Further Progress in Treatment

Up to the end of 1949 68 additional cases had been collected. These were treated in separate hospitals and there were variations in details of treatment, but 19 cases had penicillin injections of 300,000 units once daily, only two of them failing to return to normal. These two proved to be tuberculous tympano-mastoiditis, and required streptomycin and operation. It does seem, then, that the injection of 300,000 units of penicillin once daily, using the appropriate preparation, is adequate.

Among the 118 cases, there were 59 in which fluctuation was absent, and in all these resolution to normality was complete without any surgical intervention. In the remaining 59 fluctuation was present, and in 38 incision of the post-aural abscess was required; in the remaining 21 absorption of the abscess occurred naturally. Only three cases required mastoidectomy, and one of these was a tuberculous infection.

It is to be noted that the Hospital for Sick Children, Newcastle-upon-Tyne, admitted about 20 cases of acute mastoiditis in each of the years 1947, 1948, and 1949, and that there were only four cases during 1950. Probably this is to some extent due to the freer use of penicillin by the general practitioner now that it need be given only once daily.

Present Position

From the experience gained by study of over 100 of these cases I now make it a matter of routine to treat mastoiditis in children by penicillin injections, and at the moment 300,000 units once daily of the appropriate preparation is advocated. For reasons previously given, sulphonamides are not used, and incision of the tympanic membrane is deprecated.

When a case is first seen a careful history is taken to make sure, if possible, that one is dealing with a new acute infection; no immediate harm, however, will result from treating a chronic lesion, and the mistake will be revealed in the lack of progress later. Accurate recording of the local and general clinical picture is important as a basis for noting progress. The general state of the little patient may vary from very high fever to normality, and the first improvement under treatment should be reflected by a reduction of the former if present. Locally there will, of course, be evidence of otitis media with or without otorrhoea, and an evident post-aural inflammatory swelling, perhaps fluctuant. The presence of a facial palsy does not have any particular significance, but lymph-node enlargement usually indicates tuberculosis.

Once the penicillin treatment is begun the patient should be examined daily. Each sign or symptom, local or general, should begin to get better and disappear. A rapid improvement in the general condition and temperature is to be expected. In the course of a few days the post-aural swelling should show a reduction in size. When fluctuation is detected, if the abscess remains the same size for 24 hours it should be incised. If otorrhoea is present, and does not cease in about seven days, the pus should be examined bacteriologically for penicillin-resistant organisms, and appropriate action taken. No operations have been required for persistent otorrhoea in this series of cases. Should any new symptoms or signs develop during the course of treatment, all treatment should be stopped to allow of a free diagnosis. In

some cases it has been found that external otitis has developed with pain and swelling, but has settled after cessation of the penicillin injections.

So long as all is going well the injections should be continued until the tympanic membrane regains a normal texture and the tympanum is air-containing. They can be stopped when a little deafness remains and a perforation is still unhealed. There is no prescribed period of treatment; it may vary from three days to three weeks, until the condition is cured. All cases should be followed up for about three months to be sure that hearing returns and that recovery is not retarded by other factors, such as enlarged tonsils and adenoids or sinusitis.

Summary

A survey is made of 118 cases of acute mastoiditis in children treated with penicillin.

In 59 cases in which fluctuation was absent resolution to normality occurred without surgical intervention.

In the remaining 59 cases fluctuation was present, and in 38 of them the post-aural abscess was incised. In the other 21 absorption occurred naturally.

Only three cases required mastoidectomy, one of them being a tuberculous infection.

The dosage of penicillin recommended is 300,000 units daily by intramuscular injection.

A CASE OF MYXOEDEMA DEVELOPING DURING *p*-AMINOSALICYLIC ACID THERAPY

BY

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As the result of the recent report of the Medical Research Council (*Lancet*, 1949) it is probable that the use of combined streptomycin and *p*-aminosalicylic acid (P.A.S.) therapy will be increasingly evident, and therefore it is of interest to report a complication that we have experienced during the past few months.

Case Report

The patient, a girl of 8½ years, was admitted to hospital on October 17, 1949, for the treatment of military tuberculosis and tuberculous arthritis of the right hip. At the onset she was given intramuscular streptomycin, but, as the second lumbar puncture revealed changes in the cerebrospinal fluid indicative of an early tuberculous meningitis, daily intrathecal streptomycin was begun. This treatment was continued without change until January 4, 1950, when P.A.S. was given in addition by mouth. At first the child had 9 g. daily, and subsequently (April 20) this was increased to 12 g. daily.

Under this regime her condition improved steadily, and she was discharged from hospital in July with a clear chest x-ray picture, a normal cerebrospinal fluid, and no evidence of disease of the hip. It was thought advisable at that time to continue the P.A.S. treatment, and the same dose was maintained. The child continued to attend at monthly intervals for x-ray examination of the chest and lumbar punctures, and she remained well until her visit on October 25, when her mother stated that she had been ill for a fortnight with fever, swelling of the face, loss of energy, and headache, and in addition she had vomited once or twice.

On examination the child looked sick; her face was puffy, and she had dry skin and hair; there was a firm diffuse enlargement of both lobes of the thyroid as well as the isthmus. Her pulse was slow, settling eventually between 60 and 70, her blood pressure was 80/60, and there was a soft localized apical systolic murmur. There were no other abnormal physical signs, but her mental state was unusual, as she was miserable, apathetic, and whining. She refused to co-operate with the nursing staff and was incontinent of urine and faeces.

