



MEDICO, SURGICAL SUBMISSIONS

VOL IX

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# MEDICO-SURGICAL SUGGESTIONS

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# MEDICO-SURGICAL SUGGESTIONS

A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

Editor: Dr. P. R. Venkappaya.

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MAY 1940

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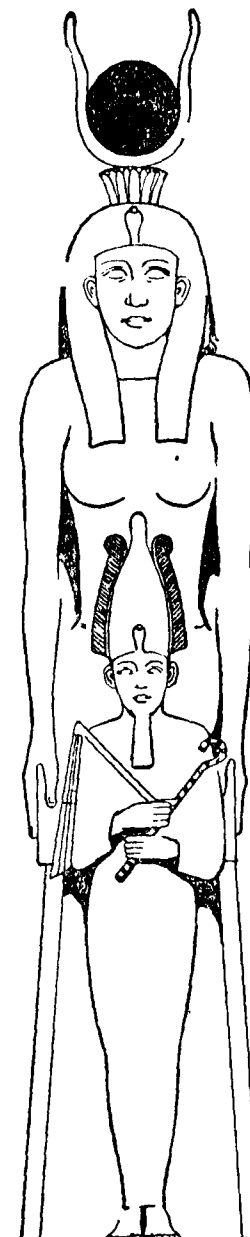
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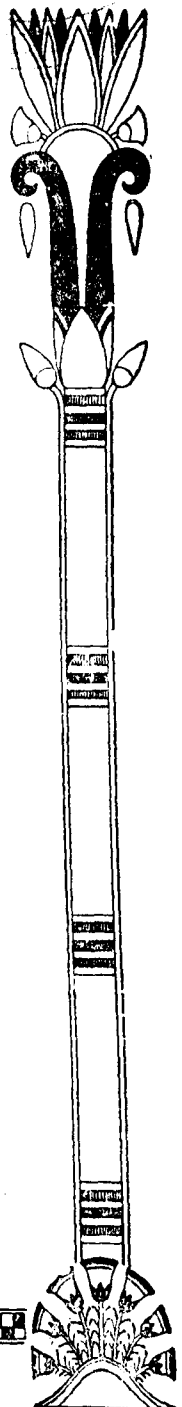
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# MEDICO-SURGICAL SUGGESTIONS

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## Original Article.

### \*SOME ASPECTS OF DRUG THERAPY IN ANAEMIAS.

BY MAJOR ILAHI BAKHSH, M.D. (LOND.), M.R.C.P. (LOND.), I.M.S.  
*Professor of Pharmacology and Therapeutics,  
K. E. Medical College, Lahore.*

For successful therapy of anaemias a correct diagnosis of the type and causation is most essential. Haphazard and gunshot treatment of all anaemias by means of proprietary mixtures of liver extract, iron, copper and vitamins cannot be tolerated in these days of scientific progress and especially in a poor country like India. Again far more important than the drug treatment of anaemias is prophylaxis and removal of the causative factors for unless the latter are removed or controlled the anaemia is liable to recur. It is therefore important to consider first the various ways in which anaemias may be caused. Anaemias may be produced by any one or more of the following factors:—

- (1) Deficient supply of materials required for blood formation.
- (2) Depression or aplasia of the bone marrow by toxins, infections, cachexia, malignant disease or unknown causes.
- (3) Blood loss from haemorrhages.
- (4) Destruction of blood from haemolysis.

The normal diet contains all the substances which are essential for blood formation. The most important materials so far discovered are the haemopoietic (P. A.) factor, iron, copper and possibly vitamin C and thyroxin. The P. A. factor is concerned with the transformation of megaloblasts into normoblasts while iron and copper are essential for the maturation of normoblasts into erythrocytes. Vitamin C and thyroxin probably stimulate the whole course of haemopoiesis. It is apparent therefore that deficiency of P. A. factor will give rise to megalocytic anaemia while lack of iron or copper will cause hypochromic anaemia which may be either normocytic or microcytic.

\*A lecture delivered before the annual meeting of the B.M.A. (Punjab Branch) on 25th February, 1940.

Deficiency of the blood-forming materials may be produced by any one or more of the following causes:—

*Insufficient intake.*—This is not a very important factor in the case of iron for fortunately iron-containing foods are fairly abundant and cheap. It is difficult to exclude copper from the normal diet for copper is widely distributed in nature and the quantity required is very small. There is only one condition in which copper may become deficient and that is in children artificially fed on cow's milk.

The P. A. factor is manufactured in the stomach from the interaction of extrinsic factors of food and intrinsic factor secreted by stomach. As Lucy Wills has shown macrocytic anaemia due to lack of extrinsic factor among pregnant women in India is not uncommon.

Insufficient intake may result from food faddism, anorexia, heavy smoking, pyloric stenosis or vomiting.

Again when the food is normal in all substances necessary for blood formation and ingestion is adequate anaemia may still result from insufficient absorption. Defective absorption of iron may be due to achlorhydria or during treatment of peptic ulcer with alkalies. Chronic diarrhoea such as chronic dysenteries, hill diarrhoea, sprue, intestinal tuberculosis, coeliac disease, idiopathic steatorrhoea, pancreatic disease; or when the intestinal absorptive surface is reduced such as after resection of the small intestine, gastro-colic fistula; and possibly also in infestation with *Dibothrocephalus latius*. Again when ingestion and absorption are adequate anaemia may still occur as a result of increased requirements. This is the case in pregnancy although other contributing factors such as insufficient ingestion and absorption from vomiting and gastro-intestinal disorders may also be present. Twins and premature babies which are born with low reserves of iron in the liver also require more iron. Women require more iron than men and any minor factor which is not sufficient to produce anaemia in men may do so easily in women. Rarely macrocytic anaemia may result when the liver is unable to store the P. A. factor as in cirrhosis and diffuse diseases of the liver.

The chief causes of depression of the bone marrow are acute rheumatism, rheumatoid arthritis, typhoid fever, syphilis, toxins of nephritis, lead, mercury, x-ray, radium and benzol. The most frequent causes of haemorrhage are haemorrhoids, menorrhagia, hookworm and amoebic dysentery. Haemolysis may be due to known causes such as malaria, streptococcus, haemolytic infections, sulphonamides intoxication or rarely to congenital anomalies in the blood-forming organs for example acholuric jaundice and familial icterus gravis of infants.

It is clear therefore that rational treatment of anaemia in any case does not depend upon the administration of liver extract, iron or copper but upon the removal of the causative factor where possible and

administration of the haematinics according to circumstances and requirements of the individual. For example it is useless to give liver extract or iron by mouth when absorption is defective, or when macrocytic anaemia is due to lack of extrinsic factor it is much more economical to give the patient marmite instead of expensive liver extracts which most of our people cannot afford to buy. Again correction of a dietary defect or removal of the causative factor is more likely to give permanent benefit to the patient than mere administration of haematinics. I know of two patients suffering from macrocytic anaemia, sore tongue, add diarrhoea who were only partially cured of their anaemia with liver extract by injection while their diarrhoea did not improve until emetine was administered. These were cases of chronic amoebic diarrhoea with defective absorption of P. A. factor. Treatment of such cases with liver extract is equivalent to relief with aspirine of headache due to constipation. It is this aspect of the treatment of anaemia which is deplorably ignored by most of us and too much emphasis therefore cannot be laid on this point.

I will now consider the relative merits and mode of administration of the various haematinics in use these days.

*Liver Ext.*—Since the successful use of liver in pernicious anaemia by Minor and Murphy almost every form of anaemia is now being treated with expensive liver preparations. This is a great pity for not only most of our people cannot afford such treatment but haphazard treatment of anaemias without correct diagnosis leads to half-hearted therapy and the root cause of the anaemia is never removed. I believe that by far the commonest type of anaemia in this part of India is due to iron deficiency either as a result of defective intake and absorption of iron but most often to loss of blood. Macrocytic anaemias are, however, not rare but it is not quite certain what proportion of them are pernicious anaemia. It is probable that Addisonian pernicious anaemia is quite rare in India. I am in the habit of prescribing marmite to all cases of macrocytic anaemia and if there is no reticulocyte response within two weeks liver therapy is commenced. This method cannot of course be recommended when there is urgency or when the expense is no consideration but in other cases it is an easy and simple method of differentiating tropical macrocytic anaemia from Addisonian anaemia. There is little to choose between stomach and liver extract but I prefer the latter which contains the finished product in the form of P. A. factor. Again stomach extract, which contains mainly the intrinsic factor cannot be given parenterally as the intrinsic factor is thermolabile and cannot be sterilised. Again there is no advantage of giving stomach extract by injection because the P. A. factor is manufactured in the stomach by the interaction of the extrinsic and the intrinsic factors.

