy is ordered.

The diet of younger children needs to be modified with the fact in view that they are unable to raise sputum but swallow it. The buffer action of the mucus still further decreases the acidity of the gastric juice, which fever may have impaired to a considerable degree. Hence the milk should be skimmed and then acidified with orange juice, one ounce of which is added slowly drop by drop, and

with constant stirring, to a pint of cold milk. This reduces the size of the curd, greatly increasing the digestibility of the milk.

Liniments, by maintaining hyperemia of the chest, relieve the sense of "tightness" or of substernal soreness, if they do nothing else. Greasing the child's chest with Camphor Liniment and covering it with flannel jacket or a "cotton jacket" is an established omeostic remedy, probably not without merit. One must beware, however, of burdening an infant's chest with heavy applications e.g., a clay poultice. For adults Chloroform Liniment may be preferred. If a flannel chest protector is too old fashioned for the modern woman suffering from acute bronchitis, one should at least insist on a flannel nightgown or a bed jacket to be worn instead of the flimsy decollete trifle worn nowadays.

In all critical cases—and every case of febrile bronchitis in an infant or an aged person should be considered critical—it might be well to push the chest hyperemia treatment to its logical maximum, which is most conveniently attained by the mustard poultice. Mixing one part of mustard with two parts of flour (or four parts for children) and adding warm (not hot) water, one makes a moderately thin paste that is spread about one-eighth inch thick on a backing of old muslin, or even of paper, large enough to cover the front of the chest from axilla to axilla, with a quarter circle cut out at the upper corners for the shoulders. A piece of cheese cloth covers the paste, which is then applied, for from five to fifteen minutes, to the chest previously anointed with petrolatum. The same poultice may then be applied to the back for a similar length of time, after which it is discarded. The strength of a reapplication, made at intervals of from six to eight hours, depends on the reaction previously secured. If it was deficient the strength may be increased. If the skin is still flushed, the strength is progressively decreased by adding relatively more flour to the mustard as the skin becomes more sensitive. This treatment probably does good only during the stage of acute congestion. It is questionable whether it is of any service after the first two or three days of an acute bronchitis.

A plaster support of the lower costal arch is likely to be of comfort when excessively violent coughing has caused a soreness across the epigastrium or elsewhere. A belladonna plaster, applied while the chest is in the expiratory position, frequently suffices to give considerable relief. When, however, a cough is associated with severe stabbing pain in the chest, which is also produced by deep inspiration, as in pluerisy, it is nothing less than grievous neglect to omit the tight application of strips of adhesive plaster to the affected half of the chest while it is in the position of extreme expiration, in such a way as to limit greatly the respiratory excursions of the chest, which at once minimizes the pain. An elastic web bandage, 4 or 6 inches wide, applied snugly to the chest is often more comfortable, especially in women.

(To be continued.)

Bombay

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ARTIFICIAL INSEMINATION.

WALTER R. STOKES, M.D.

Washington.

The past decade has witnessed an extraordinary development of scientific interest in the understanding of problems involving human fertility. The chief contributions have been in endocrinology and in the physiology of ovulation, menstruation and conception. Today a new and voluminous medical literature in these fields gives us a picture of such clarity as to make an almost incredible contrast with the muddled, unscientific concepts of only a very few years ago.

Among the many practical results of all this progress has been a sharp stimulation of interest in the subject of human artificial insemination. The one thing in recent knowledge that has been of most value in this connection has been the relatively accurate fixing of the time of ovulation. This information, while of poor practical value in the prevention of conception, is of great value in timing an insemination when conception is desired. The occasional failure of ovulation to occur as predicted may prove a contraceptive tragedy, but in respect to an artificial insemination it means merely waiting for another month and repeating the procedure.

It is the purpose of this paper briefly to outline salient facts concerning the present status of artificial insemination. Both indications and technic will be considered.

The most obvious usefulness of artificial insemination is in a childless marriage in which the husband is aspermatic and agrees with the wife upon the use of sperms from another source. Here there are legal and emotinal considerations of importance. In a recent paper on artificial insemination appearing in the Journal of the American Medical Association there was described a rather elaborate technic employed to insure, by a series of affidavits, the legitimacy of the child's birth and legal protection for the physician. Personally I am opposed to any system of affidavits, because too many embarrassing confidences are involved and nothing substantial is actually gained. I would point out that the Common Law absolutely estops a man from denying parentage of a child whom he has accepted as his own at the time of its birth. He will not later be allowed to plead his sterility. This rule of law is founded upon a public policy of protecting as far as possible the presumption of legitimate birth. It is the law in the District of Columbia.

