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## Case Report

# A rare cause of right-upper quadrant abdominal pain: Epiploic appendagitis of the hepatic flexure ☆☆☆

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## ABSTRACT

Epiploic appendagitis (EA) is an uncommon cause of acute abdominal pain that may mimic other causes of acute abdomen. Epiploic appendages are outpouching of fat tissue located on the external wall of the colon, being more numerous in the descending and sigmoid colon that account for up to 80% of EA cases.

We present the case of a 59-year-old woman with right upper quadrant pain. Abdominal ultrasound and contrast-enhanced computed tomography suggested the diagnosis of epiploic appendagitis of the right colonic flexure.

Our case highlights the fact that epiploic appendagitis may occur in unusual locations and must be included in the differential diagnosis of acute abdominal pain, in order to avoid unnecessary medical and surgical treatment.

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## Introduction

Epiploic appendages are pediculated outpouchings of fat located along the wall of the large bowel from the cecum to the sigmoid colon.

Their pediculated structure causes high mobility and makes them prone to torsion and infarction.

Primary epiploic appendagitis (EA) refers to spontaneous torsion, ischemia, and inflammation of the epiploic ap-

pendages, whereas secondary EA is caused by spreading of inflammation from adjacent organs as occurs in diverticulitis, appendicitis, or cholecystitis.

The most common sites of EA are the ileo-cecal region and the descending/sigmoid colon.

EA is usually a self-limiting condition that may mimic other conditions causing acute abdomens such as omental infarction, appendicitis, and diverticulitis [1–4].

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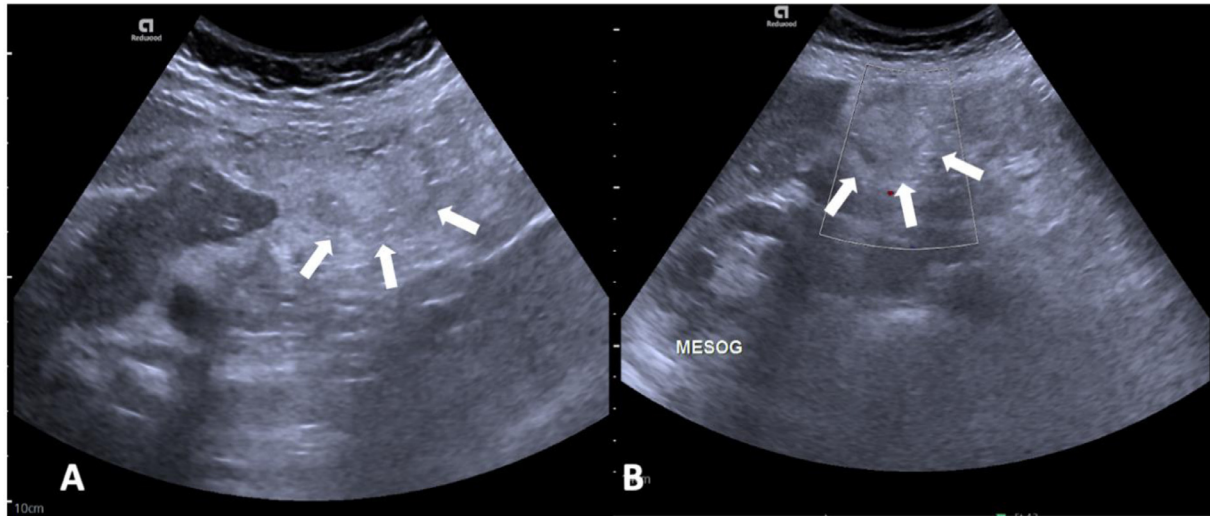
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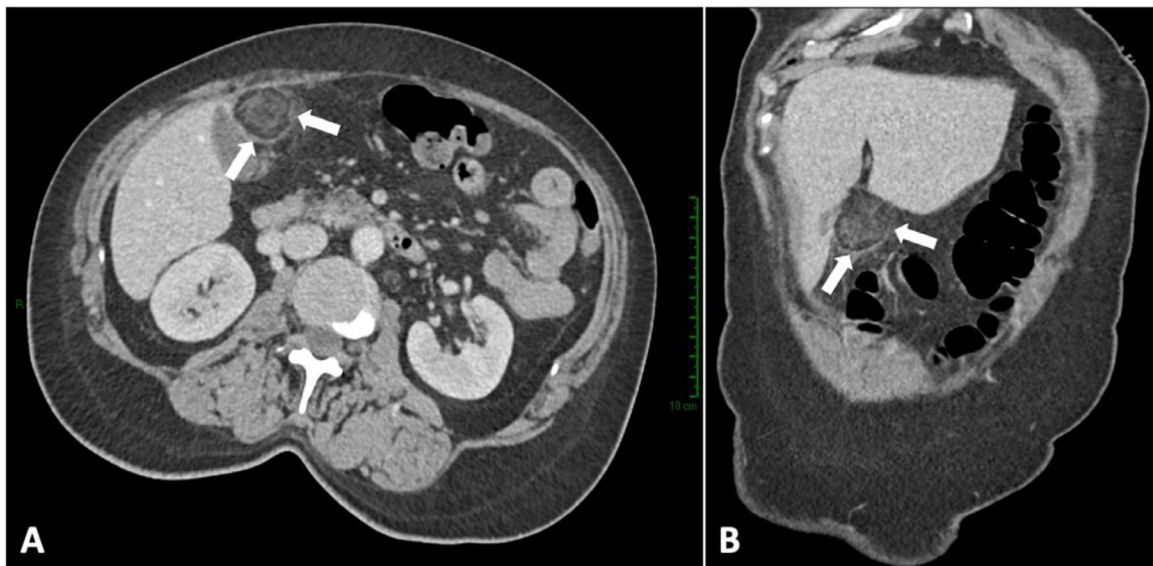
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**Fig. 1** – Abdominal US showing a hyperechoic rounded mass in the right hypocondrium adjacent to the lower margin of IVb hepatic segment close to the ascending colon (white arrows in A and B). The mass is surrounded by a hypoechoic rim. Color Doppler US shows absent internal blood flow (B).



