

Torsion of Fatty Appendage of Falciform Ligament: A Case Report

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Abstract

Case Report

Torsion of the fatty appendage of the falciform ligament is an extremely rare condition that leads to severe abdominal pain and raised inflammatory markers. It can be recognised on ultrasound or CT scan. The pathophysiology is the same as that involved in the more common torsion and/or infarction of the greater omentum or epiploic appendages. The condition is best managed conservatively with anti-inflammatory analgesia, and the early recognition of this type of torsion may prevent unnecessary operative intervention to look for a source of abdominal pain. We report a rare case of torsion of the fatty appendage of the falciform ligament associated with pancreatitis C in 71 years old women. The management consisted of surgical treatment after failure of medical treatment with a favorable outcome.

Keywords: Torsion, Falciform, Ligament, Appendage, torsion, Fatty, Acute abdomen, Computed Tomography.

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INTRODUCTION

The falciform ligament is a double fold of peritoneum that marks the anatomical division between the right and left lobes of the liver. Pathologic conditions of the falciform ligament are extremely rare; one particularly rare condition is the torsion of a fatty appendage of the falciform ligament leading to fat infarction [1, 2]. This type of torsion and/or infarction occurs more commonly in the greater omentum or epiploic appendages [3]. The condition causes abdominal pain and associated raised inflammatory markers, and it can be identified on ultrasound and CT scan.

CASE PRESENTATION

A 71-year-old was admitted to the emergency department with 3 days of epigastric abdominal pain and bilious vomiting. The pain localized to the mid-epigastrium and worsened with deep inspiration. The pain improved with abdominal flexion.

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pressure. The abdominal examination showed tenderness of epigastrium region.

Blood investigations showed anemia lipasémie:1560(6xN), hyperleukocytosis (WBC:25 109/L) and normal liver test (TB:10 DB:3, SGOT:40, SGPT:38).

The abdominal ultrasound showed no evidence of cholelithiasis or cholecystitis, and the diameters of the intrahepatic and extrahepatic bile ducts were within normal range. The appendix was not visualised and no free fluid was present. There were no abnormalities identified in the area of the liver or the falciform ligament.

Abdominal Computed Tomography scanner with intravenous contrast showed hazy increased density of fat and inflammatory changes centred around a focal area of fat, which was anterior and inferior to the left lobe of the liver and adjacent to the falciform ligament with an infiltration of peripancreatic fat (pancréatitis C) (Figure 1).

Conservative management was recommended via a trial of nonsteroidal anti-inflammatory medication' for the presumed diagnosis of F-FLAT. Despite 6 days of observation, the patient's pain persisted, and a

surgical treatment was indicated median supraumbilical laparotomy was made. an abscessed collection was identified in the falciform ligament, with extension into

the round ligament of the liver. the collection was drained and a cholecystectomy was performed.

At a follow-up appointment, 2 weeks after the procedure, the patient's pain had resolved.

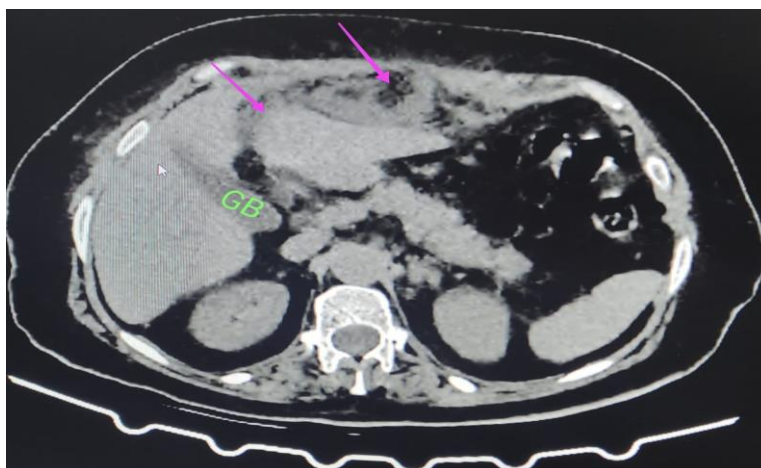


Figure 1: Axial CT demonstrate on oval fatty mass with a thin hyperdense rim along the course of the falciform ligament (arrow), GB = gallbladder

DISCUSSION

The falciform ligament is a double fold of peritoneum that anatomically divides the liver into the right and left lobes. It extends from the superior edge of the liver to the inferior border of the diaphragm. The free edge contains the obliterated umbilical vein, or round ligament, which extends into the hepatic notch [4].

Conceptually, the course of the falciform ligament when viewed sagittal has a semilunar footprint anterior to the liver. F-FLAT may occur anywhere along this track and should be scrutinized when presented with equivocal abdominal pain. The arterial blood supply primarily comes from the left inferior phrenic and middle hepatic arteries. Venous drainage of the falciform ligament usually flows into the left inferior phrenic vein [5].

It is extremely rare to see pathologic conditions of the falciform ligament. Recognised conditions include ligament cysts, tumours, abnormal vascularisation due to portal hypertension, iatrogenic internal hernia through the ligament, and gangrene related to acute necrotising pancreatitis, along with torsion of a fatty appendage of the falciform ligament as described in this case [1, 2].

Both ultrasound and CT can be used to visualise a torted fatty appendage of the falciform ligament. It is not possible to use plain film radiography to diagnose this condition, as the falciform ligament is only evident on abdominal plain films in the setting of pneumoperitoneum [7, 8]. In that situation, the "falciform ligament sign" is produced, which consists of gas outlining the falciform ligament. On ultrasound, a torted fatty appendage of the falciform ligament

appears as a hyperechoic, noncompressible, slightly heterogenous mass in the area of maximal abdominal tenderness [9]. Further, on real-time sonography, the lesion does not move with underlying intraperitoneal structures while breathing, which indicates its extraperitoneal position [10]. On CT, a torted fatty appendage of the falciform ligament appears as an area with increased fat density, associated with surrounding inflammatory changes in the adjacent fat planes [9]. To our knowledge, there has been no previous description of the appearance of a twisted infarcted fatty appendage of the falciform ligament on MRI. However, MRI would be a valid alternative form of imaging to diagnose this condition, because it would distinguish adipose tissue from oedema or bleeding, it avoids radiation exposure particularly in the case of a paediatric patient, and it avoids contrast medium administration and its associated nephrotoxicity.

Diagnosis is mainly based on ultrasound and CT which shows a torted fatty appendage of the falciform ligament. A typical image showed an area of fat density with focal inflammatory changes in the local fat, in the area of the falciform ligament.

As many cases of F-FLAT are known to resolve without surgery, a period of conservative management with rest and nonsteroidal anti-inflammatory medication' is considered first-line treatment. Follow-up imaging with ultrasound, CT, or abdominal MRI may be considered if symptoms do not improve. Surgical resection of F-FLAT is generally reserved for cases in which pain persists and/or lifestyle is limited.

CONCLUSION

Awareness of F-FLAT as a possible cause of abdominal pain is an essential precursor to making the radiographic diagnosis. When identified, surgical intervention can often be avoided.

Consent: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Competing Interests: All authors declare no competing interest.

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