The physician should protect himself by having the husband present at the time insemination is accomplished and by obtaining from the husband a note of assent which may be destroyed a few days after the husband's silent acceptance of the newborn infant. It is my policy to insist, for emotinal reasons, that the sperm be

from an unknown donor who is assuredly free from disease and of good heredity. It is potentially dangerous for the donor to be known to the parents of the child. It is best that the impregnation be looked upon as a strictly impersonal happening.

When a woman has been inseminated from a source other than the husband it is wise that she be delivered by a physician who knows nothing of this circumstance. I have found that this suggestion is usually gratefully accepted by these patients and it eliminates any worries for the obstetrician.

Sterility in the husband is by no means the only indication for artificial insemination. I have found the procedure of marked value in certain cases in which pregnancy does not occur from sexual intercourse but may be brought about by an instrumental insemination in which the semen of the husband is used. This procedure is especially indicated in the presence of any type of cervical obstruction, such as in marked anteversion, and in certain cases of cervical infection in which spermatozoa cannot readily pass the cellular debris in the cervical canal. In my judgment it is well worth a few trials in any case of persistent infertility in which a careful modern study has failed to reveal any cause for sterility in either husband or wife. I have several times employed it with success in such cases.

The technic of artificial or instrumental insemination is quite simple and without danger of complications if done with reasonable skill. Two preliminary steps are most important. First, it is necessary to calculate, upon a basis of past menstrual history, the probable date of the next expected ovulation and to inseminate at that time. Second, it is most desirable to gain in advance an exact knowledge of the length and direction of the cervical canal. It is my practice to pass into the cervix the blunt end of a small flexible silver probe which is experimentally bent until so curved that it can be passed to the internal os without the slightest obstruction. Later the tip of the insemination cannula is bent to a similar curvature so that it can be passed through the internal os without producing bleeding. It is possible by this method to avoid bleeding during the insemination, and I believe this to have some advantage, although I have seen impregnation occur when there was a little bleeding from slight traumatization of the internal os. It requires a painstaking technic, and often some good luck as well, to pass the internal os with no bleeding whatever.

The seminal fluid to be used should be obtained by manual masturbation, within a half hour of the insemination. It may be kept much longer, but there had best be no great delay. The penis and hands of the donor should be thoroughly washed and dried in an antiseptic manner and the specimen retained by direct ejaculation into a sterile container, such as a 30 cc. beaker. It is important that this container be washed with sterile distilled water before being

used, since chemical residue from the sterilizer may have a devitalizing effect upon sperms.

The freshly ejaculated seminal fluid is a stringy mixture of seminal vesicular and prostatic secretions and cannot readily be aspirated through a cannula. It should stand for at least 10 minutes before being used in order to allow for full liquifaction and for complete activation of sperms. Before being used the specimen should be given a final microscopic check against increase in leukocytes and to verify good motility of sperms.

For introducing the seminal fluid into the fundus I use a long, thin, flexible silver cannula of a type designed for making installations into the male posterior urethra. This instrument is 8 inches long and about 16 gauge in diameter. The tip of it is bent in advance to conform to the previously determined angulation of the cervical canal, and it is attached to a 1 cc. tuberculin syringe. Such a syringe is desirable because of its fine graduations, by means of which it is possible to measure tenths of a cubic centimeter very easily. I believe it good practice to draw a little seminal fluid into the cannula and syringe and wash them out with it, discarding this first portion and then drawing in 0.4 or 0.5 cc. for the insemination. One should be careful to expel all air from the syringe and cannula before injecting the semen into the fundus.

When all is ready the cannula is passed with the aid of an ordinary bivalve speculum into the cervical canal and up a little past the internal os. Then 0.1 or 0.2 cc. of the seminal fluid is gently expelled from the syringe at a very slow rate. No more than 0.2 cc. should be used, since larger amounts are likely to induce uterine cramps. The smaller amount will cause a patient no discomfort whatever in most cases. This completes the procedure. The patient is allowed to go about her usual activities without the least restriction.

I know of no contraindication to artificial insemination except acute infection in the cervix. Great tortuosity of the cervical canal is an obstacle to be treated with respect, but it is not likely to be a real contraindication.

In conclusion, I offer the prediction that within a few years artificial insemination will have become widely established as a safe and valuable medical procedure of considerable practical importance.

(Medical Annals of the District of Columbia, July 1938).

A vacant mind is open to all suggestions as a hollow building echoes all sounds. CHINESE PROVERB.

Diagnostic Pointers.

Differential points in pulmonary tuberculosis.

If signs and symptoms point to the lungs, sputum negative and severe pain over deltoid, suspect malignancy.

If there is elastic tissue in a sputum which gives a negative test on guinea pigs; you may have lung abscess, malignancy or actinomycosis.

Sudden weight change.