**Fig. 2** – Axial (A) and coronal (B) contrast-enhanced CT demonstrating a formation with heterogeneous adipose matrix and peripheral dense rim (white arrows in A and B) adjacent to the right colic flexure. The findings were consistent with epiploic appendagitis.

## Case report

A 59-year-old woman was admitted to our Emergency Department for right hypocondrium pain and fever (maximum peak 37.8°C). Physical examination revealed signs of peritoneal irritation in the right upper quadrant.

Laboratory tests were unremarkable.

Abdominal Ultrasound (US) showed normal liver, gallbladder, and bile ducts. The appendix was not visible. In the subhepatic region, US revealed a 4 cm noncompressible heteroge-

neous hyperechoic mass with a thin hypoechoic rim, with no signs of blood flow at color-Doppler (Fig 1).

Contrast-enhanced CT was performed to clarify US findings. CT revealed a formation of 43 × 33 × 56 mm located between the right colic flexure and the lower border of IVb hepatic segment (Fig 2).

The formation had an adipose matrix with dense internal branches and was surrounded by a hyperdense-enhancing rim.

The findings were consistent with epiploic appendagitis. No other significant CT findings were visible.

The patient underwent pharmacological therapy with intravenous Ketorolac. Abdominal pain and fever progressively disappeared and the patient was discharged in good clinical condition after 2 days.

## Discussion

Epiplonic appendagitis (EA) is a rare inflammation of the small fatty outpouchings located on the external colonic surface, occurring most frequently in the descending–sigmoid colon and the ileocecal region.

Epiplonic appendages are usually undetectable by current imaging techniques unless inflammation occurs.

Abdominal Ultrasound may reveal a rounded, noncompressible, hyperechoic mass, without internal vascularity surrounded by a hypoechoic line in the zone of maximal abdominal tenderness, typically 2–4 cm in maximum diameter [5,6]. Color-Doppler evaluation shows absent or weak internal blood flow, in contrast to the hypervascularity observed in appendicitis or diverticulitis [3]. CEUS may demonstrate a central nonenhancing area with a peripheral enhancing rim [7].

Compute tomography shows a fat-density ovoid formation adjacent to the colon, usually 1.5–3.5 cm in diameter with thin (1–3 mm) high-density rim (hyperattenuating ring sign), surrounding fat stranding and thickening of the adjacent peritoneum [3,4].

Magnetic resonance, even though not routinely performed, may show a fat-containing mass with a peripheral enhancing rim [8].

Common differential diagnoses include omental infarction, diverticulitis, mesenteric panniculitis, and omental neoplasms.

Although omental infarction may have a very similar appearance to epiplonic appendagitis, it usually lacks the hyperdense rim and appears attached to the parietal peritoneum, showing no movement during respiratory excursions (tethered fat sign) [9].

In diverticulitis, colon diverticula and thickened bowel wall are demonstrated [10].

Mesenteric panniculitis is a chronic inflammation involving the adipose tissue of the bowel mesentery. US may show distortion and thickening of the root of the mesentery, which appears hyperechoic, with a halo of hypoechoic fat around vessels (fat halo sign) [11].

Liposarcomas show a more prominent mass effect with indistinct margins and areas of hypervascularity [12].

Epiplonic appendagitis is usually a self-limiting condition and conservative management with oral anti-inflammatory medications is considered the best treatment option. Surgery is performed in case when there is no improvement with conservative treatment or in patients who develop complications such as adhesions, abscess formation, peritonitis, bowel obstruction and intussusception [13,14].

## Conclusions

Even though several cases of EA have been described, only few present with right upper quadrant abdominal pain. Epi-

plonic appendagitis of the hepatic flexure is an uncommon self-limiting condition that should be included in the differential diagnoses in a patient with right upper quadrant abdominal pain, in order to avoid unnecessary hospitalization and invasive treatment.

## Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Patient consent

Informed consent was obtained from all individual participants included in the study.

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