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VOL. IX

JULY 1940

No. 7

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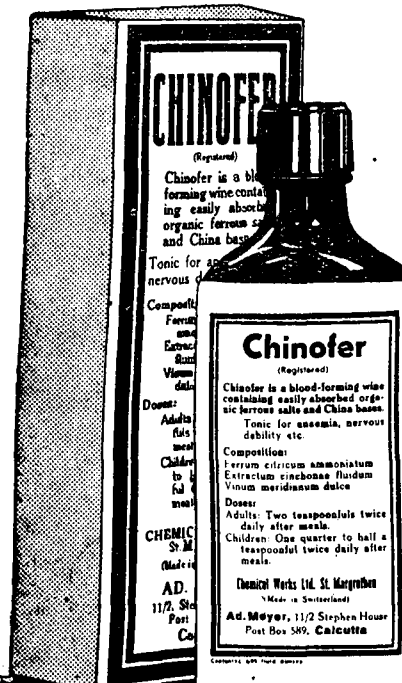
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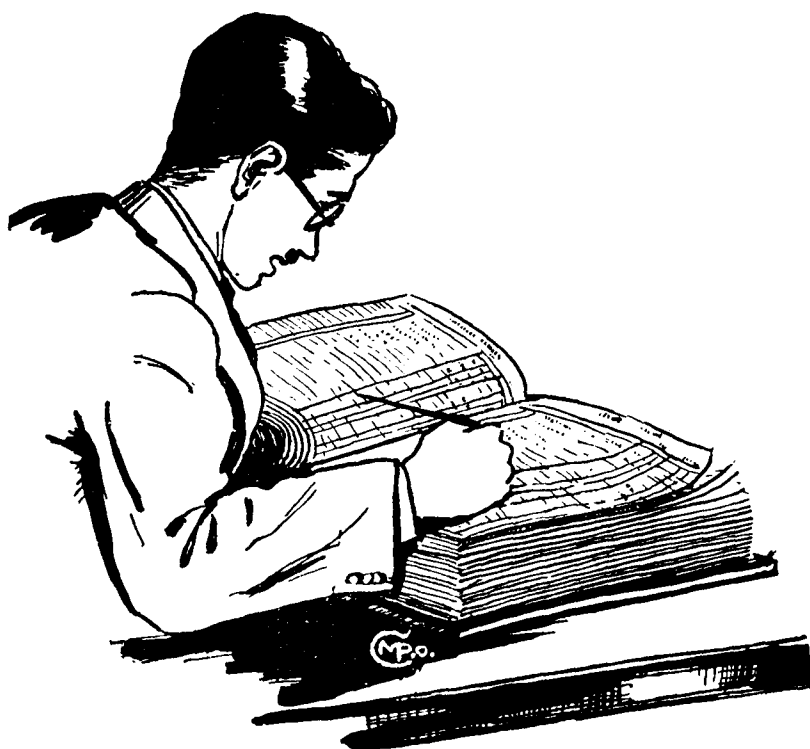
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MEDICO-SURGICAL SUGGESTIONS

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Original Articles

INSOMNIA AND ITS TREATMENT

BY MUKTESH NATH BASU, L.M.S.

Calcutta.

INTRODUCTION.

To elderly individuals and to those who pass restless, fretful and sleepless nights the subject of insomnia is very interesting. One third of our lives is normally spent in sleep; yet how often we meet with people who complain of insomnia. It is believed that now-a-days people suffer more from insomnia, and various preparations have been introduced for producing sleep.

During sleep one changes his position many times. This change of position during sleep is supposed to be an expression of motor activity and thirty such bodily stirs are said to be an average number for a night. If the changes are fewer in number, the amount of rest is supposed to be greater. Giddings demonstrated that a child has a definite sleep pattern and this can be disturbed only by sickness or certain experimental conditions. It has been experimentally demonstrated that drinking six ounces of warm milk or taking three-fifths of a grain of caffeine at bed time did not disturb sleep at all. A child sleeps better in the cold than in the hot weather. Emotional causes disturb sleep. In boys study at night, in order to appear at an examination the following morning, causes disturbance of sleep.

During sleep at night we lay down our diurnal cares. The amount of sleep that is required for individuals varies in different cases. One person at a given age will need so many hours of sleep, while another of the same age-group will require a different period. The amount of sleep that is required for adults is said to be 'six hours for a man, seven hours for a woman and eight hours for a fool'; but this does not apply to all cases. A strange room, a strange bed and unfamiliar illumination will often disturb sleep. Again, some people are light sleepers, while others sleep like logs. In some persons mental stimulation, rather than sensory or visceral, appears before

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sleep is obtained and a kaleidoscope of patterns may appear before the retina when the eyes are closed. Others find that their legs will give sudden kicks while dozing or dropping off which sometimes awakens them. Once asleep, we cross the frontiers of mental awareness and the inner wishes may be so strong as to lead to motor discharges, such as talking in one's sleep or walking during sleep.

Various alterations occur in the body during sleep. The respirations become slower and costal in type, the amount of inspired air becomes diminished, more carbonic acid is eliminated and the absorption of oxygen is greatly increased. The action of the heart becomes slower, the blood pressure falls and the peripheral vessels dilate. The temperature usually falls. Enlargement of the limbs is said to occur due to venous engorgement on account of the relaxation of the cutaneous vessels. The sweat glands act more freely and the internal organs become anemic and their functions are decreased. The stomach and the kidneys however remain active. The kneejerks become less active or may disappear during sleep but in dream states they become more active. Generally in deep sleep the abdominal, cremasteric and tendon reflexes are abolished.

In the opinion of Economo there are two components of sleep, brain sleep and body sleep and the two processes coincide in time in the normal person.

CLASSIFICATION

Insomnia may be divided into two groups, primary and secondary.

The primary of psychopathologic group may be due to :

1. Profound depression or elation : These patients get up early and fill the remaining hours with depressive pre-occupations and imaginations.
2. Pre occupations, brooding or worries either of business or social, domestic or sexual matters. It may also be due to grief, remorse and suspicions. These patients have difficulty in falling asleep.
3. Frustrations, disappointments and reactions to strain and responsibility cause complaints about sleep without any actual alteration in the total amount and kind of sleep. These people resort to self medication.

Secondary insomnia may be due to ;

1. Bad habits such as going to bed late in the morning, dissipation and dietary indiscretions at night.
2. External causes such as noise, annoying light, uncomfortable bed, crowding, uncomfortable temperature, lack of fresh air or presence of draught.
3. Physical diseases : These include the following :

[A] Pain : this may be (a) peripheral as in skin diseases, pruritus, arthritis or myalgia ; (b) referred as from the pleura, peritoneum as in perforated gastric ulcer, appendicitis, intestinal obstruction or from the pericardium. It may also arise from ovarian and uterine disorders, stone in the kidney or bladder etc. ; or (c) cerebral—as severe headache, meningism, meningitis, cerebral syphilis or general paresis.

[B] Toxemic states : such as fevers, infectious diseases, uremia, alcoholism and hyperthyroidism.

[C] Disorders of the cerebral circulation : such as hypertensive heart disease, severe anemia or polycythemia.

[D] Structural diseases of the brain : such as arteriosclerosis, brain tumour, syphilis, senile changes, acute and chronic encephalitis and post-traumatic states.

[E] Organic discomforts : such as acute and chronic bronchitis, neuralgia, asthma, cardiac decompensation, the hunger pain of duodenal ulcer, gastro-intestinal disorders, nocturnal frequency of urine or retention with overflow in prostatic subjects or in those with spinal disease.

[F] Disorders of the mind : such as mental deficiency or obsessive insomnia.

[G] Auto-intoxications : such as in diabetes, hypothyroidism or ovarian dysfunction at the climacteric.

[H] Drug addiction : such as alcohol, morphia and cocaine cause disturbance of sleep. Ether drinkers and chloral addicts are also victims. In carbon monoxide poisoning there is marked insomnia in the later stages.

[I] General causes : such as irritated foreskin, unerupted teeth, malnutrition or acute rhinitis. Naso-pharyngeal obstruction is also considered by some to be a cause.

