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Acute Abdominal Pain in A 14-Year-Old Girl - Diagnostic Challenge Between Appendicitis and Ileitis

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Abstract | **Case Report**

We report the case of a 14-year-old girl presenting with acute abdominal pain initially suggestive of appendicitis. The clinical picture included central pain migrating to the right iliac fossa, localized tenderness, and elevated inflammatory markers. However, imaging failed to visualise the appendix and instead demonstrated ileal thickening with mesenteric lymphadenopathy. The patient improved spontaneously and was discharged on oral antibiotics with a working diagnosis of ileitis. This case highlights the diagnostic overlap between appendicitis and ileitis in paediatric patients, underscores the limitations of imaging when the appendix is not visualised, and emphasises the importance of careful clinical judgment, close observation, and conservative management to avoid unnecessary surgical intervention.

Keywords: Acute abdominal pain; Appendicitis; Ileitis; Mesenteric adenitis; Paediatric emergency; Diagnostic imaging.

INTRODUCTION

Acute abdominal pain in children is a common reason for emergency presentation. Appendicitis remains the most frequent surgical diagnosis, yet other conditions such as mesenteric adenitis and ileitis can mimic its features [Mallick, 2012]. Differentiating these entities is essential to prevent unnecessary surgery while ensuring appropriate management. This case illustrates the diagnostic challenge posed by overlapping clinical features and inconclusive imaging. It highlights the importance of considering alternative diagnoses in paediatric abdominal pain [Kessler *et al*., 2019].

CASE REPORT

A 14-year-old girl developed severe central abdominal pain on a Friday afternoon. The pain was persistent with intermittent exacerbations, during which she appeared pale and unwell. She vomited once and self-medicated with paracetamol, ibuprofen, and antihistamines without relief. Overnight, the pain continued, though she managed a few hours of sleep. There was no history of recent viral illness or similar prior symptoms.

By Saturday morning, she appeared brighter but the pain had localised to the right iliac fossa (RIF). Although the pain was less intense (4/10) but she was limping when walking. At an urgent care centre, examination revealed RIF tenderness with mild guarding. Laboratory investigations showed a C-reactive protein (CRP) of 65 mg/L. She was referred to hospital with suspected acute appendicitis.

On arrival, she was afebrile and maintained appetite. She reported feeling feverish but had a normal temperature. Two CT scans (with intravenous and oral contrast) failed to visualise the appendix but showed subtle ileal thickening and mesenteric lymphadenopathy [Doria *et al*., 2006]. Her pain gradually resolved by Monday morning, and she was discharged on oral antibiotics with a working diagnosis of possible ileitis.

Table 1. Differential Diagnosis of Right Iliac Fossa Pain in Children

Feature	Appendicitis	Ileitis / Mesenteric Adenitis
Pain	Starts central, localizes to RIF	Often diffuse, may localize to RIF
Systemic features	Fever, anorexia common	Mild or absent
Lab findings	Elevated CRP, leucocytosis	Elevated CRP possible, WBC variable
Imaging	Enlarged, noncompressible appendix	Ileal wall thickening, lymphadenopathy
Course	Progressive, risk of perforation	Often self-limiting, resolves with time
Management	Surgical (appendicectomy)	Conservative ± antibiotics

DISCUSSION

This case illustrates the diagnostic overlap between acute appendicitis and ileitis. The initial presentation with central abdominal pain migrating to the RIF, tenderness, and elevated CRP strongly suggested appendicitis [Schuh *et al*., 2011]. However, the absence of definitive imaging findings and the presence of ileal thickening with mesenteric lymphadenopathy pointed towards ileitis [Kim *et al*., 2020].

Mesenteric adenitis and ileitis are often self-limiting but can mimic appendicitis clinically [Karmazyn *et al*., 2005]. Imaging plays a crucial role in differentiation, though visualisation of the appendix is not always possible [Kessler *et al*., 2004]. The lack of systemic features and the patient's spontaneous improvement supported a conservative approach.

This case reinforces the importance of considering alternative diagnoses in paediatric abdominal pain, particularly when imaging findings are inconclusive. It also highlights the role of close observation and conservative management in avoiding unnecessary surgery [Kessler *et al*., 2019].

CONCLUSION

This case demonstrates that right iliac fossa pain in children should not be assumed to be appendicitis without supportive imaging or clinical progression. Ileitis and mesenteric adenitis are important differentials that can mimic appendicitis. Conservative management with close monitoring may be appropriate when appendicitis cannot be confirmed.

Consent Statement: Written informed consent for publication of this case report was obtained from the patient's parents.

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