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A rare case of torsion of the fatty appendages of the perigastric (falciform) ligament

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Abstract

Torsion of the fatty appendage of the falciform ligament is an extremely rare condition that presents with severe abdominal pain and raised inflammatory markers. Less than 20 cases have been reported on imaging so far. Its early recognition aids in preventing the unnecessary operative search for the cause of pain and it can be managed conservatively with anti-inflammatory drugs. We report a case of torsion of the fatty appendage of the perigastric ligament.

Keywords: Torsion, perigastric ligament, Falciform ligament, Focal fat infarction, Hyperattenuating rim

Introduction

The falciform ligament is a peritoneal fold dividing right and left lobes of liver anatomically. These fatty appendages of the falciform ligament may very rarely undergo torsion, leading to fat infarction. This occurs more commonly in the greater omentum or the epiploic appendages and rarely involves the perigastric ligaments (gastrohepatic, gastrosplenic, and falciform). These are grouped together as intra-abdominal focal fat infarction (IFFI)

Clinically, these conditions present with epigastric pain and mimic acute conditions like cholecystitis and pancreatitis and hence need to be differentiated from them. We emphasize the utility of "hyperattenuating rim" sign on computed tomography (CT) in recognizing IFFI in locations other than the pericolic region, through this case report.

Case report

A 51-year-old female patient came with complaints of epigastric pain for 5 days. She had no nausea, vomiting, fever. Mild guarding and tenderness was seen in the epigastric region. Blood tests showed increased WBC counts. Liver function tests, CRP, serum lipase, and amylase were within normal limits CECT of the abdomen revealed classical "hyperattenuating rim" sign in the anterior perihepatic space adjacent to the falciform ligament, extending in the anterior perihepatic space up to the umbilicus with surrounding fat stranding in the peri regional area.

Same finding was also noted in gastrohepatic and gastrosplenic ligament.

Eccentric intraluminal filling defect was noted in the left portal venous branch and continuing into the para umbilical vein.

This was diagnosed as the IFFI involving the perigastric ligaments, (falciform, perigastric and peri splenic),

mainly the falciform ligament. The patient was managed conservatively and clinical improvement was seen in terms of decreased clinical symptoms.

Discussion

The falciform ligament extends from superior edge of liver to the inferior border of the diaphragm. It contains ligamentum teres, para umbilical veins, and extraperitoneal fat. Pathologic conditions of the falciform ligament are rare and recognised conditions include 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].

The term intra-abdominal focal fat infarction (IFFI) has been used to describe focal lipomatous tissue necrosis in various anatomical locations [4]. IFFI are most often due to torsion of the greater omentum or epiploic appendages but have also been reported to involve the lesser omentum and the lipomatous appendage of the hepatic falciform ligament.

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 [5,6,7,8].

In most cases the patient improves with conservative management and surgical intervention is not required. This is particularly the case wherein CT scans, make it possible to identify an IFFI on imaging rather than requiring intraoperative characterisation [9]

The observation of a torted lipomatous appendage of the falciform ligament or IFFI should be considered as a part of a differential diagnosis when adults present with atypical right upper quadrant pain. This is important as it may prevent the patient from unnecessary surgery. Awareness of this condition among the radiologists and the surgeons can help in early and timely management.

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Legend Figures

1. CECT abdomen scan reveals the hyper attenuating heterogenous lesion in the region of falciform ligament between the right and left lobe of liver, extending in the anterior perihepatic region towards the umbilicus with surrounding fat standing. Adjacent portal venous branch shows non opacification.

Heterogenous hyperattenuating density is also noted in the gastrohepatic ligament and in the gastrosplenic ligament.

1A and B- axial image 1C coronal image

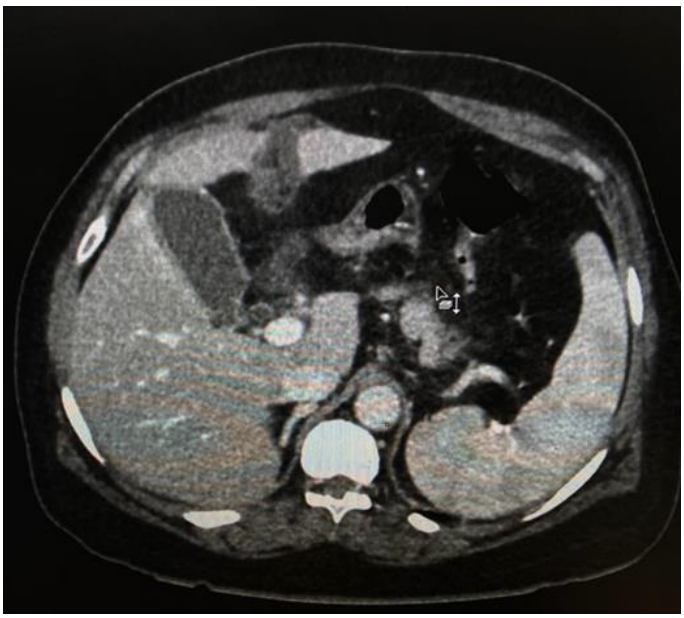

Figure 1: 1a

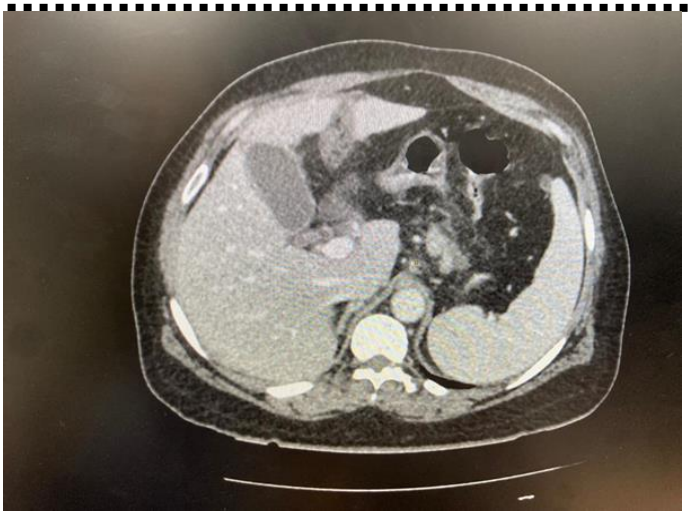

Figure 1: 1b

Figure 1: 1c