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INTRODUCTION

In childhood, acute abdomen is a common reason for emergency evaluation, and acute appendicitis is its most frequent surgical cause (1). In children with acute appendicitis, right lower quadrant (RLQ) pain and guarding are usually prominent, often accompanied by anorexia, nausea, and vomiting. Although imaging modalities are highly reliable for diagnosis, acute appendicitis cannot be completely ruled out in the absence of definitive radiologic findings (1).

Omental torsion is a rare pathological condition characterized by vascular compromise and subsequent necrosis resulting from twisting of the omentum around its vascular pedicle (2). Although

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Abstract

Acute appendicitis is the most common indication for surgery in children presenting with abdominal pain. Its diagnosis is based on a combination of clinical, laboratory, and radiologic findings. In this case report, we present a patient who was considered to have acute appendicitis on clinical, laboratory, and radiologic grounds, but was found intraoperatively to have omental torsion. A 9-year-old boy presented to the emergency department with right lower quadrant (RLQ) abdominal pain, vomiting, and loss of appetite. Following evaluation—particularly abdominal ultrasonography (USG) demonstrating a hyperechoic solid lesion within the mesenteric tissue along with mild mesenteric haziness—he underwent surgery with a preliminary diagnosis of perforated plastron appendicitis. Intraoperatively, the appendix was normal. Further exploration revealed a torsioned segment of omentum in the umbilical region, which was resected. The patient had an uneventful postoperative recovery and was discharged in good condition. Although omental torsion is rare in childhood, it can present with acute RLQ pain and closely mimic appendicitis; therefore, it should be considered in the differential diagnosis.

Keywords: Acute abdominal pain; omental torsion; negative appendectomy

its exact etiology remains unclear, its clinical presentation often closely mimics acute appendicitis (3). Common findings include RLQ pain, abdominal tenderness and guarding, and anorexia (2). On abdominal ultrasonography (USG), especially when interpreted by operators with limited experience in this condition, no specific abnormality may be detected (2). As a result, the diagnosis may only become apparent during surgery in cases initially presumed to be appendicitis, leading to a negative appendectomy (4).

In this case report, we present a patient who underwent surgery with a preliminary diagnosis of perforated plastron appendicitis but was found intraoperatively to have a normal appendix, with omental torsion identified and treated as the primary pathology.

CASE REPORT

A 9-year-old boy presented to the emergency department with nausea and RLQ pain that had started on the same day. On clinical examination, he had RLQ tenderness and guarding, accompanied by loss of appetite. His body weight was within normal limits. Laboratory evaluation showed a normal white blood cell count of 9300/ μ L, while the C-reactive protein level was elevated at 3.85 mg/dL. Biochemical and electrolyte parameters were within normal limits.

In our diagnostic algorithm, a patient presenting with abdominal pain is first evaluated clinically and with laboratory tests and, if necessary, undergoes abdominal USG. If the diagnosis cannot be established by abdominal USG, abdominal computed tomography (CT) is then performed. The rationale for this stepwise approach is to avoid unnecessary radiation exposure from CT unless the diagnosis remains uncertain.

In this patient, abdominal USG demonstrated a $42 \times 12 \times 32$ mm hyperechoic solid lesion within the mesenteric tissue, together with mild mesenteric haziness, mesenteric lymphadenopathy,

and approximately 2 cm of free fluid in the RLQ. These findings were interpreted as suggestive of perforated plastron appendicitis. Although the appendix itself was not visualized, the ultrasonographic findings were considered sufficiently consistent with acute perforated appendicitis, and the diagnosis was regarded as clear at that stage.

The patient underwent surgery with a preoperative diagnosis of complicated appendicitis. Under general anesthesia, the abdomen was entered through a Rocky–Davis incision in the RLQ. On exploration, the appendix appeared normal, and approximately 5–10 mL of serohemorrhagic fluid collection was present in the abdominal cavity. After appendectomy was performed using 3-0 absorbable polyglactin suture material (Vicryl; Ethicon, Somerville, NJ, USA), further exploration revealed a semisolid mass at the level of the umbilicus. When this mass was exteriorized, a twisted segment of omentum was identified (Figure 1). Based on these findings, primary omental torsion was diagnosed. The infarcted omental segment was resected using 3-0 polyglactin suture, and the abdomen was closed anatomically in layers.

