

Primary Epiploic Appendagitis Mimicking Acute Appendicitis: A Case Report and Diagnostic Insight

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Abstract

Background and Objective: Epiploic appendagitis is an infrequent and often misdiagnosed cause of acute abdominal pain, commonly mistaken for conditions like appendicitis or diverticulitis due to its nonspecific and localized symptoms. Its underrecognition largely stems from limited clinical awareness and the lack of definitive diagnostic markers, with diagnosis typically made via computed tomography or incidentally during surgical exploration.

Case Description: This report presents a rare case of primary epiploic appendagitis in a 35-year-old male initially suspected to have acute appendicitis. Diagnostic laparoscopy revealed a normal appendix and a necrotic epiploic appendage originating from the mid-ascending colon. Laparoscopic excision of the appendage and prophylactic appendectomy were performed. The patient recovered well postoperatively and was discharged on day three, with follow-up confirming full recovery. Histopathology confirmed necrotic epiploic appendagitis.

Conclusion: Primary epiploic appendagitis should be considered in stable patients with focal abdominal pain and minimal systemic inflammatory features. In diagnostically uncertain patients, computed tomography can establish the diagnosis and help avoid unnecessary antibiotics, hospitalization, and surgery; reserve operative treatment for selected patients with persistent or worsening symptoms, recurrence, complications, or unresolved diagnostic uncertainty.

Keywords: Epiploic appendagitis, Appendicitis, Diagnostic laparoscopy, Primary epiploic appendagitis, Necrosis of epiploic appendage

INTRODUCTION

Epiploic appendages are adipose-rich, serosa-lined peritoneal protrusions originating from the antimesenteric border of the colon, each containing a narrow pedicle comprising terminal arterioles and a solitary venule. Epiploic appendagitis represents an uncommon, non-malignant, and self-limiting inflammatory pathology affecting these peritoneal structures. Primary epiploic appendagitis (PEA) typically arises from spontaneous venous thrombosis within the draining vessels of the appendages, without associated torsion or external ischemic insult. In contrast, secondary epiploic appendagitis results from localized

inflammation due to adjacent intra-abdominal pathologies, such as appendicitis, diverticulitis, or cholecystitis. Clinically, PEA often presents with localized acute abdominal pain, frequently mimicking more common conditions like acute diverticulitis or appendicitis. The absence of specific clinical hallmarks renders its diagnosis particularly challenging.¹ Diagnosis was traditionally achieved during operative interventions such as exploratory laparotomy or laparoscopy, often performed for differential diagnoses of right lower quadrant pain. Recent advances in imaging modalities have markedly increased the preoperative diagnostic yield for this condition. This report describes an uncommon

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presentation of epiploic appendagitis in a 35-year-old male, a case of particular interest given the apparent absence of similar documentation within the regional literature. By outlining the clinical course and therapeutic approach, we aim to contribute to the existing knowledge base and underscore the importance of early recognition.

CASE PRESENTATION

A 35-year-old male with no prior history of abdominal surgery or notable medical conditions was referred to our department with severe abdominal pain localized to the right lower quadrant. The pain had progressively worsened over the preceding 48 hours and was continuous, deep, and aching. He denied vomiting, rectal bleeding, or constitutional symptoms and reported normal bowel habits. On examination, the abdomen was soft and non-distended, with normal bowel sounds and focal tenderness at McBurney's point. There were no signs of peritonism; Rovsing's, psoas, and obturator signs were negative. Vital parameters were within normal limits, with no systemic signs of infection or sepsis. Laboratory investigations showed a normal white cell count, hemoglobin, platelet count, and renal profile, and urinalysis showed no evidence of urinary tract infection. Based on the documented findings, his Alvarado score was 2 (right lower quadrant tenderness), placing him in a low-risk category for acute appendicitis. Nevertheless, acute appendicitis remained an important clinical differential because of the persistent focal right lower quadrant pain and McBurney's point tenderness.

The patient was admitted for surgical observation. Empiric antimicrobial therapy was initiated while acute appendicitis remained the working diagnosis; however, his pain persisted. At the time of this presentation, abdominal computed tomography (CT) was not routinely used at our institution for uncomplicated right lower quadrant pain except in selected cases. Owing to persistent symptoms and unresolved diagnostic uncertainty, diagnostic laparoscopy was undertaken. Laparoscopy demonstrated a macroscopically normal appendix and a twisted, necrotic epiploic appendage arising from the antimesenteric aspect of the mid-ascending colon (**Figure 1**). No mesenteric lymphadenopathy or Meckel's diverticulum was identified. The necrotic epiploic appendage was excised. Although the appendix appeared normal, appendectomy was performed at the operating surgeon's discretion because acute appendicitis had been the principal preoperative diagnosis. We acknowledge that routine prophylactic appendectomy is not required when a normal appendix and an alternative diagnosis are identified. Histopathology confirmed ischemic infarction of the epiploic appendage, while the vermiform appendix showed no pathological abnormality. The postoperative course was uncomplicated, with

resolution of the presenting pain. The patient remained under postoperative observation and was discharged on postoperative day three. He remained well at one-month follow-up.

