Case Report

A rare case of acute primary omental infarction

Xiao-Wen Sun, Bin Luo, Hong-Wei Lin

Department of General Surgery, Beijing Tsinghua Changgung Hospital, Beijing 102218, China

ABSTRACT

Primary omental infarction (POI) is a rare cause of acute abdomen. Most patients have aggravating abdominal pain without gastrointestinal symptoms. Here, we report a case of omental infarction in a 50-year-old woman, who had left abdominal pain and intestinal obstruction. Preoperative computed tomography (CT) of the abdomen showed a left ovarian cyst measuring 6.0 cm × 4.5 cm but otherwise seemed normal initially. The white blood cell count was 9.71 × 10⁹/L, and D-dimer was 1.58 mg/L. Laparoscopic exploration was performed 1 day after admission because of peritonitis and intestinal obstruction. During the exploration, a segment of congested necrotic omentum was found adhering to the abdominal wall with a segment of small intestine. Bloody ascites was also observed in the abdominal cavity. We resected the nonviable segmental omentum, and the ovarian cyst was removed by the gynecologist using laparoscopic procedures. Final pathological findings confirmed POI. While reanalyzing the preoperative CT, a segmental fat mass with an increased density was noted in the left lower quadrant, which was consistent with the intraoperative view 6 days after surgery. The patient recovered uneventfully and was discharged.

Key Words: Acute abdominal pain, computed tomography, primary omental infarction

INTRODUCTION

Primary omental infarction (POI) is a rare cause of acute abdominal pain. The first case of POI was reported by Bush in 1896. The typical clinical presentation of POI is pain in the right side of the abdomen, and this may lead to a misdiagnosis of acute appendicitis or cholecystitis. Here, we present a case of POI, with pain in the left lower quadrant. Laparoscopy was performed for the diagnosis and treatment of this case.

CASE REPORT

A 50-year-old woman admitted to the emergency room with a history of worsening abdominal pain for 5 days. The pain began in the upper abdomen and later localized to the left lower quadrant, and the pain intensity exacerbated with activities.

The pain was sharp and constant in nature without nausea or vomiting. On physical examination, the patient was febrile with a temperature of 38.1°C and had severe left lower quadrant tenderness and abdominal rigidity. Preoperative computed tomography (CT) of the abdomen showed a left ovarian cyst measuring 6.0 cm × 4.5 cm but otherwise seemed normal initially. The white blood cell count was 9.71 × 10⁹/L, and D-dimer was 1.58 mg/L. Laparoscopic exploration was performed 1 day after admission because of peritonitis and intestinal obstruction. During the exploration, a segment of congested necrotic omentum was found adhering to the abdominal wall with a segment of small intestine. Bloody ascites was also observed in the abdominal cavity. We resected the nonviable segmental omentum, and the ovarian cyst was removed by the gynecologist using laparoscopic procedures. Final pathological findings confirmed POI. While reanalyzing the preoperative CT, a segmental fat mass with an increased density was noted in the left lower quadrant, which was consistent with the intraoperative view 6 days after surgery. The patient recovered uneventfully and was discharged.

Consequently, we performed laparoscopic exploration. During the procedure, we found a segment of congested necrotic...
omentum adhering to the abdominal wall with a segment of small intestine [Figure 2a], bloody ascites (200 mL) accumulated in the abdominal cavity [Figure 2b], and an ovarian cyst measuring 6.0 cm × 4.5 cm in pelvic cavity [Figure 2c]. We also explored the whole intestine and did not find any necrotic segment. We resected the nonviable omental segment, and the gynecologist removed the ovarian cyst using laparoscopic procedures.

By reanalyzing the preoperative CT, a segmental fat mass with an increased density was noted in the left lower quadrant which was consistent with the intraoperative findings [Figure 1b]. Final pathological examination revealed hemorrhagic infiltrations, thrombosis of the tissue, acute inflammatory cellular infiltrate, and fibrinoid necrosis, and POI was diagnosed [Figure 3]. The patient recovered uneventfully and discharged 6 days after surgery.

DISCUSSION

POI is a rare cause of acute abdominal pain. Up till now, only a few hundred cases have been published in the English literature. Pathogenesis of POI has not been determined. Susceptible factors include (1) Anatomic malformations such as a bifid or accessory omentum causing the spontaneous torsion,[3] (2) sudden movement, violent exercise, and hyperperistalsis,[3] and (3) obesity.[4] Most authors support the hypothesis that it is associated with an anomalous and fragile blood supply of the right lower portion of the omentum, which is consequently susceptible to infarction.[3] Thus, 90% of all the cases have initial pain in the right side of the abdomen.[6] Our patient had pain in the left lower quadrant, so we did not include POI in the differential diagnosis spectrum.

POI was not confirmed until the exploratory laparoscopy was performed. POI has no early specific signs and is often characterized by progressive, persistent abdominal pain. Clinical features include unspecific gastrointestinal symptoms, slightly febrile, and mild leukocytosis. In the present case, D-dimer was slightly increased. D-dimer can be used as an objective parameter in the differential diagnosis of POI as it is used in other thromboembolic diseases.

POI has characteristic imaging findings on CT and ultrasound. CT scan is the most important technique for the diagnosis of omental infarction. The most diagnostic finding is an ill-defined heterogeneous fat density with surrounding inflammatory changes.[7] By retrospective reanalysis of the preoperative CT in this study, the characteristic manifestation was found. Ultrasound is specific but not sensitive for diagnosing POI; suspected imaging features include hyperechoic, incompressible, ovoid mass, and detectable in <50% of cases, even when reviewed retrospectively.[8] The best choice of treatment for POI is still controversial. Coulier B et al. reported six cases of POI. Two patients underwent surgery, one because of the absence of spontaneous regression and the other because of extremely severe clinical symptoms. In the other four patients, conservative management was given and successful.[9] If a confirmed diagnosis of POI can be made with the typical clinical signs and imaging studies, conservative treatment is the first-line therapy during the first 24–48 h while resuscitation and antibiotics are initiated.
However, if the diagnosis is in doubt or if conservative treatment fails, laparoscopy should be performed without delay. As in the present case, the pain was not relieved after conservative treatment for 24 h. Intestinal obstruction occurred as a segment of small intestine adhered to the abdominal wall.

**CONCLUSION**

POI should be considered in the differential diagnosis of any patient presenting with acute abdominal pain. CT and D-dimer could be used for the initial diagnosis. Conservative treatment can be used as the first-line therapy. Laparoscopic exploration should be performed if new symptoms occur or do not relieve within 24–48 h.

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**Conflicts of interest**

There are no conflicts of interest.

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