It is said that it is fifty times cheaper to give liver extract by injection than by mouth. This may be so as the P. A. factor is absorbed with difficulty from the alimentary canal. In this country however, when there is no urgency and the gastro-intestinal functions are normal raw or half-cooked liver is the cheapest substance. It is a pity that physicians do not prescribe raw or half-cooked liver enough, although it is not so difficult to mask its disagreeable taste.

During the last few years highly purified liver extracts have been prepared to produce the maximum reticulocyte response in the minimum time. These extracts are of little value in this country for not only they are expensive but it has been shown by Lucy Wills and Napier that highly purified extracts are practically useless in the tropical macrocytic anaemia. Although this discovery of Lucy Wills appears to have upset Castle's theory of the extrinsic and intrinsic factors and we do not know which is this additional factor in crude extracts of liver or autolysed yeast which cures tropical macrocytic anaemia nevertheless it has come as a timely warning not to use these highly purified extracts in India where true pernicious anaemia is a rarity.

The dosage of liver extract is 5-6 c. c. every other day until there is reticulocyte crisis when 5 c. c. once a week should be enough. In severe cases larger doses are necessary and intensive treatment must not be relaxed until there is a reticulocyte crisis. In subacute combined degeneration of the spinal cord it is most important to aim at 100 per cent. Hb and 5 million red cells for although there may be great improvement in the general condition of the patient the cord lesion is not affected unless the blood picture is normal. It is really surprising how even severe cases of paraplegia with incontinence of urine may recover sufficiently enough to lead a normal life when their haemoglobin and red cells are raised to a normal level. In subacute combined degeneration of the cord it is therefore most essential to persist with vigorous liver therapy and examine blood frequently until 100 per improvement in the blood is achieved.

The usual dose of fresh liver is 1-2 lbs a day and that of dessicated stomach and liver extract by mouth is 1 oz.

Larger doses than the above are indicated when there are intercurrent infections. It is therefore important to look out for and remove any foci of infection which are inhibiting the action of the P. A. factor.

Liver therapy may however fail in certain macrocytic anaemias even when given parenterally and in sufficient dosage. Wilkinson has described a chronic anaemia resembling pernicious anaemia but which differs from it in that the tongue is not sore or ulcerated, gastric secretion is normal and there are no gastro-intestinal disturbances, nor neurologic or haemorrhagic symptoms.

The condition has been termed "achrestic anaemia" by Wilkinson who considers that it is not due to lack of the P. A. factor but to inability of the haemopoietic tissues to utilise this factor. Life can be prolonged only by repeated blood transfusions.

In addition Wilkinson and Israels describe two other types of macrocytic anaemias which are resistant to liver and stomach preparations. These are aplastic-type anaemias and some cases of aleukaemic leukaemia. The diagnosis rests upon examination of sternal puncture which shows more or less aplasia of the bone marrow in the former and leukoblastic activity in the latter. If aplastic anaemia is due to toxic drugs it is imperative that they should be discontinued at once otherwise liver therapy will be wasted. Unfortunately in the majority of cases no causative factor can be identified. An early diagnosis of these conditions is important so that blood transfusion may be commenced early, which is the only form of treatment that gives some temporary improvement.

*Iron and Copper.*—Iron therapy is effective only in those anaemias in which there is shortage of the metal. In pernicious anaemia it is often useless and is very rarely indicated except when there is coexisting iron deficiency. In acute anaemias such as those resulting from haemorrhage iron is supplied from the liver and spleen stores and administration of iron by mouth does not hasten the recovery, although it is necessary to supplement the liver stock of iron.

Although iron is concerned mainly in the manufacture of haemoglobin its administration is often followed by increase in the number of red cells as shown by the reticulocyte response. This reticulocyte response is an index of the reactive state of the patient and of the relative potency of different compounds.

As iron deficiency anaemias are more often due to loss of blood it is most important that every effort should be made to discover the cause of any haemorrhage or blood destruction otherwise improvement is not likely to be permanent.

As iron is believed to be absorbed in the inorganic state, e.g., as ferrous chloride it should be given as an inorganic compound. The organic preparations are inferior to inorganic iron as the stomach has to convert them into a soluble inorganic form before they can be absorbed. Haemoglobin has thus no advantage over inorganic iron, in fact it takes longer to be absorbed and is more expensive.

Of the inorganic preparations ferric salts are more astringent and irritant and are likely to produce indigestion and constipation. Besides they are reduced to ferrous compounds in the stomach, therefore ferric salts are rarely prescribed. The ideal salt to use would be ferrous chloride as it is in this form that iron is absorbed and it has very little astringent and irritant action in the stomach. Ferrous chloride however an unstable compound and is rapidly oxidised with consequent reduction in its therapeutic efficiency. Experiments

with various stabilising agents resulted in the preparation of citrated ferrous chloride which is now being used instead.

The double salt of iron, such as ferri et ammonia citras is freely soluble in water and is not astringent as it does not dissociate into free ions. It is effective in anaemia but the minimum effective dose is much larger than that of any other preparation. The insoluble ferrous carbonate is converted into ferrous chloride in the stomach and is neither astringent nor irritant. It is however an unstable salt being soon oxidised into ferric hydroxide. Addition of sugar as in the ferri carbonas sacharatus prevents this oxidation. Bland's pill (pilula ferri carbonatus) is also less liable to become oxidised as the carbonate is formed in the pill mass. It, however, does become oxidised if kept too long and also too hard and may pass through the intestine unabsorbed. Reduced iron is also effective if given in large doses and has the special advantage that it is less likely to cause any gastric disturbances than any other iron compounds. It is converted into ferrous chloride in the stomach before absorption.

In conclusion therefore the best and most suitable preparation of iron are ferrous chloride, ferrous sulphate, ferrous carbonate, ferri et ammon cit and reduced iron. Whatever compound is used it should be given in adequate doses. It is remarkable how well these salts are absorbed even in the presence of achlorhydria provided they are given in sufficient dosage. It is, however, advisable to give hydrochloric acid in these cases for not only it facilitates the absorption of iron but corrects the associated diarrhoea and other gastrointestinal disturbances due to lack of hydrochloric acid.

Iron is rarely given by injection. According to Witts injections of iron give uniformly bad results, and anaemias of ordinary severity requiring at least 120 injections of maximum dose of injection ferri (B. P.) to cure. Heath, Strauss and Castle have shown that 0.2 gm. of ferri et ammon cit. in 10 per cent solution when injected will produce satisfactory formation of haemoglobin but toxic symptoms may occur. The oral method is simple, safe and absorption in most cases is prompt and adequate. Iron should always be given after meals as in this way it is least liable to upset the stomach. If iron cannot be taken orally, blood transfusion is the method of choice and should be given to all cases where normalisation of the blood picture is urgently required.

Effective doses of the various iron preparations are:—

Citrated Ferrous Chloride gr. 9 daily.

Exsiccated ferrous sulphate gr. 9 daily.

Ferrous Carbonate (fresh  
and preferably prescribed

as powder) gr. 30-45 daily.

Ferri et Ammon Cit gr. 60-120 daily.

Ferrum Reductum gr. 15-30 daily.

*Untoward and Toxic Effects:*—Iron produces very few untoward effects barring those of an irritant and astringent nature on the gastro-intestinal tract. Even these are less common with the ferrous compounds. In very sensitive subjects ferrum reductum should be used as it does not upset the digestion at all. Large doses are more liable to produce diarrhoea than constipation. Poisoning from iron is more likely to occur after parenteral therapy than when the metal is given by mouth. The chief symptoms are headache, vomiting, paralysis and even death.

Iron is said to be contra-indicated in fever, tuberculosis of the lungs, heart disease and during menstruation on the belief that it tends to cause haemorrhages but without any experimental evidence. On the other hand iron sometimes acts beneficially in arresting juvenile menorrhagia, epistaxis and other manifestations of a haemorrhagic tendency.