It is quite characteristic for the hypo-thyroid patient to put on weight suddenly and lose it just as quickly, as thyroid is one of the main factors in disturbance of salt and water metabolism.

Tuberculous Synovitis.

In tuberculous synovitis stiffness of the joint appears before there is any pain while in pyogenic joint infections pain appears before stiffness.

Digestive disorders.

Conditions going on for a long time with symptoms not changing in character or gravity are generally functional.

Climate and functional body disturbances.

Definite disturbances of body function may result from too prolonged and severe moist heat and such disturbances are probably based on hypofunctioning adrenal glands. The disturbances are generally of a gastroenteric nature.

Abdominal distension.

There is a marked difference between the distended abdomen of peritonitis and that of obstruction. In peritonitis there may not be much distension but what there is, is diffuse, smooth and as it were lifeless due to the rigidity of the abdominal muscles.

In obstruction the abdominal muscles are not rigid and respiratory movements may be seen. Distension may be localised or general and one should particularly look for the parallel-transverse distended coils of small intestine to which the name of "Ladder distension" has been given and which is looked upon as characteristic of obstruction towards the end of the ileum.

Therapeutic Gleanings.

Morphine.

Morphine is to be avoided in three B's. Brights disease, bronchitis and babies.

Alcohol in pediatrics.

Children are easily depressed by acute diseases, therefore alcohol is of great assistance. A few doses of brandy will often completely alter the aspect of the case.

Emetine.

Emetine by mouth or hypodermically in large doses is a gastrointestinal irritant and also depresses the heart.

Pneumonia.

Treatment of pneumonia by alkalies serves as a conservator of respiratory effort, spares the patient avoidable burdens and leaves him free to devote his energy to fighting the infection.

Boils.

Acne vaccine and staphylococcus vaccine are worth their weight in gold in the treatment of boils.

Iodine dermatitis.

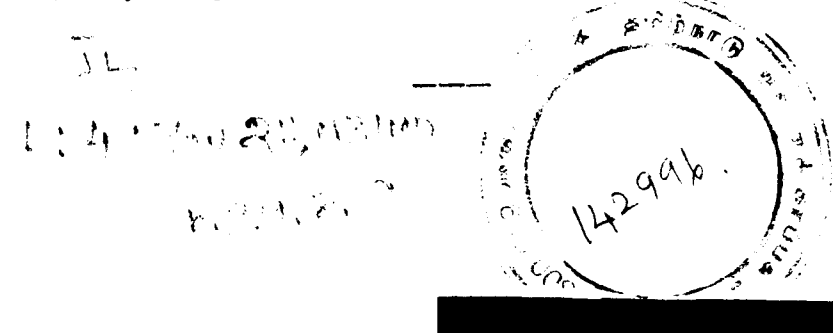
Dermatitis produced by iodoform poisoning or other iodine preparation and that produced by amino compounds is promptly relieved by manganese butyrate.

Stopping of the nose.

A little ointment composed of one grain of menthol to 8 m. of eucalyptus oil to one ounce of vaseline applied to the interior of the nose at bed time is often a very commendable help in discharge.

High Protein diet in Peptic Ulcer.

It has been shown that pepsin mixed with hydrochloric acid is far more effective in causing gastric lesions than the acid alone. Proteins have a far greater protective power against the development of gastric lesions than have either carbohydrate or fatty foods. Experimentally used proteins were gelatin, casein and lean meat.



Extracts.

SULPHANILAMIDE IN OBSTETRICS AND GYNAECOLOGY.

A good summary of the use of sulphanilamide in obstetrics and gynaecology is given in *The University College Hospital Magazine* for December, 1938, by Norman White. He writes:—

Sulphanilamide, or para-amino-benzene-sulphonamide, is one of a group of drugs which has a specific lethal effect on certain bacteria. It is sold as sulphonamide-P, prontosil album, and streptocide, to mention only three of the many names which have been introduced by different manufacturers for the one substance. This multiple nomenclature is particularly unfortunate, because related substances with similar specific properties will probably be discovered and put on the market, each with its group of names. Proseptasine (M & B 125), T 693 (M & B 693), and uleron are three of these related drugs, which have already been employed for treatment.

Sulphanilamide is the best known and the most used of these drugs, and is made up in tablets, each containing $7\frac{1}{2}$ gr. ($\frac{1}{2}$ grm.), which are given by the mouth. It is rapidly absorbed and excreted in the urine, and therefore exerts its maximum effect on organisms in the blood-stream and in the urinary tract. It is also found in high concentration in the cerebrospinal fluid. Local lesions which have a good blood supply can be influenced by the drug, but foci of poor vascularity are not affected.