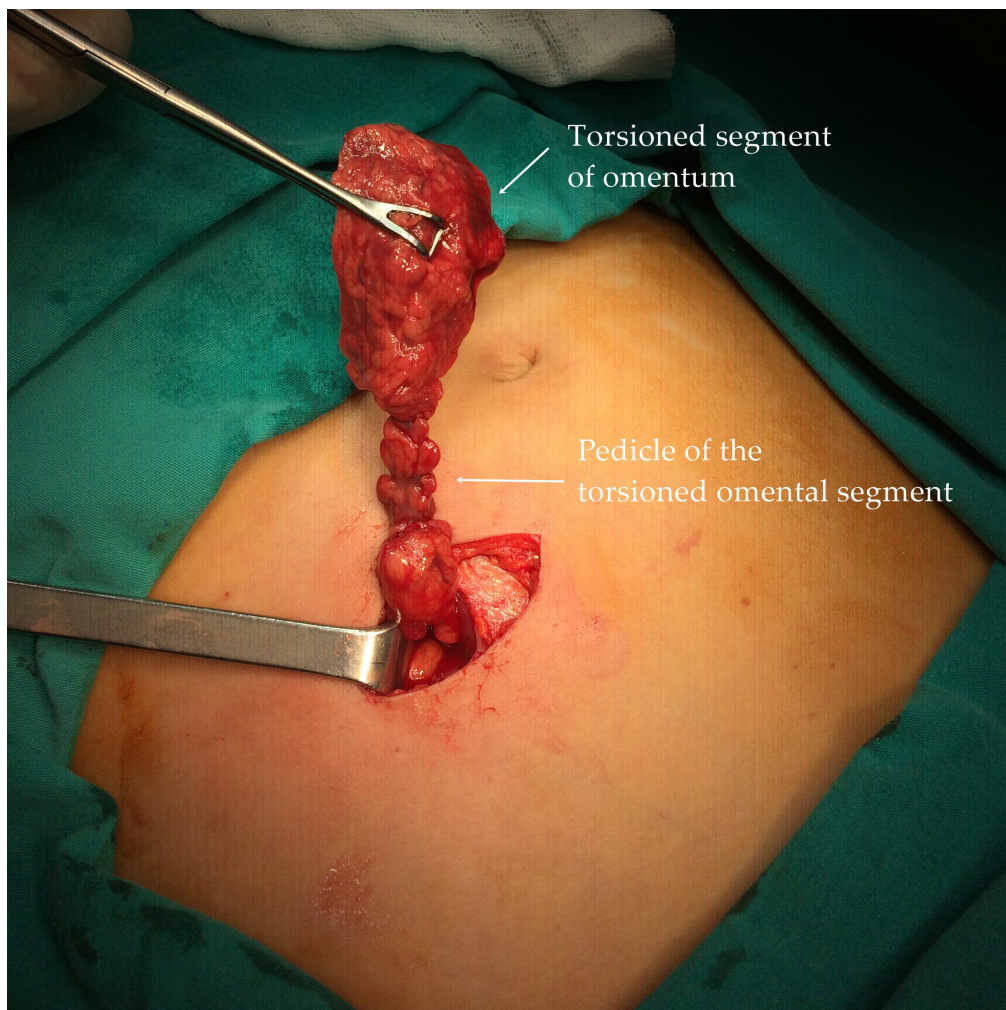


Figure 1. Intraoperative appearance of the torsioned omental segment.

Postoperatively, the patient resumed oral feeding on the same day. When surgical intervention was decided for this patient, perforated appendicitis was considered the preliminary diagnosis. Based on our previous clinical experience, we were aware that in children, perforated appendicitis may not always be accompanied by leukocytosis, particularly in the setting of bone marrow suppression. In cases of perforated appendicitis, our standard clinical approach is triple antibiotic therapy targeting gram-positive, gram-negative, and anaerobic bacteria, or alternatively, ertapenem as an equivalent regimen. Therefore, ertapenem treatment was initiated. Intravenous ertapenem was initiated and continued for a total of 4 days. The patient was discharged on postoperative day 3 in excellent

general condition.

Histopathological examination confirmed the intraoperative findings. The appendix showed luminal lymphoid hyperplasia (Figure 2A) without inflammatory cell infiltration in the muscularis propria (Figure 2B), confirming a negative appendectomy. In contrast, the omental specimen demonstrated numerous congested vessels of varying calibers (Figure 2C) together with prominent polymorphonuclear leukocyte infiltration (Figure 2D). Additional sections revealed marked vascular congestion, edema, and dense inflammatory cell infiltration (Figures 2E and 2F), findings consistent with acute omental torsion with secondary infarction.

