

# Torsion of the Epiploic Appendix on the Falciform Ligament

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## ABSTRACT

**Introduction:** the torsion of the epiploic appendix on the falciform ligament is a condition that mainly affects individuals between the second and fifth decades of life, there is no predominance when it comes to sex<sup>2</sup>. This condition promotes acute abdominal pain in the right hypochondrium. Our aim is to report an unusual case that happened at emergency department of (Hospital e Maternidade Terezinha de Jesus – HMTJ), Juiz de Fora) and to discuss about the pathophysiology and differentials diagnoses.

**Case report:** we report the case of a 39-year-old male patient who presented a sudden severe pain in the right hypochondrium. The abdominal evaluation showed pain and an increase in well-defined soft parts in the topography of the right hypochondrium. Abdominal radiography, ultrasound and laboratory tests were performed. From the set of findings, no acute or identifiable changes were evidenced by these methods. Thus, computed tomography was requested, which demonstrated the related findings. After discussing the case and patient guidance, analgesia, clinical guidance and return in case of further changes were chosen. Upon subsequent return of the patient, he is already asymptomatic and without any notable guidelines.

**Discussion:** appendices epiploicae are pedunculated adipose structures lining the colonic extension and lined by the peritoneum. Epiploic appendix torsion on the falciform ligament may cause an ischemic inflammatory condition<sup>1</sup>, leading to severe and focal abdominal pain, which mimics other acute abdominal conditions such as appendicitis, diverticulitis, hernia, cholecystitis, or gastroduodenal disease<sup>3-7</sup>. The challenge involving the identification of epiploic torsion reflects the copious amount of differential diagnoses that present a lack of pathognomonic clinical features.

**Conclusion:** it is important to consider this hypothesis in cases of abdominal pain in the upper right quadrant of the abdomen and the challenge involving the identification of epiploic torsion reflects the copious amount of differential diagnoses that present a lack of pathognomonic clinical features.

**Keywords:** Epiploic Appendix; Torsion; Right hypochondrium; Diagnoses; Treatment.

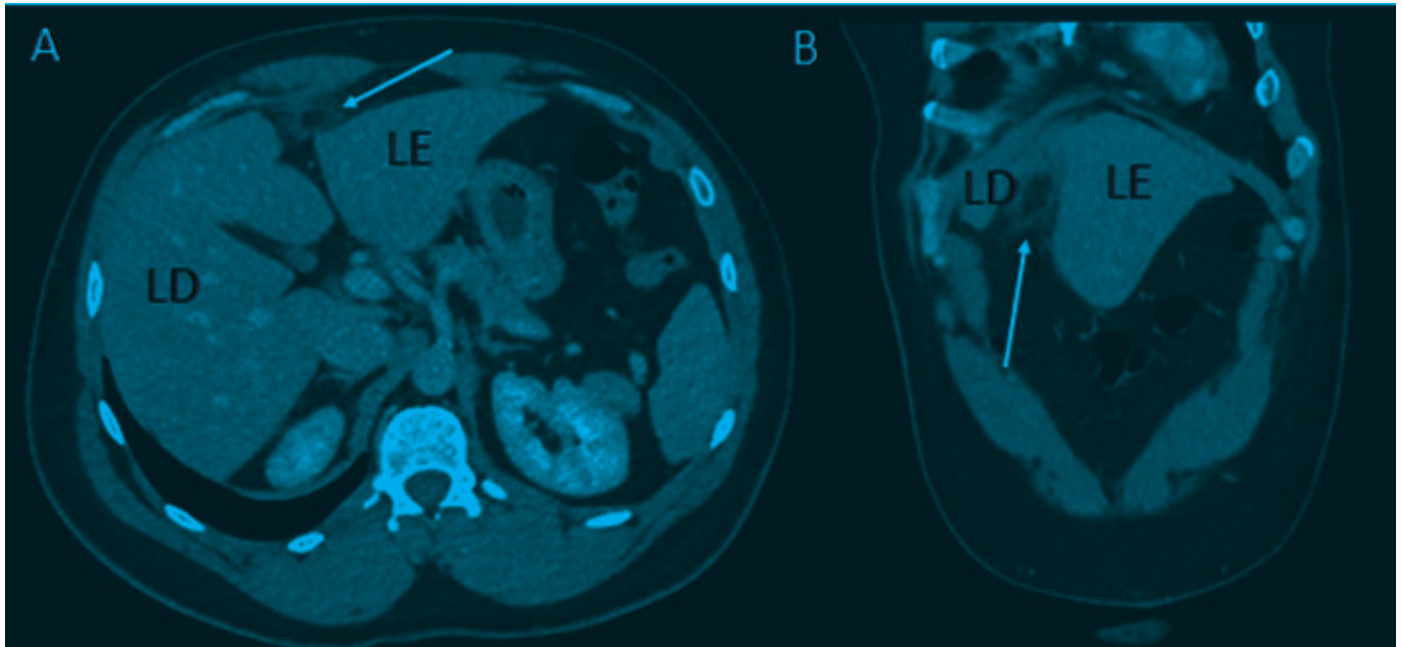
## Introduction

The torsion of the epiploic appendix is a condition that mainly affects individuals between the second and fifth decades of life, there is no predominance when it comes to sex<sup>2</sup>.

