

outdoor employment. Strength must be maintained; good food and fats are desirable; virol and the various emulsions are worthy of a trial. Fowler's solution with nux vomica and iodide of potassium may be given. Until a larger experience of the disease has been gained it would be better to send the patients for change of air, not to the seaside, but inland to fairly high altitudes—say 700 feet or more above the sea-level.

Newcastle-upon-Tyne.

EARLY PERITONITIS.¹

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THE importance of recognising the earliest indications of peritonitis due to disease of the appendix can scarcely be exaggerated, for it may make all the difference between life and death to the patient, the condition being capable of arrest and cure in the early stage and only occasionally so in the later. If all cases of peritonitis due to disease of the appendix showed certain general characteristics resultant on their origin, or if they began abruptly in the same way, it would not be necessary to ask your attention to the subject, for descriptions would be printed in every text-book both on medicine and surgery. But it is not so, and in quite a large number peritonitis is insidious in its origin. The question which always presents itself to those in charge of a case presenting symptoms of appendicitis of a mild type is whether it is better to wait or to have recourse to immediate operation. If we can point to any symptom that will enable us to speak authoritatively in answer then we have gained something in our contest against a disease which presents itself under so many forms. Much depends on the reply to this question.

Many of you have seen the subjects of peritonitis brought to the hospital in the last stage of the disease, for there is hardly a week passes without the arrival of one or more of them. You know the appearance of these cases, their symptoms, and the condition of the abdomen. The disease is usually so advanced that one of the first questions put to their friends is, Why was the case not brought up before? and in most instances the reply is that there had been a serious change for the worse and their medical attendant had then advised them to come to the hospital—they had not known the patient was so ill before that. We know that the friends of patients rarely appreciate the severity of an illness, but it is not only that the friends were mistaken, as they might easily have been, but there can be little doubt that their medical attendant was also deceived by the mildness of the symptoms in some of these cases and the only conclusion we can come to is that the disease must have been most insidious. One has seen these cases in private as well as in hospital practice and the experience is always a painful one. The history is the same—symptoms of a mild attack of appendicitis and then a sudden change for the worse, or the rapid development of some unfavourable symptom, generally four or five days after the commencement of the illness. The abdomen is usually found to be distended and there is no movement during respiration excepting in the thoracic region. The abdominal wall is hard, tenderness is general, and on percussion you find a tympanitic note in front with dulness in the flanks; sometimes there is dulness also over the pubes—this dulness is that of fluid and it shifts with the position of the patient. Thrill is rarely found. If the abdomen is opened you let out a large quantity of very offensive purulent fluid and probably find a perforated or diseased appendix; but whatever further measures are taken you seldom save the life of the patient. He has received such a dose of poison that he cannot recover and death, usually from heart failure, soon ensues.

I have dwelt upon the local aspect of the case because I am strongly of opinion that more lives will be saved if we pay closer attention to the exact progress of symptoms as revealed by accurate abdominal examination. If you inquire when the evidence of fluid first showed you will probably get a very uncertain reply. The fact is, that attention has not been drawn to the necessity of looking for intra-peritoneal effusion, nor has its importance been recognised as it should

be. Then, again, the experience which some men obtain in abdominal examination during their course at the hospital is, to say the least of it, imperfect, and they are in consequence not always able to appreciate the difference in note which is caused by an early effusion. I often advise students in the wards to examine the abdomen whenever they have opportunity, as also never to miss a chance of trying for fluctuation in any case where it is suspected. Cultivate the sense of touch. You may point out the presence of dulness in the flanks and receive the reply: "Yes, there is, I see, dulness in the flanks but that is due to a full colon, and the dulness goes from the side which is uppermost because the full colon falls away by its own weight." It is then pointed out that the dulness in the opposite side is increased in extent by the change of position or it may be that the dulness extends across the abdomen above the pubes when the patient is lying on his back. The appearance of the face is very deceptive. The temperature may be normal or subnormal, as you know, in suppurative peritonitis, but when you have to diagnose the condition from the facies Hippocratica, a rapidly failing pulse, and a distended fixed abdomen, the diagnosis is not of much use to the patient. I have for a long time considered that the detection of the presence of effusion in the peritoneum was of great importance in the diagnosis of peritonitis in its early stage and the patients I show you to-day are proofs of the good result of the treatment which has resulted from that conviction. The three patients formerly in the hospital were brought up by their friends in quite an early stage of their trouble. No opium had been given to ease their pain nor had anything been done calculated to alter the course of the illness. They were ill but the parents were not alarmed at their condition and had not called in medical assistance.

