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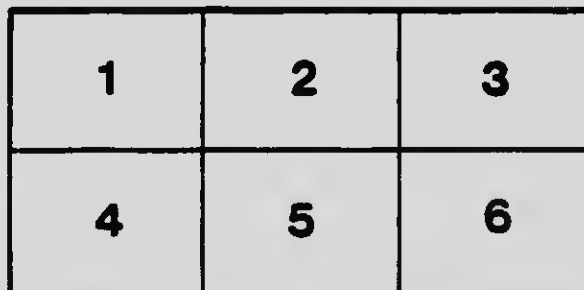
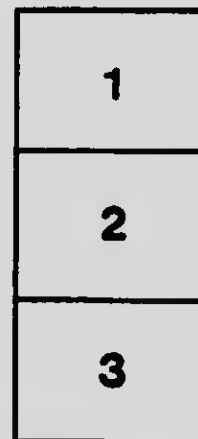
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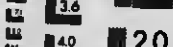
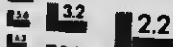
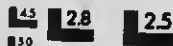
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TUBERCULAR PERITONITIS.

— BY —

L. COYTEUX PREVOST, M. D.

— o —

Gynaecologist to St. Luke's Hospital, Ottawa.

*Read before the Ottawa Medical Society,
November 13th. 1903.*

Tubercular Peritonitis.

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The peritoneum, like all other tissues which enter into the composition of the human body, may become the seat of the pathological process to which the name of "inflammation" has been given. Here, as well as elsewhere, the inflammation is caused originally by the presence and harmful influence of pathogenic micro-organisms. Whatever may be the nature of the infective agent, whatever the family to which it belongs may be, it is in all cases the *font et origo* of the disorder, the primordial cause of peritonitis.

This proposition, to my mind absolutely indisputable, shows how utterly irrational is the classical classification of peritoneal inflammation into idiopathic and symptomatic peritonitis. We know perfectly well nowadays what to think of the condition formerly called inflammation *a frigore*. Cold and traumatism, cannot by themselves create the inflammatory process, as we know them; they are never anything else than indirect factors of the disease, and their action is limited to the local disorder they produce in the intimacy of the tissues, inducing a state of receptivity, a lack of vital resistance, which render the soil favourable to the attacks of the germs which constantly swarm in the neighbourhood.

We must bear in mind that the peritoneum covers all the abdominal viscera; the liver, the stomach, the intestine. These viscera shelter all sort of micro-organisms; the staphylococcus, the streptococcus, and specially the bacterium coli are there, waiting for favourable conditions to commit their misdeeds. Let those virulent germs be allowed to enter the abdominal cavity during laparotomy, or be poured into the abdomen following the perforation of the stomach, of the gall

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bladder or of a purulent collection : Is there any wonder that the peritoneum, this susceptible serous membrane, should immediately respond, becoming the seat of inflammation whose severity will vary according to the activity of the virus ?

But, outside of these cases in which the enemy is caught, as it were, *flagrante delictu*, there are others the explanation of which is just as rational. A physiological disturbance may supervene in the intestinal functions, such as, for example, a transitory attack of indigestion, constipation, vitiated alimentation, or even the sudden impression of cold, immediately the germs contained in the intestine enter into play and determine inflammatory reaction in the peritoneum which is momentarily deprived of its habitual means of defense.

Viscera are not the only dens wherein pathogenic germs are swarming ; there exists, as you are aware, conditions in which the blood carries infective agents which sooner or later will catch some points of the organism in a state of physiological inferiority. This is what occurs in cancerous and tubercular diathesis. One day or other, what I have just supposed to take place in the intestinal tract will occur with regard to the chyliferous vessels, and the peritoneum protected until then by its normal physiological condition, will become exposed to the noxious action of the virus should a fortuitous disorder happen to put it in a state of receptivity. You remember Max Schuller's celebrated experience ? He produced a contusion on the joint of a guinea pig and then injected in the blood a culture of Koch's bacilli ; immediately the contused articulation became tubercular.