The action of sulphanilamide is remarkably different from that of ordinary antiseptics. In aqueous solution it kills very few bacteria, and the presence of blood-serum and leucocytes is essential to enable it to develop its full bactericidal power, which is much more marked *in vivo* than *in vitro*. The reason for this probably is that the drug arrests the growth of the organisms, and in some way makes them more susceptible to the attack of the normal protective mechanism of the body, by which they are actually killed. There is evidence that the maximum effect is produced only when the serum contains immune substances.

The organisms which are susceptible, in various degrees, to the action of sulphanilamide are haemolytic streptococci, some non-haemolytic streptococci, gonococci, meningococci, *Bacillus coli*, *B. proteus*, and some anaerobes. Proseptasine is less toxic for the patient than sulphanilamide, but unfortunately it appears to be also somewhat less toxic for the bacteria. T. 693 is more toxic for the patient, and probably also more toxic for the bacteria; it has one important additional property, because it acts on pneumococci, and some observers have found it the most effective drug in the treatment of gonorrhoea.

Mild toxic effects are very common during treatment with sulphanilamide. Headache, giddiness, weakness, nausea, anorexia, palpitations, and urticarial rashes are 'not an indication for stopping treatment, at least when the patient is under close observation. Cyanosis due to methaemoglobinaemia or sulphaemoglobinaemia is also common, but it is not of importance when the patient can be kept in bed, unless it becomes very marked. In some patients, vomiting, diarrhoea, fever, dyspnoea, and prostration occur, and may indicate that treatment should be stopped. Really serious toxic conditions are quite rare; they are nephritis, jaundice, agranulocytosis, and purpura. In order to avoid the toxic effect of these drugs the patient should be in bed taking plenty of fluids and sugar, and must avoid drugs and foods containing sulphur, especially saline aperients. Patients with chronic nephritis are particularly susceptible to the action of these drugs. In any case where treatment continues for more than a week, it is better to guard against severe toxic effects by having a leucocyte count done every three or four days, so that treatment can be stopped if a marked fall in the numbers of leucocytes occurs.

As sulphanilamide is so rapidly absorbed when given in tablet form by the mouth, there is rarely any need for any other method of administration. In cases of septicaemia, or severe illness, where an immediate effect is required, prontosil soluble and soluseptasine are available for intramuscular or intravenous injection, and may be given in doses of 10 to 30 cc. daily, in addition to oral tablets, if special care is taken to guard against toxic effects.

PUERPERAL INFECTION.

At Queen Charlotte's Hospital the mortality in cases where haemolytic streptococci were found in the blood was 71 per cent. before prontosil was introduced, and 27 per cent. in twenty-two cases treated with prontosil. There seems to be no doubt that a decrease in the virulence of haemolytic streptococcal infection occurred at about the same time, but as these were cases with a virulent or "invasive" type of organisms the evidence suggests that the decrease in mortality was due to the drug. There has been a diminished incidence of septicaemia, peritonitis, and parametritis at the same hospital and Gibberd suggests that this is due both to diminution in virulence of the organisms, and to the effect of the drug in checking invasion of the tissues beyond the uterus.

Sulphanilamide may be given in small doses, $\frac{1}{2}$ grm. t. i. d., as a prophylactic, when it is thought that the patient may have been infected by interference during labour. When infection is established, a uterine culture should be made to discover the nature of the organisms. If haemolytic streptococci are found, sulphanilamide should be given in doses 4 to 6 grm. a day by the mouth, divided into

4 or 5 doses which are spread out as far as possible over the twenty-four hours, because the drug is so rapidly eliminated. It is uncertain yet whether intramuscular injection of the drug is of any advantage but in severe infections $\frac{1}{2}$ to 1 grm. may be given in this way, in addition to the oral tablets. As the infection decreases the dose is diminished, and $1\frac{1}{2}$ to 3 grm. are given daily by the mouth for a few days after the temperature has reached normal.

PYELITIS OF PREGNANCY.

Bacillus coli pyelitis has been found to respond in a dramatic fashion to small doses of sulphanilamide. This is a very important advance, because mandelic acid treatment was usually ineffective during pregnancy. In the majority of cases, $1\frac{1}{2}$ to 3 grm. of sulphanilamide daily for four to six days are sufficient to make the urine free from pus and organisms. As the conditions producing the pyelitis remain, there may be a recurrence which requires further treatment. If a rapid response to treatment is not obtained, it may be found that a calculus is maintaining the infection, or that the strain of *B. coli* is resistant to sulphanilamide. Cystitis responds similarly to this form of treatment.

GONORRHOEA.

