to throw off or grow out of his disease. The difference in sex with regard to pulmonary tuberculosis, however, is not nearly so noticeable in the Registrar-General's Report, pointing to the fact that this may be a mere coincidence.

I should like to take the opportunity of thanking Dr. Sequeira for his many valuable suggestions and help, as well as for permission to use his cases for publication. I am also indebted to the members of the London Hospital staff for permission to report their cases.

THE FREQUENCY OF TUBERCULOUS PERITONITIS.

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THAT tuberculous peritonitis is a more frequent complaint than is usually supposed is attested by many facts ; and it is to a consideration of these that the following few remarks are devoted.

In the first place, let me briefly indicate the channels by which infection of the peritoneum can take place. Probably by far the commonest route is directly through the intestinal wall from a tuberculous ulcer situated within the bowel. Next in order of frequency is, in all likelihood, direct extension from a tuberculous mesenteric gland. When these two sources of infection are put aside the question of relative frequency among the other channels of infection is hardly possible, and their simple innumeration is all that can be reasonably attempted. In females, tuberculosis of the Fallopian tubes is a by no means infrequent source of infection, when these are themselves markedly affected. In the instances so far given a definite lesion has been assumed to exist as the primary infecting focus ; but there is now no doubt that the peritoneum itself may be directly infected without the existence of any such gross lesion. Thus the bacilli can pass through the intestinal parietes without there existing, or without causing, any local focus of disease. Similarly, invasion may take place by the lymphatic route of the mesenteric glands without these being seriously affected. Bacilli can also be introduced from without by way of the vagina, uterus, and Fallopian tubes. Lastly, and probably by no means infrequently, the peritoneum can be infected by the blood.

Tuberculous peritonitis, as conventionally understood and usually described, is a disease with well-marked symptoms. There is usually a certain amount of swelling of the abdomen, with physical evidence of the presence of fluid within the peritoneal cavity. Inspection may exhibit enlarged veins radiating upwards from both inguinal regions; the skin may have a waxy and glazed appearance, but this condition is, as a rule, only found in those cases which manifest considerable distension. Palpation may elicit the presence of patches of induration, dull to percussion, and more or less painful to pressure. Constitutional symptoms may be represented by general emaciation, want of appetite, increasing weakness, constipation or diarrhœa, and sometimes a quickening of the pulse and a raising of the temperature. Added to these are the various symptoms frequently associated with the gross lesion upon which the peritonitis primarily depends. Thus in pulmonary involvement, with which is frequently coupled intestinal ulceration, both lung and bowel symptoms may be present; and when the genital organs are the seat of disease, signs will not be wanting indicative of their implication. Further, the coexistence of mixed infection very materially complicates and augments such symptoms as may be present, as well as adds others peculiar to the micro-organisms entering into the pathological process.

Now, the class of patients to which I wish particularly to draw attention is not such as would be illustrated by those cases presenting symptoms of the nature and extent narrated above. Comparatively speaking, one would almost be forced to say that tuberculous peritonitis was not a particularly common disease if it had to be reckoned only by such cases as presented symptoms of a kind similar to those just depicted. As a matter of fact, and as, I trust, will be exhibited by the few cases given in illustration, there are many cases of such a minor and slightly manifest type that, if not actually overlooked, they are but rarely diagnosed. But let me illustrate my contention by describing a case or two.

CASE I.—J. B—, aged two years, was admitted into the Victoria Infirmary to be treated for an inguinal hernia. The mother stated that she noticed a swelling on the right side when the child was only five months old. It had been wearing a truss, but as the hernia had continued to increase in size, the child was brought by the mother to the institution to be operated upon. The past history revealed the fact that the child had been subject to occasional attacks of diarrhœa; with this exception, he had always been regarded by the friends as perfectly healthy. On admission to the Infirmary the boy had the appearance of being in good health; but during the interval which elapsed between the time of his admission and the date of the operation it was noticed that his bowels were occasionally loose, and that the motions contained mucus, but no signs of blood. It was further noticed that there was some slight tumidity of the abdomen. The other organs appeared healthy. At the operation a large hernial sac was isolated, and when opened, the distal extremity was seen to be studded with tubercles. On insertion of the index-finger through

the internal ring some clear serous fluid escaped. Most of the peritoneum appeared smooth, but over the anterior parietes in the left iliac region numerous small tubercles were felt. Some of the tubercles from the excised hernial sac were examined microscopically, and shown to be of a typical character. The child made an excellent recovery, and left the institution about four weeks after his operation, apparently in good health and free from any signs of diarrhœa.

Now, this was clearly a case of tuberculous peritonitis, and discovered only accidentally. It may be that the operation had something to do with its cure; but it seems more than likely that the beneficial results were attributable to the general treatment. The occasional attacks of diarrhœa and the slight tumidity of the abdomen were the only symptoms; and these, occurring in a young child, can hardly be considered particularly significant. What might have happened in this case, supposing the child had not been brought under the influences of the healthy hygienic régime of the hospital, it is not possible to say. But I believe it to be more than likely that, except for what the operation revealed, the child might have passed through this infection of the peritoneum without it ever being known that it had had such a complaint. In illustration of such a possible sequel I will narrate a case; but before doing so I may incidentally refer to the fact that not a few cases have been recorded, quite similar to that above related, where, in the performance of herniotomy in children, tubercles have been discovered in the sac and in the general peritoneal cavity. Thus Cuthbert Wallace¹ records the case of a child who was admitted to the East London Hospital for Children for treatment for inguinal hernia. When the sac was opened it was found to be studded inside with miliary tubercles. On examining the abdominal cavity with the finger through the ring, it was found that the peritoneum was in a similar condition. Six months after, the child was "well, fat, and bonny." A. E. Kennedy² narrates the case of a healthy-looking male child, aged fourteen months, born of healthy parents, admitted to hospital for the treatment of a double inguinal hernia. When the sac was opened, a coil of intestine presented, and was found to be covered with tubercles. These were identified by finding the tubercle bacillus. Edmund Owen³ also relates a somewhat striking example. A boy was admitted to hospital for the treatment of a hernia. He suffered from some slight abdominal discomfort, but this was attributed to the hernia. When the sac was opened a quantity of clear serous fluid escaped, and the omentum, which presented in the canal, was found to be covered with miliary tubercles. He made an uninterrupted recovery with no further manifestation of his tuber-