But enough upon these etiological considerations which, after all, only rest upon hypothesis. What we must accept as a certain fact is that there exists a peritonitis, of a tubercular nature, characterized by the presence on the peritoneum of a more or less considerable number of typical granulations, small, hard or having already undergone a beginning of softening. The serous layer, congested, thickened, has lost its normal lustre and shows fresh lymph on the inflamed surfaces. The intestinal cells are frequently agglutinated and the entire mass of the intestine may form a firm tumour retracted against the spinal column. Caseous abscesses are often met with and in some cases, fibroid formations are found, showing that here as well as in the lungs, there exists sometimes a tendency towards a spontaneous favourable termination. Ascites is frequent, the fluid being yellow or bloody en-

cysted by adhesions or free in the general cavity. All the organs contained in the abdomen may be studded with miliary tubercles which are then found everywhere, on the tubes, the ovary, the uterus, the stomach, the liver, the intestine. The omentum, thickened, puckered and rolled up, forms sometimes a firm, elongated tumour lying transversely across the upper part of the abdomen.

Now, where does that tuberculosis of the peritoneum come from? It is derived from a tubercular affection of the tubes or the uterus; has the pathogenic agent directly been brought by the circulation, or, was it originally situated in the intestinal tract? I have neither the time nor the desire to lay stress on this side of the question, and I hasten to proceed to the far more practical examination of the symptoms and the treatment.

Tubercles may exist all over the peritoneum without giving rise to any symptom. It happens in the abdominal cavity what we sometimes meet in the lungs were tubercles may be smouldering for a long time with all the signs of perfect health, until the day when a sudden hæmoptysis will come and reveal their unsuspected presence. This latent tubercular peritonitis is really far from being uncommon. Osler has dwelt upon this latency of the disease, the eruption sometimes taking place without the least symptom. Kelly says that in 80 per cent. of his cases, he has observed good colour, good appearance in patients having good family history whose peritoneum was covered with tubercular granulations. Courty cites the case of a patient offering the appearance of perfect health three weeks before her death.

In the month of May, 1903, a young girl, aged 19, was sent to me from Almonte. Three weeks before her entrance to the hospital, she had been complaining of abdominal pains, accompanied by digestive troubles. She looked extremely emaciated, her face was flushed and she had a hectic appearance. Temperature: 105; pulse weak and frequent. No cough; nothing appreciable in the lungs. The abdomen was distended, tympanitic and tender on pressure. No ascites. Some hard lumps could be felt in the upper quadrant of the abdomen. She was put to bed and soon seemed to improve. Feeling much better, she insisted on going home. She left the hospital ten days after her entrance and died three days after getting home, with meningeal symptoms. There is no doubt about this case being one of tubercular peritonitis; still, until one month before her death, she never complained

of anything else than slight disturbance of the digestion, without any abdominal symptoms whatever.

During the summer of 1902, Mrs. S. came to me from Renfrew. Four years before, she began to suffer from a pain in the right ovarian region, which resisted all treatment. She looked well and was complaining only of dysmenorrhœa and of that pain in the right side. Laparotomy was done. A great many tubercles were found on the peritoneum, the small intestine and the posterior surface of the uterus. Right ovary was cystic; tube adherent; appendix adherent to the posterior surface of the cæcum. Appendix and appendages were removed. The patient was discharged perfectly well.

Mrs. McL., seen in consultation with Dr. Mair, Cobden, Age 45, nulliparous. Had always been in good health until ten days before, when she was taken with severe abdominal pains and frequent vomiting. Slight tympanitis; no fever; visible increased intestinal peristalsis accompanied by crampy pains in the umbilical region. Obstinate constipation. Laparotomy was done and a large quantity of serous fluid tinged with blood issued. No tubercles were seen on the peritoneum. To the right of the median line the omentum was pulled down towards the pelvis by strong bands of adhesions. Deeply in the right iliac fossa, a small band was found forming a cord stretched across the coils of the small intestine. The peritoneal surface of the ileum showed a congested line due to the constriction produced by the band which was divided with scissors. Another band spread out from the small intestine to the pelvis, incarcerating the appendix, which after being freed was removed and found only slightly congested. In that region, numerous tubercular granulations were seen disseminated in every direction. Patient is now perfectly well.