Sulphanilamide has recently been used extensively in the treatment of gonorrhoea in the male, with very promising results. The drug has to be given in fairly large doses, and for an adequate period of time, if it is to produce any effect. Cokkinis suggests 4 grm. daily for a week, and smaller amounts during the next two weeks; he thinks that such a course of treatment will give the patient a 90 per cent. chance of cure. In the female, sulphanilamide treatment is not likely to be so effective, because the drug will not be able to reach the organisms in the cervical glands. It is a valuable method of treatment for gonorrhoeal urethritis in the female, but unfortunately the disease usually involves the cervix also. Women seem to be more liable to develop toxic effects, and cannot be given as large doses as men. I have usually prescribed $1\frac{1}{2}$ grm. daily for three days, then 3 grm. daily for a week, and $1\frac{1}{2}$ grm. daily for three more days. The patient must be seen at least twice a week, because even this small dosage will sometimes cause a rash, or other condition indicating that the treatment must be stopped. Treatment of gonorrhoea with sulphanilamide is too recent for any final opinion to be given about the methods of administration and the results.

To put it bluntly. If an undertaker charges 259 dollars for a funeral what would the doctor have earned had he saved his life. DR. WELSTER, M. D.

POST-OPERATIVE CATHETERIZATION.

The proper way to handle the urinary bladder during the first few post-operative days is a problem which has vexed many surgeons, writes Henry A. Buchtel, in *Medical Times* for May, 1938. In its solution two divergent schools have developed; the first believing that catheterization is always interdicted and the second believing that frequent catheterization is harmless.

If the first method is followed religiously, that is, if the patient is never catheterized, it will be found an effective way of preventing post-operative urinary infection. Now, I believe that these patients will eventually void unless they have some obstructive or neurogenic bladder lesion, but the sufferings they go through before voiding have always seemed to me to constitute a form of cruel and unusual punishment.

Urologists have well established the fact that the normal bladder is practically immune to infection, and can therefore be treated with great disrespect. This fact is violently untrue of the diseased bladder, however, and therefore it must be handled with utmost care.

We will consider first the situation when the bladder is normal. This occurs after any operation where the bladder, its circulation or nerve supply was undamaged. The only problem here is to keep the bladder normal, which means to keep it from becoming overdistended; for a bladder which has been overdistended is no longer normal. Normal bladder capacity is about 300 c.c., and the surgeon should attempt to prevent distention beyond this. Usually it is immediately post-operative that the damage is done. The patient may be still semi-anaesthetized and is probably well sedated, therefore sensations from the bladder are not experienced until the organ is quite overdistended, at which point micturition may be difficult. Since the surgeon may not have left orders to cover this emergency, the hospital staff try various palliative measures, turpentine fumes, mercurochrome on the meatus, streams of warm water, sitting the patient on the edge of the bed, etc., which it is true, sometimes bring the desired results. If not, the patient is finally catheterized, by which time the bladder is badly overdistended. Now, a considerable percentage of patients so handled will develop urinary infection which may be very severe, and which may cause trouble for many years. I cannot be too emphatic on this point, for it is from this misuse of the catheter that post-operative catheterization has developed such an unsavoury reputation.

To prevent this, the surgeon must judge from the length and severity of the operation, the amount of blood lost, the general hydration of the patient, the temperature and humidity, and the amount and kind of post-operative fluids, at what hour distention of

the bladder will occur, and must have orders that unless the patient voids before then he must be catheterized. There is no harm and, in fact, there is benefit, in the installation of a mild irritant such as an ounce of five per cent. argyrol before the catheter is withdrawn. This will aid in giving sensation before the bladder becomes over-distended, which will help to induce urination. The house staff and nurses must be persuaded that prevention of overdistention will lead in the end to fewer catheterizations.

The abnormal bladder requires drainage, usually through a urethral catheter. For an indwelling catheter I prefer the type with an inflatable cuff, as they require no adhesive strapping in men and are painlessly inserted and removed in women.

It requires nice judgment on the part of the surgeon sometimes as to whether to drain the bladder or not. I believe in case of doubt, an indwelling catheter is best inserted. This catheter should be connected by sterile tubing to a sterile covered bottle and rigid aseptic technic practised in its care. If the bladder abnormality is due to infection or to atony, better results will be obtained if a tidal drainage apparatus, wherein the bladder is automatically filled to a predetermined pressure and then emptied, is used than if the bladder is drained only by an indwelling catheter.

Opinions differ on how the normal bladder which has been allowed to become overdistended should be treated. I believe that the first offence should receive no special treatment. If this happens a second time, an indwelling catheter should be inserted for forty-eight hours. If infection develops, specific treatment of the offending organism is indicated, and if the infection is complicated by atony, again tidal drainage should be instituted. If it is necessary to catheterize the patient more than four times daily, I believe that an indwelling catheter is indicated for twenty-four to forty-eight hours.

