

three between two and three years, two between three and four years, and one was between six and seven years. (b) Diphtheria.—12 cases occurred during an attack of diphtheria. Of these, one patient was under the age of one year, six were between one and two years, two between two and three years, and three between three and four years. (c) Whooping-cough.—Of the seven cases in which the child was suffering from whooping-cough two patients were under the age of one year, three were between one and two years, and two were between three and four years.

2. *Meningitis*.—Eight cases occurred during an attack of meningitis. Of these five were of the epidemic cerebro-spinal type while two were those of suppurative meningitis secondary to suppurative otitis media. In one case the skull was not allowed to be opened but the child presented the symptoms and signs of meningitis.

3. *Suppurative otitis media*.—There were five cases of suppurative otitis media, three affecting the right ear alone, not any affecting the left ear alone, and two affecting both ears.

4. *Pyæmia*.—In three cases the broncho-pneumonia was part of a general pyæmia.

5. *Anæsthetics*.—In three of the cases the broncho-pneumonia was thought to be probably due to the administration of an anæsthetic which preceded the attack.

6. *Typhoid fever*.—Two of the children were suffering from typhoid fever.

7. *Scalds and burns*.—There were severe scalds preceding the illness in two instances. In one case, brought in dead, the skin showed signs of a superficial burn which had probably occurred several days previously.

In one case the broncho-pneumonia followed the impaction of a coin in the œsophagus and in another it was secondary to erysipelas. The onset of the illness was marked by an attack of diarrhœa and vomiting in 21 of the cases.

III.—MORBID ANATOMY.

1. *Distribution*.—The right lung was alone affected in nine cases, the left being alone affected in nine cases also. Both lungs were affected in 132 cases.

2. *Variety*.—(a) Confluent or massive broncho pneumonia (in which one or more lobes were completely solid and resembled to a greater or less extent lobar pneumonia).—Of this condition there were six instances, one being of the right lower lobe, two of the left lower lobe, and one of both lower lobes. In two cases nearly the whole of both lungs was solidified. (b) Suppurative broncho-pneumonia.—Of the 15 examples of suppurative broncho-pneumonia four were associated with suppurative otitis media, four with empyema (of these two with purulent pericarditis also), two with peritonitis, and three were part of a general pyæmia, while one occurred with acute suppurative periostitis.

3. *Coexisting pleurisy*.—(a) Acute fibrinous pleurisy.—Of the 15 cases in which this condition was present, in four it affected the right pleura only, in five the left pleura only, and in six it affected both pleuræ. (b) Pleurisy with effusion.—i. Serous: This was only present in one instance. ii. Purulent (i.e., empyema): there were 16 cases in which this condition was present, six affecting the right pleura, eight the left pleura, and two both pleuræ.

My sincerest thanks are due to Dr. R. N. Salaman for his kindness in placing all the post-mortem records, which he had so ably classified, at my disposal, and to the members of the staff and registrars of the London Hospital for their permission to use the clinical notes of the cases under consideration.

Nottingham.

A PLEA FOR THE MORE EXTENSIVE USE OF TUBERCULIN AS A CURATIVE AND PROPHYLACTIC MEASURE.

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IN a recent article Dr. C. Spengler of Davos reports two cases, verified by necropsy, of miliary tuberculosis cured with tuberculin. In the German literature it is easy to find records of many cases illustrating the utility of tuberculin as a therapeutic agent. In this country its use for curative

purposes is almost in abeyance. I believe this to be a concession to popular prejudice rather than the result of unfavourable experience; indeed, I find that superintendents of sanatoriums have often no experience in the matter. Yet the clinical results more than justify the use, even if it were impossible to give any rational explanation of the action, of tuberculin. But there is every reason for believing that it does stimulate the production of protective bodies against the tubercle bacillus. Although it looks like increasing the dose of poison, the injection of tuberculin is not really contra-indicated by the pre-existence of infection. For at the site occupied by the tubercle bacilli, in a progressing case, the cells are obviously too weak to resist the invader. But the other cells of the body have no opportunity of producing protective substances in the absence of a suitable stimulus, and the tubercle bacillus with its products does not come to them. It is the tuberculin which supplies this stimulus and it has been definitely shown by A. E. Wright that the injection of tuberculin leads to the increase of at any rate one class of protective bodies.

Since its introduction I myself use only the Neu-Tuberculin (Bacilli Emulsion) of Koch and I proceed according to the instructions supplied with it, avoiding violent reactions. For the first part of the time the patient is kept in hospital; later, when the dose has reached 0.75 cubic centimetre, above which I do not usually go, one injection is given every week in the out-patient room, the patient remaining at home on the following day. But I never repeat an injection until the patient has clinically recovered from the one before. The total period of injections extends over three to six months.

