in the treatment of gastric ulcer, there can be no question that success can be attained by gastro-jejunostomy in over 90 per cent. of the cases of duodenal ulcers. Therefore, in my view, duodenectomy is a totally unnecessary operation: it is one of the most tedious operations in surgery, the difficulties and dangers being far greater than with gastro-jejunostomy, and the remote results problematical.

It cannot be emphasized too often that gastro-jejunostomy should never be performed except when there exists an ulcer which can be seen and felt. It should never be done on a clinical diagnosis, however clear and definite the symptoms, unless the diagnosis be confirmed on the operation table. It may not be amiss to remind you that gastro-jejunostomy will not give good results if a gall-stone or a diseased appendix be left in the abdomen.

Often our failures teach us more than our successes. In the series I have given there are between 7 and 8 per cent. of known failures. Of them, approximately 2 per cent. were due to jejunal ulcer, 3 per cent. to hyperacidity, 2 per cent. to intercurrent diseases, such as phthisis, chronic nephritis, &c., and 0·5 per cent. to adhesions or the complications incidental to abdominal operations. Jejunal ulcer and hyperacidity are, I believe, usually the result of improper diet, and if so are preventable. It is difficult to see how partial gastrectomy would give any better results in the remaining 2·5 per cent. of the cases.

It is, therefore, very problematical whether partial gastrectomy, *per se*, would reduce the number of these unsuccessful results; it would certainly increase the mortality-rate, and on the other hand, the number of unsuccessful results from gastro-jejunostomy would be reduced materially if patients could and would keep to a more suitable diet.

This leads me to point out the supreme importance of after-care. It cannot be emphasised too strongly that gastro-jejunostomy is but an incident in the treatment of gastric and duodenal ulcers. A prolonged period of restricted diet is imperative, especially in cases in which there is hyperacidity before operation. In all such cases increase in diet should be very gradual, and must be controlled by gastric analysis at regular intervals. Without this aid we are working in the dark. After-treatment is equally as important as operation—if we bear this truth in mind and act accordingly, gastro-jejunostomy will yield even better results than we know to-day.

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**A CLINICAL LECTURE ON SOME POINTS ON THE DIAGNOSIS & TREATMENT OF THE INFECTIOUS DISEASES.**

*By JOHN WILKINS, M.R.C.S., L.R.C.P., Medical Superintendent, Eastern Hospital, Homerton, DELIVERED AT THE HOSPITAL, JULY 2, 1927.*

I propose dealing with a few of the difficulties which arise in the diagnosis of diphtheria and scarlet fever, and making some remarks on points in the treatment of infectious diseases on which, in my opinion, sufficient stress is not usually laid.

The case of diphtheria you have just seen illustrates one of the difficulties. This case was not notified till the fourth day, although it was seen by a medical man on the first day of disease. As you see, the case is an extremely severe one, and the prognosis is extremely grave, although the patient has been given 96,000 of antitoxin since admission. (The patient later died of cardiac failure on the tenth day of disease.)

The failure to give antitoxin early is the cause of the death-rate being as high as it is
(5 per cent. or thereabouts), and attention has rightly been called to the importance of not awaiting the results of cultures in suspected cases. The importance of this in severe cases cannot be emphasized too often, or too much, but in my experience, an equally frequent cause of delay is the failure to suspect diphtheria in the worst cases on the first day of disease.

I have made a point of inquiring in all cases that are sent in late as to the reason of the delay, and in a considerable number of cases I have found that the patient has been seen on the first day by a doctor and diagnosed as acute tonsillitis, or quinsy, and that no culture has been taken. This was the case with the patient you have just seen. The history was the not unusual one that the throat was examined on the first day, and not again until the mother called the doctor's attention to the foul smell of the throat on the fourth day. In other cases haemorrhage, signs of cardiac failure or paralysis lead to the recognition of the disease.

The delay, unfortunately, is most common in the severe cases in which the early injection of antitoxin is most important. The reason is that these cases do not start with patches of exudation as the milder ones do; when seen on the first day the throat is perfectly clean and no membrane is apparent. The throat is not very painful, and often the patient is brought to the doctor on account of glandular swelling, and sometimes the case is diagnosed as mumps. When in these cases the throat is examined in a good light, and no throat can be examined properly in any other, it is seen that the fauces are greatly swollen and oedematous, the swelling being bilateral and symmetrical, and that the mucous membrane of the tonsils, palate and uvula has a glistening gelatinous appearance. This is due to a translucent fibrinous exudation under the superficial layer of the mucous membrane, which later coagulates and is then evident as membrane. In these cases there is frequently a thin, serous, straw-coloured discharge from the nose, and foetor may be obvious, though it becomes more pronounced later. There is always considerable bilateral submaxillary adenitis with oedematous swelling of the periadenoid tissues. In every case with these symptoms a large dose of antitoxin (24,000) should be given at once, or the patient sent to hospital.