Further investigations which were carried out on her readmission to hospital were as follows:—Full blood count: haemoglobin, 70% (Haldane); red cells, 3,620,000 per c.mm.; white cells, 6,000 per c.mm. (polymorphs 60%, lymphocytes 28%, monocytes 9%, eosinophils 3%). Urine: nothing abnormal detected. Cerebrospinal fluid: protein, 35 mg. per 100 ml.; Pandey's reaction, negative; glucose, 70 mg. per 100 ml.; chlorides, 623 mg. per 100 ml.; cells, less than 3. Blood cholesterol, 250 mg. per 100 ml. Blood urea, 17 mg. per 100 ml. Serum potassium, 13 mg. per 100 ml. Glucose tolerance, impaired, probably because of temporary liver dysfunction. Prothrombin time, 40% of normal, using Rusven and Quick's methods. Radiograph of heart and chest: generalized cardiac enlargement but no evidence of miliary tuberculosis. Electrocardiogram: rate 64, inverted QRS and T waves in Lead III.

The P.A.S. therapy was stopped immediately and she was given menaphthone ("synkavit"), 10 mg. intramuscularly daily for three days, and then 10 mg. orally daily for one week. In addition, her diet contained large quantities of orange juice, and she was given a small amount of potassium citrate by mouth.

She was discharged home on November 8. Her general condition had improved considerably, her serum potassium was now 20 mg. per 100 ml. and her blood cholesterol 200 mg. per 100 ml.

When she attended the out-patient department a week later her pulse rate had risen to 90, the radiograph of her heart revealed a normal contour, and the thyroid gland had returned to normal both in size and in consistence. The most noticeable thing, however, was the improvement in her mental condition. She was much happier, very co-operative, and interested in everything that was going on around her.

She finally attended the clinic on February 26, 1951, when she was gaining weight and was happy and alert. Investigations, which included examination of the cerebrospinal fluid, estimation of blood cholesterol, x-ray examination of heart and chest, electrocardiography, and prothrombin time, were all normal.

We did not carry out an estimation of the basal metabolic rate, as the child was so uncooperative, but the clinical diagnosis of acute hypothyroidism was never in doubt. In fact, the picture was most striking, as was the rapid return to normal when the drug was stopped. Other complications of the therapy were hypopotaemia and a prolongation of the prothrombin time, manifestations which have been described previously and which in this case disappeared in a very short time.

Comment

In the many careful reviews (Bogen *et al.*, 1950; Carstensen, 1950; Cayley, 1950; Madigan *et al.*, 1950) of the modern treatment of tuberculosis stress has been laid on the apparently innocuous behaviour of P.A.S.; the complications which have been detailed have included gastro-intestinal symptoms (nausea, vomiting, epigastric pain, and diarrhoea), pruritic dermatitis, neutropenia, and drug fever: in addition, bacterial resistance, prolonged clotting-time, and a lowering of the serum potassium, with the production of coupled heart beats and temporary muscle paralysis, have been described. Only one reference has been made to the

thyroid gland—by Madigan *et al.* (1950), who suggested that the basal metabolic rate might rise during the administration of P.A.S.

It is true that the duration of P.A.S. therapy in this case was great, but it is quite conceivable that when the drug is used in the treatment of pulmonary tuberculosis this period of time will be exceeded, and it is suggested that the possibility of this complication should be entertained.

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A SIGN FOR DIFFERENTIATING UTERINE FROM EXTRAUTERINE COMPLICATIONS OF PREGNANCY AND PUERPERIUM

BY

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A simple physical sign which does not appear to have been described before has been found useful in the differential diagnosis of abdominal pain in pregnancy and the puerperium. The test may have been employed by other clinicians, but the object of this communication is to submit to the profession my experience with the method so that its value in the hands of others may be proved or disproved.

The diagnosis of acute appendicitis complicating pregnancy is fully described in textbooks of obstetrics and discussed in detail in the classical monographs of Jerlov (1925) and Fahmy (1944). In *Queen Charlotte's Textbook of Obstetrics* (1943) it is stated; "It is important to define whether the chief tenderness is uterine or extrauterine. In the one case the lesion is probably concealed accidental haemorrhage, red degeneration of a fibroid, or an injury to the uterus, while in the other case it is liable to arise from a peritonitis or pyelitis." (To the causes of uterine tenderness, angular pregnancy may be added.) Fahmy says: "In order to palpate the appendix area more readily it has been suggested that examination be made with the patient in the left lateral position so that the uterus may move away towards the left side as far as possible." From these two statements it appears a logical step to include the "sign of fixed or shifting tenderness," described below, among the means of differentiation between the causes of abdominal pain in pregnancy and the puerperium. This sign bids fair to assist in diagnosing the cause of abdominal rigidity and tenderness in cases in which it is difficult or impossible to outline the uterus.

With the patient lying straight on her back, the examining fingers find the area of maximum tenderness to pressure on the abdominal wall. While the fingers remain in contact with that area without altering the intensity of pressure they are exerting to elicit pain, the patient is made to turn over on to the opposite side so that the plane of the anterior abdominal wall is approxi-