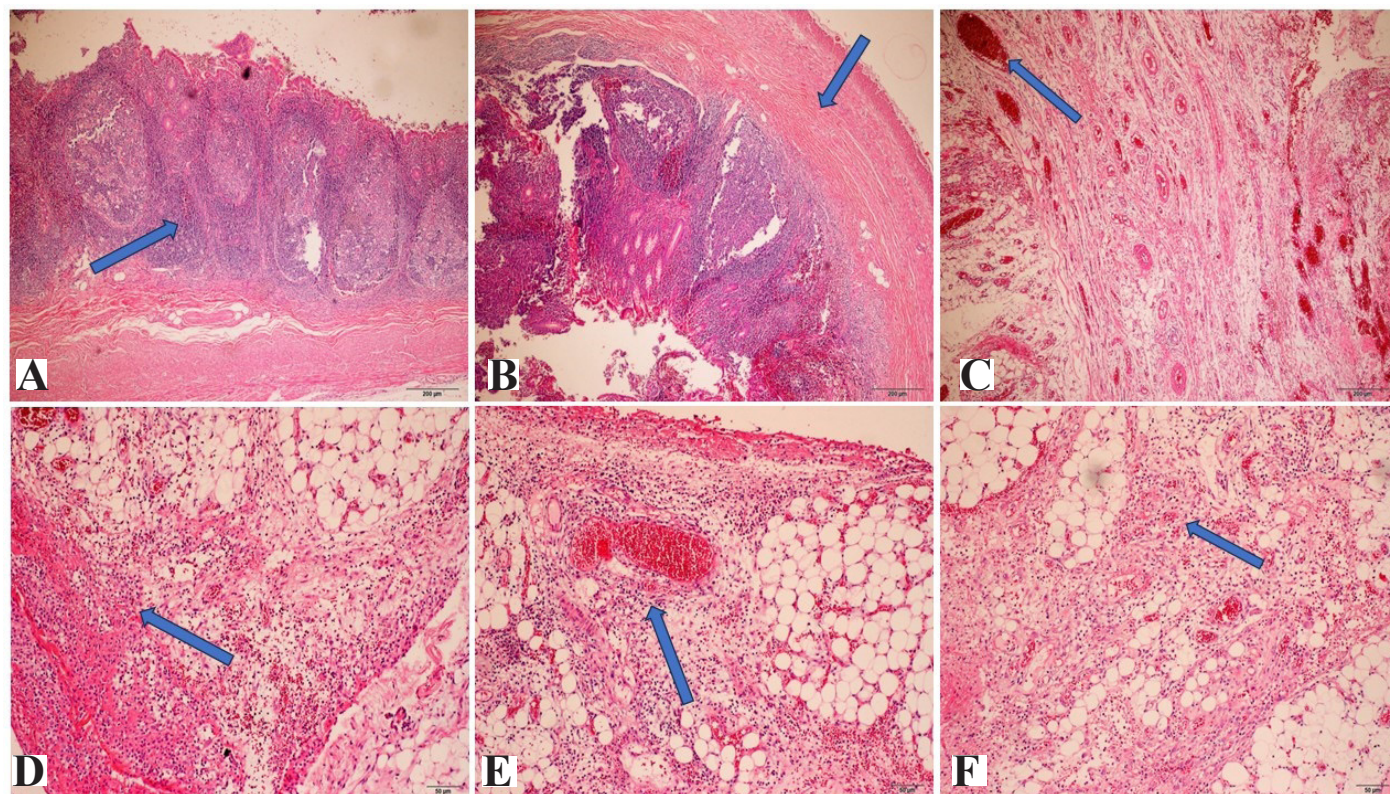


Figure 2. (A) Lymphoid hyperplasia in the appendiceal lumen (blue arrow, H&E $\times 40$); (B) Absence of inflammatory cell infiltration in the muscularis propria (blue arrow, hematoxylin and eosin (H&E) $\times 40$); (C) Omental tissue showing numerous congested vessels of varying calibers (blue arrow, H&E $\times 40$); (D) Numerous polymorphonuclear leukocytes (blue arrow, H&E $\times 40$); (E, F) Areas demonstrating vascular congestion, edema, and inflammatory cell infiltration (blue arrow, H&E $\times 100$).

