

A CONTRIBUTION TO THE STUDY OF INTRA- ABDOMINAL OMENTAL TORSION.

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IN the ANNALS OF SURGERY of November, 1900, Joseph Wiener, Jr., of New York, reports a case of omental torsion. In addition, he publishes a synopsis of five other cases, these being all the cases which he was able to find in the literature. These six cases may be briefly summarized as follows:

No. 1. Oberst, 1882. Male, aged thirty-five years. Right inguinal hernia of twelve years' standing. Omentum incarcerated in the sac. Torsion supposed to be due to forcible attempts at reduction.

No. 2. Bayer, 1898. Female, aged fifty-four years. Left inguinal hernia of fifteen years' standing. Omentum incarcerated with torsion and becoming gangrenous.

No. 3. Baracz, 1900. Male, aged forty-two years. Left inguinal hernia of several years' standing. Omentum adherent to bottom of sac, but a twisted and gangrenous portion, size of an ostrich egg, in abdominal cavity.

No. 4. Peck, 1900. Female, aged thirty-seven years. Right inguinal hernia of twelve years' standing. *Omentum not connected with hernial sac.* Entire omentum was found twisted around a vertical axis, occupying the right side of the abdomen, the lower end being in the pelvis.

No. 5. Hocheneegg, 1900. Male, aged forty-one years. Right inguinal hernia of thirty years' standing. Large gangrenous omental mass found in right side of the abdomen; had occupied the hernial sac until a few hours before the operation, when it was forcibly reduced.

No. 6. Wiener, 1900. Male, aged seventy-nine years. Right inguinal hernia for thirty years. Strangulated piece of omentum found in right side of the abdomen, with twisted pedicle; *not connected with the hernia.*

Rokitansky was the first to thoroughly discuss the causes which he regarded as producing the twisting of the pedicle of ovarian tumors, with the symptomatology of which every sur-

geon is familiar. All that seems to be primarily essential is the existence of a pedunculated tumor with no mechanical obstacles to its rotation. If the pedicle is so situated as to furnish a perpendicular axis for rotation, torsion will be more apt to occur. If a perpendicular axis is afforded by the pedicle proper and also by an adhesion at the bottom, torsion will be still more apt to take place.

In five of the six cases above reported, there seems to be no question as to the causative connection between the omental mass and the hernia. Indeed, in the first case reported the torsion was not strictly abdominal at all, since the entire mass was incarcerated in the sac. The case, however, clearly belongs in this class, since its incarceration was simply incidental. In Wiener's case, the mass at the operation had no connection with the hernia and was high up; so he concludes that the existence of the hernia was merely incidental and had no etiological relationship. This, however, is questionable, since the formation of an omental pedunculated tumor might have taken place years before from the entrance of omentum into the hernia, but conditions favorable to the twisting had not previously taken place. It is possible, however, that, as believed by him, the hernia was simply incidental in his case. It is then probably necessary to believe that the existence of the pedicle was congenital and due to a malformation of the omentum. Some sort of a pedicle seems to be a prerequisite, and from the cases reported it is evident that this pedicle is usually formed by a portion of the omentum becoming involved in a hernia. That a congenital malformation may give such a pedicle is shown possibly by Wiener's case, and quite positively by my own. It is by no means necessary to the production of the torsion that the pedicle should be particularly small, as is shown by several of these cases; although, of course, the smaller the pedicle the more easily could rotation take place. The writer has had a case of hydrosalpinx with a twisted pedicle; here we not only had a very broad pedicle but also a short one; and yet in some way twisting had occurred, with the usual inflammatory symptoms necessitating operation.

The writer has had two cases of omental tumor belonging to this series, the first of which is reported merely as perhaps throwing light upon the formation of these masses. The second case is reported as showing that a hernia is not absolutely essential to the formation of these omental masses, since in that case no hernia had ever existed. In this respect, then, the case may be regarded as absolutely unique.

In the six cases reported by Wiener, the diagnosis in four was simply that of strangulated hernia. In one of the others the symptoms led to a diagnosis of appendicitis, and in his own to that of an intraperitoneal abscess. In my own case the diagnosis of a mild but progressive appendicitis seemed clearly warranted. In all the cases the gravity of the symptoms was recognized and prompt operation resorted to.

