fold. Lateral exposure also fails to show any bulging of the abdominal wall. Fig. 2 shows perfect Poupart's fold and appearance of scar on raising of pendulous part of abdominal wall. The cyst of the ovary has practically disappeared.

The absence of the return of the tumor within fifteen months warrants the conclusion that the radical operative treatment was perfectly successful, and the absence of a ventral hernia evidences the fact that even extensive defects of the abdominal wall can be successfully repaired by plastic utilization of the remaining normal structures.

Microscopic examination of the various portions of the tumor have kindly been made by Professor Le Count, who confirmed the clinical diagnosis of desmoid fibroma, and submitted the following histologic examination: "From the section of the entire tumor, which was cut in a fresh condition, a number of small pieces were selected. These exhibited small variations in color and consistency, but histologically were all found to contain essentially the same features, viz., well-fibrillated cells with scanty amount of intercellular substance. Such blood-vessels as were encountered resembled sinuses with atypical hyaline walls. The above-mentioned variations were judged to be due to difference in the amount of blood and to edema."

CHRONIC VOLVULUS PRODUCED BY ABSORPTION OF A MYOMATOUS TUMOR AFTER SALPINGO-OOPHORECTOMY: A CLINICAL NOTE.*

BY JAMES F. W. ROSS, M. D.
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I intend to place on record my experience with a rather rare disease, a disease that has not been much written of and certainly is rarely seen. It is not my intention to discuss the subject of acute volvulus nor of acute intestinal obstruction, but the subject of chronic volvulus, chronic intestinal obstruction lasting over a considerable period of time, an obstruction partial, not complete, and an obstruction that may at any time become complete, and set up symptoms of acute intestinal obstruction.

I find a record in the *British Medical Journal*, of a case reported to the Manchester Pathological Society, by Dr. Ashby. He showed the pathologic specimens removed from the abdomen of a man, 19 years of age, who had been subject to attacks of vomiting for two or three weeks from the time of his birth. He had frequently vomited large quantities of fluid during a single night. The exhaustion of these vomiting attacks was sometimes very great, and appeared to be almost fatal. Errors of diet seemed to invariably bring on the attack. After one of these attacks of vomiting he had acute obstruction of the bowels, peritonitis supervened, and he died. The post-mortem examination showed the immediate cause of death to be an acute volvulus involving nearly the whole of the small intestine, the last few feet of the ileum being twisted from right to left around the upper portion of the jejunum below its junction with the duodenum, the latter being twisted on itself in axis. The stomach was found immensely distended and hypertrophied; the duodenum, also dilated, like a second stomach. The lower part of the duodenum and the upper part of the jejunum were surrounded and in part constricted in front by fibrous adhesions, with some

cretaceous deposit, the result of old—probably fetal—peritonitis. About six inches were thus bound down. There was no complete obstruction, as a forefinger could be readily passed through the narrowest part.

We have here a case of chronic volvulus producing an obstruction of the bowels lasting over a number of years. A little extra twist may at any time make such a volvulus acutely felt so that the result may be disastrous to the patient. I have two cases to record, one of which suffered from volvulus on several previous occasions, and was operated on by me during an attack of acute volvulus, made a good recovery and has never since had a recurrence. The second case is one to which I wish especially to draw attention:

CASE No. 1.—Mr. F. A. G., aged 35, was seen by me in consultation with his physician, Dr. Webster of Toronto, on Feb. 15, 1897. I diagnosed the case as one of acute volvulus. The diagnosis was based on the peculiar appearance of the abdomen. Beneath its walls could be distinctly noticed a tense, curved mass, looking like a piece of bologna sausage hanging over a line. I learned on questioning the patient that he had on previous occasions suffered with similar attacks, but that after the administration of high enemata he had obtained relief. In this attack he stated that he had been taken sick five days before I saw him. While lifting a box he felt a sudden pain in the abdomen. The doctor was not called in until the next morning. No movement of the bowels could be obtained. Purgatives were administered, but were ineffectual. Two professional nurses endeavored to give enemata but could not get the water to pass up beyond the rectum, owing to some obstruction. A small amount of blood and slime came away per enema. The doctor thought the case might be one of intussusception, but I differed from him, owing to the peculiar contour of the abdomen. I advised immediate operation, and operated in the afternoon of the same day.