In my own experience I have not seen any other of what may be termed the non-specific forms of treatment produce results approaching those of tuberculin in cases in the same stage of the disease. Many patients, of course, improve or recover under ordinary treatment or in sanatoriums. But such cases lack the specific resistance induced by the tuberculin treatment and easily relapse. The tuberculin treatment, like every other, has also its failures to record, but not, I think, so many, all things being equal, as the sanatorium treatment.

The best method is the combination of tuberculin and sanatorium treatment, first insisted on by Petruschky. But the latter portion is not always available and is expensive; the former can more often be carried out.

Now that the effects of tuberculin can be gauged it would seem rational to use it also prophylactically, especially in cases of obvious tuberculous diathesis, the predisposition of which it may be possible to gauge by Wright's methods. It seems to me from an examination of the evidence that in refusing to make therapeutic use of tuberculin (in suitable cases) the physician assumes the grave responsibility of rejecting one of the very small number of *specific* remedies for disease.

Leeds.

A CASE OF PERFORATED DUODENAL ULCER; OPERATION; RECURRENT HÆMORRHAGE; GASTRO-ENTEROSTOMY; RECOVERY.

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AS the number of cases of perforated duodenal ulcer with operation and recovery is at present very limited we have thought that it is desirable to publish notes on the following case. The clinical history commenced some three years ago.

The patient, a man, aged 42 years, had an attack of hæmatemesis in June, 1901. This was treated on ordinary lines and quickly ceased. The stomach was found on examination to be somewhat dilated. After the attack he was apparently restored to his usual health, but in August of the same year a second hæmorrhage occurred which again quickly subsided with the same treatment as before. These attacks recurred at the following dates: March, 1902; October, 1903; and January, 1904; in the interval the patient was apparently well. Nausea and the

vomiting of brown fermented fluid usually preceded the attacks of hæmorrhage. Pain was never a prominent symptom although at the time of the hæmatemesis there was much abdominal discomfort and perhaps some pain of a "colicky" description. The physical signs of dilatation became more and more pronounced. There was no tenderness but always much "splashing." This could be heard occasionally even at a distance from the patient on sudden movement—i.e., turning in bed or on a couch. The contents of the stomach could be felt to strike against the thumbs when the hands were placed on each side of the abdomen over the epigastric region. General nutrition was well maintained, the patient never becoming emaciated. As the gastric enlargement increased and hæmorrhage recurred in January, 1904, it was thought desirable to put him for a time (a month) entirely on a milk diet and to keep him at rest in bed. He was seen in consultation with Dr. J. F. Goodhart in February, who advised further rest and a continuance of the milk diet. The consultation was held with the object, if possible, of determining the exact cause of the hæmorrhage and of locating it. It was thought possible that the bleeding was associated with hepatic trouble, and the exhibition of small doses of magnesium sulphate was decided on with the object of lessening any congestion of the liver that might be present and of aiding the portal circulation. Under this treatment the patient appeared to improve and after several weeks' rest was allowed to get up and by April 3rd was apparently quite himself and was taking ordinary food. On the night, however, of that day he had a great deal of abdominal pain and during the night was repeatedly sick, vomiting brown fermented and very offensive fluid in much larger quantity than had been ingested within the previous 24 hours. On seeing him all food was stopped by the mouth and he was treated as before, it being hoped that the attack would subside as hitherto. On the 4th hæmorrhage recurred and he was in a good deal of pain. As his condition was obviously serious, the hæmorrhage being more severe than in previous attacks, Mr. Allingham was asked to see him, which he did on the afternoon of the 5th. By that time, as the bleeding had ceased and the patient's condition had improved, there being no pain and but little discomfort, it was thought best to continue the treatment hitherto adopted and not to operate for the dilated stomach for ten days or so in order to give the patient time to rally from the effects of the bleeding. During all these attacks of hæmorrhage there was never any bright-coloured blood vomited; it was of the "coffee ground" character, and the stools for some days afterwards were quite black. The character of the blood vomited doubtless was a sign that either it was due to repeated small hæmorrhages in the stomach or hæmorrhage beyond the pylorus with regurgitation. At 10 P.M. on April 5th, whilst the patient was absolutely at rest in bed, he was seized with sudden intense pain in the abdomen which radiated upwards over the hepatic region and downwards to the right inguinal region with much pain in the right testicle. He was intensely collapsed and had raised himself into a sitting posture with the object of relieving his agonising pain. From the history of the case in conjunction with the onset of these symptoms a diagnosis of perforation of the stomach or duodenum was made. The physical signs of great abdominal rigidity and the extremely shallow breathing and collapse supported the diagnosis. The pain and collapse were so intense that it was impossible to percuss the liver in order to discover if hepatic dulness was present or absent. It was then decided to ask Mr. Allingham to operate and he was accordingly summoned. In the meantime hypodermic injections of morphine were given. The temperature was subnormal and the pulse-rate was from 120 to 130. On Mr. Allingham's arrival operation was decided on.