The falciform ligament is a remnant structure of ventral mesenterium, and this structure divides the liver in two lobes, right and left. In addition, epiploic appendices are finger-like projections of adipose tissue arranged in parallel rows along the colon. Diseases that happen with the falciform ligament are extremely incomum, but one of these conditions is an epiploic appendix torsion. This condition promotes acute abdominal pain in the right hypochondrium and has a lot of differentials diagnoses that will be discussed<sup>1</sup>.

## Case report

We report the case of a 39-year-old male patient who presented a sudden severe pain in the right hypochondrium. The abdominal evaluation showed pain and an increase in well-defined soft parts in the topography of the right hypochondrium (Figure 1). Abdominal radiography, ultrasound and laboratory tests were performed. From the set of findings, no acute or identifiable changes were evidenced by these methods. Thus, computed tomography was requested, which demonstrated the related findings. After discussing the case and patient guidance, analgesia, clinical guidance and return in case of further changes were chosen. Upon subsequent return of the patient, he is already asymptomatic and without any notable guidelines.



**Figure 1.** A and B in the axial and coronal planes respectively, with the arrow showing the change in fat density in an oval shape, in the topography of the falciform ligament between the right (LD) and left (LE) hepatic lobes.

## Discussion

Appendices epiploicae are pedunculated adipose structures lining the colonic extension and lined by the peritoneum. Epiploic appendix torsion on the falciform ligament may cause an ischemic inflammatory condition<sup>1</sup>, leading to severe and focal abdominal pain, which mimics other acute abdominal conditions such as appendicitis, diverticulitis, hernia, cholecystitis, or gastroduodenal disease<sup>3-7</sup>. The challenge involving the identification of epiploic torsion reflects the copious amount of differential diagnoses that present a lack of pathognomonic clinical features.

The site of pain may vary depending on the location of the appendage involved<sup>8</sup>. Thus, when it is in the right lower abdominal quadrant, it may mimic acute appendicitis, but more often it is present on the left side, mimicking acute sigmoid diverticulitis.

On clinical exams, patients usually describe a sudden onset, focal, elective, non-migratory, strong, sharp, localized pain that usually starts after a specific physical movement of their body, like postprandial exercise. Patients otherwise felt healthy and rarely described other symptoms<sup>9,10</sup>.

Pathophysiologically, the twisting of epiploic appendages is responsible for the impairment of vascular supply. Subsequent venous thrombosis and necrosis is the pathophysiological sequence that, depending on localization and severity, can mimic a variety of underlying causes of abdominal conditions<sup>11</sup>. Torsion itself is rarely observed in action<sup>10</sup>.

Currently, ultrasounds (US) and CT scans can reveal characteristic findings of epiploic appendagitis,

increasing the ability to make the correct diagnosis<sup>3-6</sup>. In this regard, CT scan findings of epiploic appendix torsion show an oval area within or adjacent to the falciform ligament that is increased by fat density and surrounded by inflammatory changes<sup>3-5</sup>. The CT scan cannot reveal epiploic appendages with no inflammation. They have fat protuberance in the same way that other adipose structures do, but they are only visible when surrounded by inflammation or intraperitoneal fluid<sup>6</sup>. In contrast, US reveals an ovoid, non-compressible hyperechoic mass in the colon near the falciform ligament<sup>3-5</sup>.

Moreover, a great amount of evidence found in the literature validates the benign course of the epiploic torsion and supports conservative therapy<sup>5</sup>. In that regard, first-line treatment consists in a period of conservative management with non-steroidal anti-inflammatory treatment. Furthermore, surgical procedure consists in the resections of the sickle-fatty ligament, and they are in general reserved for cases where pain persists and/or lifestyle is limited<sup>12</sup>. Ultimately, after the necrosis occurs due to the rotation, the process disappears, and the nonviable appendage is reabsorbed<sup>11</sup>.

## Conclusion

It is important to consider this hypothesis in cases of abdominal pain in the upper right quadrant of the abdomen and the challenge involving the identification of epiploic torsion reflects the copious amount of differential diagnoses that present a lack of pathognomonic clinical features.

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