The abdomen was opened in the median line, an enormously distended and very much lengthened sigmoid flexure popped out of the incision and protruded from the abdomen from twelve to sixteen inches, and stayed straight up like the finger of a glove blown up with air. It appeared to be almost as large as a man's arm at the curve of the elbow with the point of the elbow upward. I turned the volvulus from left to right and undid two twists. I then had an assistant pass up a rectal tube, guided by my hands above, through the untwisted opening and the bowel was thoroughly washed out with water. An enormous collection of seeds of different kinds, pieces of undigested food, grape skins, and pieces of corn were in this way dislodged. After the bowel had been thoroughly emptied it was placed back in the abdominal cavity. I then fastened the left side of the mesentery of the abnormally lengthened bowel, to the peritoneum in front on the left side and the large muscular band of the intestine to the peritoneum on the right side of the abdomen. The abdominal wound was then closed. The patient made an uninterrupted recovery, has remained in good health, and has never had any recurrence of his former attack.

CASE No. 2.—Miss C. was referred to me in October, 1894. On examination I found her suffering from a fibroid tumor growing in the left broad ligament, and advised operation, not knowing before operation whether the tumor could be removed or not.

At the Pavilion of the Toronto General Hospital, in the presence of a number of medical men, I opened the abdomen in the median line, found the growth growing in the left broad ligament and determined that it could

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not be removed with any degree of safety. Both ovaries and tubes were therefore taken out. The patient made an uninterrupted recovery and went home but continued to menstruate. Her health was good for a year or more. The menstrual flow became excessive at times. She suffered considerably from backache. The chief symptoms, however, that subsequently set in, appeared to be those of indigestion produced by pressure on the rectum by the tumor. I made an examination and found, to my surprise, that the tumor had increased in size. I felt disappointed, because a large percentage of these cases have been entirely cured in my hands by removal of the ovaries. I was forced, therefore, to the conclusion that this was one of the unsuccessful cases. She complained of a continual aching in the abdomen, with a continual pain, chiefly toward the right side. I watched her carefully for a length of time and found slight elevation of temperature. She came to my office at intervals for a period of about three months. The tumor still remained as I had first found it, and the patient was evidently suffering from more pain than she could be expected to bear. She therefore determined to have the tumor removed at all hazards. I thought I knew what to expect and consequently held back, but eventually operation was forced on me.

On Jan. 18, 1899, I operated on her, in the Pavilion of the Toronto General Hospital. Dr. A. H. Wright of Toronto assisted me. The abdomen was opened in the median line and the old scar was entirely removed. A large tumor could be made out, filling the pelvis; it looked peculiar. I had never seen a tumor look just as this one did. It did not appear to be a fibroid tumor, but looked more like the tumor found when dealing with a suppurating ovary. After more careful inspection I concluded that it must be distended intestine. Even supposing the tumor to be distended intestine the case was not at all clear. The patient's bowels had moved several times in response to the usual purgative given before celiotomy. There were no definite evidences of obstruction of the bowels before operation. On feeling around in the left loin, the descending colon was encountered and was found filled with scybalous masses. These scybalous masses could not be made out by external palpation. They were found to extend onward into the transverse and descending colon. A great deal of difficulty was experienced in isolating the bowel, owing to the adhesions of one coil to the other. The operation was a prolonged one. It was found impossible to get anything up with which to anastomose any superior portion of the intestine. The tumor filling the pelvis proved to be nothing but a sigmoid or omega flexure packed tightly with fecal matter and half twisted on the narrowing portion of the omega flexure. A half turn of this flexure caused all the trouble. A full turn would no doubt have produced acute volvulus from which the patient must have lost her life long before. The finger could with difficulty be made to reach and pass up through the rectum through the constricted portion. The masses of feces were almost as hard as rocks. The tip of the finger passed through the anus would barely enter at the site of the twist. I separated the small intestines from around the mass, isolated the coils of large intestine, but owing to the shock could do nothing more. The patient left the table with a pulse of 140. Every effort was made to relieve her, but without avail, and she died next morning.

