

T-shaped Meckel's Diverticulum: An Exceptional Incidental Finding during Appendectomy, A Case Report

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Abstract:

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract, yet it is rarely encountered as an incidental operative finding in adults. We report the case of a 25-year-old man with no past medical history who presented with 48 hours of right iliac fossa pain and fever. Laboratory tests showed marked leukocytosis (21,000/mm³) and elevated C-reactive protein (71 mg/L), with no other abnormalities. The clinical picture was consistent with acute appendicitis and the patient underwent laparoscopic appendectomy. Intraoperatively, an unexpected T-shaped Meckel's diverticulum was identified on the distal ileum, representing an exceptional anatomical variant. A diverticulectomy was performed during the same procedure. The postoperative course was uneventful. This case highlights the importance of systematic exploration during appendectomy and discusses management considerations of incidentally discovered Meckel's diverticulum in adults.

Keywords: Meckel's Diverticulum, T-Shaped, Incidental Finding, Appendectomy, Diverticulectomy, Adult.

Case Report

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INTRODUCTION

Meckel's diverticulum (MD) results from incomplete obliteration of the vitelline duct and represents the most common congenital anomaly of the gastrointestinal tract. Most MDs remain asymptomatic and are discovered incidentally during surgery performed for another indication. In adults, complications are uncommon but may include obstruction, diverticulitis, and, less frequently, bleeding. Unusual anatomical variants are exceptionally rare [1]. We report a T-shaped MD identified fortuitously during laparoscopic appendectomy performed for suspected acute appendicitis, and we discuss the operative decision-making in incidental MD in adults [2].

Case Report

A 25-year-old man with no significant medical history presented with a 2-day history

of right iliac fossa pain in a febrile context. Physical examination found localized right iliac fossa tenderness. Laboratory tests revealed leukocytosis at 21,000/mm³ and a C-reactive protein level of 71 mg/L, while the remainder of the workup was unremarkable. Based on the clinical and biological presentation, acute appendicitis was suspected and the patient underwent laparoscopic exploration.

The appendix appeared inflamed and laparoscopic appendectomy was completed. Systematic inspection of the terminal ileum revealed an unexpected Meckel's diverticulum located on the distal ileum with an unusual T-shaped morphology. No macroscopic signs of perforation or active bleeding were observed. Given the patient's young age and the atypical configuration, a diverticulectomy was performed during the same procedure.

A representative intraoperative view is shown in Fig 1.



Figure 1: Resected specimen demonstrating the T-shaped morphology of Meckel's diverticulum

The resected specimen confirmed the T-shaped configuration [3]. The postoperative course was uneventful, and the patient was discharged after an uncomplicated recovery. Clinical follow-up did not reveal recurrence of symptoms.

DISCUSSION

This case illustrates that incidental MD can be encountered during appendectomy and that rare anatomical variants may complicate intraoperative decision-making. While the prevalence of MD is well known, adult presentation is often silent, and many diverticula are discovered incidentally. The decision to resect an incidental MD remains debated [1]. Several authors have suggested risk-based approaches, commonly considering young age, male sex, diverticulum length greater than 2 cm, the presence of a fibrous band, a narrow base, or abnormal features as arguments favoring resection. In our patient, the unusual T-shaped configuration created additional uncertainty about future risks and potential diagnostic confusion, and therefore diverticulectomy was performed during the same laparoscopic procedure [4].

From a practical perspective, this report supports systematic exploration of the distal ileum during appendectomy, especially when operative findings may reveal unexpected pathology. Laparoscopy facilitates safe inspection and, when indicated, allows simultaneous management of incidental MD with acceptable morbidity. Reporting this rare configuration contributes to the surgical literature and may help surgeons recognize and manage exceptional variants of MD.

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