The catheterization of male patients and the care of indwelling catheters does not seem to me to be necessarily a function of the house staff. The interne has more important tasks which may make him unavailable at the time when the catheterization should be done. The care of indwelling catheters requires asepsis which is time-consuming without special equipment.

Having worked in hospitals both with and without a catheter service I know that there is no question to its value. It will be found that the catheterizations are more carefully and cleanly done and there is no comparison in the care given indwelling catheters. This is because each trained orderly has a cart on which he carries the necessary sterile supplies, making it easy for him to do his work well.

By making a small charge for each service it will be found that the hospital gains financially as well as in giving improved service to its patients.

We conclude, then, that the normal bladder is best handled post-operatively by early catheterization if normal voiding does not occur. The abnormal bladder is best treated by an indwelling catheter, combined in special cases with tidal irrigation.

The insertion and care of catheters is more expediently done by trained orderlies than by the regular house staff.

A journey of a thousand miles begins
with one step. CHINESE PROVERBS.

A SPECIFIC TREATMENT FOR HERPES ZOSTER.

J. R. Walker and B. F. Walker, report in the *Archives of Ophthalmology*, August, 1938, a treatment of herpes zoster which can be readily tried out. They write: In reviewing the literature on herpes zoster, we find that treatment occupies but a minor part in any discussion of the disease. Many report the use of posterior pituitary with fair results. The use of autohaemotherapy, vitamin B₁ and sodium iodide has been tried with rather indifferent response.

DIPHTHERIA ANTITOXIN.

For 20 years we have been using diphtheria antitoxin in the treatment of herpes zoster and have secured splendid results in both the acute and chronic stages. We administer 5,000 units of diphtheria antitoxin and repeat this dose in two days, if necessary. In only two cases we have given the third dose. The pain and inflammation usually subside within 24 hours after the first injection. Other physicians, whom we have induced to use this method, report equally gratifying results. That our results have been just as satisfactory with concentrated diphtheria antitoxin, militates against the theory that the horse serum base of the antitoxin alone was responsible for the cure.

THE USES AND ABUSES OF TRANSFUSION.

There are only a few fundamentally different uses for blood transfusion, writes Wm. Dean Collier, in *The Ohio State Medical Journal* for October, 1938. First and foremost of these is the replacement of blood loss either by hæmorrhage or by hæmolytic disease. If the dose is adequate and prompt, the response to transfusion is most dramatic in both acute traumatic and obstetric hæmorrhage

provided that the bleeding point has been controlled. If the bleeding point is uncontrolled, massive transfusion is justified only as a pre-operative preparation for surgery intended to control the bleeding point.

A fundamentally different usefulness of transfusion is the control of hæmorrhagic oozing. The hæmorrhagic purpuras which are associated with thrombocyte, fibrogen or calcium deficiency will respond to the administration of normal blood. Even in cases of hæmophilia it supplies platelets capable of fibrin and clot formation. Likewise all cases of jaundice will be benefited provided the disease is associated with an alkaline urine and a polyuria, rather than anuria. The dosage should be small but often repeated. Thus a more constant efficiency of clot formation will be established. Both endothelial and hæmopoietic function will be repeated or constantly stimulated.

A third use is in shock, due either to absolute volume deficiency following massive hæmorrhage or to relative volume deficiency owing to circulatory collapse. Transfusions are infinitely better than saline infusions and acacia. The dose of blood must be sufficient to bring the blood pressure to normal. It should be administered promptly for best results.

A fourth use is to support the patient during the aregenerative phase of any aplastic anæmia or agranulocytosis with the combined purpose of tiding the patient over the aregenerative period, and of stimulating hæmopoiesis and bringing about a remission of the disease.

In cases of infection there are specific indications for transfusion. These are: the administration of potent antibodies, the dilution of toxic blood, the stimulation of hæmopoietic responses in sluggish infections, and the replacement of blood loss in a complicating anæmia.

Tuberculosis is one infection where transfusion is contraindicated. Many cases have been activated this way. Pneumonia, with mechanical circulatory difficulty and with impending myocardial failure is also a contraindication.

Transfusion is indicated pre-operatively in some cases. A large transfusion should be given where extensive blood loss and shock is anticipated. A small transfusion should precede and follow operations on jaundiced patients.

Finally, transfusion of carefully matched blood is the specific therapy for hæmolytic shock consequent to a transfusion by mismatched blood.

Turning to the abuses of transfusion, we should keep in mind the general rule that it is contraindicated except when given for a definitely established purpose.

We have learned that many reactions can be prevented by chemical cleanliness of the instruments and of the utensils used in

the preparation of materials for transfusion and those used in the administration of blood. We must remember that cleanliness is as essential as sterility.