In acute tonsillitis, with which these cases are usually confused, the throat is very much more painful, and difficulty in opening the mouth is more pronounced. The inflammation usually is confined at first to one side, the injection is much brighter and there is no nasal discharge or foetor.

Another difficulty that occurs not infrequently, is in the differential diagnosis of Vincent's angina from diphtheria. The most useful points of distinction are due to the fact that the "membrane" in Vincent's angina is a slough of the mucous membrane, and not a new formation, as in diphtheria. Consequently, we find a ring of bright injection round the membrane of Vincent's angina, just as with a slough due to a burn of the skin, and the "membrane," until the slough is loose and beginning to separate, is on a level with the surrounding tissues. In diphtheria the membrane is raised and has no ring of injection. The foetor of the two diseases is distinctive, that of Vincent's angina being more sour and acrid. Later, when the slough separates in Vincent's angina, there is often considerable loss of tissue; in diphtheria the loss is only the most superficial.

It must, however, be borne in mind that mixed infections of the two diseases occur and, in doubtful cases, it is often useful to take a direct smear from the throat and stain with borax methylene blue (Manson's stain). In the presence of numerous Vincent's organisms and the absence of diphtheroids, the case may await the result of culture, but if there is any doubt, antitoxin should at once be given.

In cases of laryngeal diphtheria, the early injection of antitoxin is just as important
as in severe faucial cases. If there is any deposit on the tonsils, even though it is not definitely membranous, 18,000 of antitoxin should at once be given—if definite membrane is present, 24,000.

In cases where the faucae are normal, the first thing to do is to decide whether the patient is starting an attack of measles, and Koplik's spots should be carefully looked for, in their absence, injection of the buccal mucous membrane, with catarrhal signs, may be taken as evidence of measles. Next inquire for previous attacks of croup, a positive history will point to laryngitis stridulous. The possibility of whooping-cough must also be considered, as it is not uncommon to get laryngitis in the early stage of this disease.

Then we get a fair number of cases of retropharyngeal abscess sent in as laryngeal diphtheria; in these cases there is nearly always a history of difficulty in swallowing for several days previously. Though there might be slight stridor with a croupy cough pharyngeal stertor is more marked, and the appearance of the child is usually distinctive. The majority of the cases are pale, flabby, unhealthy infants, under 9 months; head retraction without rigidity of the neck muscles is usually present, and there is invariably swelling of one side of the neck and often nasal discharge; also the cry of the child is distinctive, having a "Punch and Judy" character.

On examination a swelling is usually seen on one side of the back of the pharynx, but in some cases, mucus obscures the view and a digital examination is necessary to reveal the swelling. It is extremely important to diagnose and open these abscesses, as if they are allowed to rupture spontaneously, fatal septic broncho-pneumonia will, probably, follow.

Foreign bodies in the larynx will be suggested by the history of sudden onset, probably, during a meal. In the absence of positive evidence of any of these causes for croup, the case must be treated as one of diphtheria, and antitoxin given at once.

In the diagnosis of scarlet fever we must consider the throat, the tongue and the rash; errors are usually due to attaching undue importance to one sign to the neglect of the others.

Many cases are sent in as scarlet fever with rashes, in which the throat is perfectly normal and there is no illness of any kind. In these cases, however much the rash resembles that of scarlet fever, we can be quite certain that it is not due to that disease.

Cases of scarlet fever, however, occur in which there is no complaint of sore throat, and in which, on being questioned, the patient, usually a boy, definitely states that his throat is not sore. In some of these cases it is admitted that it hurts "a bit" on swallowing, in others, however, this is denied. On examination definite faucial injection is found, and in some cases, severe inflammation with exudation. It is, probably, in most cases, the desire not to have the throat examined, which prompts the absence of complaint and the denial of sore throat, though in some it may be due to the laudable desire not to make a fuss about trifles.

In examining the throat for evidence of scarlet fever, it is very important to have the patient in a good light, and to concentrate attention on the margin of the palate and the base of the uvula; it is injection of these parts which constitutes the typical scarlet throat. Rashes indistinguishable from that of scarlet fever, may be due to other causes, and the rash in scarlet fever varies so much that it may be most misleading. I have seen several cases, of patients with seborrhoea, in whom an acute general dermatitis has been lighted up by the scarlet eruption, which it has quite masked; the tongue signs, however, have been decisive. The tongue in a typical case of scarlet fever on the first day is coated, but usually prominent injected papillae are visible at the tip and edges on the second day, peeling starts at the tip and edges, and by the fourth day the tongue has completely peeled. In diagnosis we attach quite as much importance to the
tongue as to the rash and throat. It is especially useful on the third or fourth day, when the rash has possibly faded. The typical peeled tongue is at once rougher and smoother than the normal tongue; it is rougher, in that the papillae are more prominent, smoother, in that the surface of the papillae, and the intervening mucous membrane is smoother and more glistening than usual. The smoothness distinguishes the scarlet tongue from the raw, red peeled tongue, with its more prominent and injected papillae which we get in acute stomatitis.