Brock and Diamond, 1934, have shown that large doses of iron impair phosphorus absorption in rats with the production of rickets. These effects can be prevented by the addition of excess of phosphate in diet. On this analogy massive doses of iron in man should not be given without adequate amount of phosphorus in diet.

As already mentioned copper does not play any significant role in the anaemia of adults but may be useful in the anaemia of artificially fed babies as cow's milk is very deficient in copper. Copper is not itself a constituent of haemoglobin but appears to facilitate the formation of haemoglobin by acting as a catalyst.

*Thyroxin.*—Schermann, 1930, showed that thyroxin stimulates blood formation in experimental anaemia of animals. In anaemia of myxoedema thyroxin improves the blood pictures as the basal metabolic rate returns to normal. Many cases of myxoedema suffer also from achlorhydria and it is conceivable that anaemia in such cases may be secondary to the achlorhydria. Hypochromic anaemia is more common and requires iron in addition while pernicious anaemia is very rare. Anaemias associated with hypothyroidism do not respond to the usual haematinics unless the thyroid deficiency is also corrected.

Recently Bomford (1938) has put forward a theory that anaemia of myxoedema is a physiologic adaptation on the part of the erythron to diminished requirements of the body for oxygen and that thyroxin is not necessary for the normal maturation of red cells. True anaemia of myxoedema according to this author is of the hypochromic type and is supposed to be due to a decrease in the size of the erythron. If however there is associated deficiency of iron or P. A. factor the anaemia may be hypochromic type or of the Addisonian hyperchromic type respectively. Treatment consists of administration of thyroxin with iron or liver extract according to the circumstances.

*Vitamin C.*—The role of Vitamin C in the causation of anaemia is not fully understood. Anaemia occurring in scurvy is probably not due to loss of blood as was formerly believed. Parsons and Hawksley (1933) believe that haematopoiesis does not occur in the absence of vitamin C but Cooley (1937) is of opinion that anaemia is not related to any vitamin deficiency. Abt and Farmer (1938) believe that anaemia of scurvy is due to insufficient intake of iron for the diets which lack vitamin C may also be deficient in iron. More recently Rabbani and myself (1939) while working with vitamin C in pulmonary tuberculosis have noted that vitamin C has a definite haematopoietic effect in tuberculosis cases suffering from vitamin C deficiency. We found that thirteen out of seventeen cases showed an increase in the total red cell counts ranging from 100,000 to 3,000,000 cells per c.m.m. The rise in haemoglobin, however, did not go parallel with the increase in the number of red cells. In most cases in which the red cells were increased the haemoglobin percentage remained stationary. Although the number of cases reported were very small but our results agree with those of Radford and her associates (1937) and Hurford (1938). In spite of the controversial views about vitamin C in anaemia I am of opinion that vitamin C should be given liberally in all forms of anaemias associated with vitamin C deficiency. Vitamin C is more effective when given by injection and the dose recommended is at least 100 mg. every or every other day.

Finally the general nutrition of the patient should also be improved as poor health due to whatever causes has a depressant action on haematopoiesis.

## THE MANAGEMENT OF SOME OBSTETRIC EMERGENCIES

BY GILBERT I.

HAEMORRHAGE.

Ante-partum haemorrhage is mostly due to placenta praevia, and no condition may be more dramatic or call for more calm judgment. The first thing to be remembered is that shock is as great a danger in this condition as is the actual loss of blood, and in many cases the degree of shock present may be profound and bear no ratio to the amount of blood lost. The indication, therefore, is to manipulate the patient as little as possible, and with the greatest gentleness: and it is found in practice that in the vast majority of cases minor measures suffice to control the condition. In the first place, is it necessary to do anything active at all? If the bleeding is not severe

and if the contractions are good, pressure on the separated placenta by the presenting part is likely to solve the difficulty, and merely with observation the labour may be completed, possibly with the aid of low forceps. If this is not effective, it is not sufficiently recognized how great benefit may be obtained merely by rupturing the membranes: this is a simple manipulation which allows the head to be directly pressed on the bleeding placental site, so that, in the great majority of cases, the haemorrhage is controlled. If this is still unsatisfactory, Willett's forceps can be applied to the foetal scalp if the cervix admits two fingers. If the head is steadied this can usually be done without anaesthesia, and if a good grip of the scalp be obtained, traction by a one-pound weight is just sufficient to keep up pressure and to control the bleeding.

Only if these measures fail need version be performed, and this requires the one and only anaesthetic to be employed. With a leg brought down in this way, in a marginal case the bleeding will be absolutely controlled and delivery should soon occur. Vaginal packing may be required in some cases, but in general practice should always be avoided. It must be remembered that vaginal packing, to be effective, is a major obstetrical operation: anaesthesia and antisepsis are necessary, also very many yards of sterile gauze if the fornices are to be properly packed, and such conditions are only to be obtained properly in hospital. Usually an insufficient amount of material is packed into the vagina, the main result of which is to predispose to sepsis. If the patient has to be sent to hospital, the best thing is to give morphia gr.  $\frac{1}{4}$  and to do nothing else, not even to examine.

Post-partum haemorrhage is another ever-present danger, and may be most grave. It is usually supposed to follow prolonged and exhausting labour, inertia, or twin pregnancy: but in many cases it follows a perfectly normal labour, and in other cases, when it might be expected, it fails to appear. As the condition is mostly atonic the first and main thing is to control the fundus, and this may sometimes be difficult. Thus if the uterus has rapidly distended its limits may be very vague, and a grab at the abdomen say in the region of the umbilicus may result in grasping the body of the uterus below the fundus, and so is useless. To make sure of grasping the fundus the hand should be sunk deeply into the slack abdomen just below the ensiform and carried down towards the umbilicus: only in this way can the fundus be with certainty identified and controlled, and often a gush of retained blood will indicate that this has been accomplished. Once this has been done, and an injection of ergometrine or pituitary extract given, the next indication is to keep the patient absolutely quiet and at rest. It will follow, therefore, that such cases should never be transferred to hospital. The responsibility has to be faced on the spot and with such simple measures the vast

majority of cases will be successfully controlled; in only a very few will such measures as bimanual compression be necessary.

#### OCCIPITO-POSTERIOR PRESENTATION

The occipito-posterior position of the vertex represents a complication and an emergency that is painfully familiar to many of us, and it has well earned the name of the bugbear of obstetrics. Much has been written regarding the causation of this condition and much conflicting advice has been given regarding its treatment. It is of the later that I wish to speak, and I would like to emphasize the following points:—

(1) So long as progress in labour is being made interference is contra-indicated. With a not too large head spontaneous birth may occur with the occiput posterior, and this does not always cause undue damage to the soft parts, and is preferable to the most expert interference.

(2) When progress has ceased the head has to be turned to make the occiput anterior, and this can always be done manually. Rotation by forceps is quite unnecessary and may cause much laceration of the vagina and the foetal face.

In rotating a posterior occiput one of the most important factors is not only anaesthesia, but deep surgical anaesthesia, but deep surgical anaesthesia: with this the parts are relaxed and rotation is easy, but if the patient merely has a "whiff," muscular resistance may make rotation impossible. Next, the whole hand should be introduced up the vagina and the position confirmed by feeling the ear: the head should then be disregarded and the hand carried upwards until the index finger is behind the anterior shoulder. If necessary the head should be lifted up out of the pelvis for this to be accomplished. Then with a rotating movement the shoulder is carried a full half circle across the anterior segment of the pelvis, and the head, which automatically follows, then becomes occipito-anterior and will remain so.

A trial of this manoeuvre, which was described by Lamond Lackie several years ago, will demonstrate its great ease provided that anaesthesia be sufficiently deep. It is surprising that it has not been universally adopted to the exclusion of the difficult and uncertain bimanual method, in which so often, only the head is rotated and slips back whenever the hand is removed.

(3) When the head has been successfully rotated, forceps extraction is usually indicated, as the patient has mostly had a long labour. But in some cases fresh moulding in the anterior position may be necessary before this can be safely accomplished. Therefore, if extraction is not easy, if there is that sense of stuck resistance, the forceps should be removed and the head allowed more time for moulding. It has been my personal experience that the observance of these points has robbed this complication of most of its terrors.