Reactions may occur owing to careless matching of blood or use of relatively impotent typing sera. Matching should be done with unquestionably potent sera. Cross matching should be repeated before each transfusion regardless of demonstrated compatibility at some previous time. All blood of the AB agglutinin constitution should be checked for autoagglutinins and, if present, should be rechecked using washed cells.

Another danger in transfusion is the possible transfer of disease from the donor to the patient. It should be clearly determined that the donor is free from communicable diseases such as syphilis, malaria virus, bacterial and allergic diseases.

A most common cause of reaction is caused by the donor taking food a short time before giving blood. The number of reactions can be decreased if donors abstain from food, alcohol and other beverages for 5 hours preceding taking of blood.

Finally, transfusion must be withheld from those with congestive heart failure, the asthenic, the aged and patients with embarrassed pulmonary circulation. It must be discontinued at the first sign of congestive heart failure or reaction of mismatched blood. In the life or death emergency the blood may be given in drop by drop dosage.

ULERON IN THE TREATMENT OF GONORRHOEA

The authors have reviewed the extensive literature on the subject giving briefly the conclusions of various German and English workers. All the German observers are enthusiastic about the efficacy of Uleron in gonorrhœa acute and chronic, and of its superiority over prontosil and other sulphanilamide group of drugs. Some of them recommend uleron only for subacute and chronic cases. Ripely Oddic (1938) writes that opinion in Germany is divided, "the balance numerically is in favour of immediate as opposed to delayed treatment" English workers have found that uleron has the least toxic effect but some of them disagree with the German observers who claim for it better end-results and superior mode of action, prontosil being found more effective in acute cases in their hands than uleron.

From the observation made by various workers it would appear that the following dose and scheme of treatment give the best result consistent with safety. 3 grammes of uleron per day in three

equally divided doses for 3 to 4 days are given, preferably after a meal, followed by a draught of alkaline water. This course of uleron treatment should be repeated after an interval of 6 to 8 days and not more than 3 such courses are necessary for any case. In the interval between a course of treatment the Janet irrigation with 1 to 1000 solution of potassium permanganate in the male and only vaginal douche in the female in addition to specific vaccine therapy should be tried. The authors also found this scheme of treatment successful in his own series.

Toxic reactions met with in course of treatment with uleron are mild and are few in number. Special mention is made of a form of symmetrical toxic peripheral neuritis mainly affecting the calf muscles, producing acute stiffening, pain and disability occurring in the course of uleron treatment. Ulreon, unlike prontosil, seldom causes hæmolytic anæmia sulphæmoglobinæmia and agranulocytosis.

The authors tried uleron in 55 cases of gonorrhœa and its complications in both sexes and in all stages with complete success in 32, partial success in 11 and poor results in 12 cases. The number of cases treated are small but the results are encouraging and warrant further trial and observation. The following is the summary of their observations :—

1. Subacute and chronic cases respond with better results than acute cases.
2. Complications such as acute arthritis epididymitis, conjunctivitis, etc., react very well to uleron.
3. The drug appears to be safe when given intermittently and in doses used by the writers in their later cases.
4. In cases of gonorrhœa in women, acute and chronic, including vulvo-vaginitis in children, the results do not seem to be as encouraging as in males.
5. In spite of an apparent immediate good result, every case should have three courses: every case should also have three courses before considering it a failure.

Being the summary of a paper by Dr. V. Govindan Nair, M.R.C.P., F.R.F.P.S. and Dr. V. V. Chetty, M.B., B.S. of King George Hospital, Vizagapatam read at the Indian Science Congress held at Lahore, January, 1939.

Be courteous to all but intimate with few and let those few be well tried before you give them your confidence. GEORGE WASHINGTON.

Medical News and Notes.

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION, PALAMCOTTAH.

(Tinnevelly Branch of the Indian Medical Association)

The President's Function of the Tinnevelly Dt. Medical Association was held at its monthly meeting held at the Subramania Karayalar Public Library, Palamcottah on the 27th of August 1939. Members numbering 50 including 4 women doctors, gathered from all parts of the District. Lieut. Col., K. V. Ramana Rao, I. M. S., was "AT HOME" to the members,

After Tea and music, the meeting began under the Presidency of Lieut. Col., K. V. Ramana Rao, I. M. S., The Secretary read out the minutes of the Joint Meeting of the Madura Medical Association and the Tinnevelly Dt. Medical Association held at Courtallam on the 29th of July, 1939. It was decided to hold the Monthly Meetings of the Association on Sunday following the penultimate Saturday.

Dr. V. Narayanachari, L.M.P. Honorary Assistant Medical Officer delivered an interesting lecture on "Anaesthetics"

Three cases of Tumour Breast were shown.