[J] Errors of refraction : these are said to be a cause in some cases.

THEORIES OF SLEEP.

There are various theories about the causation of sleep. They are mentioned below :

1. *Osmotic theory* : According to this theory the nerve cells become saturated with water due to functional activity and as a result their excitability is reduced. This is removed by the lymph ; as a result the blood becomes concentrated and flows more slowly and finally produces sleep.
2. *Dendritic theory* : This theory supposes that sleep is due to retraction of dendrites of the nerve cells, thus preventing contact with the higher centres.
3. *Toxic theory* : This theory supposes a toxic origin for sleep. If dogs be kept for prolonged periods without sleep, a substance can be isolated from the blood and spinal fluid which if injected into

intact animals will produce sleep. This substance has been named *hypnotoxin*.

4. Sleep is due to alteration in the blood lactic acid, cholesterol, carbon dioxide, leucomaines and products of metabolism in general.

5. *Shepard's theory*: This theory supposes that when we are absorbed in a mass or complex of fatigue sensations, our motor activity and other sensations are inhibited and we go to sleep.

6. *Freud's theory*: According to Freud insomnia is a manifestation of inadequately repressed complexes.

7. *Pavlov's theory*: Sleep is a general internal inhibition based on conditioned reflexes.

Kleitman combines all the above and believes that there are six cardinal points in the production of sleep:—(a) It is an easily reversible inactivity of the highest centres of the cortex; (b) this inactivity is due to a functional break between the cerebral cortex and other parts of the nervous system; (c) this results in a marked decrease in the propagation of different impulses to the sensorium especially proprioceptive impulses which depend upon the degree of muscle tone maintained; (d) sleep is due to fatigue of the neuromuscular mechanism concerned in the maintenance of muscle tone; (e) in the absence of such fatigue, sleep may result from complete muscular relaxation; (f) diurnal alteration of wakefulness and sleep is a conditioned phenomenon.

2. *Mengazzini's pluriglandular theory*: This theory supposes that during waking, there is the waking excitator action of the thyroid, suprarenal, gonads and pituitary—a sympatheticotonia; during sleep, the excitator anabolic action of the autonomic produces lower temperature, torpor and falling blood pressure.

Tumours of the third ventricle are associated with somnolence but where cerebral tumours cause direct or indirect pressure on the base of the brain, there is torpor and sleeplessness. In those cases where they cause pain, there is sleeplessness.

There is at present evidence to prove that there is a special centre for sleep. According to Demole injections of calcium chloride into the grey matter of the sub-thalamic region produces profound sleep, whereas potassium salt inhibits it. Hypnotic drugs can be recovered almost entirely from the basal ganglia and none from the cortex and it is presumed that these drugs act as depressants on the portions from which they are recovered.

TREATMENT.

For successful treatment of cases of insomnia, a complete history is necessary. In cases of primary insomnia, psychoanalysis is sometimes necessary to find out the cause. Indicated laboratory studies should be carried out. In treatment, dietetic considerations must play a part. The last meal at night should not be abundant or

exciting to the nervous system and excessive drinking of tea, coffee and alcohol should be forbidden for the hours before retiring. For neurotic patients who complain of their stomach or the head, massage of those parts will be found useful because the hypochondriacal state will be satisfied by this local attention.

Hydrotherapy is useful in some cases. A hot bath is congestive and enervating and some soda may be added to the bath with advantage.

Secondary insomnia can often be treated without difficulty. If it is due to bad habits, there ought to be a response to change of habits. Environmental conditions can also be treated in the same way. Those that are due to physical disease, especially those where pain is the essential factor, require narcotics and sedatives.

The pharmacological treatment may be divided into three groups, viz., *sedatives analgesics, or hypnotics*. Sedatives are drugs which calm the nervous system; most of them are of plant origin, the best example being valerian. Belladonna and Datura (Tr. Stramonium) are used in Parkinsonism in order to control tremors and to bring rest and sleep. Scopalomine is useful in post encephalitic tremors and spasms and is particularly useful in acute mania and delirium tremens. The dose varies from gr. 1/200 to gr. 1/100.

Bromides are losing favour now-a-days but they are certainly useful. Polybromide mixtures do good in mild cases. The usual prescription is grains five each of potassium, sodium and ammonium bromide in a suitable base and this is repeated if necessary. Effervescent tablets are now available. The action begins in about thirty minutes and the effect lasts from four to six hours. They are not habit forming and do not relieve pain though there is some tendency to "hang over". *Sedobrol* is a proprietary preparation which can be used. The effect of bromides are enhanced on a salt-free diet and diminished by diuretics.

Sulphate of magesium is used as a 50 per cent solution in 2 c.c. doses as intramuscular injection in chorea and tetany. It produces sleep of short duration.

Analgesics are used for diminishing pain. The best example is opium and its preparations. It is the most valuable of hypnotics and is dangerously attractive. *Morphine* is a depressant to the central nervous system diminishing the alkaline reserve in the blood and has a selective action on the respiratory system and pain. Motor functions are less affected than perception, attention and volition. Respiratory depression is common from higher dosage. It is used in gr. 1/6, gr. 1/4, or in gr. 1/3 doses *Apomorphine hydrochlor* is one of the most powerful and certain hypnotics known. It causes nausea and vomiting and hence is available only for selected cases such as hysteria major and alcoholic psychosis. "One of the miracles of medicine is to see the laughing, screaming, cursing or belligerent

THE PREVENTION AND CONTROL OF VENEREAL DISEASES*

DR. M. RATHNAVELU, L. M. S., M. R. C. S.

(ENG.), L. R. C. P. (LOND.), F. D. S. (LOND.)

It will be interesting to note how the incidence of venereal disease is being tackled in India and abroad. In the control of communicable diseases three factors are to be considered—(1) the foci of infection (2) the susceptible groups in the population exposed to the risk of infection (3) how and under what conditions is the infection transferred from the infected to the susceptible non-infected groups.

In the majority of venereal infection the foci of infection in a community are the prostitutes and the susceptible groups are the unmarried adolescents and the infection is transmitted chiefly by sexual intercourse.

To control venereal diseases it is necessary to control or regulate prostitution and provide facilities for treatment of the infected persons and to render them non-infectious and educate the public, especially the adolescent population against the dangers of illicit extra-marital intercourse. No campaign against venereal disease can be successful without action against such social evils as prostitution and traffic in women. These are preventible diseases and with judicious care through use of prophylactic measures one can escape them. To prevent the spread of venereal diseases by interstate travel of disbanded men, the army provided that infected men be hospitalised until the acute stage of the diseases is over and the danger of transmission of infections is past.

It has been proved by statistics that 1/6 of the population has suffered from this scourge, while tuberculosis—another menace to society—which is being fought against by prominent personalities in India with great enthusiasm and energy, does not claim even half the number. The huge infantile mortality, widely prevalent sterility, frequent abortions and still births, about 20 per cent. of all blindness and deafness and 50 per cent. of imbecility can be attributed to venereal diseases. They affect practically all the organs in the body and produce degeneration of brain.

Dr. Cavaillon, the Secretary-General of the International Union against the venereal peril, has written an exhaustive account of the legislations adopted by the chief countries of the world for the suppression of these plagues. The International Union is working for the co-operation of all peoples and for a combination of natural laws to fight venereal disease. Intensive education and propaganda by means of cinemas, talkies, radios, and wireless have to be done among the people concerning the dangers of venereal diseases and

make them realise the importance of social hygiene so as to enable them to co-operate willingly with those who are working for the establishment of national and international defences against these scourges. Some nations adopt rigorous measures of compulsion and have penal codes of a stringent character, while others have no compulsory legislation. But there is universal agreement in raising the moral standard, especially the young, the necessity of taking complete treatment early, when infected, and to warn against promiscuous intercourse and to stop recruitment of prostitutes.