#### LACERATION.

It may seem strange that I discuss so common an event as a ruptured perineum with you, but there are several points in the treatment of this common emergency that are of importance. The more thoroughly such a laceration is repaired at the time of occurrence the greater comfort will the patient have, and the less will be the probability of future prolapse. The first thing is clearly to define the limits and the depth of the laceration, and this is difficult when the parts are obscured by blood descending from the uterus. If a handful of swabs squeezed out of lotion be pressed up to the top of the vagina this will form a pad and so the field will be left clear and the limits of the laceration may then be seen. The operation of repair can then only be properly performed if there is a good strong direct light on the part, and this is easily secured by a large electric torch which should form an essential part of every practitioner's outfit. With such a light the deep and superficial suturing can be carried out with exactness and to whatever depth or extent necessary. These small points make all the difference between a perineal body properly repaired and the blind insertion of sutures here and there in a blood-soaked field in the dark.

#### SHOCK.

Obstetric shock is an alarming condition when it occurs, and it usually does so unexpectedly. In antepartum haemorrhage, as mentioned, and after prolonged labour, especially with much manipulation, a varying amount of shock may be present. But the condition I have in mind is one in which the labour has been normal in course and duration, but after which, for no obvious clinical reason, the patient collapses with profound pallor and faint, rapid pulse. Thus in one case in my experience the patient collapsed immediately after the birth of the child, and was so ill that it was only two days later that the placenta could be removed. The cause of this condition is not all clear, but in some cases it is supposed to be due to partial rupture of the uterus, while in other it is held to be an anaphylactic phenomenon due to the administration of pituitary. The best line of treatment in such cases is certainly sedative. Everyone except the attendants should be excluded, the room should be darkened, and morphia gr.  $\frac{1}{4}$  should be given. With such treatment, aided if possible by a rectal saline, recovery is usually complete and in some cases surprisingly rapid. Cardiac stimulants, pituitary or adrenaline are best avoided as they may over stimulate an exhausted sympathetic nervous system.

#### ILEUS.

Paralytic ileus is a rare complication after labour, and usually follows a difficult instrumental confinement. The condition is alarming. Within an hour the abdomen may be greatly distended and tympanitic and the patient so gravely ill that urgent attention is necessary. The best thing here is to give repeated molasses

enemata with pituitary, and it will be found that in most cases flatus and later faecal matter will be passed and the abdominal distension will subside.

#### SEPSIS.

Puerperal sepsis is not usually of rapid onset, and its treatment is usually provided for by local health authorities: but in some cases the onset and course are very rapid and the case has to be treated at home under emergency conditions. These cases fall into two main groups: in the majority of cases there has been previous manipulation during labour, and in such cases the infecting organism may be the haemolytic streptococcus, the bacillus coli, or the staphylococcus: in the minority of cases sepsis develops after a perfectly normal untouched delivery or even when the baby has been born before the arrival of the attendant. The infecting organism is usually the haemolytic streptococcus carried from the throat of an attendant, and the condition is usually very serious, indicating an inherent lack of resistance in the patient. The prognostic points, such as time of onset, degree of anaemia, amount of pyrexia, rapidity of pulse, and so on, are well known: but in many cases these points are indeterminate and in no class of case is it more difficult to give a prognosis for the individual patient. In my own experience I find the following of most prognostic significance:—

(1) The time of onset: in general the earlier the onset the worse is the outlook.

(2) The degree of anaemia: the more marked is this the worse the outlook.

(3) The condition of the tongue: a dry, foul tongue usually indicates a fatal conclusion, and a moist red one a good outlook.

(4) The condition of the epigastrium: if there is tender rigidity here, generalized peritonitis is present and the outlook all but hopeless.

As regards treatment, certain general points have to be remembered. Thus the shoulders should be elevated to allow of free pelvic drainage. If the patient lies flat, foul lochia may accumulate in the posterior fornix and the condition be aggravated. Again, the uterus should be left alone as far as possible: any unnecessary manipulation, such as forceful bimanual examination or curettage, is likely still further to disseminate septic material into the circulation. If it is suspected that a piece of placenta has been retained, gentle exploration with the gloved finger may be carried out, but nothing more than this should be done. For the same reason intra-uterine douching is contra-indicated, as it tends to make the septic process extend upwards. An occasional gentle vaginal lavage may be given merely to wash away discharge and as to improve the patient's general comfort. The general strength should be conserved by appropriate easily digested food, and by stimulants, and everything possible should be done to increase the general comfort.

Many drugs have been advocated and used in the treatment of puerperal sepsis, but they have been largely superseded in recent years by Prontosil and its various sulphonamide derivatives. The effectiveness of this drug is now hardly in doubt, but the advantage of such a general background of treatment as we have sketched cannot be over-emphasized. Prontosil cannot always work miracles, and it will not cure every case. Some cases of puerperal sepsis, especially those with general peritonitis, are fatal from the onset, and form of treatment is useless. The dosage of Prontosil must be accommodated to the clinical condition, but our object should be to push the drug until the system is saturated, after which it can be reduced. Thus in a severe case 15 grains of Prontosil album should be given by mouth three times daily, and this should be reduced only as the pyrexia subsides, while for five days after the temperature is normal  $7\frac{1}{2}$  grains should be given once daily. In any event a certain degree of cyanosis is apt to develop during the treatment: but if sulphur compounds, such as magnesium sulphate, are given at the same time, the condition of sulphaemo-globinaemia may develop, and an extreme degree of cyanosis occur, which may be terrifying in its intensity. But with a temporary reduction or withdrawal of the drug this condition soon disappears. This accidentally discovered drug, whose exact method of action is not yet clearly understood, represents a most important addition to our armament in the fight against puerperal sepsis, and it is mainly as the result of this that our maternal mortality has now fallen to the low level of 3.13 per 1000 births.

#### RETROVERSION.

The incarcerated retroverted gravid uterus which may be encountered about the third month may form an urgent emergency most distressful to the patient. Many methods of treatment, such as putting the patient in the knee-chest position, traction on the cervix with volsella, and upward pressure in the posterior fornix, have been advocated, but they are uncertain and can mostly be disregarded; while rough manipulation may produce abortion. Again, the importance of deep anesthesia is found, and if the bladder be first completely emptied by catheter the uterus can usually be easily mobilized upwards by simple pressure and retained in position by a pessary for three weeks. But the best method of all, which requires no anaesthesia, is simply to empty the bladder completely and slowly by a narrow rubber catheter. In this way the bladder may be half emptied at first, and it may take several further insertion before it is completely emptied. By these means alone the uterus will be found in practically every case to have spontaneously regained its normal position, and if the bladder is not allowed to get distended again the probability of recurrence is very slight.

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## CARCINOMA OF THE LARYNX

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During the past three decades important advances have been made in the surgical carcinoma. Methods of direct and indirect inspection of the larynx have been developed to a point that even direct laryngoscopy with biopsy is not often considered an ordinary office procedure. Surgical techniques for the removal of laryngeal neoplasm have been standardized and perfected. Intrinsic malignant lesions of the larynx, operable by fissure and cordectomy, result in at least 80 per cent. of five year cures, and 60 per cent. of those patients with intrinsic lesions requiring total laryngectomy are alive without recurrence after five years. Laryngectomized patients may even be offered a satisfactory conversational voice through the development of the artificial voice box. However, laryngeal surgery is still major surgery, leaving the patient with crippled though satisfactory voice and often with a permanent tracheotomy tube. It is well, then, for the laryngologist to consider recent advances made in radiologic treatment of this disease entity and it is the primary purpose of this communication to discuss them.

The radiologic technic for the treatment of epidermoid carcinoma of the larynx has undergone great advancement, but it is likely that through a more intimate and less controversial relationship between radiologist and surgeon, greater strides towards the perfection of the treatment of this entity will be made. At the Hines Veterans Hospital, where last year 191 epidermoid malignancies of the mouth, pharynx and larynx were admitted, 49 of which involved the larynx, a study of these cases was made under such a relationship. Every new case was examined by Dr. Cutler, consulting radiologist, and myself as consulting surgeon, before any treatment was undertaken. Also Dr. Henri Coutard has kindly given us the benefit of his advice. In arriving at a diagnosis the usual orthodox procedures, such as careful history, serology, chest examinations, direct inspection of the larynx and biopsy were carried out. In addition an x-ray picture was taken of each suspected larynx, these soft tissue pictures often being invaluable in aiding diagnosis; the usual view was a lateral one.

