treatment the bulk of the acute cases clear up completely and the question of immunisation does not arise. If the disease is prolonged and no underlying cause, such as a stone or some other mechanical condition, is found to be keeping it going, a careful attempt at immunisation may be made. It is wise in such cases to begin with small doses, say from 2 to 5 millions. If the inoculation has no effect as judged by the temperature chart it may be repeated with double the dose on the third day. If the temperature rises and remains high some form of loculated pus must be suspected, and it would be wise to stop the vaccine. If the temperature falls, as it probably will, larger doses of vaccine rising gradually from 20 up to 200 millions or more should be given, gradually increasing the intervals between the injections to 7 or 10 days as the dose of vaccine is increased. In this way a considerable degree of immunity will be attained which will lessen the liability of a chronic pyelitis resulting and will probably prevent a recurrence, at any rate, in the near future. Whether or not the patient has been treated by vaccines it is always wise to examine the urine from time to time, after an acute attack has apparently cleared up, to see whether the infecting agent still remains in the urinary tract.

Subacute Cases with Recurring Febrile Attacks.—In this class of case treatment by vaccines is eminently desirable and usually effective, but it must always be remembered that there may be some primary factor at the bottom of the trouble. Some of these cases turn out to be tuberculous, others have stones in the bladder or kidney.

Chronic Infections.

Vaccine treatment of these cases, in my hands at any rate, has usually been unsuccessful. The patients will come to tolerate gigantic doses of the vaccine without getting rid of the infection. Some patients say that their symptoms are less marked if they have an occasional inoculation. If there is a liability to febrile attacks such injections are certainly advisable. It is only fair to say that others have been more fortunate in their treatment of these cases, especially in the earlier days of vaccine therapy. The organisms under consideration in this paper are essentially those of the coliform group which are usually associated with an acid urine; there are organisms of allied groups, such as *B. alkaligenes* and *B. proteus*, which usually occur in alkaline urine, and these, although they may cause primary infections, are mostly associated with some other condition such as stone or growth, and for this reason it is well to know what particular coliform organism one is dealing with. It is hoped that these remarks will be some guide as to when it is reasonably worth while to attempt immunisation in infections of the urinary tract, and although the day of extravagant expectations from vaccine therapy is for the moment past, it may help to explain some of the not unreasonable disappointments that fall to our lot in treating this class of case.

ROUND THE WARDS AT THE BOLINGBROKE HOSPITAL.

WITH

MR. ZACHARY COPE.

THERE are half a dozen patients in the wards at present from which we may be able to gather some useful information. We will first take the cases of two little children.

CASE 1 is a little child, 3½ years of age, who was well until the middle of December, when he slipped off the pavement, but was pulled back rather sharply by a person holding his right arm. That same evening some pain was felt round the shoulder, and within a few days a swelling developed above the right clavicle. I saw him first on Dec. 22nd, when there was a fluctuant swelling the size of a hen's egg above the right clavicle. It was painless and fixed and did not pulsate. The movements of the right shoulder were normal and the only abnormality by X rays was a rather bigger gap than normal at the right sterno-clavicular articulation. On inserting a hollow needle an ounce of clear serous fluid was withdrawn and soon clotted. On the first examination a tentative diagnosis was made of a branchial cyst. The swelling showed no tendency to subside spontaneously, and by the time operation was undertaken a prolongation could be felt in front of the clavicle. An incision was made parallel to and just above the clavicle and the swelling found to be a loculated cystic mass, partly subcutaneous and partly under the posterior edge of the sterno-mastoid muscle. Most of it was removed, but a portion was too adherent and was simply mopped with pure carbolic acid and drained. Even when the mass was removed its nature was doubtful. Some cysts were large and some very small and gelatinous. The diagnosis rested between cystic hygroma and hydatid cysts. The microscope showed it to be a cystic hygroma or collection of dilated lymph cysts.

This condition is not infrequently met with in children, most commonly in the neck, but sometimes in other parts. The interesting point about the case was the sudden development of the swelling after a slight injury.

CASE 2 is also a child of 4 years, who was sent up to the hospital because he limped and complained of pain in his left knee. There was no fever. Manipulation of the knee caused pain, but there was no swelling nor special tenderness over the region of the epiphysal lines. The practitioner in charge had suspected osteomyelitis and had wisely sent it up for advice. There was no vacant bed in the hospital, so we asked him to watch the patient for a few days and send up again if any further symptom developed. A few days later the child came with a definite swelling of the knee, which was tender. There was also considerable swelling in the lower and outer part of the thigh. Under an anæsthetic I made a small incision in the latter region and explored the space behind the lower end of the femur. No evidence of pus or œdema. A needle inserted into the joint withdrew pus. A small incision was then made and a great deal of flaky pus removed. Some flakes were like big lumps of custard. The joint was washed out with saline solution and closed up again.

The acuteness of the onset and the nature of the pus made me think that in this case we were dealing with a case of pneumococcal arthritis. A culture of the pus, however, proved negative, and the joint remains hot and puffy though fever is almost absent.

