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Case Report

Epiploic Appendagitis Following Blunt Abdominal Trauma: A Case Report with Literature Review

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ABSTRACT

Epiploic appendagitis (EA) is a rare and self-limiting cause of acute abdominal pain resulting from ischemia due to torsion or venous thrombosis of epiploic appendages. It often mimics more common conditions, such as diverticulitis or appendicitis, leading to misdiagnosis and unnecessary interventions. While EA is typically idiopathic, we present a unique case of trauma-induced EA in a 58-year-old man who developed sharp left lower quadrant pain after prolonged abdominal pressure while repairing a boat engine managed conservatively, which, to our knowledge, has not been previously reported. With the increasing availability of computed tomography (CT), EA is being diagnosed more frequently, yet clear management guidelines remain lacking.

1. Introduction

Epiploic appendagitis (EA) is a rare manifestation of the acute abdomen that occurs primarily when venous vascular impairment caused by thrombosis or torsion leads to ischemia of the epiploic appendages surrounding the colonic surface. The incidence of EA is estimated to be approximately 8 cases per million cases annually. In addition, EA can be triggered as a secondary outcome of inflammation in a typically normal epiploic appendage near an inflamed organ such as the colon, gallbladder, or appendix [1]. EA lacks specific clinical features and can mimic other causes of acute abdomen, making its diagnosis difficult, but abdominal pain is the main symptom. A recent single-center retrospective study of 39 patients found that nearly 69% of subjects experienced abdominal pain, with 51% experiencing left lower quadrant tenderness [2]. Another study by Ozdemir et al. showed abdominal pain as the predominant symptom in all 12 patients, with 70% being left-sided. Notably, only two patients reported associated symptoms such as nausea, vomiting, and constipation [3]. Several risk factors are associated with EA, including male gender, age in the 4th to 5th decades of life, and obesity. For example, patients with EA had 60% greater abdominal adiposity than patients with other causes of acute abdomen; of these, 67% were male [4]. CT scan is the method of choice for diagnosing EA with a fatty ovoid lesion as the pathognomonic feature [2, 4, 5] As the majority of the literature supports conservative treatment of EA, it is crucial to accurately diagnose EA to avoid unwarranted interventions [2, 4]. To the best of our knowledge, we present the first trauma-induced EA in a 58-year-old man treated conservatively.

2. Case Presentation

A 58-year-old man with a history of hypertension and hyperlipidemia and a body mass index (BMI) of 26 presented to our outpatient clinic with abdominal pain for three days. The onset of symptoms occurred after the patient was positioned on his left side against a boat's edge for a 45-minute engine repair activity, thereby exerting pressure on the left abdominal region. Initial discomfort, characterized as mild soreness in the left lower quadrant, progressed to a sharp localized pain rated at 7/10 over the ensuing three days, accompanied by significant tenderness. The pain was exacerbated by movement and deep inspiration, and its intensity was alleviated by non-steroidal anti-inflammatory drugs (NSAIDs). He had no other symptoms, such as nausea, vomiting, fever, nor any changes in bowel movements or urination. There were no changes in appetite, and the pain was unrelated to food intake. Physical examination revealed guarding and tenderness in the left lower quadrant. Laboratory workup was normal.

A CT scan of the abdomen and pelvis showed a 2.5 x 1.3 cm ovoid, fat-density structure with a thin enhancing rim and central hyperdensity abutting the descending colon **(Figure 1)**. There were no colonic diverticula. Diagnosed with EA, the patient was advised to take NSAIDs. The pain resolved within eight days, with NSAID use limited to the first three days. At the six-month follow-up, the patient remained asymptomatic without recurrence.

3. Discussion

Epiploic appendages are fatty pouches that attach along the entire colon, which are prevalent in the sigmoid colon [4, 6, 5, 7]. The principal symptom of EA is focal abdominal pain that can occur in any quadrant of the abdomen but has been mainly reported