CASE I. *Distinct Pedicle, and Attachment to Hernial Sac.*—D. D. F., aged twenty-nine years. Referred by Dr. Stickney. One year ago, as result of heavy lifting, there formed an acute right inguinal hernia. Twenty minutes after the appearance of the tumor the pain became so severe as to compel him to go to bed. A large swelling formed, which later was lanced, and exit given to a large amount of pus. This abscess healed, but later a second abscess formed, which was treated in the same way. Healing then took place, but an irreducible mass still persisted and rendered him unable to work. I first saw him April 7, 1902, at which time an ill-defined mass could be felt in the right inguinal canal and extending down to the bottom of the scrotum. The diagnosis of omental hernia seemed clear. From the history of the two abscesses, I was inclined to suspect that the appendix might be involved. The usual hernia operation was advised and executed on the 8th. On opening the hernial sac, which extended to the testicle, a small piece of omentum was found occupying the sac, but adherent only at the bottom. This adhesion was separated, and on pulling down the omentum a mass soon appeared, which was drawn out with considerable difficulty. It proved to be an omental tumor five or six inches long and more than an inch in diameter, with a smooth exterior, and looking not much unlike a piece of bowel. On bringing it out, it was found connected to the rest of the omentum by quite a narrow pedicle. This pedicle

was ligated and the tumor removed, and the operation completed in the usual manner. On examining the specimen, it was found that after separating a few adhesions keeping it in shape, the mass could be spread out into quite a normal looking piece of omentum. From the history and appearance there could be no question that this mass had from time to time occupied the hernial sac, but that reduction, while complete so far as the mass was concerned, was incomplete, owing to the adhesion of the strip of omentum to the bottom of the sac. Here we had clearly conditions most favorable for torsion, but this had fortunately not taken place.

CASE II. *Intra-abdominal Omental Torsion, without Hernia.*

—J. E. T., aged forty-seven years. Referred by Dr. Hecker, of New Madison, Ohio. Patient was a well developed male, a clerk in a country store, who had always enjoyed excellent health. On Friday, without any assignable cause, his stomach became somewhat disturbed. He did not vomit, but felt a little nausea. He had an uneasy sensation in the right side of the abdomen and suspected appendicitis. A doctor, to whom he incidentally mentioned his condition, advised him to take a dose of oil. This was taken and operated freely, but with no relief to his symptoms. Saturday morning he had a good deal of pain in the right side of the abdomen, together with tenderness, which led him to consult his regular physician, Dr. Hecker. At this time there was a good deal of abdominal rigidity on this side. His general condition seemed good. The symptoms were not sufficiently marked for a diagnosis, and the patient was therefore treated on general principles. Sunday morning he felt still worse, and sent for his physician. The pain in the right side was more pronounced. The tenderness and muscular rigidity were more marked. Early Monday morning, the symptoms persisting and becoming still more pronounced, a diagnosis of appendicitis was made by Dr. Hecker, and concurred in by Dr. Myers, who had been called in consultation. I was at once telephoned to, and reached the patient's bedside at 1.30 P.M. Patient's pulse and temperature were practically normal. He complained a good deal of pain, although he had been given two grains of opium. Abdominal tenderness and rigidity were both pronounced. When asked where he felt the most pain, he put his finger almost exactly on McBurney's point. The most tenderness, however, I found to be slightly above this point. Of the correctness of the diagnosis there seemed no rea-

sonable doubt, and, as the case was clearly progressing and the patient at a distance (over one hundred miles), an operation seemed clearly advisable and was at once executed.

Owing to the tenderness being higher up than usual, the incision was made above the usual location. The gridiron incision was used. On introducing the finger, a hard mass could be made out above the opening. This was slightly adherent to surrounding parts as a result of the existing local peritonitis. Examination led to an exclusion of malignancy and of any connection with the gall-bladder. Examination of the head of the colon, which was then made, showed this to be in its usual place and normal, with no recent trouble about the appendix. The adhesions above were therefore separated and the mass brought down and carefully drawn through the incision. As soon as it was exposed the diagnosis was at once plain. The mass proved to be made up of omentum rolled up so as to make a distinct tumor and having a very small pedicle, not larger than a knitting-needle, twisted upon itself eight times. The entire mass was about the size of a large fig. The pedicle was ligated and the tumor removed. The appendix was then more carefully examined and its distal portion found obliterated. The obliterated portion was cut off, the rest inverted by my usual method, and the incision closed in the usual way. Recovery was absolutely uneventful. Examination of the specimen showed it to be made up of ordinary omentum, but rolled together and adherent so as to make a distinct tumor. When the adhesions were separated it could be spread out, just about covering the palm of the hand.