The tongue in scarlet fever, however, especially in adults, does not always peel, but it is always injected, and if the tongue is quite pale scarlet fever can be excluded.

Treatment.—In the infectious diseases, apart from the use of antitoxins, the treatment is almost purely hygienic, dietetic and nursing.

Open-air treatment is as useful as in cases of tuberculosis. I have seen apparently hopeless cases of measles, broncho-pneumonia recover when treated out of doors, even in the winter. No more pernicious doctrine in medicine has ever been promulgated than that in the treatment of measles the temperature of the room should be about 65°, and not allowed to fall below 60°. To carry out this in the winter, at all events, is to be on the side of the enemy, the secondary invaders, and to invite broncho-pneumonia.

I have treated cases of measles during the winter in wards in which the temperature was never below 40°, and the incidence of broncho-pneumonia was much below the average. It is important to keep the patient warm, but this should be done with blankets, and, if necessary, hot-water bottles. From my experience I am inclined to think that the colder the air the patient breathes the less likely are respiratory complications to occur. There is no doubt that warm, moist air favours the growth of pneumococci and streptococci and lowers the patient's resistance to them.

Cold air improves the appetite, increases metabolism and predisposes to sleep.

I feel very strongly that the wards of hospitals, general as well as infectious, are usually much too warm for the health of patients and staff.

I repeat that the patient must be kept warm, as there is little doubt that chills lower the resistance to disease. I have seen several cases in which infections, cerebrospinal fever amongst others, have followed prolonged immersion in swimming baths. It appears probable that the patients were carriers, and that the chill, and possibly the fatigue, reduced their resistance to infection.

The benefit of open-air treatment is also very marked in septic cases of scarlet fever.

With regard to diet, I feel strongly that in most cases the patient's appetite is our best guide, and that it is our duty to give the patient as much food as he can digest and assimilate.

In the case of enteric fever I find that most patients are the better for solid food before the temperature is normal, and often throughout the disease. I believe that in patients so fed, complications, especially relapses, are much less frequent than under our old starvation treatment, the patient being in a much better position to manufacture the necessary antibodies to repair his lesions, and to protect himself against secondary infections. In fact it appears more than probable that many of the complications one used to meet with, such as multiple abscesses and post febrile dementia, were largely due to starvation. On the other hand, in some cases of enteric, where on admission the mouth is very dirty, the abdomen distended and the stools frequent, loose and offensive, it is often of benefit to wash out the bowel and to keep the patient on water only for twenty-four or forty-eight hours.

Whilst speaking of enteric I should mention the good effect of alcohol in severe cases with failing hearts, and in the "typhoid state." There is a great tendency, nowadays,
for conscientious objectors to decry the value of alcohol in medicine, but I have seen too many cases of immediate improvement on the giving of alcohol to the type of patient I have just mentioned to be influenced by theoretical objections to its use. A favourite argument used is that alcohol is a depressant and not a stimulant; if that be true it is a depressant that is needed in these patients; in any case there is no doubt of the benefit that is derived from its use.

Another disease in which in the past we erred in over-restriction of diet is nephritis. I find that patients recover much more quickly, and do not develop the anaemia which was customary, if they are not allowed to suffer from hunger.

In many cases it is impossible for the patient to take as much nourishment as he needs by the mouth, and, in some, such as cases of pharyngeal paralysis, he is, of course nasal fed, but in many other cases nasal feeding should be used.

I make no apology for dealing at some length with this subject, as it forms an extremely important part of the treatment of many of the infectious diseases; I find, also, that many practitioners have little knowledge of its usefulness, and that many nurses, from inexperience and an idea that it is dangerous, are averse from its use, and sometimes inclined to say, when it is ordered, that it is impossible to pass the tube. That this is often stated on insufficient grounds, I have proved in many cases by passing the tube myself with ease. This is not in the nature of a boast, as no anatomical knowledge is required, and the operation is simple in the extreme.