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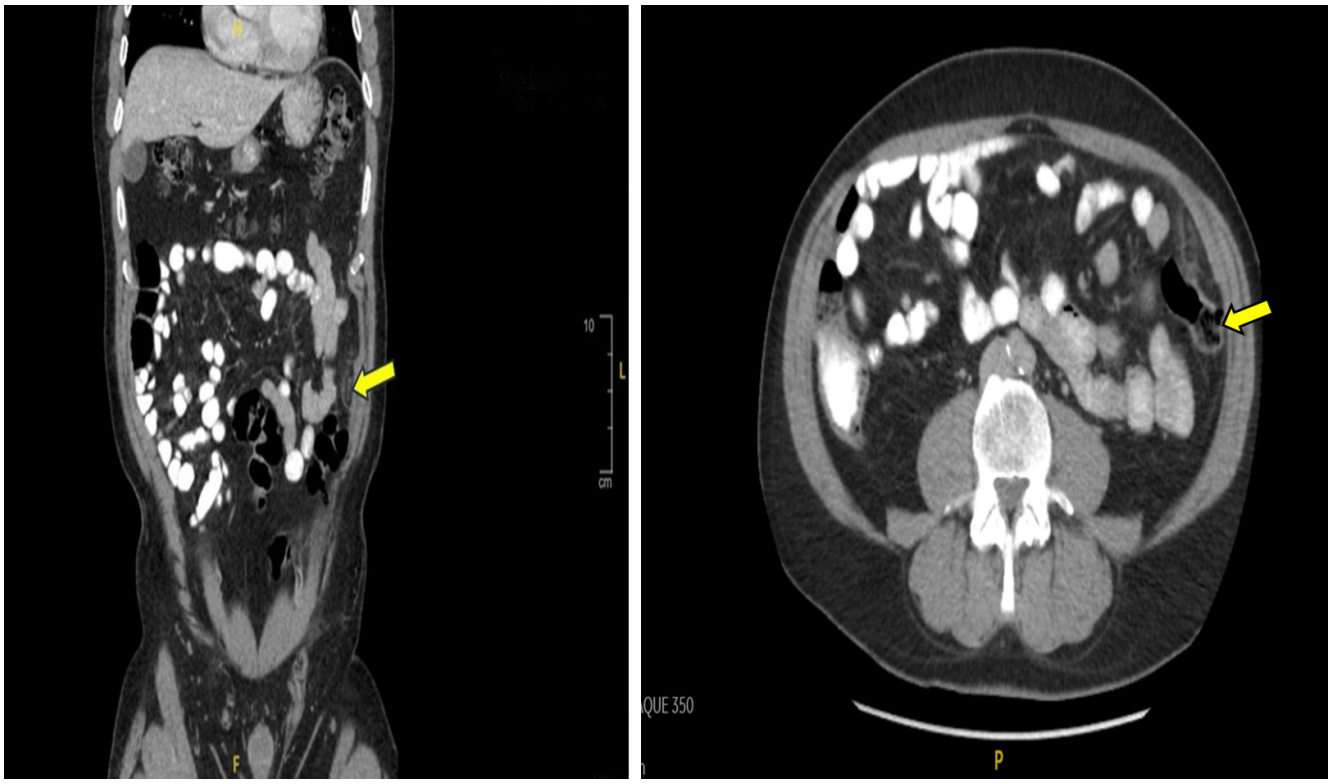

Figure 1: A 2.5 x 1.3 cm ovoid, fat-density structure with a thin enhancing rim and central hyperdensity abutting the descending colon.

on the left side, resembling diverticulitis [2, 3, 6, 8]. Associated symptoms include wide nonspecific symptoms such as nausea, vomiting, constipation, anorexia, and dysuria, which have been reported [9, 2, 10, 3, 6, 8]. On average, patients wait 2 to 10 days before seeking hospital care [9, 10, 3, 6].

Risk factors include obesity, hernia, and intense exercise [11, 1]. EA is predominant in males in the 4th or 5th decade. However, a retrospective study reported that 59% of 56 EA patients were female [11, 2, 7]. Compared to diverticulitis, left EA patients are younger and have more localized pain than diverticulitis, with diffuse pain over the left side. Despite higher BMI in left EA patients, a study of 53 patients showed no significant BMI difference between the two groups. 80% and 40% of patients had leukocytosis and fever, compared to 6% and 0% in left diverticulitis and left EA, respectively [9, 8]. In our case, the patient presented with localized left abdominal pain, consistent with most literature, and had a negative laboratory workup. However, unlike previously reported cases, our patient developed EA following blunt abdominal trauma, a mechanism not previously described in the literature to our knowledge. While trauma is not an established cause of EA, it may represent a rare contributing or confounding factor. Theoretically, blunt trauma could induce torsion or vascular injury of an epiploic appendage, triggering ischemia and thrombosis. This aligns with mechanisms described in secondary EA, where local inflammation from nearby pathology (such as pancreatitis or postoperative complications) leads to the involvement of adjacent epiploic appendages [12].

