CASE REPORT

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Torsion of the vermiform appendix: A rare intraoperative finding

Muhammad Yaman Adi, Mohammad Bader, Ingo Jester

ABSTRACT

Introduction: Torsion of the vermiform appendix is a rare intraoperative diagnosis. The clinical presentation is identical to that of acute appendicitis, with preoperative investigations playing a minimal role. The aetiology of the torsion is unclear, though it has been associated with fecoliths, lipomas and mucocoeles of the appendix. **Case Report:** This case report describes a rare presentation of a four-year-old boy with a history and examination classical of acute appendicitis. Intraoperatively, a torsion of the vermiform appendix was found. The clinical presentation and operative intervention are reviewed. **Conclusion:** Torsion of the vermiform appendix is a rare cause of acute abdominal pain, mimicking acute appendicitis in presentation. Clinicians need to be aware of this intraoperative diagnosis and be able to manage it in the theatre.

Keywords: Torsion, Vermiform appendix, Appendicitis, Pediatric

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INTRODUCTION

Torsion of the vermiform appendix is a rare intraoperative diagnosis. It was first reported in 1918, which was clinically identical in presentation to acute appendicitis [1]. It has been reported 30 times in the last century, half of which were in pediatric patients [2]. The aetiology of the torsion is unclear. Herein, we present a four-year-old boy with acute appendicitis and diagnosed as appendicular torsion.

CASE REPORT

A four-year-old boy was presented with a three-day history of central abdominal pain and vomiting. Pain was localized to the right iliac fossa. On examination, he was pyrexial. He had a tender abdomen with rebound tenderness in the right iliac fossa. He had a past medical history of adenotonsillectomy and grommet insertions.

No hematological or radiological investigations were required. Clinical examination was suggestive of acute appendicitis. Therefore, he was taken to operation theatre for a laparoscopic appendicectomy on the same day.

At the time of operation, he was discovered to have 720 degrees torsion of the vermiform appendix (Figure 1) with ischemic changes in the distal half. A thrombosed vessel was visualized. A perforation was not present. The appendix had adhered to the inner inguinal opening, however a patent orifice was not seen. The appendix

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was then peeled off this area and three endoloops were applied and appendicectomy was performed. He made an uneventful recovery and was discharged the following day. His histopathology was consistent with hemorrhagic infarction of the appendix.

Histopathology

Macroscopic: The appendix measured 7x1x1 cm with a congested surface and hemorrhagic attached fat 3x2 cm. On the cut surface the appendix wall was brown and had hemorrhagic luminal contents.

Microscopic: This confirmed severe acute congestion of the appendiceal wall associated with extensive mucosal, subserosal as well as mesoappendiceal hemorrhage. The mucosa was completely necrotic and focally the necrosis extended into the muscularis propria. Acute serosal inflammation was also present.

Diagnostic summary: Hemorrhagic infarction of the appendix.

DISCUSSION

Even though acute appendicitis is one of the most common surgical emergencies, torsion of the vermiform appendix, which mimics acute appendicitis, is a rare phenomenon. It is unclear how the torsion develops though several aetiologies have been reported. Some have described it as a primary event due to the appendix being of a longer length, having poor fixation and narrow mesentery. Others have reported cases as a secondary event due to irregular peristaltic movements of the appendix [1], inflammation of the distal appendix [3], or presence of fecoliths, lipomas and mucocoeles of the appendix [4–6]. Mostly, the appendix torsion is in a counterclockwise direction (as in this case) [6].

It is difficult to describe the exact cause of the torsion in this case. We theorized two questions: Was the torsion a primary event that caused tip inflammation, which then led it to adhere to the anterior abdominal wall? Or did the inflammation of the appendix cause the tip to adhere to the abdominal wall, which then led to the torsion

by secondary means such as poor fixation or bowel peristalsis? Other secondary factors, such as fecoliths, lipomas or mucocoeles, were not present in this case.

The position of the appendix in these cases is commonly described as lying free or pelvic [7]. However, the case reported revealed an appendix that had adhered to the anterior abdominal wall.

Imaging does not play major role in these cases. One report described how an ultrasound scan performed twice showed a distended bowel loop on both the occasions [8], but still underwent an operation for diagnostic and therapeutic measures. This patient had the same outcome as the case reported above, though investigations were not performed in our case.

CONCLUSION

Torsion of the vermiform appendix is a rare finding in patients presenting as an acute appendicitis. The diagnosis remains an intraoperative one, with preoperative investigations playing a minimal role. The torsion can be caused by a primary or secondary event. Nonetheless, they will have an appendectomy performed, and therefore the operating surgeon needs to be aware of this intraoperative finding and how to manage it.

Author Contributions

Muhammad Yaman Adi – Acquisition of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published

Mohammad Bader – Conception and design, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published

Ingo Jester – Conception and design, Analysis and interpretation of data, Critical revision of the article, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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Figure 1: Intraoperative laparoscopic photograph: Torsion of the vermiform appendix (720 degrees).

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