I believe that nurses are usually taught that there is a danger of the tube being passed into the larynx. As a matter of fact, it is extremely difficult to pass the tube into the larynx, and should it be so passed the patient will leave you in no doubt as to what has happened, and, of course, no fluid should be allowed to enter the tube until a sufficient length has been passed to reach the stomach. Cases have, undoubtedly, occurred of sudden death when the patient is being nasal fed, and milk has been found, post mortem, in the trachea and lungs. I have no doubt that this was due to the tube being coiled up in the mouth, and this, in my opinion, is the only danger of nasal feeding, and once recognized it ceases to be a danger.

What has happened is that a sufficient length of tube has been passed to reach the stomach, the patient is quite comfortable and the nurse pours the milk in without satisfying herself that the tube is not coiled up in mouth; the consequence is that the pharynx is flooded and milk pours down the larynx. The nurse, before feeding, should always look to see that the tube is not in the mouth. If it is, in repassing it she should extend the child's jaw to prevent the tongue going back to guide the tube into the mouth, and she should pass the tube very quickly as soon as it has reached the back of the pharynx.

I have found nasal feeding most useful in cases of small children and babies with pneumonia. When the respirations are very rapid, the child can only take small sips at a time, and not infrequently inspires during a drink and has a severe attack of coughing; dreading a repetition of this he refuses nourishment. In these cases nasal feeding often acts as a charm; after the first feed, the child, who previously had been restless and wakeful, going off into a sound sleep, and waking later much improved. Nasal feeding is necessary in cases of intubation, in some cases of tracheotomy, in cases of septic scarlet fever when the throat is very swollen and ulcerated, and swallowing difficult and painful, and in many cases of encephalitis and cerebro-spinal fever. It is only very occasionally necessary in cases of paralysis of the palate, giving small quantities slowly, and if necessary thickening the fluids, being all that need be done in most cases, I have mentioned that nasal
feeding is often of the greatest use in cases of pneumonia and broncho-pneumonia; another remedy that may save life in an otherwise hopeless case is vena-section. The indication is failure of the right side of the heart, with cyanosis and the distension of the systemic veins. In some of these cases the child is at once relieved, and may eventually make a good recovery. In cases in which the left side of the heart has failed secondarily, the only hope is in the use of hot packs and small doses of alcohol: injections of strychnine, which are usually given in these cases, I have found quite useless. In all cases of convulsions, whether due to uraemia, or whooping, lumbar puncture should be done.

Uraemic coma and convulsions seem to have a direct relationship to increased pressure in the cerebro-spinal canal, and the patient is often immediately relieved by the withdrawal of the fluid. Occasionally the symptoms recur, and further puncture may be necessary. If puncture does not relieve the patient at once vena-section should be performed.

In the treatment of diphtheria, although it is generally recognized that rest is all-important, sufficient attention is not usually paid to mental rest. Everything possible should be done to eliminate fear, and to place the child at ease in every way. This is especially necessary in cases with circulatory failure; in these cases I have found no benefit result from injections of strychnine, adrenal, or atropine, and I feel sure that in many cases they do harm, possibly from the fear of the needle. I am convinced that more cases have recovered since we have given up the use of injections. Frequent examinations of the heart also do more harm than good. The pulse gives us all the information we need, and in cases in which the circulatory failure is peripheral the heart may be very misleading. In these cases it is most important to keep the child's head low, without a pillow, and it is the most comfortable position for the patient, who feels faint if the head is raised. (It is often useful too to raise the foot of the bed.) But, apart from signs of circulatory failure, there is no reason for keeping the diphtheria patient without a pillow, and in mild cases, not allowing them to sit up in bed if they wish to.

In the treatment of scarlet fever "Dick's" antitoxin should prove to be useful in toxic cases, but these are extremely rare nowadays, and I have had no case since the introduction of the serum. It appears to be of benefit in some cases of septic scarlet fever, but in others has no apparent effect. My experience, however, has been sufficiently favourable to incline me to give it to all severe septic cases in doses of 30 or 40 c.c.

In the majority of cases of scarlet fever the disease nowadays is so mild that there is no reason or justification for its use.

It is doubtful whether the death of any member of the medical profession has been more noticed than that of Professor ADRIAN STOKES, D.S.O., the Professor of Pathology at Guy's Hospital. Three notices of him and a portrait have appeared in the Times, and all the prominent newspapers have given an account of him and his brilliant work in the war, in which his industry and ability saved thousands of lives. He died during September from yellow fever in West Africa, where he had gone at the request of the Rockefeller Foundation to investigate this disease. By his fearlessness, his exceptional power of accurate thought, his devotion to his work, and his ever-present willingness to help others, he had won the esteem and affection of troops of friends. He was a many-sided man, being fond of all sorts of sport. We sympathize most deeply with his relatives, friends, and his colleagues at Guy's Hospital, where he will be very difficult to replace. We can ill spare such men as Adrian Stokes.