The following is the clinical report of the patient I now show you.

CASE 1.²—A girl, aged 14 years, living at home, was admitted into St. Thomas's Hospital, under my care, on Dec. 21st, 1900, with the following history. In May of that year she had been operated on by a surgeon at another hospital for peritonitis, and after her recovery from this condition she was sent to a convalescent home at the seaside. She was there taken with pain in the abdomen and an abscess developed which was opened. From this she recovered satisfactorily. She was taken ill again on Dec. 19th with pain in the abdomen and vomiting, there being no constipation. On admission the abdomen was found not to be rigid or distended and it moved well on respiration. She complained of pain under the right rectus and also half way between the umbilicus and anterior superior spine. There was evidence of free fluid in the right flank, but no tumour could be felt. She had vomited in the morning, but now the tongue was clean and moist and she did not feel sick. The temperature was 100·2° F. and the pulse was slightly quickened. There was a scar, the result of the first operation, in the middle line below the umbilicus, and another, the result of the second operation, in the right linea semilunaris, over the region of the appendix. Her expression was good and she did not look ill. The incision on this occasion was made over the rectus on the right side of the abdomen and after displacement of that muscle the peritoneum was opened. A quantity of thin pus having a faecal odour escaped and more was removed with sponges. The appendix was found with some difficulty and removed; it was bound down by old adhesions. It contained a faecal concretion of the size of a small hazel nut over which there was a perforation. There was a patch of lymph over one part of the ileum but no general dissemination of it. The vessels of the intestine were also unusually distinct but otherwise there was no change in the appearance of the peritoneum. There were no adhesions of intestine or omentum. The wound was closed after a careful cleansing of the peritoneum, without drainage. On the 28th, however, when the stitches were removed it was found that a rise of temperature was accounted for by a collection of pus which was discharging through the outermost of the scars and which had a distinctly faecal odour. Her progress towards recovery was good after this date and she left well on Jan. 24th, 1901. The recent wound had not suppurated.

I was rather inclined to regard the slight symptoms produced by the perforation of the appendix and the effusion in the peritoneum as the result of lessened sensitiveness of

¹ Abstract of a clinical lecture delivered at St. Thomas's Hospital.

² Vide THE LANCET, Jan. 18th, 1902, p. 145 (Case 5).

the peritoneum as a consequence of the former inflammatory attacks. This was not a correct view, as Cases 2 and 3 will show. You can see that the scars are all of them without weakness; there is no bulging when the abdominal wall is strained, and the girl, who looks well, has had no illness since she left the hospital.

The history of this second patient is as follows:—

CASE 2.—A youth, aged 15 years, was admitted into George Ward in St. Thomas's Hospital under the care of Dr. H. W. G. Mackenzie on August 2nd, 1901. For about four years the patient had had attacks of pain in the abdomen but had never been kept at home by them for more than two days. He had had about seven or eight attacks altogether; the last one was in the previous March. When returning from work at 6 o'clock in the evening of the day before his admission to the hospital he again felt pain in the abdomen and on arrival home he was unable to eat his supper. He could not sleep and a hot fomentation was applied. In the morning he was a little better and returned to work, but while there he was taken much worse, the pain in the abdomen became very severe, and he was sent up to the hospital in a cab. The patient was a well-nourished lad with flushed cheeks and he complained of pain in the abdomen. On examination the abdomen moved only slightly and in the upper part it was somewhat distended on respiration, and there was general tenderness which was most marked below the umbilicus. The liver dulness was normal. No definite tumour could be made out but there was dulness in the flanks and above the pubes, shifting with position. The chest sounds were normal. The pulse was 112; it was of fair tension and was regular. The tongue was lightly furred but was not dry. The temperature was 100·8° F. The bowels acted the day before admission. I was asked to see the case about 2.30 P.M. I found the patient suffering but little. The expression of the face was good and he smiled pleasantly when answering questions. The pulse was less frequent—about 90—but with the exception of increase in the dulness of the flanks there was little change.

