

Laparoscopic Appendectomy for Torsed Appendix Presenting as an Acute Abdomen in an Infant Female

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ABSTRACT

Background: Torsion of an otherwise normal appendix vermiformis is exceedingly rare and usually presents with symptoms consistent with acute appendicitis. We present the unusual case of an infant girl who was admitted with right lower quadrant pain and focal peritonitis who was found to have appendiceal torsion on laparoscopy.

Case Report: An 11-week-old girl was brought to the emergency department with a 48-hour history of abdominal pain, emesis, low-grade fever, and focal right lower quadrant tenderness. Sonography found a noncompressible distended appendix in the right lower quadrant. Upon laparoscopy, a torsed, necrotic appendix vermiformis was found. Appendectomy was performed, and the patient recovered uneventfully.

Conclusion: In an infant girl with lower abdominal pain, the differential diagnosis should include torsed appendix besides more common causes, such as torsed ovary, intussusception, or small bowel volvulus. Ultrasound is useful for planning the operative approach.

Key Words: Appendix, Torsion, Infant, Laparoscopy.

INTRODUCTION

Volvulus of an otherwise normal appendix vermiformis is exceedingly rare and usually is associated with a mucocele¹ or other tumor²⁻⁴ that predisposes it to torsion. Symptoms are usually consistent with acute appendicitis, and most cases have been reported in adults.⁵⁻⁷

It is unusual to find focal right lower quadrant tenderness with peritonitis on physical examination of a young infant. Although acute appendicitis has been reported in children as early as in the first week of life,⁸ most practitioners likely will never encounter such a case in their career. We present the case of an infant girl who was admitted with right lower quadrant pain and focal peritonitis and who was found to have appendiceal torsion on laparoscopy.

CASE REPORT

An 11-week-old girl was brought to the emergency department with a 48-hour history of abdominal pain, emesis, and low-grade fever, but without leukocytosis. Physical examination demonstrated diffuse lower abdominal tenderness with peritoneal signs. Sonography found a noncompressible distended appendix in the right lower quadrant (**Figure 1**). Because of the unusual finding, a computed tomography of the abdomen was performed, which again was interpreted as acute appendicitis. Upon laparoscopy, a necrotic appendix vermiformis was found, torsed 360° anticlockwise at its base (**Figure 2**). The appendix was detorsed (**Figure 3**), and laparoscopic intracorporeal appendectomy was performed using a 3-trocar technique and an endoGIA stapler with a vascular load. A 5-mm expandable trocar was initially used in the umbilicus and later expanded to 12-mm to accommodate the endoGIA stapler. Two 3-mm trocars were placed in the left lower quadrant and suprapubic area. During stapling, care was taken to include a portion of healthy cecal tissue in the suture line to avoid dehiscence (**Figure 4**). The patient recovered uneventfully and was discharged home on the second postoperative day. The histopathology report showed acute gangrenous appendicitis. No tumors were found.

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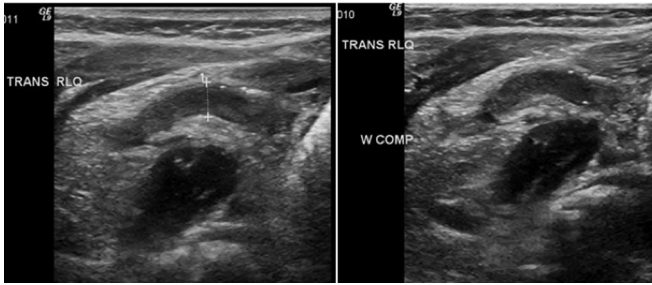


Figure 1. Right lower quadrant ultrasound without (left) and with (right) compression, showing an engorged, noncompressible tubular structure compatible with appendicitis.



Figure 2. Initial laparoscopic view of the 360° anticlockwise torsion of the appendix vermiformis.

