



## CASE REPORT

# A Rare Case of Acute Abdomen: Torsion of Vermiform Appendix

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## Abstract

Diseases of the appendix are the most common causes of an acute abdomen. Among them, torsion of the vermiform appendix is a rare disorder. Clinical manifestations of torsioned appendix vermiformis are indistinguishable from acute appendicitis and it is usually diagnosed during the operation. Primary and secondary torsion are recognized in the appendiceal torsion. Torsion of the appendix may occur at any age, but it is less common in children in the literature. Here, we report a case of secondary torsion of the vermiform appendix with fecalith impaction and review the literature on appendiceal torsion.

Keywords: Appendix vermiformis torsion; acute abdomen; appendix disease.

Appendix diseases are the most common causes of an acute abdomen. Among them, torsion of the vermiform appendix is a rare disorder. Torsion of the vermiform appendix was first defined by Payne et al.<sup>[1]</sup> in 1918. Clinical manifestations of torsion of appendix vermiform are indistinguishable from acute appendicitis and it is usually diagnosed during the operation<sup>[2]</sup>. Primary and secondary torsion are recognized in the appendiceal torsion. In primary torsion, specimen examination shows secondary ischemic or necrotic change and luminal dilatation distal to the torsion site without any primary lesion. Secondary torsion arises from appendiceal abnormality, which includes cystadenoma, mucocele, fecalith impaction, lipoma, and malformation<sup>[3–5]</sup>. Secondary torsion is seen rarely<sup>[6,7]</sup>. Torsion of the appendix may be developed at any age, but pediatric cases are less common in the literature. Here, we present a case of secondary torsion of the vermiform appendix with fecalith impaction.

## Case Report

An 8-year-old male patient was admitted to the emergency department with sudden onset of abdominal pain and vomiting. He had pain at the right lower quadrant and vomited non-bilious contents. On the physics exam, there was tenderness and rebound tenderness in the right lower quadrant area, with no guarding. On laboratory, white blood cell (WBC) count was 17.500/mm<sup>3</sup> (89% Neutrophil), and C-reactive protein (CRP) was negative. As per the findings under sonography, non-compressible distended appendix diameter was 13 mm, the mural thickness was 6 mm and it was reported to be compatible with acute appendicitis. The patient was operated upon the diagnosis of acute appendicitis. We found that the appendix was counter-clockwise torsioned from the proximal. The appendix was necrotic and dilated (Fig. 1). A simple appendectomy was performed. The patient was discharged at day 2 post-oper-

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**Figure 1.** Torsion and necrosis of appendix.

ation. The histo-pathological evaluation revealed fecalith in the appendix and ischemic changes in the appendix. Macroscopically appendix length was 11 cm and the diameter of the lumen was measured as 1.5 cm at the widest.

## Discussion

Acute appendicitis is the most common disorder in patients with a complaint of right lower abdominal pain. However, the torsion of the vermiform appendix is a rare disorder. It clinically simulates acute appendicitis. Thus, it is invariably diagnosed intraoperatively<sup>[8]</sup>. We diagnosed our patient intraoperatively, but we consider retrospectively that sudden onset of symptoms and could indicate torsion.

Counter-clockwise torsion of the appendix was observed more than clockwise torsion as per the literature reviews<sup>[9]</sup>. In our case, there was a counter-clockwise torsion.

The site of torsion is variable and could be at the base or about 1 cm or more distal to the base. Appendix torsioned at the base in our case. The secondary torsion that arises from appendiceal abnormality is much rarer. The secondary torsion has been reported to be associated with cystadenoma, mucocele, fecalith impaction, and malformation of the appendix<sup>[10]</sup>. There was a secondary torsion of the vermiform appendix with fecalith impaction in our case. All reported cases were treated by appendectomy. We performed a simple appendectomy in our case, and the pa-

tient showed full recovery.

In conclusion, the torsion of the vermiform appendix is a rare disorder with an unclear etiology. When a patient presents with abdominal pain indicating appendicitis, the torsion of the vermiform appendix should also be considered.

**Informed Consent:** Written informed consent was obtained from the parents of the patient for the publication of the case report and the accompanying images.

**Peer-review:** Externally peer-reviewed.

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