About 18½ hours after the onset of pain the appendix was removed after incision of the rectus sheath with displacement of muscle. On opening the peritoneal cavity free purulent fluid was found which filled the pelvis and extended into both flanks; it resembled thin gruel and was of a dirty yellowish colour, in quantity about a pint or more, and not offensive in odour. There was no lymph. The intestines were not distended, they showed no change in the normal polish, and the only thing unusual was a dilatation of the vessels in the walls of the gut. The appendix after removal was about two inches in length; the last inch was intensely inflamed and contained a few drops of pus. At one spot near the tip the wall was extremely thin, evidently being on the point of perforation. The rest of the appendix towards the cæcum was pale and thickened and contained a stercolith. The peritoneum was sutured over the stump of the appendix, after which the peritoneal cavity was washed out with saline fluid at a temperature of 105° F. A glass drainage-tube was passed into the pelvis. The pulse and temperature gradually fell to normal on the fourth day and as the amount of discharge from the tube was slight it was removed on the sixth day, the stitches being removed on the seventh day. The patient made a rapid recovery and left the hospital on August 20th.

The account of the third patient is very similar to that of the patient in Case 2.

CASE 3.—A boy, aged nine years, was admitted into the Leopold Ward of St. Thomas's Hospital on Oct. 10th, 1901. Some months before the patient had pain in the abdomen and vomiting, but the pain was in the upper part of the abdomen and passed away in a few hours. On the afternoon of the 9th when in school the patient had an attack of pain in the upper part of the abdomen. He went home, when he vomited once. He complained of a smarting feeling and pain lower down on the right side of his abdomen. On the next morning the patient vomited again and his mother brought him up to the hospital in the evening. When admitted his temperature was 101·6° F. and the pulse was quickened—from 70 to 80—but the boy did not appear ill. On examination of the abdomen there was found to be some slight distension but the walls moved well with respiration. Examination with the hand was well tolerated, and the patient did not complain of any pain excepting on pressure to the right of the umbilicus, and then he did not complain much. The right rectus in this region was rather rigid. No

tumour could be felt but on percussion there was evidence of free fluid in the pelvis and the right flank. The symptoms were altogether obscure but it was thought best to explore the affected region, the free fluid being regarded as an unfavourable sign.

Operation was performed at 9 P.M. An incision was made through the right rectus muscle and the peritoneum was opened. A quantity of yellowish-white fluid, which was not offensive in odour, at once escaped from the opening and a quantity (from six to seven ounces) was sponged away from the pelvis and outer side of the ascending colon and cæcum. The appendix was lying to the outer side of the cæcum, slightly bound down and curled on itself. It was six inches long and contained a concretion over which there was a perforated ulcer. The appendix was removed in the usual manner and the peritoneum was cleansed with warm saline. A Keith's tube was inserted and a gauze plug placed beside the tube. The peritoneum, the rectus, and the aponeurosis were stitched with silk, while fish-gut was employed for the superficial sutures. No lymph could be seen anywhere, not even about the cæcum; the intestine was not sticky and the only visible change was an unusual distinctness of the vessels in the intestinal walls. The temperature became normal by the 14th. There was no more vomiting or pain. The discharge was slight, so the tube was removed on the 12th. The gauze plug had been taken out on the previous day. The wound was somewhat slow in healing but he was quite well and able to go home on Nov. 12th.

Additional proof of the importance of early recognition of this symptom is afforded by the following case. It resembles the others very closely although the patient was older. Luckily for her she was under skilled observation and her condition was recognised at once and promptly treated.

