A CASE OF ACUTE GENERAL GONOCOCCIC PERITONITIS.

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Whilst clinically peritonitis is a well-recognised complication of gonorrhœal infection in women, the opportunity for obtaining direct bacteriological proof of its occurrence is of some rarity. In fact, I am not aware of a single case hitherto published in this country in which the presence of *Micrococcus gonorrhœæ* in the peritoneal exudation has been actually demonstrated.

In a case of gonorrhœal pelvic peritonitis which was recorded by Mr. Bland-Sutton, in Vol. XLIII of the 'Transactions of the Obstetrical Society,' I was able to obtain *M. gonorrhœæ* in pure culture from the contents of the tubes which had been removed by operation, but had not the opportunity of examining the peritoneal exudation itself.

For this reason the following case, in which a pure culture of *M. gonorrhœæ* was obtained from the peritoneal exudation, is of particular interest; the onset of symptoms, also, was perhaps more acute than is generally associated with the clinical conception of gonococcic peritonitis.

F. B—, aged 19 years, an unmarried woman, was admitted into the Middlesex Hospital under the care of Dr. Pasteur on March 21st.

Condition of the patient on admission into hospital.—The patient complained of severe pain in the abdomen, and of extreme tenderness when examined. The abdominal muscles were immobilised, respiration being entirely thoracic. The temperature was 100·4° F., and the pulse-rate was 116.

History of illness previous to admission.—Patient completed a menstrual period last week. On May 19th she noticed some pain in the abdomen, but did not pay much attention to it. On the following morning the pain was more severe, but the patient was able to get up. During the afternoon diarrhœa and vomiting set in, and by the evening the pain in the abdomen had become extremely acute. On the next day the patient was brought to the hospital. It may be added that subsequently the patient denied any knowledge of having suffered from any sort of purulent discharge from the vagina.

Progress of the case.—It was decided that abdominal exploration was immediately necessary, and the patient was transferred to Mr. Andrew Clark's wards for surgical treatment.

The patient was anæsthetised, and before the operation was commenced it was ascertained that there was a free

purulent discharge from the vagina. An incision was made from the umbilicus onwards along the middle line, and pus at once welled up through the opening. On examination it was found that the peritoneal sac contained a considerable quantity of pus and that the peritoneal covering of the intestines was deeply injected. The appendix cæci was next examined and was found to be of healthy appearance. On drawing up the right tube for examination, it was found to be swollen, and pus was oozing out of the ostium abdominale; the left tube was also swollen, but there was no escape of pus from it.

The tubes and ovaries were then removed, the peritoneal sac was swabbed out with a 1 in 4000 solution of perchloride of mercury, and the operation wound was closed, except for an opening for a drainage-tube.

After the operation the temperature rose to 101·4° F., and did not become normal until some three weeks later; but otherwise the course of the case was quite satisfactory, and the patient left the hospital on April 20th.

Condition of the appendages.—Both ovaries appeared to be normal; the left one showed a recently-ruptured Graafian follicle. Both tubes were thickened, and contained greenish pus; the lumen was not obviously dilated. The right tube was sharply kinked at about its middle, being doubled on itself, so that a section through this point cut across the lumen of the tube twice. The ostium abdominale of the left tube was occluded by adhesion.

Bacteriological examination.—An examination was made of the vaginal discharge of the pus from each tube and of the peritoneal pus. On microscopical examination of the vaginal discharge colonies of cocci, which did not stain by Gram's method, were found in many of the pus-cells; no examination by culture was made.

Pus from each tube showed similar intra-cellular cocci, which did not stain by Gram's method, in considerable numbers. Culture-tubes of gelatin, nutrient agar, and pepton-broth were inoculated with pus from each of the tubes, and in every tube the medium inoculated remained

sterile on incubation. No culture media, however, which would have allowed the growth of *M. gonorrhœæ* were inoculated with pus from the tubes.

On microscopical examination of the peritoneal pus (specimen shown), a number of pus-cells were found, containing colonies of similar cocci. The pus also contained many larger mononuclear cells, apparently of endothelial origin, none of which appeared to contain cocci. No other bacteria were seen in the microscopical examination. Culture-tubes of gelatin, nutrient agar, and pepton-broth were inoculated with the pus and incubated—some aerobically, others anaerobically; all these remained sterile. Four nutrient agar tubes, with fresh human blood smeared over the surface, were also inoculated with the peritoneal pus; and in each of these four tubes pure cultures of *M. gonorrhœæ*, typical in every respect, were obtained after incubation for twenty-four hours at a temperature of 37° C.

Microscopical examination of sections made through the tubes.—The condition of the tubes showed that there had been considerable exudation into the sub-epithelial layer and into the circular muscle layers, the latter showing many localised aggregations of round cells. The mucoid folds were swollen, the change being slight towards the uterine end of the tube, and very conspicuous towards the ovarian end. The epithelium did not show as much alteration as might perhaps have been expected. In the half of the tube nearer to the uterus the epithelial cells showed little change, except that in some places the cell-protoplasm had a cloudy appearance when stained. Towards the ovarian end of each tube the mucous folds were denuded of epithelium in places. A careful examination of many sections failed to find any evidence of penetration of the cocci below the epithelium, nor was any marked invasion of the epithelial cells themselves by the cocci noted. In one or two instances a pair of cocci could be seen in the upper part of a columnar cell, but such were few and far between, and larger intra-cellular colonies were not found.

The comparative rarity of symptoms of peritonitis in women who are suffering from gonorrhœal infection, in comparison with the known frequency of gonococcic salpingitis, is probably due in the first instance to the natural tendency for a fluid in the tube to flow in the direction of the uterus, and afterwards, in many cases at any rate, to occlusion of the ostium abdominale by adhesion.

And it would seem probable that in this particular case the occurrence of peritonitis was due to the kinking of the right tube. This kinking would appear to have been caused by the sudden engorgement of the wall of the tube with inflammatory exudation, and was of such a nature that the lumen of the tube must have been completely closed to the passage of pus formed in the ovarian end of the tube towards the uterus; and so escape through the ostium abdominale occurred.

The removal of the appendages in this case was clearly justified. The right tube was closed by the kinking near its middle, and had it been left a tubal abscess would almost certainly have necessitated operative interference later on; the ostium abdominale of the left tube was completely sealed by adhesions, and so the tube had become useless as an oviduct, whilst remaining a potential source of future danger to the woman.

Dr. CULLINGWORTH was glad the case had been brought forward. General peritonitis of gonorrhœal origin was not common. He could not agree with Mr. Foulerton as to the cause in this case being that a kink in the tube prevented the purulent exudation finding its way through the normal channel into the uterus. In the first place he did not regard the uterine end of the tube as the normal outlet for morbid secretions. In fact, he knew of no instance in which it had been proved that the tubal secretions in acute inflammation had passed out through the uterus, and the probabilities were all the other way, owing to the extreme fineness of the canal at that part and the ease with which a very little inflammatory swelling of the mucous membrane completely blocked it.

Mr. FOULERTON, in reply, said that he had no doubt but that in this case the escape of pus from the right ostium abdominale was due to the occlusion of the tube by kinking. He did not

think that occlusion of the ostium abdominale by adhesion was the only safeguard against peritoneal infection in these cases; he thought that there was a natural tendency for pus to flow towards the uterus if the passage was free. He thought that the treatment adopted—removal of both tubes—was the only correct method. The right tube was occluded at about its middle, and if it had been left a tubal abscess would almost certainly have resulted; the ovarian end of the left tube was occluded by adhesion, and so the tube would have been useless as an oviduct, whilst otherwise it would have been a possible source of future danger to the patient.