These cases, although not very uncommon, must still be considered as exceptional and patients suffering from tuberculosis of the peritoneum usually present some symptoms which attract our attention towards the abdominal region. Ascites is frequent being in some cases, the only appreciable symptom, and the existence of fluid in the abdomen in the absence of heart, liver or kidney diseases, must always make us think of tuberculosis, even if the patient complains of no pain, has no temperature and offers no other sign whatever, which we would naturally expect to find in cases of peritoneal inflammation.

Last spring, a Polish girl, aged 20, was sent to me from Renfrew. Servant girl, no tubercular antecedents. One year before, she complained of dyspepsia which lasted for several months and was accompanied by swelling of the feet and legs. Ascites developed. She was tapped by her physician and twelve quarts of serous fluid were removed. The effusion returned and she was sent to the hospital. She looks well, has rosy cheeks. Considerable œdema of lower limbs. Enormous ascites. Pulse, 112 embryocardia. Hardly any abdominal pains, but severe backache extending downwards. Slight abdominal tenderness. Temperature normal. Appetite good. She was tapped and six quarts of amber coloured serous fluid removed. The next day the abdomen began to fill up again; respiration became accelerated and temperature for several days reached 103 every night. Laparotomy was done. Peritoneum very thick. Abdomen contains a large quantity of serous fluid. Omentum adherent to parietal peritoneum. Numerous tubercular granulations were found covering the whole abdominal cavity, peritoneum, liver and intestines. Temperature fell after the operation, went up again in the evening for a while, but gradually disappeared. Ascites did not return. Was discharged several weeks afterwards feeling well. I have heard of her lately; she is in perfect health and has resumed her work.

In some cases, ascites is absent but there is generally quite a perceptible enlargement of the abdomen due to a certain amount of meteorism and also to the thickening of subperitoneal tissues which produces on the finger a doughy sensation, a sign considered by Edebohls as characteristic of tubercular peritonitis.

We must not therefore lose sight of the fact that in several cases patients suffering from tubercular peritonitis come to the consultation complaining only of digestive troubles or merely of enlargement of the abdomen with or without ascites. The diagnosis then is rather difficult and always very puzzling. The only particular which is liable to arouse our suspicion is the long and obstinate duration of the symptoms, in spite of prolonged and appropriate treatment.

Typical cases manifest their nature by the following symptoms: Abdominal pains, generally without special localization, but sometimes simulating appendicitis with which tubercular peritonitis has after been mistaken. Vomiting is not uncommon. There is always a certain amount of tenderness of the abdomen which is tense, thickened and

containing more or less fluid in its cavity. Gastric disturbances are very frequent and in the majority of cases, constitute the initial symptom. There is fever with evening exacerbations, the temperature varying between 99 and 100 and, in some cases reaching 103, 104. Fever is not always present, and, out of 11 cases, I found 5 entirely apyretic. But when it exists, elevation of temperature with evening exacerbations is a precious sign, especially when such course of temperature is associated with tympanites and effusion in the abdomen. Ascites is rarely large, although at times the effusion may be considerable. In the observation cited above, the abdomen contained more than twelve quarts of fluid. The fluid is generally amber coloured, but it may be tinged with blood. Still, the bloody character of peritoneal effusion is always very suspicious; it occurs most usually in malignant diseases of the abdominal cavity.

In cases where there exists a sacculated effusion, the differential diagnosis may be somewhat embarrassing, the disease resembling then ovarian cyst or ascites due to affections of the heart or the liver. But, careful percussion will show that in cardiac, renal or hepatic ascites, there is resonance in front and dulness in the flanks; in ovarian cysts, dulness in front and resonance in the flanks, and, in sacculated tubercular peritonitis, dulness all over. Diarrhœa which associated with evening temperature is so frequently the sign of tubercular enteritis, seems to be rare in tuberculosis of the peritoneum. On the contrary, constipation was present in 50 per cent, of the cases observed by Kelly who also found painful defecation in 20 per cent. The same author lays great stress upon pain in urination which he contends to be a most characteristic symptom. Out of several cases, I have observed this symptom only once, which shows that it must not be of very frequent occurrence.

Like all cases where there is some impediment in the portal circulation, dilatation of subcutaneous veins is often observed, but contrary to what occurs in cirrhosis, where collateral circulation is seen in the upper quadrant of the abdomen, in tubercular peritonitis it is situated below the umbilical region.