Aided by these studies indications for the type of treatment of a given laryngeal carcinoma have evolved themselves and at present we are guided as follows:

1. Intrinsic epidermoid carcinoma of the larynx with movable vocal cords is considered non-infiltrating and usually is treated with external irradiation. These lesions are most frequently found to be undifferentiated ones, but with early lesions the motility of the cord has proven to be a more reliable indication for treatment than the cellular structure of the neoplasm. The clinical aspects of the

neoplasm have proven throughout to be the important determining factor for radiation, rather than the microscopic picture, so that we have paid but little attention to the laboratory grading of a given lesion and have disregarded other orthodox conceptions of radio resistance based upon the mere cellular structure of a given neoplasm. The clinician, not the pathologist, must make the decision between radio therapy and surgery.

2. Intrinsic epidermoid carcinoma of the larynx with a fixed cord is considered infiltrating and is usually treated surgically. These infiltrating lesions are usually differentiated ones, but again the motility of the cord has proven to be a much more satisfactory guide than the histopathologic picture. However, in the presence of undifferentiated lesions with cordal fixation, a therapeutic test may be made before decision upon the method of treatment to be employed. This test consists of a study of the effect of 2,000 R units on the motility of the cord. If after this inadequate exposure the cord becomes freely movable, an adequate course of radiation may be considered.

3. Primary subglottic lesions are usually treated surgically. Here the anatomic location of the lesions seems to exert an influence on the response of the tumor to radiation.

4. Extrinsic lesions, either primary or due to extension of intrinsic disease, are irradiated. However, surgery is not infrequently combined with radiation in treating some of these extrinsic lesions. Block neck dissection for cervical metastasis may be indicated after the primary lesion has been controlled by radiation, or laryngectomy following the regression of an extrinsic lesion down to the original intrinsic focus may at times be advisable.

5. Intercurrent upper respiratory infections during radiation treatment of laryngeal carcinoma modify the cellular response to radiation in a most unfavorable manner. This is evidenced by pain, malaise, edema of the mucosa of the larynx, and inflammatory changes in the skin over the irradiated area. In the presence of this complication radiation must be terminated and proper surgical measures undertaken. There are, however, many problems as yet unsolved concerning the combination of radiotherapy and surgery. It is a recognized fact that previously irradiated tissue not alone adds to the difficulty of surgery because of the formation of scar tissue, and the tendency to increased bleeding, but that it also results in a crippling of the cellular response to healing. We are attempting at the present time to establish an optimum time for surgery following an adequate course of radiation and are also attempting to establish the maximum amount of radiation that may be given without adversely affecting subsequent surgical procedure.

The technic for irradiation which is employed is that of the fractional method as described by Coutard. The factors involved are

200 kilovolts, 1 mm. copper screening, 60 cm. distance. 150 R units are usually given daily through either one or two portals. These portals are usually 6 x 6 cm. at the beginning but are progressively decreased as the treatment progresses, down to a portal of around 3 x 4 cm. A total dosage of between 5,000 and 7,000 R units is usually given. This technic, however, is not a fixed one, the factors being modified by estimation of the cellular response and by considerations of the original lesion.

In conclusion: Considering our present knowledge concerning epidermoid carcinoma of the larynx, two observations may be made: 1. There is need for close unbiased cooperation between surgeon and radiologist. 2. The indications for surgical treatment of a given malignant lesion of the larynx cannot be based solely upon such considerations as accessibility, mobility, and radiosensitivity as indicated by some laboratory method of grading. In making a decision the surgeon must be aware of the importance of the reaction of underlying connective tissue; he must be able to interpret clinical evidence of infiltration; he must be able to interpret clinically cellular response to irradiation; and, most important, he must make his decisions without bias.

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### AN EFFICIENT ADJUNCT IN THE TREATMENT OF CORNEAL ULCER.

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This paper is intended to describe an adjunct in the treatment of corneal ulcers which I have found to be more than merely satisfactory. It is true that this procedure is not infallible for many patients have been encountered in which it has been used where the condition of the ulcer was not influenced in the least by its administration. On the other hand, in many instances, not only has this treatment yielded considerable satisfaction, but it has been the means of affording the patient a very substantial degree of comfort.

It has been employed in various forms of corneal ulceration and I regret that I am not prepared to make direct comparisons in results of instances where it was used with those in which it was not administered. I am decidedly convinced that not only has the healing of the ulcer, in most instances, been much more rapid, but the patient during the process of treatment has experienced infinitely greater comfort during the course of the disease.

The technic of this procedure was encountered while visiting Dr. Aaron Green's clinic in San Francisco. I am reasonably certain that this treatment was original with Dr. Green. The technic is as follows: One or two drops of one per cent. holocain or two per cent butyn is dropped into the lower cul de sac every two minutes for four instillations. A punctum dilator is used in the lower canaliculus. A strong dental syringe fitted with a lacrimal tip filled with pontocain ointment is inserted into this dilated canaliculus and a sufficient amount of ointment is injected into the lacrimal sac until such time as it is seen emerging from the upper canaliculus. In the beginning, I found this to be a rather awkward procedure but after a few administrations it became much less complicated. The reason for this awkwardness was the size of the syringe and the difficulty with which this heavy ointment was forced through a small lacrimal tip:

Originally, plain white vaseline was used but Dr. Joseph Duane suggested the use of pontocain or butyn ointment in its stead contending it would act equally as well as the vaseline in blocking off the lacrimal sac and at the same time would serve as a continuous local anesthetic to an irritated painful area. The pontocain suggestion was adopted as it was felt that its firm consistency would be preferable even though it would prove to be more difficult to inject. In many patients it has been possible to express, by pressure over the site of the sac, some of the pontocain on the third day. In others, pressure over the lacrimal sac after twenty-four hours would produce no visible signs of the presence of ointment. This finding has been used as a guide to know how often the injection should be made. The majority of patients, however, have been treated every other day.

I have no positive explanation as to why this treatment is responsible for more rapid healing, but it is safe to assume that infections in many types of ulcers have their origin in the nasal passages and spread by way of the lacrimal sac. If this be true, one may safely conclude that the source of the infection or reinfection is occluded by the blocking off of secretions from the sac thereby preventing fresh infection from injecting itself into the picture. Lubrication of the ulcer surface and the anesthetic effect of the pontocain are responsible for the comfort which this treatment affords the patient.

The first step in the management of an ulceration of the cornea is to determine, if possible, the etiological factor or factors. It might be well at this point to name a few of the types of ulcers which have been treated by this method.

- I. Ulcers following:
  - A. Foreign bodies.
  - B. Abrasions.

- C. Burns.
  - 1. Mechanical.
    - a. curling iron.
    - b. molten metals.
  - 2. Chemical.
    - a. acid.
    - b. Alkali.
- D. Catarrhal conjunctivitis.
- E. Trichiasis.
- F. Trachoma (which may be ignored since sulphanilamido has been added to our armamentarium).
- II. Serpigenous.
- III. Dendrietic.
- IV. Recurrent marginal ulcers.
- V. Herpes ophthalmica.

Again I'll repeat that my method in the management of corneal ulceration is first to ascertain, if possible, the cause, second, to check the spread of the ulcer both as to depth and area, third to make an attempt to relieve the pain and photophobia which invariably accompanies this disease and lastly, to prevent, if possible, secondary complications.

The various forms of treatment which were employed in these patients are as follows:

1. Atropine.
2. Cauterization with carbolic or trichloracetic acid.
3. The application of pasteurization by the thermophore or the actual cautery or with quartz light.
4. The application of iodoform, calomel, or zinc sulphate powder.
5. The application of the various aniline dyes.
6. Delimiting keratotomy.
7. Paracentesis.
8. Bandage.

It is not my intention to leave the impression that all of these methods were employed in an individual patient but that one or more of them were employed as deemed advisable.

I am sure that the blocking of the lacrimal sac with pontocain ointment relieves, in a substantial manner, both the photophobia and the pain which attends corneal ulceration that it hastens healing but that it has no quieting effect on the pain of a secondary iritis. I have not found it necessary to employ any of the commonly used analgesics since the adoption of this treatment. When I feel that the need for surface anesthesia is no longer during convalescence, I substitute white vaseline for pontocain because of its ease of injection, until the healing is complete. It has been observed that in patients having considerable secretion that the blocking of the sac

reduced the secretion to a minimum, thereby removing this contraindication to the application of a patch or sealing of the eye.