DISCUSSION

Omental torsion in children is a rare but clinically important condition. A review of the literature identified a total of 32 reported pediatric cases (5). In most of these cases, patients underwent surgery with a preliminary diagnosis of acute appendicitis, and omental torsion was identified either during the initial operation after finding a normal appendix or during reoperation persistent postoperative pain following negative appendectomy (5). Only four cases were diagnosed preoperatively, and in all of these, the diagnosis was established

by CT (6). In the remaining cases, surgery was undertaken under the assumption of acute appendicitis, and omental torsion was discovered intraoperatively, often while searching for an alternative pathology after a negative appendectomy (0.18%) (7). In our case as well, surgery was initiated with a preliminary diagnosis of perforated appendicitis; however, after a negative appendectomy, omental torsion was identified during exploration for an alternative pathology.

All reported cases of omental torsion in the literature have been managed surgically. The treatment of omental torsion is

emergency surgical resection of the necrotic tissue; otherwise, leaving a patient with omental torsion in pain for several days without definitive treatment would be inappropriate and could raise ethical concerns. Although the exact cause of omental torsion is not known, it has been claimed that obesity may be the reason for this (9). However, we do not agree with this claim because it does not explain why omental torsion occurs in patients with normal weight, as in our patient. As reported in the literature, all previously published pediatric cases involved patients older than 6 years; similarly, our patient was 9 years old (2-9). This observation suggests that omental torsion may tend to occur after a certain age. It may be speculated that, as the omentum increases in size and weight and the intra-abdominal cavity expands with growth, more favorable mechanical conditions arise for the development of this pathology. Our literature review showed that most reported pediatric cases of omental torsion occurred in males (75%) (9). In the present case, the patient was male. Although no definitive study has established this association, male sex may be a potential risk factor for omental torsion.

Published reports indicate that most patients with omental torsion were not initially suspected of having this condition and were diagnosed only intraoperatively; therefore, no standard surgical approach has been established. However, laparoscopy has been reported to provide valuable exposure for abdominal exploration, particularly in obese patients (8). A laparoscopic approach is therefore an appropriate surgical option when the diagnosis has not been fully established. In our patient, however, the preliminary diagnosis at the time of surgery was perforated appendicitis. Because our experience with the laparoscopic management of perforated appendicitis was limited, we elected to proceed with an open surgical approach. Based on this experience, when a negative appendectomy is encountered during exploration, careful evaluation of the umbilical region may help identify underlying omental pathology.

CONCLUSION

Omental torsion is a rare condition in children. We believe it should be considered when a negative appendectomy is encountered in patients operated on with a preliminary diagnosis of acute appendicitis. In such cases, exploration of the intra-abdominal umbilical region may reveal underlying omental pathology.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Informed Consent

Written informed consent was obtained from the patient's legal guardians, the mother and father, for the publication of this case report and any accompanying images.

REFERENCES

1. Dunn JCY. Appendicitis. In: Grosfeld JL, O'Neil JA, Coran AG, Fonkalsrud EW Textbook of Pediatric Surgery. 6th ed. Philadelphia, Mosby Elsevier; 2006; Vol 2, Chap.98: 1501-13.
2. Wertheimer J, Galloy MA, Régent D, et al. Radiological, clinical and histological correlations in a right segmental omental infarction due to primary torsion in a child. *Diagn Interv Imaging*. 2014;95:325-31.
3. Wang Y, Huang R, Li C, Li W. Acute abdomen caused by torsion of the omentum: a pediatric case report. *Medicine (Baltimore)*. 2022;101:e29184.
4. Vázquez BJ, Thomas R, Pfluke J, et al. Clinical presentation and treatment considerations in children with acute omental torsion: a retrospective review. *Am Surg*. 2010;76:385-8.
5. Madha ES, Kane TD, Manole MD. Primary omental torsion in a pediatric patient: case report and review of the literature. *Pediatr Emerg Care*. 2018;34:e32-4.
6. Albejais R, Alharbi G, Al-Ali E, et al. Omental cyst with torsion: a rare culprit of pediatric acute abdomen. *Cureus*. 2023;15:e50606.
7. Mavridis G, Livaditi E, Baltogiannis N, et al. Primary omental torsion in children: ten-year experience. *Pediatr Surg Int*. 2007;23:879-82.
8. Nubi A, McBride W, Stringel G. Primary omental infarct: conservative vs operative management in the era of ultrasound, computerized tomography, and laparoscopy. *J Pediatr Surg*. 2009;44:953-6.
9. Theriot JA, Sayat J, Franco S, Buchino JJ. Childhood obesity: a risk factor for omental torsion. *Pediatrics*. 2003;112:e460.