There are different legislations to stamp out these contagious and disastrous maladies in several countries. There is complete freedom in Great Britain: there are no laws of constraint, no compulsory treatment, no regulations of prostitution and no enforced certification before marriage. There is liberty in France and Belgium in all points save in regulations and control of prostitution by law. The United States of America adopt legal compulsion; in the majority of the States, treatment is obligatory, prostitution is prohibited and marriage is regulated. Germany and Czechoslovakia before its incorporation in Reich, had laws of constraint, but did not forbid prostitution. By a campaign of education, the incidence of syphilis has been reduced by 50 per cent in Great Britain during the last 15 years.

In U. S. S. R. medical treatment is given free and a unified, nation wide legislation dealing with venereal diseases is in force. Intentional infection with venereal diseases is punishable by 3 years' imprisonment in reformatory labour institutions. The law further provides for compulsory treatment of those patients who refuse to undergo voluntary treatment which, however, seldom happens.

Compulsory warning, compulsory notification, compulsory investigation regarding carriers of germs, compulsory treatment and pre-nuptial certificates are the five means of reducing the incidence of venereal disease in different countries.

NOTIFICATION.

Compulsory warning is meant to inform the infected persons about the contagious nature of venereal disease and to warn them as to their moral, sanitary and judicial responsibilities by a medical attendant. When the public are educated regarding its utility, they will not only tolerate notification of venereal disease, but welcome it as an essential extension of the general principle of notification. Intensive education should precede notification. Compulsory warning is legalised in Sweden, Czechoslovakia, Japan, Germany and such a one has existed in the Danish Laws since 1906. In Scandinavian countries, America, Germany, Czechoslovakia and Russia, notification to seek out sources of contagion and of contacts and the establishment of precautions before marriage have already been adopted. In 1918 the United States of America introduced a system

* A lecture delivered at the Madras Branch of the A. I. M. L. A., during March 1940.

of notification. The medical attendant notifies the case to the Health authority without giving the name or the address of the patient. If he fails to take complete treatment in spite of warning, when contagious, then only the doctor reveals the name and address of the delinquent to the Commissioner of Health to deal with him officially. The International Union approves of this indirect method of notification.

COMPULSORY TREATMENT.

Compulsory treatment is closely associated with compulsory notification. Great care has to be exercised in the compulsory investigation of the sources of the disease, and of subsequent contacts. Compulsory investigation is adopted in Sweden, some of the American states, Czecho-Slovakia, Germany and with great stringency in Russia. In France, the law does not permit inquiry about sources of infection save in the army.

PRE-NUPTIAL CERTIFICATE.

In American States pre-nuptial certificate was adopted as a law. In certain States the law prohibits marriage of a venereal patient until a certificate of recovery is produced or a declaration on oath concerning health. In Germany, one who marries while infectious, not informing his fiancée, is liable to imprisonment. In Sweden, Norway and Denmark the pre-nuptial certificate is required. There are active propagandists in Holland. In Vienna there is a Municipal Bureau for pre-nuptial consultation. There are some clinics which undertake the duty in France. The International Union is in favour of compulsory pre-nuptial certificate.

REGULATION OF PROSTITUTION.

The regulative system of prostitution is in force in France, Belgium, the Argentine, Ecuador, Austria-Hungary, Paraguay, Italy, Spain, Portugal, Japan, Egypt, etc. The number of women who are regulated and controlled is very small in relation to those who are free and clandestine. In every town out of 100 registered, there are 3,000 who are not registered. Prostitution encourages the growth of clandestinism and provides a screen for it. The International Union is in favour of total abolition. Recently France and Germany adopted abolition of prostitution. In America prohibition has taken the place of registration and prostitution is forbidden and under this system the prostitute is arrested and if found guilty, she is imprisoned. If she is diseased, she is treated in a special hospital but is only released after taking her full period of treatment. As a result of this there is a considerable fall of prostitution. The International Union is in favour of social hygiene which provides a fairly good results. The maintenance of physical health of the people is not only a duty of the State but also the duty of the individual to the State. In countries where there is compulsory notification and treatment, these are

penalties for people who infect others, knowing that they are in a contagious condition.

AN INTERNATIONAL ORGANIZATION.

On 27th January 1923 the International Union was established by the English, Belgian, French, Spanish, Japan and Swiss delegates with representatives from the League of Red Cross Societies. Gradually most of the nations joined the Union and today it has members from 44 different countries from Europe, Asia, Africa, North, South and Central America and Australia. The Union of Russian Soviet Republics, Turkey and Persia have not joined as members. The Union works in close alliance with the venereal diseases clinics from the International standpoint as regards prophylactic measures, propaganda, treatment and legislation.

Coming nearer home, the Government of Straits Settlements adopted the recommendation of the Advisory Committee on Social Hygiene in 1925 by making the progressive policy of closing 'known' brothels, making brothel-keeping illegal and extending and amplifying the free and confidential facilities for the treatment of venereal diseases started in 1923. Singapore has satisfactorily worked the British policy of dealing with this branch of Public Health.

In India public interest in the prevention of venereal diseases was stimulated by the visit during 1927-28 of delegates from the British Social Hygiene Council in response to an invitation from the Government of Bombay, Madras, Bengal and Burma. They submitted a report making a series of important recommendations covering all the varied aspects of the venereal diseases problem and these have been of great advantage to different medical and health administrators.

In Madras Presidency, where a considerable degree of organised effort has since been made, as up-to-date venereal diseases department has been located in a new and well-equipped building in the Madras General Hospital and placed in charge of a Venereal Specialist. Medical under-graduates and post graduates are given a course of training for 3 months in venereal diseases. In addition to this central institution, 32 venereal clinics are working for the past few years in different parts of the province. In other parts of the country, no general campaign against venereal diseases has so far been planned.

In India the problem is complicated by the general illiteracy of the population and by the fact that in rural areas particularly, medical aid is not easily available. No campaign against venereal disease can be successful without action against such social evils as prostitution and traffic in women. In India, these questions are complicated by various social customs and religious practices, as Devadasi-problem, but those need not be a serious problem once public opinion is roused to the necessity for tackling it which is not the least of the many of the public health problems awaiting solution.

The Suppression of Immoral Traffic Act was passed in Bengal, Bombay, Burma, Madras, United Provinces and some Indian States as Mysore. The Madras Immoral Traffic Act was brought into force on 1st April 1932. By closing the brothel houses under the Act, the main source of venereal infection is eliminated. Recently one Rescue Home was started in Madras for the protection of girls rescued from the house of ill-fame. If compulsory warning, compulsory notification, compulsory investigation regarding carriers of germs, compulsory treatment and pre-nuptial certificates are introduced in Madras as in other countries, the incidence of venereal disease will be reduced to a minimum. Intensive education and propaganda by means of cinemas, talkies, and radios should be done among the people concerning the dangers of venereal diseases and make them realise the importance of social hygiene. Venereal prophylaxis should be given at the Venereal Diseases Centres. For Syphilis, inunction of the genitals with a 33½ per cent calomel ointment and for gonorrhœa, irrigation of urethra with a 2 per cent solution of protargol or 10 per cent solution of argyrol after urination are recommended. Venereal diseases treatment centres should be established in all municipalities of large towns and in industrial centres. The public should be warned against treatment by quacks. Sex hygiene should be taught in schools for boys and girls.

Any organisation against venereal diseases to be effective should be based upon the following points as it is in Denmark :—

1. The provision of free treatment to all venereal patients irrespective of the economic condition.
2. Obligatory treatment of all infective cases.
3. Punishment for transmission of venereal diseases; if any body, who knows himself to be infected with the venereal diseases has sexual intercourse, he should be liable to be sentenced to prison.

Venereal diseases are spread through a personal act of two persons in which public health is endangered, unlike in other infection where an inanimate object such as water and food or an insect on the one hand and a susceptible person on the other, are concerned in the transmission of the infection. The control of the former, of necessity, implies legal control and all other methods will prove ineffective or only partially successful.

MANAGEMENT OF THE THIRD STAGE OF LABOR.

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The third stage of labor is that phase which begins immediately after the birth of the baby and ends with complete expulsion of the placenta and its membranes. From the maternal standpoint it is the most serious and hazardous stage of labor, yet the one which is not given its warranted amount of attention by many who practice and teach obstetrics.