Tumours are often felt in palpating the abdomen when the quantity of the effusion does not prevent satisfactory examination. These tumours are due to masses formed by the agglutination of intestinal coils. In other cases, they are formed by the omentum curled up in irregular

nodules and always situated, according to Musser, in the upper quadrant of the abdomen.

I wish to draw your attention to the fact that, out of 11 cases the detailed history of which I have before me, 10 were observed in women and none of these women had ever been pregnant. Would there be any relation between sterility and the predisposition to tuberculosis of the peritoneum? This is quite possible when we consider on the one hand the frequency of the involvement of Fallopian tubes in these cases and, on the other, the well known predilection of infectious diseases for organs in abnormal conditions. The same thing is observed in ectopic gestation which is supposed to occur generally in tubes previously diseased and in the majority of cases, is preceded by a more or less prolonged period of sterility. The greater frequency of tubercular peritonitis in women, and also the previous disturbances of genital functions for a certain time before the breaking out of the tubercular symptoms, lends, I fancy, some likelihood to the correctness of this proposition.

Treatment :

It is really remarkable how strange errors do sometimes occur. De Graafe, one day, thinking he had to deal with a cataract, performed a preliminary iridectomy to remove the supposed opaque lens. The latter, to his great surprise, was not diseased; it was simply a case of glaucoma. However, the patient recovered his eyesight and the treatment of glaucoma by iridectomy became classical, thanks to that error of diagnosis.

In 1862, Spencer Wells, who could not help seeing ovarian cysts everywhere, one day opened the abdomen, believing he had to do with one of these cysts. He was mistaken, and laparotomy revealed tubercular peritonitis, accompanied by ascites. The patient recovered from the operation and also from her disease. Much later, in 1884, Koenig proposed laparotomy as a method of treatment of peritoneal tuberculosis. But, it is only within the last few years that this mode of treatment became definitely adopted by surgeons and, to-day, the cases of tubercular peritonitis treated and cured by the opening of the abdomen are simply innumerable.

I have personally treated a great many cases by laparotomy, but I have been able to follow only 11 of them after the operation. This

number is comparatively small I know, satisfactory as the results may have been, since 7 were cured out of 11 ; however, it is so much added to the statistics cited by others, namely Koenig, who had 30 per cent, of permanent cures ; Aldibert, 82 per cent ; Ochsner, 84 per cent ; Parke Syms, 30 per cent ; Roersch, 75 per cent ; Maurange, 80 per cent ; and finally, Galvani, who in a remarkable article published in "La Revue de Gynécologie et de Chirurgie abdominale," cited lately 111 cases in his own practice with 85 per cent radically cured or improved by laparotomy.

The fact that some patients remain permanently cured is shown by the personal experience of observers who have published cases of patients feeling perfectly well several years after the operation. Schuc-ling's patient was living and in good health fifteen years after; Stelwag's, thirteen years, and Spencer Wells' woman, in whose case the error of diagnosis became the origin of the actual surgical treatment of the disease, was still living twenty-two years after the operation.

Moreover, in cases where a second laparotomy was deemed necessary, the tubercular lesions—and some of them very extensive—found at the first operation proved to have entirely disappeared. Ashfeld, Keetly, Schmidt, have published several observations of that kind. Halsted operated once upon a patient affected with tuberculosis, who several months later died of pneumonia ; the autopsy showed complete absence of tubercles. Herslag performed laparotomy on a woman whose abdominal cavity was studded with confluent granulations ; eight months after, she died of pulmonary phthisis, and at the autopsy the peritoneum was found perfectly clean ; no trace of granulations.

Galvani, who seems to have had in these cases more experience than anybody else, insists on the necessity of doing a second or even a third operation when improvement does not seem definite after the first laparotomy. Well, in the course of a subsequent operation, he has repeatedly noticed the total disappearance of tubercular masses which existed previously in the abdomen.

Naturally, here, the same thing occurs as it does in all other questions pertaining to the medico-surgical domain ; the enthusiasm of the majority is not shared by a certain number, who deny the efficacy of this mode of treatment, in spite of the astounding results published everywhere. Thus, Brockgrevink is far from being convinced. He has

observed 22 cases of peritoneal tuberculosis treated by laparotomy and 17 without. Out of the 22, 9 died, 8 out of those who had fever, and 1 out of the apyretic. Out of the 17 cases treated without laparotomy, 14 recovered. Oheler treated 39 cases without operation, and 21 got well. Fargas, at the Congress of Moscow, in 1897, contended that spontaneous cure occurred in 50 per cent. of cases and that the opening of the abdomen was not necessary.

