

Anemia as One of Presenting Symptoms in an Adult with Cyst and Torsion of the Omentum - A Case Report

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Rezumat

Anemia ca simptom la prezentare la un adult cu chist și torsiune de oment - prezentare de caz

Introducere: Volvulusul este o afecțiune puțin frecventă a omentului, iar chisturile reprezintă una dintre cele mai rare cauze de torsiune omentală. Din cunoștințele noastre, aceasta este prima raportare a unui caz de chist omental prezentându-se atât cu torsiune omentală, cât și cu anemie.

Prezentare de caz: Prezentăm cazul unei paciente în vârstă de 41 de ani, de origine indiană, care s-a prezentat la spital cu anemie (hemoglobina serică 6,5 g/dL) și durere abdominală intermitentă cauzate de torsiunea unui chist omental hemoragic. Tomografia computerizată a decelat un chist omental și lichid liber în cavitatea abdominală. La explorarea abdominală prezența a 1,5 litri de lichid hemoragic a fost confirmată în cavitatea abdominală. Chistul și porțiunea torsionată de oment au fost excizate en bloc. Pacienta a avut o evoluție postoperatorie lipsită de alte evenimente și a fost externată în ziua a 8-a postoperator. La consultul efectuat la 2 luni după intervenția chirurgicală pacienta nu mai prezenta anemie (hemoglobinaserică 10,7 g/dL).

Concluzii: Au fost raportate cazuri de anemie asociată cu volvulus omental la copii; însă, din cunoștințele noastre, acesta este primul caz de acest fel raportat la un adult. La asemenea pacienți excizia chirurgicală este tratamentul de elecție. Persoanele cu durere abdominală recurentă și anemie trebuie evaluate cu atenție, iar diagnosticul diferențial trebuie

să includă și torsiunea de oment. Diagnosticarea corectă și tratamentul adecvat ajută la evitarea complicațiilor.

Cuvinte cheie: chist, torsiune, oment, mezenteric, anemie.

Abstract

Background: Torsion is an uncommon disorder of the omentum and cysts are one of the rarest causes of omental torsion. To our knowledge, this is the first report of a case of an omental cyst presenting with both omental torsion and anemia.

Case presentation: We herein present a case report of a 41 year old indian female patient who presented with anemia (hemoglobin concentration 6.5 g/dL) and intermittent abdominal pain caused by torsion of a hemorrhagic omental cyst. A computed tomography scan, showed an omental cyst with free fluid in the abdominal cavity. At abdominal exploration, 1.5 L of hemorrhagic fluid was confirmed in the abdominal cavity. The cyst and twisted omentum were removed en bloc. The patient had an uneventful postoperative course and was discharged on day 8. At her 2-month follow-up, she was no longer anemic (hemoglobin concentration 10.7 g/dL).

Conclusion: Cases of anemia associated with omental torsion have been reported in children; however, to the best of our knowledge, this is the first reported case of such a presentation in an adult. In such patients, surgical removal is the treatment of choice. Persons with recurrent abdominal pain and anemia must be assessed carefully and their differential diagnosis should include omental torsion. Appropriate diagnosis and treatment help avoid complications.

Key words: cyst, torsion, omentum, mesenteric, anemia.

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Background

Mesenteric and omental cysts are rare pathologies that are usually seen in children or young adults (1,2).

Eastern studies indicate that omental cysts are encountered more commonly in men (2); whereas in Western studies, the female sex has predominated (3). Omental cysts are commonly located on the right side and are usually asymptomatic when small (4). When they enlarge, they may present as palpable, mobile masses. Common complications are torsion, infection, and rupture; most of these complications can present as an acute abdomen (5). Bleeding or rupture of such cysts is responsible for 11% to 19% of acute abdomens (3).

Torsion is an uncommon omental disorder and cysts are one of its rarest causes (6,7); torsion more commonly being caused by inguinal hernias (most common), tumors, internal or external herniation, foci of intra-abdominal inflammation, or postsurgical wounds or scarring. This condition is frequent in middle-aged men and can mimic acute appendicitis.

When omental torsion occurs, venous return is compromised, resulting in congestion and edema of the distal omentum and cyst in cases in which a cyst is responsible for the torsion. Arterial occlusion leads to hemorrhagic infarction and omental necrosis with extravasation of serosanguineous fluid into the peritoneal cavity (8).

Our aim was to report a case of an omental cyst presenting both with omental torsion, and the very rare symptom of anemia.

Case presentation

A 41 year-old woman with known hypertension presented to the Emergency Department in December 2014 with a 1 week history of intermittent lower abdominal pain, low grade fever, and dizziness. She had no associated nausea, vomiting, or change in bowel habit. Her only significant surgical history was a lower segment cesarean section in 2008.

Physical examination revealed a blood pressure of 130/85 mmHg, pallor, tachycardia (110 beats/min), tachypnea (22 breaths/min), and fever (38.6°C). Abdominal examination revealed normal contours with no distention, the scar of her previous cesarean section, and mild tenderness in the left lower quadrant with a mobile, well demarcated, palpable mass (15 cm in its greatest dimension).

Laboratory test results showed leukocytosis (white cell count $13.0 \times 10^3/\mu\text{L}$) and anemia (hemoglobin concentration 6.5 g/dL), with normal platelet count, electrolytes, and liver function tests.