The management of most medical, surgical and other obstetrical conditions is quite variable. Until recently the management of third stage labor has been quite routine. Now, even third stage management is variable to a point where the student, intern or practitioner who lacks considerable experience in obstetrics is in a quandary.

The history of obstetrics demonstrates that through several cycles of so-called conservative and radical obstetrics there is accomplished with each cycle some degree of advance in knowledge and technic. In the past four years, after noble efforts by private and commercial research, obstetrics has been blessed with a drug which has been clinically tested and proved to possess a strong oxytocic activity.

Now more than ever before, with our so-called painless labors, analgesias, anesthetics, operative obstetrics, perineotomies, prophylactic forceps and what appears to many of the older practitioners to be a "three-ring circus" of radical ideas, all of which increase the hazardous possibilities, we are in need of potent oxytocics.

The usual, tried, safe and conservative method of handling the third stage of labor required that immediately after the birth of the baby the obstetrician or an assistant control the uterus by sinking the palmar surface of the hand into the abdomen between the umbilicus and the symphysis pubis until contact is made with the fundus. Massage is only necessary if the outline of the fundus is indistinct or soft and filling with blood. Vigorous massage then stimulates contraction of the uterus, hastens complete separation of the placenta and prevents undue loss of blood. Contact should be kept with the fundus until the signs of separation present themselves. These are: first, a bright red trickle of blood; second, a rising of the fundus above the position it has occupied; and third, the prolongation of the extra vulvar umbilical cord. These changes signify bleeding from behind the placenta and distention of the lower uterine segment or upper portion of the vagina by the placenta. This separation is completed normally 15 to 20 minutes after the birth of the baby.

As soon as separation has taken place, the fundus should be massaged until it contracts into a firm, hard, globular mass, after which it is grasped between the thumb anteriorly and forefinger posteriorly and pressure exerted downward in the axis of the pelvis, the uterus being used as a piston to shove the placenta out of the vagina.

When the placenta appears at the vulva, it should be grasped with the free hand and lifted upward. This maneuver seems to separate the membranes more evenly and if not executed too swiftly prevents their tearing. Some prefer to twist the membranes into a cord and slowly extract them. If the membranes should tear, the extra vulvar portion may be clamped with forceps and twisted; the remnants can usually be delivered by gentle traction, but if not they should be allowed to remain instead of the vagina or uterus being invaded in attempting to remove them. Remaining portions will be cast off with the lochia. As soon as the uterus is empty any of the accepted oxytocics can be given freely to keep the uterus contracted. These oxytocics vary from fluid extract of ergot to the most refined alkaloids of ergot's oxytocic principles, but pituitrin is probably most commonly used.

If separation of the placenta has not taken place after 30 minutes from the birth of the baby, Crede's method to hasten contraction and separation may be employed. This consists in kneading the fundus vigorously, irritating the uterus to contract. It is well to remember that an empty bladder facilitates expulsion of the placenta.

The foregoing has been a short summary of the management under normal conditions. Nowadays, contrary to what most of us were taught, oxytocic drugs are given before the uterus is empty by many well-known obstetricians. Pituitrin in doses of 1 c.c. given intramuscularly immediately after the birth of the baby has been found to have in hospital practice a beneficial reduction of the separation time with marked lessening of blood loss, the separation time being reduced to an average of 8 to 10 minutes. Many of the conditions which tend to lessen the contractile powers are actually produce atony of the uterus, such as twin pregnancies, hydramnios, prolonged labors and shocking operative deliveries all respond favorably to pituitrin stimulation.

The good results following the use of pituitrin have encouraged the use of even more potent oxytocics, given by methods which elicit even swifter action. I am referring to the salts of the water soluble ergot, alkaloid or ergonovine isolated in 1934 and on the market in a host of proprietaries, common among which are Ergotrate, Baser-gin and Ergometrine.

The drug is administered intravenously in doses of 0.2 mg. Given immediately after completion of the second stage, in most cases it evokes a characteristic tetanic contraction of the uterus

within 20 to 40 seconds which separates the placenta in 1 to 3 minutes and lasts 2 to 4 hours. Its freedom from undesirable effects increases its value. Since it has no effect on blood pressure, it may be used judiciously in toxic cases.

When ergonovine was first used, in what might be termed so radical a method, many were discouraged because they believed it increased the incidence of retained placenta by creating a contraction zone at the lower uterine segment which incarcerated the separated placenta. Ergonovine should be used intravenously only in hospital cases, and since most of these are under various degrees of anesthesia and are unable to bear down when the uterine contraction occurs, it is necessary for the obstetrician or an assistant to determine the time of separation and express the placenta immediately; otherwise the separated placenta may be enveloped above the closed cervix and the interference with expulsion eventuate in a post-partum hemorrhage.

Surprisingly enough, when ergonovine is used intravenously separation occurs usually before 3 minutes have elapsed, so that close observation must be stressed and prompt expulsion of the separated placenta executed.

I have had the opportunity to observe the action of ergonovine in over 900 labor cases in which the drug was administered intravenously after the delivery of the baby. Of these only 11 cases offered any degree of difficulty in removal of the placenta because of the contraction zone of the lower uterine segment or closed cervix. Three of these cases necessitated manual removal of the separated placenta from the uterus. The remaining 8 were expressed after vigorous pressure on the fundus. None of the cases that gave trouble had the placenta expressed as soon as it had separated. In most cases perineorrhaphy was done before attempting to deliver the placenta. Only 6 cases did not respond to ergonovine as far as uterine tone and contraction are concerned, 4 of which respond to other oxytocics, 1 of which responded to packing and 1 of which terminated fatally after all available attempts at control had failed. The dramatically swift action in completely separating the placenta, the small amount of bleeding and the firm contraction of the uteri in all of the remaining cases under my observation have made ergonovine and its intravenous administration my choice as a safe and reliable method in treating the placental stage of labor.

By 1936 Davis and Adair in Chicago had observed the action of ergonovine in 20 labors complicated by severe post-partum hemorrhages, and in all cases reported spectacular action on the part of the oxytocic agent. The use of ergonovine and the expression of the placenta within 2 minutes after injection with no unusual bleeding in a case I had previously seen to have a severe post-partum

hemorrhage with each of her two previous labors, may have been coincidental, but to me was most impressive and convincing.

The necessity of palpating the uterus to rule out the possibility of another baby before the injection of ergonovine is apparent. The violent contraction following the use of the oxytocic might rupture the uterus or at least render delivery of the baby very difficult if any abnormal position existed.

Whether allowing the normal physiologic process to take place or using oxytocics before the uterus is empty, if after a period of 2 hours repeated attempts at expression by Crede's method and prolonged efforts have been of no avail in delivery of the afterbirth, the condition should be considered one of abnormal adherence or anomaly of the placenta.

In the absence of any emergency, such as hemorrhage, it is safe for those less familiar with obstetrics to wait for several hours, or better still to call for special consultation, than to attempt manual removal. Manual removal of the placenta is the most dangerous of all obstetrical operations. The hand which must pass through the unsterile vagina comes in direct contact with the thrombosed sinuses of the uterine wall. The danger of infection is manifest.

Although I do not intend to recount in detail the treatment of every complication of the third stage, I feel that a short description of manual removal of retained placenta will be beneficial because of the possibility of hemorrhage which demands action.

The danger of manual removal of the placenta cannot be overemphasized; the aseptic technic cannot be too scrupulous. Anesthesia must be moderately deep. The patient's general condition must be at least fair. The right hand enters the vagina following the cord through the cervix until the placenta is felt. With the left hand controlling the fundus through the abdominal wall, the right hand seeks the edge of the placenta. The fingers are gently inserted between the placenta and uterine wall. A slow deliberate peeling motion is made from the uterine wall toward the placenta, following the line of cleavage until the placenta lies free in the uterine cavity. The great danger of perforation of the uterus where the placenta is tightly adherent demands caution. Packing, oxytocics, infusions, transfusions and shock treatment are usually necessary following manual removal.