I regret the termination of the case, but can scarcely see that I could have done otherwise than I did. The condition could only be made out after a great amount

of searching, and this searching could only be carried out by breaking down dense adhesions. I fear that some portion of the bowel may have been torn into and that this contamination of the peritoneum brought about the fatal issue. I have never seen such an amount of fecal matter collected in any patient and have never seen fecal matter attain such a degree of hardness as it did in this case. The tumor of the uterus was found to have dwindled down until it remained about the size of a small orange. The only theory I can offer as an explanation of the condition is that the tumor filling the left broad ligament diminished, after the removal of the ovaries, from the size of a man's head down to that of an orange, and that during this diminution, the rectum, which is so closely attached to these tumors growing in the left broad ligament, was stretched and its mesentery lengthened, and that after the tumor had undergone a reduction in size, the bowel, as a consequence of this increase in length of bowel and corresponding mesentery, was allowed to take a half turn on itself.

Since meeting with this case I have come to the conclusion that there is one other condition that may simulate fibroid tumor and may deceive even the trained finger, and that condition is a collection of scybalous masses in a distended and partially twisted intestine, or in other words, a chronic volvulus of the omega flexure.

In November, 1898, I received a letter from the doctor in the country into whose hands the patient had recently fallen. He writes me as follows: "Dear Doctor:—I write you regarding Miss C., on whom you operated two or three years ago (in reality four years) in the General Hospital, for some ovarian trouble. She has been in very poor health for the past few months and now has some growth in the uterus on which an operation is necessary." To the letter I replied, "Your patient called yesterday. I believe you are in error regarding the nature of the trouble and, as a consequence, there must be some variance in our opinions. On examination now one would naturally think that our patient is suffering from a uterine tumor. At the operation four years ago I found that she had a fibroid tumor growing from the left broad ligament and, as a consequence, causing fixation of the tumor. The uterus was then over to the right side and somewhat elongated. Both ovaries were removed, as the operation of enucleation of such a tumor is accompanied by such a high mortality. I hoped at the time that oöphorectomy would put an end to the growth of the tumor and that its presence would not give rise to much subsequent suffering. The whole question to be decided on is: Is the amount of suffering present great enough to demand interference, and the removal of the growth at all hazards? In some of these cases, after the removal of the ovaries menstruation continues for four or five years and then an early menopause is induced. If this patient demands operation I am prepared to perform it. Her recovery after removal of the growth would be complete and satisfactory."

After the operation had been carried out I wrote to the Doctor again as follows: "We have both been entirely mistaken in the case, as well we might be. The tumor has almost disappeared. After its diminution the omega or sigmoid flexure of the rectum must have taken a half twist on itself and have produced a volvulus. This volvulus was not sufficiently twisted to give rise to symptoms of intestinal obstruction nor even to send the patient to bed, but it constricted the intestine sufficiently to cause an enormous accumulation of scybalous masses above. The scybalous masses filled the twisted omega flexure of the rectum and were found away up in the

transverse and the ascending colon as far as the ileocecal valve. I never felt such hardened fecal matter before; it felt like pieces of broken stone inside the intestine. I passed a finger up into the rectum while the patient was thoroughly anesthetized and with the hand in the abdomen and the finger in the rectum I was able to make out the constricted portion. The tip of the finger would just barely enter at the site of the twist. After thoroughly exploring I separated the small intestines from their adhesions but could do nothing more. The patient's pulse by this time had reached 140. I am now in hopes that I will be able, should she survive, to wash out the scybalous masses. If this is impossible colotomy will be the only other recourse. The mass you felt on examination was fecal matter, the two lumps that slid about above and that felt like pedunculated fibroids growing from the main body of the tumor were pieces of hardened fecal matter in the bowel."

I give the quotations at length because the letters themselves give a better picture of the progress and circumstances surrounding the case than a bare recital of facts.

There is only one kind of a man whose foresight is as good as his hindsight, and that man is a fool. We can all learn by the mistakes of others, and it is easy to suggest what might have been done in a given case, but it is difficult for us to say exactly what we ourselves would have done had we been dealing with that given case. I think my finger has been fairly well educated by a number of years of experience, and I feel fairly competent to give an opinion regarding the nature of a pelvic tumor.