In the serpigenous type of ulcer, I am not at all sure that the duration of the disease is in any way shortened by the administration of this treatment, but do feel that my patients have been made much more comfortable.

Among other patients, six recurrent marginal ulcers were treated. These were found to be particularly amenable to this treatment which gave amazing results. One patient who had in the past required from two or three weeks or more to heal recurrent marginal ulcers, required only one injection and healing followed within seventy-two hours.

Incidentally, this treatment has been found to be very effective in patients who have had a deeply embedded foreign body in the cornea. I speak of the type of foreign body which is difficult to remove and in which there is stain or scorching in the bed of the wound and where considerable digging is required in order to remove the offender. This type of injury we all see too often. The possibility of a secondary ulceration is great and there is a still greater possibility of the patient informing you over the phone or in person, in an angry petulant voice, that the eye is still painful, that the piece of steel, he is sure, is still present and "what do you propose to do about it." Blocking the sac with pontocain followed by cotton and gauze dressing sealed in place with Scotch cellulose tape has been the means of eliminating this irritative occurrence from my practice.

This procedure has not been presented as a cure-all but simply as a comforting adjunct devoid of danger and simple of execution in the management of corneal ulceration.

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## GASTRO-INTESTINAL SYMPTOMS OF RESPIRATORY INFECTIONS IN CHILDREN

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The pediatric group appreciates the privilege of being invited to present a subject to the Medical Section. The majority of this group are in the general practice of medicine and the care of children makes up a great part of your work. Pediatricians are general practitioners also but only to a limited age group.

The subject I have chosen may be rather elementary, still when this condition is the purpose in consulting a physician in nearly half our work among children, then it is worthy of our consideration. A rather personal angle also in the selection of the subject is the ability of one to be more dogmatic in a topic with which he has had the most interest. I have always felt that in meetings such as this that common problems deserve an equal if not greater part on the programs as compared to more scientific and unusual topics which require extraordinary clinical facilities to arrive at a diagnosis.

When one is confronted with gastro-intestinal symptoms the case, is as a rule, in the home and our diagnosis is to be made within a period of a few hours. It is through the media of the "old-fashioned house visit" most of us derive our experience. The man who is active in general practice or who is making numerous house visits becomes familiar with the current epidemics and many times also is familiar with that particular patient; the manner in which he has acted with similar illnesses in the past. This familiarity with given cases puts the physicians in a much better position to evaluate the importance of symptoms. This is especially so when symptoms may be far remote from the actual cause of the illness. In no other disease is the possibility of far-reaching complications and varied symptoms so great as in infections of the respiratory tract.

Of all the amazing variation of symptoms of respiratory infections those related to the gastro-intestinal tract are the most confusing. The possibility of hematogenous infection is well known to us and when the symptoms of abdominal pain and vomiting present themselves as an acute illness, one's ability as a diagnostician is challenged especially when there is evidence of recent infection about the nose and throat. He wonders also when diarrhea or constipation enters the picture whether an inflamed appendix is causing the symptoms or whether a primary peritonitis or an intestinal obstruction is the causative factor, or perhaps all is due to a referred affair as is common in pneumonia. To add to this is the possibility of approaching measles or scarlet fever.

Vomiting itself occurs frequently and is the most common of all symptoms in infections of infancy and childhood. As a symptom it may vary from nausea or anorexia to persistent emesis and dehydration. Some children seem susceptible to repeated attacks in ushering in acute infections, and vomiting is so violent and lasting so long that they have been thought to be victims of "cyclic vomiting." So frequently also when one encounters an epidemic he may see several cases with an acetone breath, and the case is called "epidemic acidosis." Zahorsky, I believe, called the symptom-complex, occurring in winter "hyperemesis heimis" and when it occurs in summer one often consoles the parents with the diagnosis of "summer flu."

As a general rule the vomiting will last only 24-36 hours but in some cases it is more protracted and will last several days, and dehydration becomes alarming which may require administration of fluids by other than the oral route. The vomiting may disappear for a day or so only to return, especially if food is given too early. It seems an inherent desire of the mother to worry when a child will not eat and so often is a grave cause of anxiety on the part of the grandmother. If the child is at all able to stand on two legs he is allowed up, and if one thing is absolutely necessary in these cases it is complete rest and quiet. It is essential to withhold food and supply liquids. Even though liquids are vomited it at least makes the act much easier and some is bound to be taken up by the system. If medication to secure rest is necessary I know of no better remedy than a suppository containing some barbiturate.

Constipation is the rule in infections of this type. This also is most distressing to the parent and so often they insist that the bowels must move even though food has not been taken for days. Purging only distresses the patient since we all agree the intestinal tract is not the main avenue of escape of all toxins.

Diarrhea is a common symptom often occurring in the form of an epidemic even affecting adults in the family. It has frequently been designated also according to seasonal occurrence into summer or winter flu. Five or six bowel movements a day is the rule. They are liquid, yellowish in color and contain mucus, rarely blood. This may last two or three days. A bland diet is usually all that is necessary in treatment unless there is tenesmus and pain; this may require small doses of paregoric.

Pain in the abdomen is one of the most common symptoms of this group. As a matter of fact it is encountered in infections of the upper respiratory tract more often than in all other infections combined. This may be epidemic or it may occur sporadically. Frequently it seems common to certain children with each attack of cold, often leading to diagnosis of chronic appendicitis. It seems, I believe, to be very common in allergic children also in children who have a tendency to be obese. It is by far the most common reason for consulting the physician both for acute and recurring attacks.

The pain may be sharp and intermittent and if questioned the child will invariably lay the hand horizontally across the epigastrium. If questioned further the distress will be designated by one finger as occurring an inch or so above the navel. There is no tenderness present and this pain may subside after the first day or it may continue and last even after the signs of an upper respiratory infection have subsided.

This latter type of pain has been referred to as being produced by inflamed mesenteric glands. This has been confirmed frequently

by laparotomies performed where the question of pathological findings in the abdomen was in doubt. The common location for these glands is in the right lower quadrant where they may be palpated at times. The persistence of these glands with the intestinal peristalsis probably accounts for the continued pain after the subsidence of the original infection. It is the presence of this pain and tenderness of these glands in the right lower quadrant that taxes the ability to differentiate from appendicitis. As a rule, however, the pain will not shift from the region of the navel to McBurney's point so characteristic of appendicitis and while there may be tenderness present, there is very little rigidity or spasms of the muscles.

However, in a certain group of these cases one is very much in doubt as to the changes present since we are all familiar with the fact appendicitis is about twice as frequent during the epidemic season of colds as in the non-epidemic season. However, if appendicitis does occur during the course of an upper respiratory infection it is as a rule ten days to two weeks after the original onset of symptoms.

With this in mind, the presence of signs of a recent respiratory infection must not lead us entirely from a diagnosis of appendicitis, but must also put us on guard that it is not occurring incidental to it. This is also so in measles, scarlet fever and pneumonia. It is not at all uncommon to hear of or to see appendicitis occurring just previous or during the presence of these diseases. The symptoms may be so alarming and severe that only one method is positive in making a diagnosis and that is by exploring the abdomen. Conservatism, without too much self-confidence, should be the rule. A doubtful case must be kept under close supervision and seen frequently, not giving too much assurance that everything will be all right without surgical intervention. On the other hand, if one explores too many of these abdomens only to have symptoms recur after operation, he will be abashed somewhat since the public no longer believes in adhesions causing postoperative distress. A conservative attitude and close supervision and necessary surgical judgment usually is necessary. There are no laboratory methods available which are going to be any great help to you. We often wish endoscopy would develop to such a stage that we could insert an instrument through a tiny incisions and take a look.