If a definite line of cleavage is not felt when attempting manual removal, the operation should be discontinued. Undoubtedly the condition is that of placenta accreta. These cases should be prepared for hysterectomy, since, removal of the placenta is impossible.

Post partum hemorrhage and inversion of the uterus are mentioned not because they occur in the third stage but because of their relation to mismanagement of third stage. Hemorrhage is due to atony of the uterus, extensive tears and retained portions of

placenta. Strong oxytocics and uterine packing, repair of the tears or removal of retained portions of the placenta usually control the hemorrhage, but the rapidity of onset, the magnitude and quick development of serious symptoms often overwhelm the obstetrician.

Inversion of the uterus may be spontaneous, may follow too vigorous attempts at expression of the placenta, or may be brought about by traction on the cord before separation is complete. Deep anesthesia, pressure on the fundus, trauma to the soft parts such as laceration of the cervix, all tend to increase the incidence of inversion of the uterus. An inverted uterus should be replaced and packed as soon as the patient's condition permits.

As soon as the placenta is delivered, it should be examined closely for absence of cotyledons or succenturiate lobes. The afterbirth is spread out on a flat surface with the maternal side exposed. Normally the lobes fit accurately together as pressure is made on the periphery toward the center. When pieces of placenta are missing, this accurate apposition is not accomplished. After the maternal surface of the placenta has been examined, it should be turned over for examination of the fetal surface. Defects in the chorion and amnion suggest the absence of a succenturiate lobe and its retention in the uterus.

Examination of the perineum, vaginal vault and cervix uteri may be made before or after delivery of the placenta. If lacerations are extensive, it is better to express the placenta before repair is made, thus eliminating the interference of bleeding and the possibility of damage to the repair by delivering placenta. All of the operations should be executed with dispatch, since continued anesthesia adds to the risk of hemorrhage.

Delivery care does not end with completion of the third stage and post-partum repairs. The attending physician should remain with the patient for at least one hour after completion of labor. In consideration of the fact that of all the risks and dangers which accompany pregnancy during gestation and the time of parturition, those occurring in the third stage and the hour thereafter are of such magnitude and develop so rapidly, it is imperative that diligent attention be given at this period to safeguard the patient and insure a happy termination to the pregnancy.

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FUNDAMENTAL PRINCIPLES, OR DO'S AND DON'TS IN THE HANDLING OF FRACTURES.

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This subject is important for several reasons; in the first place, fractures are a scientific problem which is difficult and dangerous; second, they are a liability problem which makes them even more dangerous. We are not only treating the physiological and anatomical problems, but we are treating an economic and insurance problem and our bad results will not only lead us into trouble with the patient, but into trouble with the courts. All the things that I have to say are old—most of you know them. I merely want to review some of the elementary Do's and Don'ts, some of the common things which will often keep us out of trouble.

After a careful, gentle, and complete examination including x-ray—A-P and lateral—a diagnosis is made and as the patient's general condition will permit, treatment should be instituted as early as possible. Follow-up treatment of fractures is still an emergency. We have two main classifications with two subdivisions, the simple and the compound; and under each we have fractures with displacement and the fractures without displacement. I want to consider first the fracture with displacement—the simple type. We are all familiar with the three R's: *Reduction, Retention, and Restoration of Function*. Even in many cases of fractures with displacement it is still a question whether reduction is necessary, as many of them are on the borderline and may not need reduction. There are three postulates which should be our criteria: We should attempt reduction if there is a possibility that (1) we can prevent or correct deformity. (2) prevent or correct the loss of function. (3) assure better union. After we have decided to attempt reduction, what is the procedure? Shall it be under local or general anesthetic; without the fluoroscope; the closed or the open type? All this will depend on the circumstances. First as to local or general anesthetic. The individual case here again must be considered. If the fracture can be set within an hour or so after it has happened, local anesthesia may be used very nicely. The Boehler method of injecting 2 per cent novocain directly into the site of fracture is quite successful. After two or three hours this method often fails. If there are multiple fractures, general anesthetic is usually indicated. Spinal anesthetic works well in lower extremity work. In either event be sure that good relaxation is obtained. Should we or should we not use the fluoroscope is not necessary. Those cases in which there is a tendency to re-displacement of the fragments, and in the more difficult cases, the fluoroscope is often necessary. Do not use

it while manipulating but only to check the position. Be careful in using it and do not over-expose your hands to the rays, as they are dangerous. Experience will develop better tactile sensation and will gradually eliminate the necessity of it.

Next, shall it be a closed or an open method? There are really the three methods: the closed manual manipulation; extension either with adhesive tape or skeletal traction; and finally, the open reduction. In any event, plan a definite attack, decide on what you are going to do, on how you are going to manipulate the fracture—what forces you are going to use, and if possible, what movements are necessary in the restoration of the fragments. In most cases a hyper-deformity must be made in order to obtain a reduction. Closed reduction should probably be attempted in all cases except where experience has shown that similar fractures cannot be satisfactorily reduced with the closed method.

Fractures of the long bones with oblique over-riding where it is necessary for a pull over a period of time usually cannot be reduced at one setting and will necessitate adhesive or skeletal traction. The common types where manual manipulation will usually suffice are the ordinary types such as Colles' and Potts' fractures. Fractures which necessitate skeletal traction are usually fractures of the shaft of the long bones. After a reduction is done, when is a satisfactory position obtained? Do fragments have to be apposed entirely, one-third, or two-thirds? It will depend a great deal upon the position in the body. We might say that the nearer the fracture is to the joint the more perfect the re-position of the fragment must be, as in the Colles' and the Potts' and in the elbow fractures. In fractures in the mid-shaft which are not very superficial (as in the femur) it is not necessary to get very good apposition, but bowing must be corrected. Sometimes just a slight apposition is necessary but no shortening is essential. The age will decide that a great deal. In children many fractures of the femur are in rather poor position so far as apposition is concerned; however, if the general alignment is good there is no shortening, a beautiful end result does follow later. In adults it is necessary to get a much better position.

After reduction, then, it is a question of fixation. Plaster of paris casts are used a great deal now, either the circular or the splint type. Splints of aluminum, wood, wire, ~~properly~~ shaped will work quite satisfactorily. Each surgeon to his choice. One thing certain—the external fixation will only hold the fracture, it will not correct it. These external splints or casts must be put on snugly, but not too tightly. One rule always is—whenever a cast or splint has been put on while the patient is under a general anesthetic, be sure that the circulation of the fingers and toes is all right following the reduction. This circulation should be checked for a period of from

24 to 48 hours after the application of the cast. If there is interference in circulation, something must be corrected. The bony prominence should be well padded and the inside of the casts and splints should be smooth so as not to cause pressure on the skin or bony prominences. Especially is this true in casts which involve the pelvis, particularly over the sacrum, and also over the malleoli and the heel. The fixation should extend over the joint above and below the fracture. How long should a splint be kept on? Until there is no danger of the fragments slipping when it is removed for inspection and physiotherapy. In the very young this may be only a few days. In the aged it may be several months. In children, if the fracture is near a joint, the cast should be bivalved and removed after ten days or so and permit some active motion, then reapplied. Particularly is this true in fractures near the wrist, elbow, and ankle. We cannot say in weeks how long the cast or splint should be left on. A very good man so aptly puts it, "I never get non-union because I treat a fracture with support until I have union." This of course is a little far-fetched but it shows how necessary it is in different cases to leave the splints on for different periods of time. Clinical evidence of callus with x-ray corroboration are a very good guide as to when the support should finally be removed. Following the removal of the splint there should be given heat, massage and exercises, and the patient should be treated and watched until the maximum improvement has been obtained. Do not dismiss a patient before he has reached the maximum improvement, and if there is some abnormality either in anatomy or function, tell the patient, tell him why it was, and tell him what he can expect. If you don't, somebody else will. Be sure that an x-ray has been made following your reduction—keep it as a record.

Fractures with no displacement are treated in the same manner except the first R is omitted—needing only Retention and Restitution of function.

