Clinical Remarks

ON PELVIC APPENDICITIS

AND THE IMPORTANCE OF RECTAL EXAMINATION.

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I WOULD include under the term "pelvic appendicitis" those cases in which the diseased area of the appendix lies over or below the brim of the true pelvis, and in which the pelvic peritoneum is primarily involved. I have had to do with a number of such cases and they bear such a close resemblance to each other that I think they form a fairly distinctive group.

Every third-year student knows the location of the so-called McBurney's point, and the importance attached to it clinically. Those who see a large number of cases soon learn that the point of maximum tenderness is by no means fixed, but is determined by the locus of the disease. The location of the diseased appendix in any case is indicated by the point or region of maximum tenderness, that is, if the case is examined early while the disease is limited to the appendix and its immediate neighbourhood. This knowledge is constantly made use of at the bedside in making diagnoses. For instance, if the tenderness is more marked in the loin, one may take it as evidence that the appendix is turned upwards behind the caecum; if near the median line, that the appendix lies more internally than usual. It seems necessary to find a tender point over the presumably diseased appendix to enable one to make a diagnosis of appendicitis, and in the early stage while the disease is localized the other symptoms of appendicitis without a point of tenderness do not generally permit or warrant a definite diagnosis.

The mortality is high in the group of cases I have designated by the term "pelvic appendicitis." One, and the chief, reason for this high mortality is failure to make the diagnosis early. The misleading feature in these cases is absence of a characteristically tender point. Pressure over McBurney's point does not cause pain, nor does pressure over any of the more usual situations. Only deep pressure over the hypogastric and pelvic regions causes distress. The reason is that the distal and diseased end of the appendix lies just over the pelvic brim, and is not easily directly pressed upon. In the early stage, when the disease is confined to the appendix only, deep pressure touches the sensitive spot, and if now a careful examination be made per rectum and by conjoined manipulation, an indefinite suspicion may be changed into a positive diagnosis.

In looking over the symptoms and diagnostic points of acute appendicitis, as enumerated in the surgical textbooks published in English, German, or French, I am surprised at the infrequency of mention and insistence upon a rectal and bimanual examination as a routine measure in physical examination. I think it should certainly be practised in all doubtful cases of appendicitis and in all obscure abdominal conditions. Another striking symptom in this group of cases is the facial expression. In two instances it was the most prominent symptom present, the temperature and pulse being normal, and the apparent abdominal condition not one to cause alarm; indeed, the expression was so drawn and anxious that I have kept these patients in bed when otherwise they might have been allowed up.

I know of no group of cases that give such surprises to the attendants as this of pelvic appendicitis. The diagnosis of appendicitis may have been given as the probable one; as the twelve-hour intervals pass the patient improves, and the diagnosis of appendicitis may be questioned or abandoned. On the fourth, fifth, or sixth day, without warning, there occurs accession of pain, and there rapidly develops a generalized septic peritonitis, and almost before the attendant and family realize it the patient is in a hopeless state, with abdominal distension, a rapid shabby pulse, cold extremities, cold perspiration, and vomiting. The only chance of saving them is immediate operation the moment the evidences of spreading

develop. The progress of the infection is so rapid that, as a rule, relief comes sufficiently early only in those under observation in hospital wards.

One evening a young woman of 17 was admitted to one of my wards with some abdominal pain and more or less general abdominal tenderness, not especially marked at any one point. These symptoms had been present for five days. The diagnosis outside had been appendicitis. There were no urgent symptoms, and ice bags were placed over the abdomen. At my visit on the following day I was told that the patient was much better and would not need operation. The temperature was 99.5°, and the pulse 104. The upper part of the abdomen was soft and not tender; there was no particular tenderness over McBurney's point. Deep pressure over the hypogastric region caused a feeling of distress and was resisted. On passing the fingers into the rectum and pressing forward, the girl winced and complained that it hurt her. Bimanual examination was distinctly painful. I operated at once and found the tip of a rather long appendix hanging over the brim of the pelvis, gangrenous and perforated, and lying in a small walled-off pocket of pus. The appendix was removed, the pus wiped away, and the patient made a good recovery.

Without a rectal and bimanual examination this case might quite likely have drifted along until the little walled-off abscess ruptured, and then it is a question if her life would have been saved. There were at the time no other symptoms present that seemed to call for immediate operation.

On February 4th, 1887, a young man aged 22 years was admitted to the Montreal General Hospital complaining of gripping pain in the abdomen and rectal tenesmus. There was no vomiting. He said it was the same pain that he had had a year before during an attack of typhoid fever. He was sent to a medical ward. On admission there was slight, if any, tenderness in the right iliac region, and no rigidity. The abdomen was somewhat distended and tympanitic. The temperature was 100° F. Three days later I was asked to see him, and found by rectal examination a smooth even mass partially filling the pelvis, and advised operative measures. On the two following days there were frequent passages of small quantities of mucus, with pain down both thighs. He was transferred to the surgical side on February 9th, and I operated at 8 p.m. The pelvis was full of pus held down by intestine, omentum, and adhesions; a small abscess was evacuated at the site of the appendix; the appendix itself was a mass of slough. There was no communication between the small abscess at the site of the appendix and that in the pelvis. The patient made an uninterrupted recovery.

