

CASE REPORT

Spontaneous Torsion of the Omentum

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SPONTANEOUS torsion of the omentum is a rare condition of particular surgical interest because of the importance of distinguishing it from other acute abdominal emergencies. The condition consists of an omental twist in the absence of any recognizable etiologic factors such as hernia, cysts, inflammatory processes, tumours or adhesions. Various classifications of omental torsion have been proposed, but the one put forward by Donhauser and Locke¹ seems to be the most practical. They classified omental torsions under two broad headings:

A. Primary (always unipolar)—1. Complete.
2. Incomplete (recurrent).

B. Secondary—1. Unipolar: (a) cysts and tumours of the omentum, (b) internal hernia, (c) external hernia, (d) associated intra-abdominal pathologic processes. 2. Bipolar: (a) external hernia, (b) adhesions, (c) tumours causing omental fixation.

In all cases of secondary omental torsion, two types are recognized:

A. The unipolar, in which the omentum is fixed at one end and the opposite end is unattached and mobile.

B. The bipolar, in which both ends are fixed, allowing the central portion to swing freely.

The present communication concerns only the primary or spontaneous idiopathic variety, in which the distinguishing feature is the absence of any associated intra-abdominal lesion.

The first description of this interesting clinical entity was given in 1851 by Pierre de Marchette,² who recognized what is now currently classified as a secondary type of torsion, related to pre-existing abdominal adhesions. Eitel³ in 1899 is credited with the recognition and report of the first case of spontaneous omental torsion, unrelated to any other intra-abdominal lesion. Since then additional scattered reports have appeared in the literature in reviews and articles.⁴⁻⁹ While the number of reported cases appears small, it seems that many cases go unreported, so that the true incidence of spontaneous omental torsion is greater than that obtained from a review of the world literature. Mainzer and Simoes⁹ were able to collect 159 cases of primary spontaneous torsion of the omentum, and to this group they added six cases of their own, bringing the total to 165. In

this report, two additional cases will be described, and the pathogenesis and clinical manifestations of this disorder that make it so difficult to distinguish from other causes of "acute abdomen" will be reviewed.

PATHOGENESIS

The pathogenesis of primary omental torsion remains obscure, although most authors hold the view that a combination of factors is responsible, namely:

(i) Changes in the consistency of the tissues caused by inflammation, edema, excess fat deposition and trauma.

(ii) Anatomic malformations of the omental pedicle, tongue-like projections from the free edge, bifid omentum, or the presence of an accessory omentum.¹⁰

(iii) Changes in vascular tone. Payr,¹¹ who advanced this theory, based it on the fact that veins are compressed more easily than arteries. A small twist of the omentum engendered by external trauma or violent exercise, or as a result of peristaltic waves, causes distension and increased tortuosity of the thin-walled veins. With venous obstruction, the arteries become tense, and the longer and more tortuous veins rotate around these more rigid structures, producing omental torsion.

PATHOLOGY

Torsion of the omentum is usually in a clockwise direction and occurs in the long axis of that structure. Occasionally, incomplete rotation occurs with subsequent restoration of normal anatomy. Vague, nonspecific abdominal pain, so often seen in clinical practice, may have its origin in such a phenomenon. In most cases, the twisting is permanent and signs and symptoms of a surgical abdomen supervene. If the blood supply is compromised, infarction of the omentum occurs and serosanguineous or sanguineous fluid appears, lying free in the peritoneal cavity. The appearance of the involved segment of omentum varies from a dark yellow, edematous, indurated area to a purple mass of hemorrhagic, gangrenous fat, depending on the age of the lesion. Microscopically, there is venous congestion and thrombosis, with hemorrhagic extravasation into the omental tissues.

CLINICAL PICTURE

The clinical picture is indefinite, so that the preoperative diagnosis of omental torsion is scarcely ever made. The primary symptom is pain of varying intensity, most commonly located in the right lower quadrant of the abdomen and often associated with nausea and vomiting, suggesting acute appendicitis. Constitutional symptoms were conspicuously absent in the two cases in this report, as noted by Altmeier and Holzer¹² in their six cases. Abdominal tenderness is always present and rebound tenderness and moderate rigidity are often noted. A palpable mass may or may not be present, depending on the area of omental involvement. The temperature is usually, though not invariably, raised to between 99° and 100° F., and a mild to moderate leukocytosis (between 11,000 and 14,000 cells per c.mm.) is present.