Some fractures necessitate skeletal or adhesive traction. By skeletal I mean traction through the bony structures with a Kirchner wire or Steinman pin, or some other sort of fixation which penetrates the bony structure. Skeletal traction probably is one of the greatest advancements in the treatment of fractures in the last quarter of a century. In comminuted fractures or spiral oblique fracture, particularly the long bones, it is impossible to maintain them by manipulations. A constant pull is necessary and there is nothing more constant and more definite than skeletal traction. The two-pin method is very good. Here local or general anesthetic may be used. The important thing is to prepare the parts as if you were going to do open surgery so as to prevent infection and maintain the skeletal traction in the line of deformity so that the distal fragment is fully in line with the proximal and held there until some union

has taken place so there will not be any re-displacement of the fragments. It may be two weeks and it may be eight weeks. Skeletal traction can be left on when properly applied for as long as three months. Adhesive traction is of value to children, particularly in fractures of the femur, as in Buck's extension; however, the traction is not as constant as skeletal traction. There is often a slipping of adhesive tape, there is an irritation of the skin, and it cannot be used very well in compound fractures.

The compound fracture presents a problem of its own. We have the wounded bone plus the open wound of soft tissues, which are quite devitalized and obviously exposed to infection. Routine gas bacillus and tetanus antitoxin should be given in prophylactic dosage. The wound should be cleaned under an anesthetic, mechanically—cleaned well and thoroughly with an antiseptic of choice. Devitalized tissue should be removed. If possible dissect out the entire tract; then if reduction is necessary apply the traction (preferably skeletal). As Boehler says, "Skeletal traction pulls or stretches the muscles and soft tissues and eliminates the sacs or pockets within these tissues which are so favorable for infection." It is probably unwise to ever close these compound fractures tightly. It is better to institute some kind of drainage. If infection of the bone follows, it is a question of the treatment of osteomyelitis and it is no longer a purely fracture problem. Many fractures cannot be treated successfully either with a closed method or skeletal traction. What then is the procedure? Don't repeat and repeat in the closed attempt and traumatize the tissues unnecessarily. If closed reduction has been judiciously attempted and failed, or your experience has shown that closed reduction is not the method of choice, then do an open reduction. In all probability no fracture in a child under the age of 12 years necessitates an open reduction. There are some exceptions, but very, very few.

In experience, what type of fracture showed that an open reduction was necessary? The most common are patella with separation; olecranon with persistent separation; fractures of the head of the radius; fracture of the tibia into the knee joint with probable cartilage injury; fracture of the astragalus involving the sub-astragalar joint; fracture of the femur or humerus with intervening soft tissues; both bones of the forearm with considerable displacement; or fractures where there is a nerve injury and the nerve-vessels are probably caught within the fragments. If open reduction is necessary, what then? Wait a few days, five to seven, and get the patient into condition—preferably a 48-hour preparation. Use the technic and method you are familiar with. Consider it a major operation. Use a local, spinal, or general anesthetic as you prefer. Use instruments instead of fingers in the wound. Use internal fixation of choice, and maintain fixation until union is

Longitudinal striation of the nails is a common condition in adults past middle life. In slight cases it is merely an exaggeration of the normal longitudinal ridges of the nail bed, but in well marked cases it is accompanied by splitting of the nails (onychorrhexis) at the free margins. It is common in persons who are absorbing from a focus of infection at the root of a tooth or in the bowel. In addition to cases due to focal infection, lining of the nails is seen in gout and nervous diseases such as neuritis and hæmiplegia. It is also associated with the dry skin and scanty hair of myxoedema. Dryness of the skin and lustreless nails showing longitudinal or transverse lining is also seen in cases of vitamin A, B and D deficiencies.

Administration of the appropriate vitamins in these cases will restore the nails to normal. A single raised longitudinal ridge running down one nail is the result of a scar at the base of the nail from previous disease or injury. Transverse lines, usually known as Beau's lines, appear on the nails as a result of previous interference with the growth of the nail matrix. If these lines are due to a local inflammatory cause, usually the nails are not all affected.

Shedding of the nails may occur in epidermolysis bullosa, after fevers and in extensive cutaneous diseases. Atrophy of the nails is often associated with ectodermic defects such as extreme thinness or absence of scalp hair. Although not necessarily associated with any mental condition, this change in the nails is fairly frequently seen in mentally defective children. It may also be an acquired condition, and may follow injuries, scars from disease, frostbite, sclerodactylia, Raynaud's disease, radiodermatitis and syphilis. It also occurs in hyperthyroidism and exophthalmic goitre and has been reported after nerve injuries, in leprosy, tabes dorsalis and syringomyelia, and in prolonged debilitating diseases such as cancer.

Thickening and hypertrophy of the nails may occur in chronic eczema with hyperkeratosis of the palms and soles, chronic cutaneous disease, ringworms, paronychia, peripheral neuritis, leprosy, tabes and hæmiplegia. Pituitary and thyroid dysfunctions may be responsible for a few cases, but in the majority of cases there is no evident cause except want of cleanliness and neglect.

RETROPHARYNGEAL ABSCESS.

Retropharyngeal abscesses, writes Philip F. Barbour, in *Medical Times*, for September, 1939, are far more frequent in the young than in adult life, the greatest number occurring in children under three years of age. The abscess lies under the mucous membrane of the pharynx in front of the body of a cervical vertebra and separated

from the bone by several layers of muscles and fascia. It usually starts in one of the lymphatic glands which extend in chains on both sides of the central line of the pharynx from the basilar process down to the mediastinum. These glands receive lymphatics from the nose, the nasopharynx, the sinuses, the fossa lying above the tonsils, the eustachian tubes and adjacent structures. Infections in any of these areas may be carried to this chain of glands, just as they are so frequently transmitted to the anterior or posterior groups of cervical glands. These external glands are enlarged many times from infections in the area which they drain. Such glands do not always suppurate, in fact the greater number of such adenopathies will gradually clear up after several weeks, without abscess formation. Any one having had experience with children recognizes the vulnerability of these lymph glands. It is probable that adults gradually acquire or develop immunity because of frequent submarginal infections. Children have not as yet elaborated their immune bodies so that with any lesion of the mucous membranes of the nose or throat there will be a reaction in the corresponding lymph glands with swelling and some pain. The retropharyngeal glands have also followed this rule and do not always suppurate, but this is rare. It is difficult to explain why these glands are not more frequently attacked as they lie in a very vulnerable position. It is probable that they are usually overlooked unless the swelling has gone on to ulceration, and the frequency with which even an ulcerated gland is missed and a preventable death has occurred establishes a sad record of our inefficiency.

Retropharyngeal abscesses may lie deeper, under the fascia which covers the prevertebral group of muscles, and take their origin from a tuberculous involvement of the bodies of the upper cervical vertebrae. Osteomyelitis other than tuberculous is not unknown in this location. Orthopedists meet such cases occasionally. It is possible that traumatic injuries to the neck can also produce these deep abscesses, and with the growing number of automobile injuries, such eventualities are bound to increase. Trauma of the pharyngeal wall by pins, tacks, glass, etc., may through perforation of the posterior wall of the pharynx result in a retropharyngeal abscess, or, if lower down in the esophagus, cause a retroesophageal abscess. It must be reiterated that such abscesses may develop without any evident injury to the mucous membrane of the pharyngeal wall.

The diagnosis of such an abscess is not difficult if its possibility is kept in mind. Three outstanding symptoms are dyspnoea, dysphagia, and a peculiar nasal voice. The dyspnoea is inspiratory as the swollen mass is sucked over the larynx by inspiration. It is lifted up by expiration and does not obstruct the outgoing air unless the tumour is below the level of the larynx. The dysphagia prevents

assured. If using plates you must get good fixation of the fragments internally or you are liable to get absorption around the screws, with non-union. Restoration of function proceeds as in the other types of fracture. Adhesions in the joint may have to be broken up or stretched. Muscles must be restored to their normal strength and pliability. Complications such as an ischemic paralysis, foot drop, etc., must be guarded against and corrected if they develop, if possible. Be careful and look out for circulatory and nerve complications. Fractures particularly around the elbow joint are liable to give injury to the nerves and to the vessels. Be sure the circulation is all right and be sure the examination shows whether or not there has been a nerve injury.