Had not a rectal examination been made I doubt not that this case would have gone on until one or other abscess perforated and infected the peritoneum.

A somewhat similar case was that of a young girl aged 19, admitted to the Montreal General Hospital, February 1st, 1897. She gave a history of having suffered from ill-defined abdominal pain for a period of four days. A little rounding up of the abdomen and moderate tenderness on pressure over the pelvic area were present. Rectal examination found Douglas's pouch filled by a soft elastic swelling, very decidedly tender on pressure. The temperature was normal and the pulse 76. She said that she had vomited a good deal. The facial expression was anxious. On opening the abdomen it was thought at first that an error in diagnosis had been made. I then placed the patient in the Trendelenburg position, and after guarding the abdomen carefully by swabs I gradually approached the mass which I had felt per rectum. Very soon there was an escape of pus, and I found embedded in a small abscess cavity the distal end of a long appendix hanging over the brim, and in a sloughy and gangrenous condition.

Here again rectal examination contributed to the establishment of a diagnosis and to the saving of a life.

A young man, aged 28, was admitted to the General Hospital on November 10th, 1902. A diagnosis of appendicitis had been made by his family physician, Dr. Reddy. Two weeks before he had felt a pain in the epigastrium, which lasted a few minutes and then passed away. On admission, he stated that after breakfast on the previous day he was seized with a sharp pain in the region of the stomach and vomited. He remained in bed all that day. On examination there was present a little tenderness in the epigastrium, to the right of the umbilicus and over the pelvic region. Rectal and bimanual examination was very painful; no definite mass could be made out. The temperature was 101° and the pulse 100. I concurred in the diagnosis, and thought it wise to watch the case for a little, hoping that he would recover from the present attack, when the appendix could be removed with greater safety in the interval. On the third day his temperature became normal and his pulse 82. The abdominal and rectal tenderness had disappeared. The same condition obtained on the fourth and fifth days. When I made my visit on the morning of the sixth day he asked to be allowed up; his temperature was normal and his pulse 72. Pressure over the

abdomen and over the appendix caused no pain. By rectal and bimanual examination there was felt high up an indistinct fullness, nothing definite, and he did not complain of my hurting him. The only symptom that caused me any anxiety was his face; it wore an anxious expression. Leaving careful instructions that I was to be called if there was complaint of pain, I went into another ward. In less than half an hour the message came. The man was complaining of severe pain in the lower abdomen. I returned to him at once, and found that now there was very decided tenderness on pressure over the hypogastrium. My first examination had probably precipitated the rupture. As soon as possible I opened the abdomen, and found the end of a long appendix hanging over the brim of the pelvis. In the distal end were two concretions, and on the proximal side of the concretion a small perforation. He made an excellent recovery.

I might report many more illustrative cases. Unfortunately many of these are past relief when admitted to the hospital. This is largely due to the difficulty in diagnosis, and perhaps more to their deceptive course. A small perforation may occur, become walled off by adhesions, and lie in such a position that the usual examination of the abdomen does not detect it. How often the consulting surgeon is told by the family physician that at one visit the patient was to all appearances doing well and without ominous symptoms, and at the next visit evidenced more or less generalized peritonitis, and the patient in a semi-collapsed state!

On December 9th, 1904, I saw in consultation with Dr. W. Grant Stewart, a man 36 years of age, who gave the following history. Two years ago he had typhoid fever. This was followed by a condition thought to be tuberculous peritonitis. He was off work for seven or eight months. He described the onset of the present attack in the following words:

"Three days ago I was trying to lift a piece of machinery by using a plank as a lever, and resting my stomach against it. I was rather sore that evening, but was all right the next day, Wednesday. Early Thursday morning, while in bed, I vomited. Got up at the usual time, took a cup of coffee and a bit of toast, and went to the factory. Did not feel able to work, and started almost at once to return home. On the way I vomited from the rear end of the tramcar."

Dr. Stewart saw him at 5 p.m. on Thursday, and found him complaining of some epigastric pain; no marked tenderness. Temperature and pulse normal. The following morning his condition was much the same; temperature, 99.5°; pulse, 100. In the afternoon there was tenderness on deep pressure lower down over the pelvis; temperature, 100.5°; pulse, 112. When I saw him that evening the abdomen was somewhat rounded up, but there was very little tenderness at any point. Deep pressure over the pelvic region caused some uneasiness. By rectal examination the end of the fingers could feel high up an indistinct sense of a mass, which was tender, and, on pressing forward, he said that it hurt him considerably. There being no improvement in his condition on the following morning (Saturday), Dr. Stewart sent him into the hospital, where he could be kept under observation. At noon, Saturday, I examined him most carefully, and could make out no definite tenderness, except per rectum. There was no vomiting, and he felt much better, and asked for more to eat. There was present only two symptoms, slight abdominal fullness and rectal tenderness—these two symptoms and the clinical history. His temperature was 99° and the pulse 80. There was a good deal of distress in urinating.