The anæsthetic was administered by Dr. E. Chittenden Bridges. An incision was made in the median line from the ensiform cartilage to just above the umbilicus about five inches in length. Immediately on opening the peritoneal cavity fluid welled up and, in short, the abdomen was full of the contents of the intestine. The stomach was carefully drawn out of the wound and examined both anteriorly and posteriorly but no perforation could be found. It was notably dilated. On further examination a large sloughing ulcer of about the size of a penny was discovered in the duodenum, about two inches from the pylorus. This was carefully sutured. The abdomen was thoroughly flushed with boiled water and as far as possible cleansed by repeated sponging. The abdominal wound was then closed and a

long gauze plug was left in the upper and lower parts of the wound, the abdomen being allowed to remain full of sterilised water with the object of diluting as far as possible any intestinal contents that might remain.

The patient was in such a grave condition of collapse that although the question of performing gastro-enterostomy was considered it was decided that it was impossible to perform it in his then condition. One-thirtieth of a grain of strychnine was injected during the operation. The patient was put back to bed and brandy was injected hypodermically. These hypoderms of brandy were repeated at intervals as occasion arose and nutrient enemata were given every four hours. Very little pain followed the operation and the patient gradually rallied. Nothing was given by the mouth for 36 hours when one teaspoonful of plasmon was cautiously administered every half hour. A slight rigor occurred about 24 hours after the operation. 48 hours after the drachm doses of plasmon were stopped as hiccough occurred; a turpentine enema was given, part of which was retained. The enema was repeated on the 10th with some success. Plasmon and brandy were recommenced on the 10th, two drachms being given every hour. The patient was fairly comfortable and passed flatus freely. On the 12th, six days after the operation, the plugs were removed under an anæsthetic. During this time the pulse had varied between 112 and 140 and the temperature between 97° and 99·6° F. On the 13th the temperature rose to 101°. The feeding by the bowel was continued; also occasional hypoderms of strychnine and brandy were given. The plasmon was increased to four drachms, alternated with the same quantity of peptonised milk. The condition had in all respects improved. The stitches were removed on the 16th. On the 19th hiccough recurred accompanied by a feeling of nausea and abdominal pain. Food was stopped. Hæmatemesis recurred with much pain and collapse. Adrenalin in five minim doses was administered every hour, and for the collapse brandy and strychnine were again resorted to hypodermically and a sixth of a grain of morphine was given. The patient was kept going with nutrient enemata and no attempt was made to give nourishment by the mouth for 48 hours, when plasmon and brandy, two drachms at a time, were given every hour. The bowels were induced to act by hot water enemata and there was evidence of old hæmorrhage in the actions. Raisin tea (two drachms at a time) was given alternately with plasmon. On the 25th a thrombus formed in the left leg, which was greatly swollen. In other respects the patient appeared to be making progress, feeling no discomfort after the plasmon and raisin tea, which were continued in slightly increased doses but never exceeding a total of 20 ounces in the 24 hours. Occasionally whey and white of egg were given. On May 4th hiccough again occurred and on the 5th nausea, vomiting, and hæmorrhage once more threatened to put an end to the patient's life. Adrenalin was again given. The hæmorrhage on this occasion was more copious than hitherto and the patient's condition seemed hopeless, as in spite of the extreme care which had been exercised in feeding him it was quite clear that the stomach did not empty itself and that the ulcer was not healed. On the 7th raisin tea was again given in two-drachm doses and on the 8th similar quantities of plasmon. The temperature on the 6th sank from 100° at 2 A.M. to 96·6° at 6 P.M. The pulse was 110. As the patient was losing strength and becoming much emaciated it was felt hopeless to persevere with the present course of expectant treatment and the question of performing gastro-enterostomy was raised. Mr. Allingham concurred in the opinion that nothing remained but to do this and on the 11th Dr. Bridges again administered an anæsthetic and Mr. Allingham performed posterior gastro-enterostomy.

An incision was made parallel with, and to the left of, the original wound between five and six inches in length. The stomach had greatly diminished in size since the first operation and the ulcer was quite shut off by adhesions and could not be seen. The patient stood the operation well and from this time there was no further trouble. Liquid food was commenced on May 13th and increased gradually. By the 20th he was taking chicken-broth, milk and barley water, Benger's food, &c. The stitches were removed on the 21st, and within a fortnight of the second operation he was taking solid food in fair quantities, and within three weeks he was quite convalescent. There has been no further trouble at all.