On the other hand, Treves has published the following compared statistics :

Cases treated by laparotomy :—	Mortality, 3 per cent.
	Improvement, 80 per cent.
	Permanent cure, 30 per cent.
Cases treated without :—	Mortality, 19 per cent.
	Stationary, 71 per cent.
	Cured, 9 per cent.

The conclusions which naturally arises from the above more or less contradictory statistics, is the undeniable fact that tubercular peritonitis is susceptible of spontaneous cure, but I do not think that it militates with the uselessness of laparotomy when we take into consideration the rapid and brilliant results obtained by this mode of treatment employed in suitable cases, that is, above all, at the early stage of the disease, or at least, before the patient is actually moribund. In these favourable cases, twenty-four, forty-eight hours after cœliotomy, the fever disappears, appetite returns, all painful symptoms vanish and in a few weeks, the patient is well enough to resume her occupation.

Of course, I know perfectly well that we are bound to meet with a certain amount of failures, and the good results will necessarily vary with the different conditions which are liable to occur. For instance, we cannot overlook the influence of the age, the form and the duration of the disease and specially, the numerous complications such as fever, involvement of the lungs and the character of the pathological lesions existing in the abdomen. I quite willingly believe that the results of our intervention are ever so much more satisfactory when we have to deal with the miliary rather than the caseous form of tuberculosis, but until we are in possession of reliable clinical signs indicating the exact nature of the process, we should, in my opinion, persist in opening the abdomen as early as possible, that is, as soon as we have acquired a

satisfactory presumption that there exists tuberculosis in the peritoneal cavity.

I do not contest the fact that several cases get well spontaneously but I cannot agree with those who contend that we should always wait, to see what nature will do, before resorting to the surgical treatment which after all, besides being entirely devoid of gravity, will at any rate serve to enlighten the diagnosis in obscure cases. Why should *waiting* be here the proper course to follow, when the most elementary experience has repeatedly taught us the deplorable consequences of procrastination in other pathological conditions?

And finally, when we consider the difficulty, in the majority of cases, of placing our tubercular patients in such a situation as will ensure efficacious results from purely medical treatment, such as irreproachable hygienic conditions, over-feeding, prolonged and absolute rest, I am compelled to come to the conclusion that laparotomy is the treatment of choice in tuberculosis of the peritoneum, because experience has proved that it is curative in the majority of cases, provided it is resorted to before the progress of the disease has made it impossible for the patient to be cured by any surgical or medical treatment whatever.

And then, I consider the mere fact of opening the abdomen as altogether sufficient, without it being necessary to resort in the meantime to antiseptics, irrigation or the removal of pelvic masses. The supposed primary genital focus should not be attacked unless suppurating. If adhesions are not extensive, they may be separated with care, but when the intestines are adherent in a bunch, they should not be touched.

And no drainage; the tract of the drain may remain open indefinitely. Kelly has shown temperature to drop to normal in the second week without drainage, and in the ninth only, when drainage is used. He has abandoned it for more than five years. If in a few weeks or months, the disease shows signs of occurrence, we should not hesitate to follow Galvani's example and reopen the abdomen a second and even a third time.

Should it be our good fortune to have to deal with a recent case, accompanied by ascites, we are justified in expecting a definitive and permanent cure, and even in cases where alteration of the general state and elevation of temperature induce us to suspect that we have

perhaps to deal with the caseous form, here again, although our prognosis should be reserved, we have good chances of obtaining considerable improvement and even permanent cure, as several observers have cited examples.

We are not yet in possession of satisfactory theories to explain the means of healing after abdominal section in tubercular peritonitis, but whether the penetration of light and air in the abdominal cavity has any influence or not upon the disappearance of the lesions, we have ample reasons to believe—and this is my final conclusion—that the mere opening of the abdomen is all that is required to obtain the necessary results. It is, at any rate, the first and the most important step in the treatment which, subsequently, should be continued and directed according to the classical rules governing the treatment of tuberculosis in general.