I advised him to submit to immediate operation. "Well," he replied, slapping his abdomen, "I seem pretty well here, to have an operation, but I suppose you know best." Students and house-surgeons showed by their facial expression what they hardly cared to say—that I was most radical in advising an immediate operation with so few symptoms. On opening the abdomen I found an unusually long appendix. The proximal two-thirds seemed almost normal; the distal third dipped down over the brim of the pelvis, and was in part gangrenous, and contained a faecal concretion, on the proximal side of which was a small perforation. This diseased end lay in a small walled-off abscess. Perfect recovery.

On Monday, December 26th, 1904, a young man, aged 33, was brought to me by Dr. Edgar of North Hatley. The condition was thought to be appendicitis. The illness was of ten days' duration. There had not been much pain but a good deal of vomiting. He complained of discomfort amounting almost to pain when he vomited. At the onset there had been pretty general abdominal tenderness. Dr. Edgar said, "he had been tender everywhere except over the appendix." On admission to the hospital there was considerable distension of the abdomen, together with a moderate degree of rigidity. The only place where there was any tenderness was on very deep pressure over the pelvic region, and there it was very little indeed. There was certainly no tenderness over the usual situation of the appendix nor in the right loin. Per rectum there could be felt a distinct mass which was exceedingly tender. The slightest pressure of the fingers forward caused him to complain loudly and draw away.

Operation on the tenth day of illness and twenty-four hours

after recurrence of sharp pain. When I opened the abdomen with the patient in the Trendelenburg position, and the intestines pushed out of the way, I could see nothing abnormal on looking into the pelvis except that there were two coils of small intestine which, although somewhat reddened and rather distended, were evidently adherent below. After carefully protecting the general peritoneal cavity I gradually separated the coils of intestine from below and found a perforated gangrenous appendix lying in an abscess cavity behind the bladder.

In this case the caecum had slid down and become a pelvic organ. Pain and distress during micturition, especially towards the end of the act, are very generally complained of in this condition. Recovery is sometimes slow. The abscess walls are largely those of the true pelvis and are fixed and unyielding.

These clinical histories resemble each other in several particulars. There is the usual sudden onset of pain, and generally some nausea and perhaps vomiting. The pain is often more generalized than is usually the case. There will be only moderate elevation of temperature and acceleration of pulse. Tenderness on pressure, not marked, is complained of more when deep pressure is made over the pelvic region than over the more usual situations of the appendix. The diagnosis at the onset is probably appendicitis, but the attendant does not feel certain about it. In twenty-four or forty-eight hours the symptoms have improved, and the diagnosis becomes still more uncertain. Then there occurs quite suddenly after a period of two, three, or four days of an apparently normal convalescence, a sharp recrudescence, peritonitis develops, generally rapidly, and the condition of the patient soon becomes alarming.

My special plea is that a routine rectal and bimanual examination by fully establishing an uncertain diagnosis would suggest earlier operative treatment and lower the death-rate in this variety of disease.

In operating upon these cases I have found the Trendelenburg position of great value. The small intestines can be carefully protected and the deep pelvic cavity brought into view. In this way one is able to proceed to the different stages of the operation with much more assurance of not doing injury to the already inflamed parts and the infected area can be made clean with greater precision and certainty. Drainage is always necessary. Convalescence is usually slow. In only two instances have I thought it necessary to establish dependent drainage through the vagina. In one of these cases another surgeon had operated six weeks before and had carried a drainage tube from the bottom of the pelvis up through his lateral abdominal incision. A considerable cavity persisted with a good deal of purulent discharge. At his request and with his assistance I passed a tube up through the vault of the vagina into the pelvic cavity. We both thought that the dependent drainage was an advantage, but the cavity did not close entirely until three months later.

DIFFUSE PERITONITIS FROM PERFORATION OF THE APPENDIX: ITS DIAGNOSIS AND TREATMENT, WITH A RECORD OF 14 CASES WITH 12 RECOVERIES.

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In the *Bristol Medico-Chirurgical Journal* a few years ago¹ I published a paper on 40 cases of appendicitis, and in the September² number of the same journal one based on the records of 115 more cases. In the last series were 14 cases of operation for diffuse peritonitis and 6 of general peritonitis, and I purpose in this paper to give an abstract of the cases of diffuse peritonitis, and to make some remarks on their diagnosis and treatment. The first case was fully reported in the *Lancet* for 1901,³ and Cases III and IV in the *BRITISH MEDICAL JOURNAL* for 1902.⁴

It may be asked at once, What is the difference between diffuse peritonitis and general peritonitis? I think the difference is a very important one. By general peritonitis I mean cases in which the whole peritoneal cavity is involved; by diffuse peritonitis I mean a peritonitis spreading widely in the lower abdomen, and not merely