I have elsewhere published a case treated with electricity for two years on the supposition that the patient was suffering from a fibroid tumor, while, in reality, on performing an abdominal operation I removed a pair of pus-tubes with walls solid and thickened and cartilaginous and almost two inches in diameter. Among the hundreds of pus-tubes I have removed I have never seen another pair exactly like these. In lecturing to my class I have always claimed that one of the diagnostic features of a fibroid tumor was the separate nodules so frequently found more readily movable than in the main mass of the tumor. These nodules were noted in the case under discussion. In the days when electricity as a cure for fibroid tumors was absorbing the attention of a certain portion of the profession and a large portion of the public, it was no uncommon thing to hear of the complete subsidence of a pelvic tumor under the magic influence of the electric current. When a few of us ventured to suggest that many of these masses were not fibroid tumors, but that they were entirely inflammatory, we were supposed to be using this as unfair argument in the discussion of the question. But when one has lived to mistake a collection of fecal matter in the distended bowel of a patient having regular evacuations, it is easy to understand how many of these fibroid tumors may have been nothing but hardened intra-intestinal contents.

Time has not permitted me to make a very thorough search through the medical literature for information regarding this peculiar disease, chronic volvulus. In the slight search that I have made I find nothing except the reference given at the beginning of my remarks. There can be no doubt that a half turn of the intestine on the axis of its mesentery may produce chronic volvulus. Perhaps many cases of troublesome constipation may be explained in this way. It is evident that chronic volvulus may exist and the patient may live for years

with the condition, but not without discomfort. It is also evident that chronic volvulus may be cured by operation and the danger of acute volvulus may be thus avoided.

From the three cases referred to it is evident that chronic volvulus may occur in either the small or large intestine. When the omega flexure of the rectum is very fully developed, it is easy to understand how it may be twisted where the two branches of the omega approximate one another. That acute volvulus occurs at this spot more frequently than anywhere else is not to be wondered at. This elongated and apparently over-developed omega flexure seems to be a congenital condition. In the case of the man successfully operated on, I was amazed to find the mesentery of the omega flexure and the omega flexure itself of such enormous dimensions. When an attack of volvulus has occurred and recovery has taken place after a resort to high enemata, it seems to me that the abdomen should be opened and the bowels should be so fixed that volvulus cannot recur. It is only in this way that the patient can be placed in a safe condition. A resection of intestine might be done so as to shorten the portion of intestine inflicted with a long mesentery, but this procedure must necessarily be somewhat severe and scarcely justifiable if the minor measure carried out in my case will answer the purpose.

There are cases of volvulus of Meckel's diverticulum occurring in infants on record. While I have never yet met with such a case, I have recently had a peculiar experience in connection with Meckel's diverticulum. An infant was born and no fecal matter passed per anum. A few hours after birth I saw the child and it was evidently in great pain. Vomiting had set in and was persistent, so I opened the abdomen and found a coil of gangrenous intestine forced through under a band produced by adhesion of a partially obliterated Meckel's diverticulum, to a spot of the peritoneum near the spine. I presume that the bowel had been forced through under this band as a consequence of the pressure exerted during childbirth. There were evidences of acute peritonitis, the abdomen being filled with a seropurulent collection of fluid. The infant, but a few hours old, and already greatly shocked, soon succumbed.

DATA CONCERNING DEFORMITIES OF EXTRAUTERINE GESTATION.*

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The subject is one which, at first thought, would seem to be narrow in its scope, and yet the proper apprehension of it involves the examination of many disconnected reports of cases of extrauterine gestation, some of which devote no attention at all to the consideration of the physical condition of the fetus, while in others the details are aggravatingly meager. The deformities which are alluded to are in almost all cases, if not in all, consequences of the latter months of fetal development, since in those fetuses which are removed during the first half of gestation I have observed no record of deformity, and in those which I have examined personally, the upper and lower extremities have appeared to be normal. The subject derives importance from the fact that the number of fetuses developed outside the uterus and born alive by extraction through an abdominal incision, is not inconsiderable, and this number is increasing, year by year, as the means of diagnosis and

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