CASE 1.—A 36-year-old well-developed and well-nourished white man was admitted to hospital because of moderately severe pain situated in the right lower quadrant of the abdomen. The pain had been present for two days prior to his admission on October 20, 1958, and had started initially as a mild discomfort that progressively increased in severity. His temperature on admission was 99.8° F., pulse 85/min. and respirations 20/min. His blood pressure was 140/100 mm. Hg. Physical examination showed localized tenderness slightly above McBurney's point, with mild rebound tenderness and no muscle rigidity. Rectal examination was negative. The total leukocyte count was 11,850 per c.mm., with 75% segmented leukocytes. Since the signs were equivocal, a watch-and-wait policy was followed, but 24 hours later the pain had increased in severity and definite muscle rigidity was elicited. Laparotomy was performed through a right paramedian, rectus-displacing incision. A small amount of serosanguineous fluid was encountered, and exploration revealed a normal appendix. On the superior, lateral extremity of the incision, a mass 6.5 x 3 x 1.5 cm. was attached to the main body of omentum by a pedicle that had undergone torsion with some four twists. This was removed and the patient made an uneventful recovery. Microscopically this lesion showed hemorrhagic extravasation with omental infarction.

CASE 2.—A 41-year-old white man was admitted to hospital in September 1962, with a complaint of sudden onset of right lower quadrant pain, occurring 1½ hours after a full meal. The pain had increased in severity over a period of eight hours, prior to his hospital admission and was now of agonizing severity, radiating through into his back. Clinical examination revealed tenderness at McBurney's point with rebound tenderness, and marked muscle rigidity over the right lower abdominal quadrant. System review was essentially negative. His admission temperature was 100.8° F., pulse 102/min. and respirations 18/min. The leukocyte count was 18,800 per c.mm. with 85% segmented leukocytes and a shift to the left in the Arneeth count. A preoperative diagnosis of acute appendicitis was made and a laparotomy performed. A large amount of serosanguineous fluid was encountered free within the

peritoneal cavity. A segment of gangrenous omentum, thickened and indurated, which appeared to be twisted upon itself and measured 8 cm. x 5.2 cm. x 2.5 cm., was found and resected. A normal-appearing appendix was also resected. The patient's postoperative course was complicated by a mild paralytic ileus, which was successfully treated by nasogastric suction. Eight days after operation, he was discharged completely asymptomatic.

DISCUSSION

Spontaneous torsion of the omentum is a clinical entity that presents with so indefinite a clinical pattern that its differentiation from other causes of "acute abdomen" presents a considerable problem. The natural course of the disease is probably self-limiting and does not lead to a fatal issue. The possibility of resolution was suggested by Galloway,¹³ who had occasion to operate on a patient with omental torsion at a much later stage than usual and found that organization and absorption were taking place. The point is probably of academic interest only, because laparotomy will almost certainly have to be performed in order to exclude more serious intra-abdominal disease. In a clinical situation such as this where the surgeon has in the course of his exploration excluded all the common sources of abdominal pain (*viz.*, appendicitis, Meckel's diverticulum; intussusception, salpingitis; mesenteric adenitis, diverticulitis, etc.), the entire omentum should be carefully examined, particularly if free serosanguineous fluid is present within the peritoneal cavity.

A significant fact, as yet unexplained, is that 75% to 80% of cases of omental torsion that have been reported occurred in the right lower quadrant. This may be due to the fact that a greater mass of omentum presents on the right side than on the left, and thus the frequency of anatomical abnormalities which predispose to torsion is greater on the right.

SUMMARY

Attention is drawn to an unusual clinical entity, spontaneous omental torsion, as a cause of acute abdominal pain. Two cases of this condition are presented, along with a brief review of its pathogenesis and clinical manifestations.

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