Thus I then have these Do's and Don'ts compiled in the following brief resume:

Under the Do's:

1. Do be gentle and careful.
2. X-ray before and after.
3. Analyze carefully, then plan an attack.
4. Closed reduction if possible.
5. Watch carefully for complications, especially for injuries to the nerves and vessels.
6. Pad the bony prominences.
7. Prevent bed sores.
8. Keep a record of all cases.
9. Reduce as soon as possible.

Under the Don't's:

1. Don't, however, try to reduce a fracture until the patient's general condition will permit.
2. Don't experiment; use an accepted method.
3. Don't manhandle the parts.
4. Don't promise results.
5. Don't put a cast on too tightly—look out for ischemic paralysis.
6. Don't allow foot drop or a wrist drop to develop.
7. Don't dismiss a patient until he has reached his maximum improvement, and
8. Don't criticize your colleagues in the presence of the patient

(Rocky Mountain Medical Journal, April 1939.)

Extracts.

CHANGES IN NAILS AS AID TO DIAGNOSIS

R. C. Low, in *The Practitioner*, May, 1939, maintains that few medical men, when examining a patient, make even a cursory inspection of the nails. Yet a good deal of information can sometimes be obtained from these structures. Their normal growth depends on the general health, and they are quick to show changes when that is interfered with. When all the nails of the hands and feet show the same alteration the presumption is that it is due either to a congenital anomaly or in the absence of any adjacent skin inflammation, to some general condition affecting all the nails through the circulation. When only some of the nails are affected and others are quite normal, a local cause should be looked for such as a recent or remote injury, an infection of the nail itself (as in ringworm) or an inflammation or growth affecting the skin or deeper tissues round the nail. The fact that the nails are affected in any general condition indicates to some extent its severity, and so may influence the prognosis.

A change in the colour of the nails may be diagnostic of leukonychia, trophic nerve disturbances, arsenical poisoning, Addison's disease, argyria, chronic mercurial poisoning and diabetic and other forms of gangrene. Apart from any alteration in colour the nails may become altered in shape and size in various ways, as clubbing of the fingers and toes in chronic pulmonary and cardiac conditions. The opposite condition may also occur. The cause of spoon-nail is not known. It may occur in association with nutritional anæmias. As most of the persons in whom it occurs are of the highly strung type, the nervous system may play some part in the ætiology.

Fragility and splitting of the nails are fairly common. Some persons are born with nails which are brittle and tend to split and break off at the free ends. A similar condition may also be acquired by prolonged or frequent contact with chemicals (as in manicuring), especially alkalis. There is also the condition known as egg-shell nail, in which the nail-plate is soft, semi-transparent, bends easily and splits at the end. This particular change has been reported in association with arthritis, peripheral neuritis, leprosy and haemiplegia. A somewhat similar condition also occurs occasionally in late syphilis, producing onychia syphilitica sicca. In this condition all the nails are affected. They are dry and atrophic and tend to split. It may be the only visible sign of syphilis, but the diagnosis can be confirmed by the Wassermann test.

swallowing, the food often being forced out through the nose as well as the mouth. Both dyspnoea and dysphagia are progressive. The nasal timbre of the voice and cry has been to me the earliest warning note of the nature of the trouble. One should easily recognize the toneless voice due to adenoids. The hoarseness of acute laryngitis is readily distinguished from the near-aphonia of a diphtheritic membrane in the larynx. These abscesses cause a cry which has a distinct nasal quality. Dean terms it a quack cry, which is not very accurate. Perhaps "quack cry" is a better nomen.

When such symptoms are presented, one must palpate the throat and usually the mass is felt to one side, and, if the condition has not been recognized sufficiently early, fluctuation will be present. Later the swelling will extend clear across the pharyngeal space. There will also be some fever, a tilting back of the head, perhaps to one side, occasionally an external swelling below the angle of the jaw on the same side, and the evidences of a sick child. Tuberculous disease of the upper cervical vertebræ causes the neck to be held in a much stiffer posture.

Quinsy or peritonsillar abscess seems to cause much more pain from deglutition, and there will not be the delayed regurgitation after the fluid has passed the tonsils. It is difficult to get a patient with quinsy to open the mouth at all, but it is not at all hard to examine and to palpate the pharynx for a retropharyngeal abscess. An X-ray will show the characteristic displacement forward of the larynx and upper trachea, but the diagnosis should be clear without this added aid.

On account of the rapid, difficult respiration a false diagnosis of bronchopneumonia has often been made in cases of retropharyngeal abscess. So far as the sounds in the lungs are concerned, the transmitted rales over the lungs, the restlessness and distress of the sick child, the high fever and the accompanying lung symptoms make a proper diagnosis somewhat difficult for even a good internist.

The accidental fracture of the cervical vertebrae and a displacement forward of the body of a vertebra very rarely would produce a protruding forward of the postpharyngeal wall, but other symptoms should be present to insure a proper diagnosis.

The treatment should be evacuation of the pus at the earliest moment, by an accurate puncture with a guarded bistoury, or by puncturing with dressing forceps and spreading the blades. The child does not require an anæsthetic, but the head should be thrown far forward immediately upon the opening so that the pus will not be inhaled into the larynx, and into the trachea. Some surgeons advise that the operation be done from the outside by incision back of the sternocleidomastoid muscle. The objections to this are that the operation requires a prolonged anæsthesia, the field is surrounded

by many important nerves and blood vessels, and there will be discharging sinuses for several weeks and a permanent scar left. This type of operation should be selected in case of tuberculous or other form of osteomyelitis where operation is indicated because the pus here is behind the rather dense layer of fascia covering the longus colli muscle.

Some surgeons have made the point that the pus which drained from the abscess when opened on the inside will be swallowed, and cause septic symptoms by absorption. Such has not been my experience. In fact in all cases of retropharyngeal abscess there has already been a mucopurulent discharge from the nose which has been swallowed apparently without injury.

The importance of the early recognition of these abscess is emphasized by the severe if not fatal sequelæ and complications. The projection of the tumor over the larynx may itself cause strangulation. The abscess may rupture suddenly during sleep, asphyxiating baby, or it may discharge smaller amounts of pus which are inhaled into the lungs, causing a fatal bronchopneumonia, or an abscess of the lung.

Different types of organisms depending upon the original focus of infection will produce somewhat different destructive lesions of the adjoining tissues. Ulceration of the internal carotid artery with fatal hæmorrhage has been reported by Dr. Claude T. Wolfe and others. The lives of several of these cases have been saved by a prompt ligation of the internal or common carotid. Such a happy outcome is possible only when the child is in a well equipped hospital. Ulceration of the internal jugular, also with resulting hæmorrhage, has been noted.

The pus may burrow laterally and be discharged through the external auditory canal, very rarely into the middle ear. It has opened beneath the ear or through the parotid gland. Facial paralysis has been reported, and rarely a fatal meningitis. Oedema of the glottis is a very alarming and dangerous complication. Ulceration of various localized groups of muscles leaves a permanently scarred pharynx.

It is obvious that the pus may be carried down into the mediastinum. The more superficial ulceration will cause pus to flow along the anterior surface of the fascia, but if the pus comes from a diseased vertebra it will follow much deeper planes into the posterior mediastinal space. Either of these creates a very serious surgical problem for even an experienced thoracic surgeon.

Several deaths have been reported as due to forcing the mouth open with a gag for the purpose of examination and before any operation was attempted. The explanation of these sudden deaths is not very clear. Some have suggested the status thymolymphaticus, which is not convincing. Others believe that pressure upon the

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pneumogastric or other nerves is increased by stretching of the throat. This explanation also is unsatisfactory, but the fact of the sudden deaths should warn us to approach these cases very cautiously.

When a retropharyngeal abscess is recognized promptly, and is properly treated the mortality will run as low as 5 per cent. The various sequelæ and complications noted above emphasize the danger of the unrecognized case, and also of an unjustified postponement of surgical intervention.

DIFFERENTIAL DIAGNOSIS OF PULMONARY TUBERCULOSIS.