CT scan is the modality of choice with a fatty ovoid lesion surrounded by a hyperattenuating ring as the characteristic feature [2, 13, 14, 4]. A study involving 50 patients showed complete resolution of CT findings after six months [5]. Ultrasound detected EA in 7.1% of 84 patients with acute abdomen, but the diagnosis can be missed as it is limited by radiologist expertise and visceral obesity [15, 16, 17]. Our patient had the pathognomonic features of EA on a CT scan, but a follow-up scan was unnecessary.

EA is a self-limited disease typically treated with NSAIDs [2]. Surgery would be required for complications such as gangrenous EA, abscess, or obstruction [3]. A 10-year observational study found that antibiotics increased hospital stays, reducing readmissions or recurrences, though patients given opioids at discharge had fewer readmissions [7]. Symptoms are resolved within an average of 7 days [11, 14]. Recurrence of EA symptoms is extremely rare and was not reported in most literature [9, 2, 13, 3, 6, 8]. However, a retrospective study showed a 1.8% recurrence rate for EA, compared to 13% for diverticulitis patients [11].

There are no clear guidelines on EA management. Management is mentioned in case reports and case series. Diagnosing EA in acute abdomen patients is important as this can decrease hospital stays. A case series of 11 patients demonstrated that misdiagnosis of EA resulted in a prolonged average hospital stay of 4.3 days, compared to either no hospitalization or a mean stay of 1 day when correctly diagnosed. Additionally, the cost of care was significantly lower in correctly diagnosed cases ($1,205 vs. 4,117$ in misdiagnosed patients) [18].

Recent literature challenges the perception of epiploic appendagitis as a rare entity. Kahveci et al. emphasize that PEA is not truly rare but is instead underdiagnosed due to its clinical overlap with more familiar abdominal pathologies such as diverticulitis and appendicitis. Their large retrospective study of 92 patients highlights that well-localized abdominal pain with normal laboratory findings and absence of systemic symptoms should prompt consideration of PEA, especially in younger male patients. Importantly, ultrasound

was found to have 100% sensitivity and specificity in diagnosing PEA when performed at the site of maximal tenderness, supporting its use as an effective, radiation-free modality alongside CT [19].

Furthermore, a separate report by Kahveci et al. described a rare case of epiploic appendagitis of the appendix vermiformis, underscoring the diversity in the anatomical presentation of this condition. Similar to our case, their patient exhibited localized pain and normal lab results, but CT imaging was pivotal in identifying the inflamed fat-density lesion adjacent to a non-inflamed appendix. These findings reinforce the need for heightened clinical awareness and radiologic scrutiny to avoid unnecessary surgical interventions in patients presenting with atypical abdominal pain [20].

This case highlights a potentially rare association between blunt abdominal trauma and epiploic appendagitis, expanding the differential diagnosis of acute abdomen. Strengths include a clear timeline, characteristic CT findings, and complete clinical resolution with conservative management. However, as a single case, causality cannot be confirmed. The lack of baseline imaging and radiologic follow-up limits definitive conclusions, and the unique mechanism may reduce generalizability.

Given the lack of specific clinical features and the potential for EA to present without traditional risk factors, clinicians should maintain a high index of suspicion for EA in any patient with acute abdominal pain. Accurate diagnosis can prevent unnecessary interventions, reducing both healthcare costs and patient burden.

4. Conclusions

Epiploic appendagitis is a rare cause of acute abdomen that can be diagnosed with a CT scan rather than the US. Clinicians should be aware of this rare presentation to prevent unnecessary management methods as it is treated conservatively. With the increased availability and use of CT scans, the diagnosis of epiploic appendagitis is becoming more common. Further research is needed to establish standardized guidelines for its management.

Conflicts of Interest

The authors declare that they have no competing interests that could have influenced the objectivity or outcome of this article.

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Informed consent

The patient gave verbal informed consent to publish this case report and accompanying images. A standardized verbal consent documentation form was completed, witnessed, and retained by institutional protocols. All patient identifiers have been removed to protect privacy.

Large Language Model

None

Authors Contribution

All authors contributed equally to the manuscript, and all authors read and approved the final version of the manuscript.

Data Availability

All data are included in this published article.

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