DISCUSSION

Although rare, torsion of the appendix vermiformis is a well-described condition in adults. In most cases, torsion occurs secondary to a mass in or around the appendix, such as a mucocele,¹ fecalith,² or tumor.³ The symptoms can mimic those found in ovarian torsion.⁶ If suspected, the diagnosis can be made by contrast-enhanced ultrasound imaging.⁹ In our case, the CT of the abdomen did not add any significant information and retrospectively could have been omitted, sparing the patient the associated ionizing radiation.

A review of the literature on this condition identified 11 cases in children. The youngest patient was 3 years of age. Interestingly, it was over 4 times as common in boys.¹⁰ Therefore, age is not a prerequisite for the consideration of appendicitis, and torsion can occur at any age.

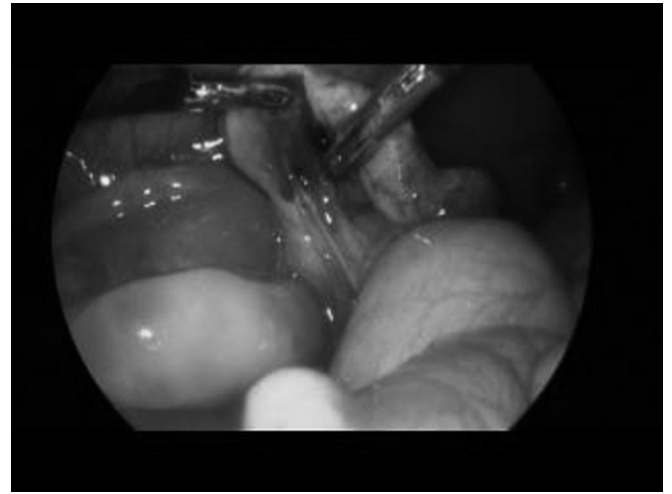


Figure 3. After detorsion, the necrotic tissue extends proximally to base, close to the cecum.

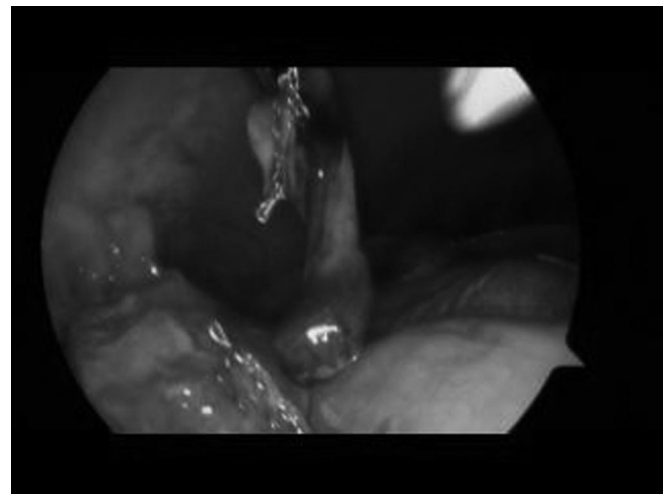


Figure 4. The appendix is stapled off with a margin of healthy cecal tissue.

During the operation, care was taken not to staple across the necrotic tissue resulting from the torsion, but to rather include a portion of healthy cecum in the suture line to avoid dehiscence. On the other hand, we were concerned that too much traction on the appendix could result in a tear of the weakened tissue. Indeed, a case of a 2-month-old girl with appendiceal torsion and ileocolic intussusception was reported recently, in whom the appendectomy was complicated by stump insufficiency, leading to subsequent re-laparotomy with repair.¹¹ Using an endoscopic loop ligature would have been an alternative to the stapling device and may have avoided the need to upsize the umbilical trocar to 12mm.

Although rare, appendiceal torsion should be included in the differential diagnosis of a young child with right lower abdominal pain and no elevated inflammatory markers, besides more common causes, such as ovarian torsion, intussusception, or small bowel volvulus. Abdominal ultrasound is the initial imaging modality of choice. During appendectomy, care should be taken to include healthy tissue towards the cecum in the staple line.

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