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Case Report

Greater omental infarction: Uncommon cause of acute abdomen

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Abstract

Objective: To present a case of non-surgical acute abdomen and the unusual radiological finding that determined the clinical management. A previously healthy 37-year-old man presented to the emergency department with a seven-day history of constant, progressively worsening pain localized to the right iliac fossa, associated with an unspecified fever. Physical examination revealed localized tenderness and abdominal rigidity on the right side. Laboratory evaluation was largely unremarkable, except for moderate leukocytosis. Computed tomography was performed to investigate suspected acute appendicitis and demonstrated a 6.7 × 3.3 cm fat-density mass within the mesenteric fat pad, consistent with omental infarction. Omental infarction is an uncommon and often underrecognized cause of acute abdominal pain. It typically results from omental torsion or idiopathic ischemia and may clinically mimic more frequent surgical conditions, such as appendicitis. Awareness of its characteristic imaging findings is essential, as accurate radiologic diagnosis allows conservative management and helps avoid unnecessary surgical intervention.

Keywords

Greater omentum, Omental infarction, Acute abdomen, Radiology.

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Introduction

The acute abdomen is classically diagnosed and managed according to the fundamental principles established by the seminal work of Sir Zachary Cope, which relies essentially upon the patient's history and physical examination (1). Cope's maxim regarding severe abdominal pain—stating that pain persisting beyond six hours is caused by a condition of surgical significance—though not absolute, continues to guide generations of physicians (1). Since Cope's era, substantial advances have been achieved in the diagnostic imaging of the acute abdomen (2,3). The use of imaging modalities to inform surgical decision-making in cases of acute abdomen has become routine practice in emergency departments today (4,5), although arguments exist against the routine employment of imaging methods, contending that the use of ancillary diagnostic techniques in cases of obvious surgical acute abdomen unnecessarily increases treatment costs and delays surgical intervention itself (2). We present the case of a patient with a clear acute abdomen, initially diagnosed as acute appendicitis, in whom surgery was obviated by a rare imaging finding.

Patient Case

A previously healthy 37-year-old male presented to the emergency department with a seven-day history of constant, progressive pain in the right iliac fossa and an unspecified fever. He denied nausea, vomiting, diarrhea, and genitourinary symptoms. Tenderness and rigidity were noted on palpation of the right abdomen. Laboratory results were unremarkable except for moderate leukocytosis. A computed tomography (CT) scan, initially performed to evaluate for acute appendicitis, revealed a 6.7 x 3.3 cm fat mass within the mesenteric fat pad, suggestive of acute mesenteric infarction (figure 1). The patient was treated with supportive care and analgesia and demonstrated clinical improvement over the course of a few days, with no need for surgical intervention.

Omentum Infarction

Omentum infarction is an uncommon etiology of non-surgical acute abdomen. Resulting from omental torsion or idiopathic ischemia, it represents a rare cause of unnecessary laparotomy in this setting. Given the potential for accurate diagnosis via imaging, this condition should be considered in the differential (6,7).

Symptoms are nonspecific, often manifesting as acute, right-sided abdominal pain accompanied by nausea and vomiting, which can easily mimic acute appendicitis or biliary tract disease (7,8). Abdominal ultrasound may reveal an ovoid, heterogeneous fat mass with hyperattenuated striations at the pain site. However, contrast-enhanced CT is the diagnostic modality of choice, demonstrating an oval or triangular fat mass with a swirling or striated appearance, typically located in the omentum between the right anterior abdominal wall and the colon (Figure 1). A focal mass with indistinct fat planes and striations within the right mesenteric fat strongly supports the diagnosis (9-11).

Discussion

Recent literature has appropriately emphasized the overuse of imaging in acute abdomen (2). Unnecessary tests for conditions such as appendicitis or acute cholecystitis can increase costs and delay definitive management. While Zachary Cope's paradigm of history and physical examination remains a cornerstone (1), this case highlights the importance of imaging in identifying atypical presentations.
The characteristic CT findings in this patient exemplify a readily recognizable, yet often overlooked, cause of acute abdomen (5,12,13) . This underscores the need for a broad differential diagnosis and judicious use of imaging to avoid diagnostic errors. Although laparoscopic resection may be considered for management, conservative treatment with analgesics and anti-inflammatory agents is often successful, as demonstrated in this case (6).