¹ Wallace, Cuthbert: "Trans. Med. Soc.," Lond., vol. xxix., p. 401. 1906.

² Kennedy, A. E.: *Lancet*, vol. ii., p. 581. 1900.

³ Owen, Edmund: *Lancet*, vol. ii., p. 1106. 1902.

culous trouble. Here, again, as in my own case, it is impossible not to believe that in each of these three instances, but for the operation, the coexisting tuberculous peritonitis would not have been discovered, and that perfect recovery might have ensued without it ever being known that the patients had suffered from tuberculous infection of the peritoneum.

But we have other facts, possibly, too, of a more cogent character, which prove that tuberculous peritonitis may entirely escape diagnosis, and yet be revealed subsequently in complications that are the direct outcome of the original disease. This is well illustrated by, the following case :

CASE II.—O. P——, aged four years, was admitted to the Victoria Infirmary as an acute abdominal case. From the history obtained from the child's parents it appeared that he had suffered at times from occasional attacks of diarrhoea, but with this exception he had been regarded as quite healthy. About fourteen days prior to admission he was seized with abdominal pain coupled with vomiting. Within this period his bowels had moved once, a week ago. Some swelling of the abdomen was noticed at an early stage of his illness, but this had increased rapidly within the last day or two. On admission the child looked extremely ill. He was in a semi-lethargic condition, with dry tongue, temperature 100° and pulse 133. The abdomen was greatly distended, and every now and again contraction of the parietes took place, and there was seen what appeared to be distended coils of intestine; no indications of peristalsis, however, were observed. At these particular times the child evidently suffered pain, from the nature of the cry which was uttered. Shortly after admission the child vomited a quantity of brown offensive material, evidently the contents of the small intestine. Owing to the extreme toxic condition which was present, a general anæsthetic was not administered, but the abdomen opened under the local effect of ethyl chloride. A distended coil of small intestine at once presented; this was tapped, when a quantity of fluid faecal material was forcibly expelled. The stomach was washed out, and by this means also a good deal of the same material as that which escaped from the bowel was removed. Notwithstanding this relief, the toxic condition continued to deepen, and the child died in a comatose state some hours later. A *post-mortem* examination was conducted by the Infirmary Pathologist, Dr. Anderson. Loops of intestine were found matted together by firm fibrous adhesions, which, in the pelvis, bound them down to the floor of that region. There was some enlargement of the mesenteric glands, but no evidence of breaking down was detected. There were no signs of any ulceration of the bowel, past or present; and the abdominal cavity showed no other indications of tuberculous disease.

There is no doubt that, at some comparatively early period, this child had had an attack of tuberculous peritonitis which healed; this left behind adhesions that subsequently led to the obstruction which proved the direct cause of death. Inasmuch as the *post-mortem* failed to detect the presence of any gross intra-abdominal lesion, it is certain that the infection must have taken place either through the blood or by transmission through the bowel wall or the mesenteric glands. The character and wide distribution of the adhesions suggest that the primary disease of the peritoneum must have been fairly extensive;

and yet so far as could be ascertained the child had never suffered from symptoms of sufficient gravity to attract special notice. That we are, however, quite familiar with children showing very slight constitutional symptoms, yet in whom there are very obvious indications of advanced tuberculous peritonitis, is a knowledge common to all surgeons who have much to do with children's diseases. I recently had a small boy in my male ward who, it was difficult to believe, had, as proved by operation, his peritoneum freely besprinkled with tubercles. Yet he was apparently free from all discomfort, was cheerful, and played with the other children in running about the ward ; he had a good appetite, and slept well.

While it is quite possible for a tuberculous peritonitis dependent upon a distinct focus of disease to end in complete dissolution, the cases which most frequently recover and may never manifest themselves by sufficiently advanced signs to be easily diagnosed are those which arise from a primary infection of the peritoneum. The resistance offered by the host is often sufficient to overcome the onslaught of the bacilli, and so recovery, from what is often regarded as little more than a temporary indisposition, ensues. But unfortunately the mere disappearance of the active process does not rid the patient of all consequences ; and the adhesions which are only too likely to occur may, at some future date, as in the case above narrated, lead to dangerous and even fatal complications.

In drawing attention to this particular class of cases my object has been, not to deal with the subject of diagnosis and treatment, but solely to indicate that the range of tuberculosis is even more extensive than it is customary to assume ; and to add, if need be, still greater reasons for the adoption of every preventive measure that is being taken to stamp out this dire disease. While so much attention is being directed to the pulmonary aspect of tuberculosis, it is well to be reminded that it is not only in the lungs that the bacilli can work out their fell and fatal ravages, but that by insidiously, and, for the time being, unobtrusively, primarily infecting the peritoneum, after-results may accrue as fatal to the patient as any that can follow upon the most rampant invasion of the pulmonary organs.