In *Northwest Medicine* for September, 1939, Philipp Schonwald sets forth the classic diagnostic points for pulmonary tuberculosis and for those other conditions which are to be considered from the viewpoint of differential diagnosis.

PULMONARY TUBERCULOSIS.

According to the Trudeau system of diagnosis the following symptoms as convincing evidence of pulmonary tuberculosis are listed in the order of their importance : (1) tubercle bacilli in the sputum, (2) persistent rales in the upper parts of the lungs, (3) parenchymatous lesions, shown on roentgenogram, (4) history of otherwise unexplained haemoptysis, (5) history of unexplained pleural effusion.

Symptoms of toxæmia, such as fatigue, loss of weight or strength, fever over 99 deg., and high pulse are regarded as non-specific and more indicative of activity of the process, if not otherwise explainable.

INFECTIOUS BRONCHITIS.

This may present bronchial rales over both lungs or in the lower portion of one or both lungs, purulent sputum negative for tuberculosis, at times blood streaked, fever, malaise, loss of weight, negative roentgenogram.

BRONCHIECTASIS.

This is of long standing and exhibits copious purulent sputum, sometimes foul smelling or of acrid taste, consistently negative for tubercle bacilli but containing many cocci and often saprophytes, leucocytosis, occasional haemoptysis. Rales, if present, are heard only at base of lung. There is negative roentgenogram, but positive evidence of sacculation and widening of terminal bronchi, when lipiodol is injected intrabronchially.

ALLERGIC BRONCHITIS OR NASOPHARYNGITIS.

There are wheezing rales, mostly expiratory, much dyspnoea, often in definite attacks, and of seasonal occurrence, other allergic ailments and family history of allergy. There is no fever. sputum is gray, stringy. Occasionally one finds eosinophilia of blood,

sputum, and nasal secretions; positive skin tests for allergens. Spasms of cough or wheezing are relieved by adrenalin or ephedrin.

PNEUMOCONIOSIS.

History is of characteristic occupation (quartzminer, worker in asbestos, clay or hemp, sand blaster, stone cutter). Auscultation is negative. Roentgenogram shows many small fibrotic spots evenly divided in both lungs in a butterfly-like pattern. Fever is present only when tuberculous infection has set in.

LUNG ABSCESS.

This gives history of rather sudden onset with fever, malaise, pain, cough, sputum sanguinopurulent, foul smelling and of acrid, sweetish taste. Roentgenogram shows roundish, dense infiltration, in later stages cavitation with fluid level. There have been leucocytosis, history of oral surgery, tonsillectomy or aspiration.

FUNGUS INFECTION.

This has slow onset and progress; sputum positive for fungi, fever, malaise; favourable reaction to high doses of iodine.

CARCINOMA.

Here are insidious onset, pain, early dyspnoea and frequently pleural effusion which soon becomes blood-tinged, positive roentgenogram or bronchoscopic evidence, fever only in advanced stage. Age of patient is in fourth to fifth decade.

SYPHILIS.

One finds positive Wassermann, no malaise or fever, usually no cough or sputum. Roentgen evidence is not characteristic of anything. Improvement with antisyphilitic treatment.

HYPERTHYROIDISM.

This shows slight fever, high pulse, flushed face, tremour digitorum, nervous instability, occasionally little cough. Auscultation and roentgen findings are negative. Basal metabolism rate is high.

ANAEMIAS AND SEPTICAEMIAS.

These present the well-known blood picture and are completely negative as to physical and roentgen findings in the chest.

TREATMENT OF POSTOPERATIVE RETENTION OF URINE.

H. S. Barber, in *The Irish Journal of Medical Sciences*, February, 1939, discusses this.

The musculature of the bladder has two principal sources of innervation, the sympathetic and the parasympathetic. The sympathetic impulses are conveyed by the presacral nerve, which probably takes origin from the 1st and 2nd lumbar ganglia, receiving further contributions from the 3rd and 4th ganglia. The pelvic nerves,

arising from the anterior primary divisions of the 2nd and 3rd sacral nerves, conduct the parasympathetic impulses. Both these nerves terminate in the hypogastric ganglia lying on the lateral wall of the rectum from which new post-ganglionic fibres containing both sympathetic and parasympathetic fibres arise.

Section of the sympathetic supply causes no interference with the act of micturition except for temporary frequency. Division of the pelvic and pudic nerves (parasympathetic) causes loss of posterior urethral and related reflexes (contraction of the bladder following distention of post-urethra). Both the bladder and the urethra when completely unconnected with the central nervous system, exhibit the power of spontaneous rhythmic contraction and relaxation.

The internal sphincter acts reciprocally with the detrusor muscle of the bladder, whereas the external sphincter can be closed though not opened voluntarily. Opening of external sphincter depends upon contraction of the bladder or relaxation of the internal sphincter. Initiation of micturition is invariably accompanied by a preliminary relaxation of the perineum. No amount of abdominal straining is effective in initiating the act.

Disturbances of bladder function occurring as postoperative complication may be ascribed to (1) disturbances of innervation, (2) disturbances of the bladder musculature, (3) alteration in the position of the bladder, (4) psychic factors, (5) anaesthetic used. Usually it is a combination of factors rather than a single one that is responsible. Direct trauma to bladder and its innervation occurs most frequently in gynaecological operations and obstetrics. The psychologic factors in the causation of retention must not be underrated. Some authorities have no hesitation in stating that the psychologic is the principal factor.

TREATMENT.

Catheter.—For a long time the use of the catheter was the method of choice in a very limited number of alternatives. An effort was made to influence the patient psychologically by such measure as the sound of running water, local application of hot stupes, etc., with some successes. It is the use of drugs in the treatment of postoperative retention that the greatest advances have been made within recent years. These drugs can be divided into four groups, (a) those whose action is purely psychological—isotonic saline and methylene blue, (b) bladder irritants—urotropin, (c) those acting on vesical musculature—pituitrin, quinine sulphate, potassium and sodium salts, (d) those acting on the neuromuscular junction—physostigmine, pilocarpine, acetylcholine, Mecholyl, Doryl, and Esmodil.

Isotonic Saline.—The injection of 10 cc. isotonic saline intravenously is, of course, only a psychologic stimulant. Another ingenious method is the administration of capsules of methylene blue, at

the same time carefully warning the patient that his urine will be tinted.

Urotropin.—Two techniques may be used in administering urotropin: 7 to 10 cc. of a 40 per cent. solution can be injected intravenously immediately upon completion of the operation of a prophylactic measure. A smaller amount, 3 cc., can be given 8 to 12 hours after operation, which results in less painful micturition. The popularity of urotropin waned as a result of unfortunate complications such as haematuria, abdominal pain, headache, vomiting, and tinnitus.

Potassium Acetate is used in half-ounce doses of the saturated solution; 80 per cent. of Reimers 49 cases voided with one dose. The remainder received half-hourly doses of potassium repeated until evacuation of the bladder took place, the most obstinate taking 3 hours. At 7 per cent solution of sodium acetate in half-ounce doses has also been used with success.

Pituitrin, Quinine Sulphate, Physostigmine, and Pilocarpine have all been used with good results. However, unpleasant side effects militate against their use routinely.

Acetylcholine acts as a parasympathetic stimulant. However, it is so promptly destroyed in the body that it is of very little use as a therapeutic agent. **Mecholyl, Doryl, and Esmodil** act in a similar manner. In addition to a desire to micturate, salivation, perspiration, and increased movements of the alimentary canal occur following their use. **Atropin** abolishes the action of these drugs and is safeguard if untoward effects should result from injection. The dosage of **Mecholyl** is 5 mg. injected subcutaneously; **Doryl** is only 0.25 mg.; and **Esmodil** is 1 to 1.5 cc. I have used **Esmodil** in 22 cases of postoperative retention with 9 failures. I believe that **Esmodil** marks a decided advance in the treatment of spasmodic retention irrespective of the cause. This is especially true in such cases as haemiplegia or pneumonia when one does not wish to expose an already debilitated patient to the risk of a bladder infection by the untimely passage of a catheter.

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