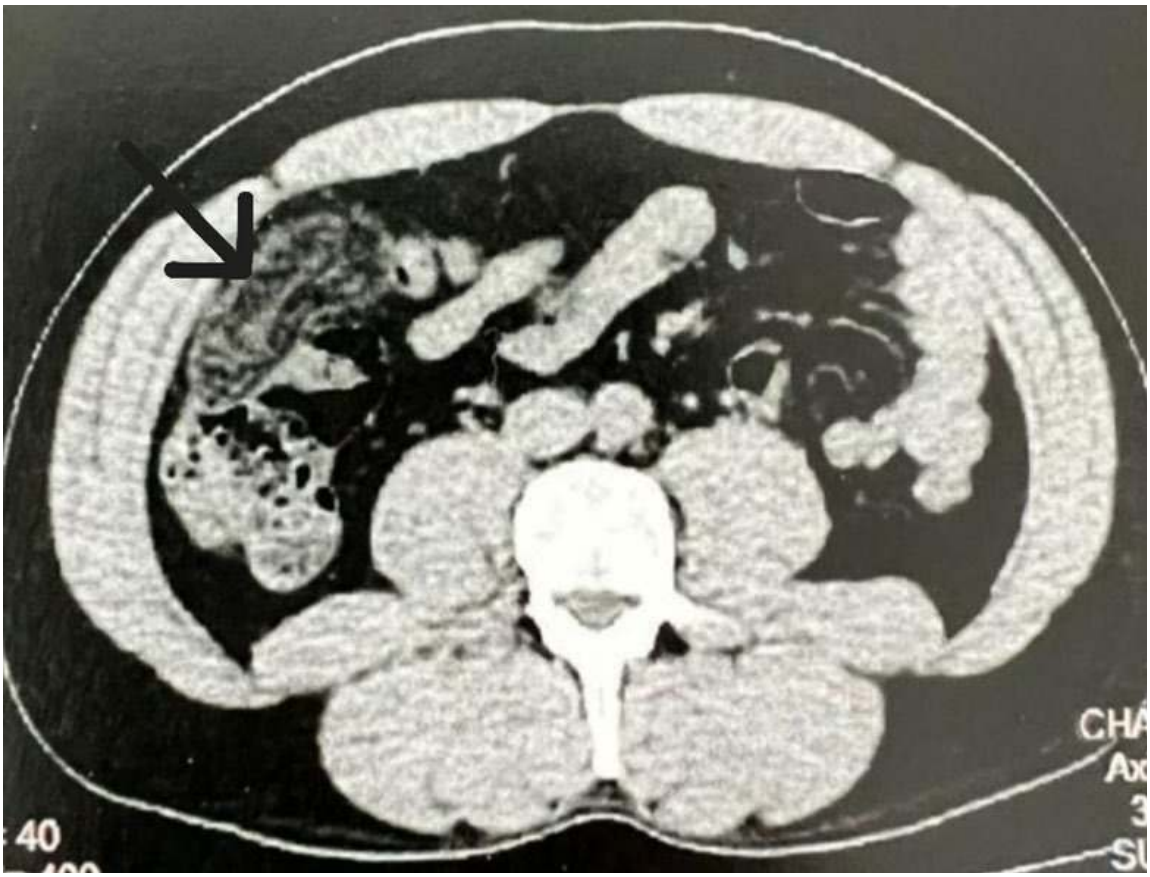

Figure 1. Contrast-enhanced axial computed tomography image of the upper abdomen reveals an ovoid heterogeneous fatty mass with internal striations, positioned within the greater omentum anterior to the ascending colon and subjacent to the anterior abdominal wall (black arrow), radiological features pathognomonic of omental infarction.

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