The presumption is therefore that we are dealing with a tuberculous synovitis of sudden onset. Quite frequently tuberculous synovitis of the knee is gradual and painless in onset and well advanced before the advice of the surgeon is sought. The rarer form of acute onset compels attention sooner. Such a joint needs prolonged immobilisation, and after that continuous watching over a course of years before it can be accounted cured.

Senile Gangrene.

CASE 3.—Here we have a patient at the other extreme of life, who was sent up by his doctor for very great pain in the foot and a small area of gangrene in one toe. The foot was discoloured and rather cold, but the area of gangrene was very small. Nevertheless, in view of his age and the known way in which senile gangrene progresses, we advised amputation. This he would not accede to. In a month's time, however, he was no better, and the pain was worse than ever, so he came up again asking us to remove the limb. The operation of amputation through the lower third of the thigh is the correct procedure for these cases, for in old people any amputation lower down is followed by sloughing of the flaps.

This case serves to point out the great pain which frequently attends the initial stages of gangrene. When a part is dead it is painless, but when the part is ill-nourished, it would appear that the deficient nourishment causes a change in the nerves, for frequently in the part which is cold but not dead great pain is experienced—pain which makes sleep almost impossible and life a misery.

Prostatic Enlargement.

CASE 4.—We now come to an unusual case of urinary trouble. This is a man aged 46, who for three years had difficulty and pain in passing urine. Five months ago he had severe pain on the left side of the abdomen. He had never passed blood. When I first saw him at the end of October, 1925, he was very pale, had to pass water every two hours by day and night, and used to wake up at night with pain in the left loin which was relieved after urination. His bladder was distended half way up to the umbilicus. There was no swelling in the renal region, and rectal examination showed a slightly enlarged prostate. His tongue was clean. Here, then, we had a case of obstruction of the urinary passage with evident back pressure on the kidneys, for the pain in the left loin must have been due to temporary distension of the renal pelvis. At his age one would have expected the cause to be a urethral stricture, but a catheter passed quite easily into the bladder. The blood urea was tested and found to be 180 mg. per 100 c.cm., so it was clearly inadvisable to do much in the way of operation. A de Pezzer tube was inserted into the bladder by suprapubic puncture and the bladder emptied slowly and drained for a week or two. By this means the blood urea came down to 76 mg. per 100 c.cm., which, as you know, is still abnormally high. The tongue was clean, however, and we considered his condition good enough to operate. On Dec. 12th I opened the bladder and found the middle lobe of the prostate enlarged to the size of a cherry and blocking up the internal opening of the urethra. The rest of the prostate was not enlarged, nor in any way abnormal. I shelled out the middle lobe, and at the present time the patient is already a greatly changed man, passing his urine easily the right way, eating and sleeping well.

The interest of this case is the comparative youth of the patient. It is very unusual to get prostatic obstruction due to the formation of adenoma before

the age of 50, and in those cases where there is a localised and polypoidal adenoma of the middle lobe I consider there is no necessity to disturb the parts by removing the remaining normal portion of the prostate.

Intestinal Obstruction Due to an Appendix Abscess.

CASE 5.—This is an example of a class of case which is only too common. Here is a lady, aged 48, who was taken with abdominal pain about Christmas time. She vomited. The acuteness of the pain subsided within a day or two, but she still had considerable discomfort in the abdomen. About ten days later the pain became much worse, and when she called in her doctor he at once saw that surgical intervention was necessary. When seen at that time the abdomen presented the typical ladder-pattern characteristic of obstruction of the end of the ileum, whilst there were tenderness, muscular resistance on deep pressure, and an indefinite lump at the right brim of the pelvis. At the operation a large abscess was found occupying a position behind the end of the ileum and in the right posterior quadrant of the pelvis. Simple drainage of the abscess led to subsidence of all the unpleasant symptoms.

This position for an abscess is a dangerous one in that it does not give rise to very definite symptoms until obstruction of the ileum results. It lies in the region of what I have termed the silent area of parietal peritoneum, and the greatest care must be taken in the diagnosis of these cases.

Intestinal Obstruction Two Years After Acute Appendicitis.

CASE 6.—Here is a lad, 24 years old, who had a very severe attack of acute appendicitis two years ago. It was complicated by paralytic ileus, which necessitated temporary enterostomy. Since that time he has been fairly well, with occasional attacks of colic. Just before coming into hospital he had a more severe attack than usual and the bowels did not open for 24 hours. When I saw him he was having recurrent attacks of severe pain, and an enema brought no result. There was tenderness and some local distension in the lower abdomen. He vomited once. I diagnosed intestinal obstruction (small gut), and on opening the abdomen found a stout omental band tightly gripping the ileum an inch or two from its junction with the cæcum. The band was easily divided, when it was found that the peritoneal coat and subjacent portion of the bowel, where it had been pressed upon, were black with gangrene. This area was invaginated by sutures and a lateral anastomosis made between the ileum and cæcum. After the operation the pain ceased and the bowels were soon opened naturally.

The moral of this case is always to regard seriously acute attacks of colicky pain at any time after an attack of suppurative appendicitis, and not to delay too long in recommending exploration. The case was unusual, also, in that the peritoneal coat of the bowel was more gangrenous than the other coats.

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