The examination of the abdomen reveals two crucial points by palpation, viz.: localized tenderness to pressure and a localized area of involuntary muscular rigidity. However, before palpation is attempted one must first secure the confidence of the child. He must be approached slowly and quietly and be addressed in his own language. A brusque, harsh attitude only increases his fear, making a good examination difficult. Dr. Abt has said the child should be approached with a warm heart and warm hands. A resident at

Children's Hospital suggested that a small child was like an ostrich; if his head was turned from the examiner he had less fear, so he suggested turning the child over the mother's shoulder and making an examination of the abdomen with the physician not in clear view. The left side should be examined first and to get our bearings; the area over recti muscles are palpated first the left and then the right. These areas are naturally slightly more tense than the lateral edges of the abdomen. Then the area over the appendix is palpated. When there is an area of spasm over an involved appendix it is usually more tense than even the degree over the recti muscles. The localized rigidity and tenderness appears rather early, as the lymphatic hyperplasia in the appendix and relatively thin layers goes to make the infection spread rather rapidly to the peritoneal surface. This also forms a basis for our general opinion that an appendix ruptures more readily in children than in adults.

I have mentioned the abdomen first because it is the region in doubt. So far as the other areas are involved, examination is probably less distressing to the patient than others except the chest where presence of pneumonia must be ruled out. Examination of the throat and proper evaluation of pathological conditions is gained only by developing the habit of always looking at them. The appearance of throats varies in different individuals and in different epidemics. It is not at all uncommon to recognize an epidemic of similarly infected throats during a current epidemic. It is not necessary to have a follicular tonsillitis present to make a diagnosis of a throat infection. Redness of the pillars or pharynx and swelling of the tonsils is sufficient.

Often the acute symptoms have subsided and one encounters a postnasal discharge or lymphoid hyperplasia in the pharynx, or infected ears, or tender or swollen cervical lymph glands, or a cough. Most of these signs are pathognomonic of recent involvement of the area no matter how normal the throat may appear at the time of the examination.

The differential diagnosis often rests on whether or not in the presence of the respiratory infection the appendix has been involved. The very fact that it may must put one on guard. However, it is by no means a common complication. The percentage of respiratory infections acting as primary foci for involvement of the appendix is exceedingly low compared to the number of colds. There are only two cardinal points in diagnosis; they are localized tenderness and involuntary spasm of the muscles. The age of the child is rather significant in that appendicitis is rare under two years and increases gradually to the eighth year, when it is just about as common as in young adults.

The presence of primary peritonitis which probably occurs more often as a result of a hematogenous infection than it does from a

ruptured viscus makes a diagnosis often difficult. In very young children, it is often impossible except at postmortem. However, the anxious pinched facies and generalized abdominal pain with general tenderness over the abdomen, but particularly over the lower portion is characteristic. Also there is distension which though absent early increases rapidly, finally becoming more prominent even to a shining appearance over the epigastric area.

In closing I would like to stress the following points: symptomatology in children is frequently gastro-intestinal in character, still the true pathological condition is in the upper respiratory tract. The pediatricians early were considered specialists on gastro-intestinal upsets, but as Brennomann puts it they have long since shifted their interest to the respiratory tract.

Pain in the abdomen is caused by upper respiratory infections more often than by all other causes combined.

Conservation and frequent observation during the questionable stage is essential. However, when there is too much doubt after thorough contemplation, laparotomy and appendectomy is the wise procedure.

(Illinois Medical Journal Oct. 1939).



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## Extracts.

### THE PROBLEM OF INTRANASAL MEDICATION.

Theodore E. Walsh and Paul R. Cannon discuss the problem of nasal drops and sprays in *The Annals of Otology, Rhinology and Laryngology*, Sept., 1938.

Heretofore, they say, physicians have assumed that, even if such preparations did little if any good, at least they did no harm. Recent observations of the effects of various drugs on the nasal mucosa and in the lungs following nasal application, however, have proved this idea to be erroneous.

#### THE EFFECTS ON THE NASAL MUCOSA OF VEHICLES USED.

1. *Oils*: Perhaps the most commonly used vehicle for intranasal medication is mineral oil. Proetz has shown that although liquid petrolatum has no immediate effect on the activity of the cilia, it does cause a slowing down or loss of "mucous streaming" by lying on the mucous blanket and by being propelled by it with great difficulty. In the case of rabbits, Stark has found that the intranasal use of plain mineral oil leads to hyperactivity of the mucous glands in the nose, and Fox has demonstrated that long-continued use of mineral oil exerts a deleterious effect on the nasal mucosa. It is also true that drugs dissolved in oily solutions act less efficiently than in saline solutions, being separated from the epithelium by the blanket of mucous. It is apparent, therefore, that oils are unsuitable as vehicles for intranasal medicaments.

2. *Aqueous Solutions*: Proetz has also found that the cilia of both man and animals remain active for long periods in 0.9 per cent solution of sodium chloride, but lose their activity when more concentrated or less concentrated solutions of saline are used. With hypotonic solutions the outlines of the cilia are gradually lost and the surface becomes cloudy. In view of the importance of ciliary activity in maintaining efficient streaming of mucus in the nose, this work is particularly significant and indicates quite definitely, therefore, that isotonic saline is the vehicle of choice for drugs to be used in the nose.

#### THE EFFECTS ON THE NASAL MUCOSA OF DRUGS USED INTRANASALLY.

1. *Antiseptics*: When one considers that in an upper respiratory infection the causative organisms are not lying free on the surface of the mucous membrane, but are in the epithelial or subepithelial tissues, and also that in all probability drugs placed in the nose remain there for no longer than from 10 to 15 minutes, it is improbable that antiseptic drugs can exert much bacterial effect in the upper respiratory tract. Furthermore, it has been demonstrated that thymol causes immediate cessation of the ciliary beat, that

merthiolate causes an initial slowing of ciliary action with cessation after a few minutes, and that silver protein, while probably not affecting the cilia, interferes with the streaming of mucus, probably due to clumping of the precipitated drug on the surface of the membrane.

2. *Astringents*: The use of astringents in nasal therapy has been increased recently because of the evidence that poliomyelitis of monkeys, produced by intranasal instillation of the virus, can largely be prevented by an antecedent spraying of the nose of these animals with astringent solutions (1 per cent tannic acid, 2 per cent zinc sulphate, 4 per cent sodium aluminium sulphate). The effect of these drugs is to cause a deposit on the nasal tissues, particularly over the olfactory area, of a protein precipitate which will act as a barrier to the passage of poliomyelitis virus into and along the olfactory nerves. The end results of this type of treatment in humans have not been sufficiently investigated as yet to determine its success. Clinically, there have been reports of loss of smell following the use of such sprays, and in view of the uncertainty that the nose is actually the portal of entry in poliomyelitis, the use of this astringent sprays seems questionable. Locally, 2 per cent zinc sulphate causes almost immediate cessation of ciliary activity in the rabbit's nose, and resuscitation is not effected.

3. *Vasoconstrictors*: Since the most common complaint of patients suffering from upper respiratory disease is nasal obstruction, nearly all of the solutions prescribed for use in the nose contain a vasoconstrictor. The most widely used drugs for this purpose are adrenalin, ephedrine, neosynephrine, and benzedrine. It is important, therefore, to know what effect these drugs may have on the mucous membrane and the ciliary activity. All observers agree that adrenalin in 1 : 1000 solution causes immediate cessation of ciliary action. Weak saline solutions of ephedrine, on the other hand, are not detrimental to ciliary activity. Fitzhugh reports that neosynephrine hydrochloride causes no apparent harm to the nasal mucosa, has a slightly longer vasoconstrictive effect than either adrenalin or ephedrine, and is less toxic than either. Benzedrine is recommended for intranasal application either in solution in oil or in the form of a vapour. There is no report on the effect of the drug in watery solution on the nasal mucosa or cilia; it is, however, a powerful central-nervous-system stimulant and should be used only with the greatest caution.

In view of the fact that the maintenance of the physiologic functioning of the nasal mucosa and the promotion of adequate drainage from the nasal sinuses are the two essentials in the treatment of upper respiratory infections, weak saline solutions of ephedrine and neosynephrine appear to be the medications of choice for intranasal application.

#### PATHOLOGY OF LIPOID PNEUMONIA.

In view of the fact that necropsy studies of lipoid pneumonia deal only with end-stages, we have studied the early changes in the lungs of normal rabbits, following intranasal instillation of oils and watery solutions of antiseptics, astringents, or vasoconstrictors. The general findings were as follow:—

1. Oily solutions, when instilled intranasally in small amounts into healthy rabbits, went quickly to the lungs and caused oedema, desquamative alveolitis, and focal lipoid pneumonia. When mixed with living bacteria, cultured from the nose of a rabbit with snuffles, they caused, after two or three weeks, granulomatous lesions containing oil.