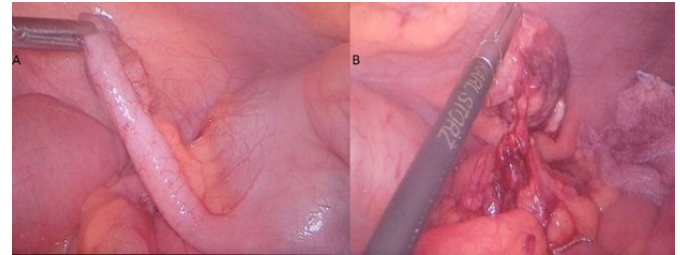


Figure 1 Intraoperative assessment: 1A - Appendix with no gross pathological abnormalities; 1B - twisted necrotic epiploic appendage at the antimesenteric aspect of the mid-ascending colon.



Figure 2 Gross specimen of the resected necrotic epiploic appendage.

DISCUSSION

The incidence of primary epiploic appendagitis has been estimated at approximately 1.3% among patients presenting with acute abdominal pain.¹ Primary epiploic appendagitis results from torsion of an epiploic appendage or spontaneous thrombosis of its central draining vein, causing ischemic or hemorrhagic infarction and localized inflammation. Secondary epiploic appendagitis occurs when adjacent inflammatory disease, including diverticulitis, appendicitis, cholecystitis, or pancreatitis, involves the epiploic appendages.² Clinically, primary epiploic appendagitis is an important mimic of acute appendicitis. Typical features include acute, localized, non-migratory abdominal pain, focal tenderness, normal or only mildly abnormal inflammatory markers, and relative absence of systemic symptoms such as fever or vomiting.^{2,6} This pattern closely resembled our patient; he was hemodynamically stable and afebrile, had focal McBurney's point tenderness, no peritonism, and a normal white cell count. His documented Alvarado score was only 2, which, in retrospect, should have increased consideration of non-appendiceal causes of right

lower quadrant pain. Prior episodes of similar localized pain have been described in patients with epiploic appendagitis.³ Although epiploic appendagitis commonly mimics acute appendicitis, rare coexistence of the two conditions has also been reported.⁴ CT is the key imaging modality for diagnosis and for differentiating epiploic appendagitis from appendicitis or diverticulitis. Typical findings are an oval fat-attenuation lesion adjacent to the colon, a thin hyperattenuating rim, surrounding inflammatory fat stranding, and occasionally a central hyperattenuating focus representing a thrombosed vein.⁵ In a stable patient with localized pain and limited inflammatory response, a CT-first strategy can prevent unnecessary hospital admission, antimicrobial treatment, and surgery.^{5,6} In our case, CT was not obtained because of the institutional diagnostic pathway used at the time. Given the low Alvarado score and clinical stability, we recognize that preoperative CT would have been a less invasive and more appropriate diagnostic step and might have permitted conservative management. This case represents an important learning point.

Most uncomplicated cases are self-limiting and should be treated conservatively with analgesia and, when appropriate, non-steroidal anti-inflammatory medication. Antibiotics are not routinely required once primary epiploic appendagitis has been established, because the condition is ischemic-inflammatory rather than infectious.^{5,6} In this patient, empiric antimicrobials were given before the definitive diagnosis because acute appendicitis remained the working diagnosis; this should not be interpreted as recommended treatment for confirmed epiploic appendagitis.

Surgery is therefore not first-line treatment. General indications for operative management include persistent or worsening symptoms despite an adequate trial of conservative treatment, recurrent symptomatic disease, complications such as obstruction, abscess, or peritonitis, and persistent diagnostic uncertainty when a more serious surgical condition cannot be excluded.^{6,7} When surgery is required, laparoscopic excision of the infarcted appendage is usually sufficient. Routine prophylactic appendectomy of a macroscopically normal appendix is not necessary after an alternative diagnosis has been established. In our case, appendectomy was performed because appendicitis had been the principal preoperative diagnosis and at the discretion of the operating surgeon. This practice should be distinguished from the management of CT-confirmed uncomplicated epiploic appendagitis.

The case also illustrates the value of critically reassessing institutional pathways for right lower quadrant pain. Diagnostic laparoscopy remains useful when symptoms persist and the diagnosis remains unresolved, because it permits complete intra-abdominal assessment and immediate treatment. However,

in a stable patient without peritonitis or marked inflammatory abnormalities, modern cross-sectional imaging should generally precede operative exploration. Our patient recovered uneventfully after excision, with complete symptom resolution and no recurrence at one-month follow-up.

CONCLUSION

In conclusion, primary epiploic appendagitis should be included in the differential diagnosis of focal right lower quadrant pain, particularly in stable, afebrile patients with limited inflammatory abnormalities. CT is the preferred diagnostic tool in clinically indeterminate cases and can prevent unnecessary antimicrobial therapy and operative intervention. Uncomplicated disease is usually managed conservatively; reserve surgery for persistent or worsening symptoms, recurrence, complications, or unresolved diagnostic uncertainty. This case highlights how better recognition of the characteristic clinical pattern and earlier CT use may reduce avoidable surgery.

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ETHICAL STATEMENT

The authors are accountable for all aspects of the work and will ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee(s) and the Declaration of Helsinki (as revised in 2013). We obtained written informed consent from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the editorial office of this journal.

CONTRIBUTIONS

- (I) Conception and design: Hemanathan Praemanathan
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- (V) Data analysis and interpretation: N/A
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- (VII) Final approval of manuscript: All Authors

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