CASE 4.—The patient was a nurse; she awoke at 1 A.M. on the night of April 30th, 1902, complaining of pain in the abdomen and she was sick. There was at this time no rise of temperature and a dose of castor-oil was given for the relief of the supposed colic. She had been perfectly well the day before and engaged in the wards of the institution in which she was employed. As the day progressed she had continued paroxysms of pain, especially in the right iliac fossa, and about midday the temperature rose to 102° F. It fell towards evening but the pain continued although the bowels were well acted on by the medicine. In the temporary absence of Dr. Donaldson Dr. W. M. Jackson asked Dr. F. Bryan to see her. He agreed that the patient had peritonitis and I was asked to go down. The patient was a young woman, about 24 years of age, pleasant looking, and without the abdominalis facies. She was lying on her back, had a somewhat rapid, thoracic respiration with slight working of the nostrils, and a pulse of 120, which, however, quieted down. The tongue was moist and not particularly furred. Examination of the abdomen showed little movement with respiration. There was a long red firm scar running across from the right kidney region with a curve into the iliac region which was said to have been made at an operation in December, 1901, when she had some disease of the appendix. There was tenderness with some rigidity of muscles, especially in the right iliac region, but tenderness and pain also troubled her on the left side, whilst the tenderness was to some extent general. There was some shifting dulness in the flanks but not above the pubes. When the patient was under chloroform, which was administered by Dr. W. J. Thomas, some thickening was felt in the region of the appendix, but it was a question whether this process had already been removed or not at the former operation. Anyway, the scar resembled that of the incision suggested by Dr. J. R. Morison for this purpose when pus is present. The patient did not know: all that she was able to say on the subject was that the gentleman who operated would be pleased to answer any questions as to what had been done. I thought that this indicated a failure in the attempt to remove the appendix.

An incision was made through the right rectus muscle and on opening the peritoneal cavity pus of an offensive odour came from the region of the right iliac fossa and right kidney. It was thin, a kind of brownish sero-pus, and several ounces came away during the progress of the operation; there was some both in the pelvis (where there were old intestinal adhesions) and in the right flank. The ileum and the cæcum were partly coated with lymph, which was irregularly but not widely distributed, and there were some

flakes on the bowel towards the middle line and pelvis but in no great quantity. The appendix could not be found at first and a fleshy projection near the caput cæci resembling a stump made it appear possible that it had been removed. However, the impression that this was a mistake remained and further search was made. There was no indication of its presence in the iliac fossa, for the peritoneal surface appeared continuous and there was no undue hardness to be felt. For some time it could not be found but finally towards the pelvis a slight bulging which proved to be the apex of the appendix was discovered and the finger carried along it freed it, with some difficulty, from its bed of adhesions and after ligature of its mesentery it was removed, a second ligature being applied to its proximal end. The stump was not invaginated but its mucous surface was sterilised with a drop of pure carbolic acid. The abdomen was then washed out with gauze sponges in holders and the wound was closed, a glass drain being passed into the pelvis. The appendix was the subject of a chronic catarrhal inflammation and presented a large perforation where a portion of the wall had sloughed which easily admitted the finger-tip. The tube was removed on the third day but discharge continued for some time from the wound. The patient made a satisfactory recovery. I may say that the scar resulting from the former operation is a very good one and without any sign of weakness.

The note of Dr. Mackay, for which I am indebted to him, was to the effect that the patient had had an attack of peritonitis at Christmas time. At the outset appendicitis could not be diagnosed; with the clearing of distension and effusion, however, Dr. Mackay made out a tumour in the right flank which soon showed signs of deep fluctuation. He suspected peri-appendical suppuration and operated, hoping to find an easily removeable appendix. Some foul pus was evacuated but the appendix could not be found without breaking down the adhesions of the abscess cavity and therefore he had to leave it.

This case is a further confirmation of my contention as put forward in a recent paper that the appendix should be excised in the quiet period, if for some reason it is not removed when an abscess dependent on its disease is opened. Experience of other cases since that statement was written has strengthened my feeling on this question.

We have here a group of four cases which presented symptoms of a mild character varying but slightly. Each patient was seized with abdominal pain and each vomited and had a moderate elevation of temperature—in no case was it registered as above 102° F. before operation. The pulse did not in any instance (except in Case 4) exceed 110 when I saw it, nor was the expression of any patient indicative of serious abdominal trouble. Yet in each case there was purulent peritoneal exudation of considerable amount within a few hours of the commencement of the illness and in three of them there was perforation of the appendix, and in the fourth acute inflammation of that structure, with a purulent collection inside it. In all these cases the mildness of the symptoms in spite of the serious condition of the appendix is striking. Inflammation of the peritoneum had already commenced and it is unlikely that it would have become localised.