2. Watery solutions of antiseptics and astringents similarly entered the lungs and caused, not only oedema, but severe focal necrosis, purulent bronchitis and bronchopneumonia. This was particularly true of the antiseptics when given intranasally to rabbits with snuffles or when given mixed with living micro-organism.

3. Isotonic saline solutions of such vasoconstrictors as ephedrine and neosynephrine, caused no significant degree of pulmonary damage after intranasal instillation in normal rabbits.

#### INTRAVENOUS ALCOHOL AS AN ANODYNE IN CANCER.

D. Thursz, in *Weiner Klinische Wochenschrift* (June 21st, 1938), writes:—

In the course of my investigation of the effect of intravenous infusion of ethyl alcohol upon malignant tumours, I observed an analgesic effect often of long duration in many cases. Later experiences completely confirmed my first observations.

In the cancer division of the St. Lazarus Hospital in Warsaw I obtained remarkably good results by this method in patients who were not relieved by alkaloids. Among these a patient with melanoma of the cheek and generalized internal metastases who suffered intolerable pain not yielding to alkaloids. After 3 infusions of 200 cc. of 33 per cent. ethylalcohol in physiologic saline the pains disappeared for some time. A similar effect was observed in a patient with a metastases in the cervical glands after operation for cancer of the breast.

In 1932, I demonstrated a case of recurrence and metastases after operation for breast cancer in which the severe pains disappeared for 17 months after 5 infusions of the solution (150 cc.). Similar

results were obtained in ovarian cancer with disseminated peritoneal metastases; in carcinoma of the portio vaginalis with extensive infiltration severe pain was relieved for 3 months by several infusions of 150 to 200 cc.

Further investigation of this method at the Warsaw Radium Institute was made in the following 4 cases:

*Case 1.* Extensive metastasis of right iliac fossa after extirpation of the cancer of the portio. Severe pains in the hip only partially and temporarily relieved by morphine; 7 infusions, each of 150 cc. given on alternate days. Immediate improvement and remission of pain for several months.

*Case 2.* Metastases above and below the clavicle following operation for breast cancer; 4 infusions given. After the first two the pains disappeared and patient could move arm freely. Later, numbness of the arm.

*Case 3.* Metastatic tumour in the right parametrium after extirpation of a cancer of the portio. Severe pains in the hip and lower abdomen; 6 infusions, each 120-220 cc. given in the course of a month. Pains decidedly less after first infusions. Patient able to go about freely. After last infusions, pains returned but much less severe. Altogether the improvement lasted 1½ months.

*Case 4.* Inoperable breast cancer with bone metastases. Severe pains in back and right leg. After five infusions (150 cc.) pains disappeared for 5 months and then returned in milder form. Infusions repeated with good results. Systematic examination of blood and urine in these cases showed no deviation from the normal.

*Technique:* For infusion we employed of 33 per cent. alcohol solution in physiologic saline, giving 1 cc. alcohol per Kg. of body weight. The alcohol appears to act directly upon the nervous system and also upon the tumour, which, as I have demonstrated, undergoes retrograde change which, in turn, lessens the pressure upon the adjacent tissues.

As repeatedly demonstrated by me and by other authors, intravenous infusion of alcohol solution, with proper precautions, is entirely free from danger.

The reports submitted prove that by his method the severe pains of malignant tumours may be relieved for a long time and that the method is far superior to all other pain-relieving measures.

## CASE REPORT.

### TREATMENT BY ABSCESSIN.

*Case No. 1.* P. D. H. F. Aged about 26, carrying eight months, developed a mammary abscess on the fourth month of the term. She was under the treatment of a doctor but nothing could be done. I saw her first on the eighth month with two or three Sinuses emitting thick pus with a regular rise of temperature. She responded well to Abscessin given to her for about a week, 1 tablet twice a day and she got cured in about a fortnight.

*Case No. 2.* N. D. H. M. Aged 27, got a Cellulitis on the dorsum of the hand. Abscessin tablets one to two were administered daily for 6 days. From third day fluctuation developed, previous rise of temperature came down to normal and on the 6th day the pus came out after spontaneous rupture and he got completely cured within one week after that.

*Case No. 3.* Angol-Indian, J. W. aged 22, male, saw me with a cellulitis of the upper lip, beginning with a rise of temperature with rigor about 2 days back.

Abscessin tablets were administered, one tablet thrice daily for about one week. He had no serum as he was sensitive, and so far as I know he had no other treatment mentionable, before he came to me. Temperature came to normal from the 5th day and joined his usual work on the 13th day.

*Case No. 4.* Mr. B. Ganguly, age 60. *Suppurated Cyst*—subsided without any surgical interference with the use of 12 tablets of Abscessin in all, administering 3 tablets a day. Duration of illness 20 years.

*Case No. 5.* *Acute inflammation and threatening Suppuration*—of axillary gland of a girl of 9 years, Name. Sisir Kana Debi, subsided with the use of 6 tablets of Abscessin 2 tablets a day.

*Case No. 6.* *Furuncles of the external ear.* Mr. Sukkur Singh aged 42, was suffering from most painful inflammation.

Veramon and other sedatives were used for temporary relief. There was no other alternative than to wait for suppuration and bursting.

Abscessin tablets 3 times daily and on the 3rd day that the boils subsided with subsidence of pain and deafness.

To sum up, I can frankly recommend Abscessin tablets in cases of Furuncles, Boils, Suppurated or indurated and inflamed glands.

## Medical News and Notes.

THE KRISHNA DISTRICT MEDICAL ASSOCIATION,  
MASULIPATAM.

(The Krishna District Branch of the Indian Medical Association).

Minutes of the Monthly meeting of the Krishna District Medical Association held at the Travellers' Bungalow, Gudivada on 21st April 1940. After Tea and Music the meeting began with Colonel Shastry, I.M.S., the President, presided.

The Business Meeting was conducted first. Dr. M. V. Subbarao, L.M.P., Secretary and Treasurer, read the minutes of the last meeting. Then the following resolutions were unanimously accepted by all the members:—

Resolved:

1. to send condolences on the death of Dr. Jogayasarma of Ellore;
2. to congratulate Dr. Satakopan on his success in the recent election to the Indian Medical Council;
3. to congratulate Dr. A. Lakshmanaswami Mudaliar, F.C.O.G., on his recent election as Vice-Chancellor of the Madras University;
4. to accept the Draft Constitution and Rules of the Andhra Provincial Branch of the Indian Medical Association.

Then the Medical Meeting was conducted with Colonel Shastry in the chair. Dr. M. V. Subbarao, L.M.P., Secretary and Treasurer, read the case-notes of the following cases:—

1. Tuberculosis of the Cæcum and Colon.
2. Gastric Ulcer.

Then Dr. S. Sreeramrao, read out a very interesting and stimulating address on "Poverty and Disease". Dr. C. V. Chelapatirao, explained "A case of Nasal Polypus".

With a vote of thanks from the President the meeting closed.

### THE MEDICAL PRACTITIONERS ASSOCIATION, NUZVID.

An ordinary meeting of the above Association was held on 31st March 1940 in the Government Hospital Nuzvid. Dr. C. Applachari presiding, Dr. N. Rama Rao, Secretary read the minutes of the 6th Anniversary that was held on 28-1-40 and the statement of accounts for the same which were duly adopted. The meeting resolved to 1. hold here after meetings once in 2 months instead of every month and 2. to reduce the Annual subscription to Rs. 0-8-0 from Rs. 2 in view of the fact that most of the members are members of the Krishna Branch of the I. M. A. and regularly attending the meetings of the latter Association paying heavy subscriptions.

A case of syphilitic affection of the nose was demonstrated by Dr. A. Venkateswararao of Agiripalli.

The x-ray picture of a female suffering from osteomalacia that developed a peculiar scissor-like deformity of the lower extremities was demonstrated by Dr. N. Rama Rao of Gollapalli together with its case history. Dr. N. Rama Rao then mentioned also of a case of cancer cervix which was diagnosed and declared in operable, now under his care and said that the probability if a gumma of uterus struck him and that the treatment therefor now being given by him seems little encouraging and hopeful. He also promised to give to the members sometime later the results of his Antisyphilitic treatment in this particular case. Some more cases of clinical interest were discussed and the meeting came to a close.

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