An abdominal ultrasound (Fig. 1) revealed a complex, predominantly cystic lesion in the left iliac fossa measuring about 11x4.9 cm. A subsequent abdominal computed tomography (CT) scan (Figs. 2, 3) showed a cystic mass measuring 11x6.5 cm in longitudinal and transverse axes, respectively, occupying the left lower abdomen (density 7 to 47 HU). The cyst had a thick wall that was slightly enhanced by contrast and marked stranding and congestion of surrounding mesenteric fat and a moderate amount of free fluid in the



Figure 1. Ultrasound abdomen showing a abdominal large cystic mass



Figure 2. Computed tomography showing a omental cyst



Figure 3. Computed tomography showing intra-peritoneal hemorrhage

pelvic cavity were noted.

These findings were suggestive of an inflamed complicated omental cyst. The patient was resuscitated and stabilize with intravenous fluids and three units of packed red blood cells. Laparotomy was then performed: a large hemorrhagic omental cyst with torsion over its narrow long pedicle and a 1.5 L amount of hemorrhagic fluid were found in the peritoneal cavity (Fig. 4). The cyst and twisted omentum were removed en bloc and sent for pathological analysis. Histopathologic examination of the resected specimen showed hemorrhagic infarction and fibrosis of the cyst. Peritoneal fluid cytology showed numerous pigment-laden and foamy macrophages in a background of blood.

The postoperative course was uneventful and the patient was discharged on the 8th post-operative day. At the 2-month follow-up, the patient was healthy and her hemoglobin concentration was normal (hemoglobin concentration 10.7 g/dL).

Discussion

Since Gardner's first description in 1852 and that of Eiter in 1899 (9,10), more than 200 cases of omental cysts have been reported (2,9,11); many of which comprise benign proliferations of ectopic lymphatics without communication with the normal lymphatic system (12). Other causes include lymphatic obstruction (13), trauma, neoplasia, and lymph node degeneration (14). Cysts of the omentum can be simple or multiple, unilocular or multilocular, and may contain hemorrhagic, serous, chylous, or infected fluid (15). Their diameters range from 3 to 30 cm (5). Female persons are less frequently affected by these cysts in Eastern countries, which are uncommonly located on the left side. The differential diagnoses include diverticulitis.

Because preoperative diagnosis is challenging, most omental cysts are diagnosed intra-operatively. Clinical presentations include a painless abdominal mass, abdominal distention, abdominal pain, and ascites (3). A freely movable abdominal mass is the commonest physical finding associated with omental cysts (16). In complicated cases, fever or high white cell counts develop.

On the other hand, when omental cysts are associated with torsion, the symptoms become more severe and include rapidly intensifying pain, nausea, and vomiting. This was the case with our patient, whose large cyst had probably been asymptomatic for a long time, but became symptomatic when the torsion of the omentum occurred.

Torsion of the omentum can be primary or secondary: with primary torsion there are no associated diseases or distal fixation. Natural variation resulting in the transverse extent of the omentum being unusually long is a predisposing factor for primary omental torsion. Trauma, exercise, and hyper-peristalsis can displace the omentum and thus induce torsion. On the other hand, secondary torsion of the omentum is attributable to an underlying disease. The torsion was secondary in our case, in which increasing cyst size probably predisposed to progressive twisting of the omentum, eventuating in acute torsion.



Figure 4. Excised cyst

Anemia is an uncommon symptom of omental torsion associated with a cyst. We have identified only one reported case of chronic anemia (17) and three of acute anemia (all in children) (18). To the best of our knowledge, no such adult cases have been reported. Our patient presented with intermittent symptoms for one week; her anemia was likely attributable to progressive accumulation of hemorrhagic fluid in the peritoneal cavity, which would have also accounted for her intermittent and worsening pain. Chronic self-resolving episodes in the past may also have contributed to her anemia. The moderate volume of hemorrhagic fluid found intra-operatively supports the above explanation for her presentation.

In cases of complicated cysts with omental torsion, white cell counts are usually high and clinical diagnosis is challenging. Differential diagnoses include appendicitis, Meckel diverticulum, cecal diverticulum, twisted ovarian cyst, appendicitis, and diverticulitis. Formerly, when diagnostic imaging findings were limited to the indirect finding of "bowel displacement" on plain films or upper gastrointestinal series, the correct diagnosis was rarely made preoperatively (6). Ultrasonography is now the imaging modality of choice (19). It usually shows fluid-filled cystic structures, frequently with thin internal septa; debris from hemorrhage or infection can appear as internal echoes (12). Abdominal CT scans enable identification of the organ of origin and exclusion of the kidney, ovary, or pancreas. Our patient underwent ultrasound and CT scanning, enabling us to locate the cyst precisely and identify its relationships with surrounding tissues.

Once a diagnosis has been made, complete surgical excision is recommended to minimize postoperative complications and associated morbidity (6). A laparoscopic approach is preferable;

laparotomy being indicated only in complicated cases. In cases of infarction and hemorrhagic twisted omentum; complete excision provides definitive treatment and reduces the risk of recurrence, as in our case.

Consent

Written informed consent was obtained from the patient for publication of this case report and the accompanying images.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

AA, GJ, AZ, EL, MLM made substantial contributions to the conception and design, or acquisition of data, or analysis and interpretation of data: AA, GJ, AT and IDC were involved in drafting the manuscript or revising it critically for important intellectual content. All authors read and approved the final manuscript.

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