I think that it is very probable that many cases of septic peritonitis have passed through the stage as described in these notes for the patients only to die a few days later because its importance was unrecognised and operative treatment was postponed or neglected. I regard this early effusion as an indication for immediate operation.

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THE RELATION OF MENTAL SYMPTOMS TO BODILY DISEASE.¹

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THE relation of mental symptoms to bodily disease is a subject of the greatest importance and interest to us all as practitioners of medicine. It would be impossible for me in one paper to deal with such a comprehensive subject at all adequately, so that I do not propose to speak of

actual insanities either as occurring in the course of numerous diseases or as caused by them, but to restrict myself to those temporary mental disturbances observed in association with lesions of various viscera.

Maudsley has said in his "Pathology of Mind" that "it is impossible to be out of sorts physically without being out of sorts mentally," and this we must all admit to be to a great extent true, for our mental well-being depends on the physiological condition of our internal organs, more especially the digestive apparatus, and it is our common experience to observe serious mental disturbance follow visceral disorder. We are all acquainted with the "livery" man, in what varying moods we may find him at different periods—at one time so irritable as to be approached only with caution and at another so depressed and dull as by preference to be avoided.

In spite of the importance of the subject very little has been written upon it. A few papers dealing with the mental symptoms in individual diseases have been published but as far as I know no general classification or orderly arrangement of them has been made. My own conclusions are based on an observation of a very large number of insane patients in three large county asylums and also about 26,000 ordinary hospital cases. From this very large clinical field of observation I have had exceptional opportunities of seeing almost every form of mental disorder, temporary and permanent, arising during the course of, or following, serious bodily disease and injury.

One of the most interesting forms of mental disorder is that occurring in visceral disease and which has been so well investigated and described by Henry Head in two papers—the first published in *Brain* in 1893 and the last in the same journal in 1902. The latter excellent and scholarly paper has just been published and I am greatly indebted to it in writing my own paper. Adopting the classification of Head we find that mental changes may be produced in the following ways. 1. The circulation to the brain may be so altered either by a disturbed activity of the heart or by the altered condition of the blood. The delirium that accompanies a failing heart may be instanced as an example of a mental change dependent directly on altered vascular conditions. 2. Some secretory organ may be attacked by disease, such as the thyroid. In exophthalmic goitre we have evidences of thyroidism with great nervousness and irritability, whilst in myxœdema we have the opposite mental state of depression and hebetude. 3. Disease of excretory organs may lead to the retention of toxic agents in the blood, as, for example, uræmia and jaundice. 4. Poisons circulating in the blood, such as alcohol, may in certain lowered conditions of the body due to visceral disease produce mental changes. 5. "Visceral disease may so lower the patient's resistance that some inherent mental tendency may become manifest as active mental disease." These are the causes of the direct mental effects in visceral diseases and are easily understood, but there are certain diseases of the internal organs which are now known to be accompanied by superficial tenderness of the scalp, the face, and the body, together with radiating pains of the trunk. The pain and tenderness are due to changes in some part of the central sympathetic system caused by disturbance of the internal organ to which sensory sympathetic nerves are supplied. Head calls these "reflected visceral pains" and the mental symptoms are indirect for they are associated with visceral disturbances through the mediation of the sympathetic system. We are all familiar with the young anæmic woman with pain in the chest and side, or even with all sorts of patients who complain of tenderness and radiating pains round the trunk and the head, pains which cause much physical and mental distress and which in many cases are accompanied by changes in consciousness. These changes mostly take the form of hallucinations of sight, hearing, and smell and are generally of a temporary nature, disappearing with the disease, but more pronounced mental changes may manifest themselves in the form of varying moods of exaltation, depression, or suspicion. In these moods a patient may have all the symptoms of an insane person for the time being with delusions, but they are in no sense fixed delusions and often disappear as rapidly as they came. The diseases in which these curious mental states are observed are chiefly those of the heart, the lungs, and the stomach, and it is extraordinary in how many cases they will be found in a greater or lesser degree if carefully looked for. It would be impossible in this short paper to enter at all fully into the details of numerous cases of which I have notes, so that I will

¹ A paper read before the Liverpool Medical Institution on Feb. 13th, 1902.