Dr. A. L. Ananthanarayana Iyer, M.B. B.S., Medical Officer, Tenkasi demonstrated a case of Meningo Myelitis.

Each case was fully discussed by the members present. Thereafter Lieut. Col., K. V. Ramana Rao, I. M. S., summed up the salient and important features of all the cases and their differential diagnosis in detail. He offered his thanks to the authorities of the Public Library, for placing the Library Hall, at the disposal of the Association for holding the meeting. He also thanked the members for responding to his invitation. Dr. K. Rama Ayyar, M.B.B.S., thanked the President for this enjoyable function and for his entertaining the Association.

Thereafter an excellent Dinner brought the happy gathering to a close.

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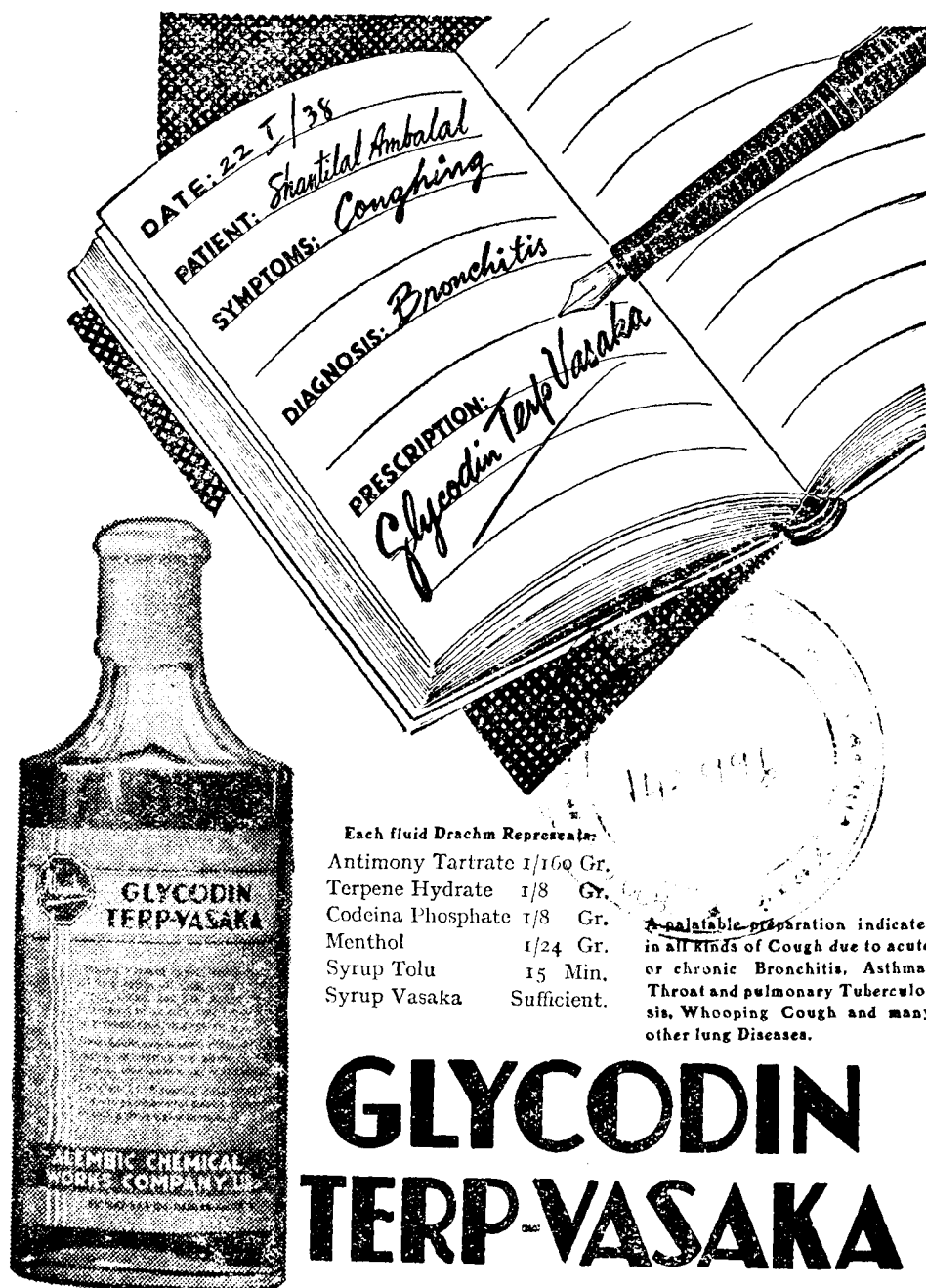
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