Case Report

Torsion of the fatty appendage of the falciform ligament

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ABSTRACT

Pathology of the falciform ligament is extremely rare. We present a case of a 50-year-old man with a torsion of the fatty appendage of the falciform ligament. This is a self-limiting disease. To prevent unnecessary surgical management, it is important to recognize on computed tomography scans.

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Introduction

The falciform ligament divides the left and right lobes of the liver and connects to the ventral abdominal wall. It is a peritoneal fold which encloses the ligamentum teres hepatis, the obliterated umbilical vein, and some accompanying extraperitoneal fat. The falciform ligament is formed by a dual layer of visceral peritoneum with extraperitoneal fat separating the 2 layers. The extraperitoneal falciform fat can be variable in size and forms the so-called appendage [1]. Pathology of the falciform ligament is extremely rare [2].

Case description

A 50-year-old male presented to the emergency department with abdominal complaints. He was known with heartburn for which he used omeprazole 20 mg once a day. The patient did not have any other medical history. The man presented with one day existing severe continuous right upper quadrant pain without the urge to move. Furthermore, he was nauseous but did not have any other complaints and was without fever. At physical examination the patient showed right upper quadrant tenderness without signs of peritoneal stimulation. Blood results were, except for a slightly increased γGT (gamma glutamyl transferase) of 80 U/l (reference range <70 U/l), fully normal. Other liver function tests, white blood count, C-reactive protein and lipase were normal. An abdominal ultrasound showed no abnormalities. The patient was sent home for re-evaluation the next day at which the complaints still existed but did not progress. Blood results remained normal. Due to the persistent vigorous abdominal
pain a computed tomography scan with intravenous contrast was performed. The computed tomography scan showed subtle increased density of fat anterior and inferior to the left lobe of the liver and adjacent to the falciform ligament (Figs. 1-3). These findings are in line with those recognized for epiploic appendagitis (torsion of the epiploic appendages), which appear as areas of focal fat induration elsewhere in the abdomen. There were no other significant findings on the scan. Diagnosis torsion of the fatty appendage of the falciform ligament was made. The patient was treated with pain killers after which the pain slowly left, without any other remaining symptoms.

**Discussion**

The falciform ligament seldom is a cause for pathology. However, torsion, infection and infarction of the fatty appendage are described. After abdominal surgery iatrogenic internal hernia through the ligament can occur [3].

The pathophysiology of a torsion of the fatty appendage of this ligament is the same as that involved in the more common torsion and/or infarction of the greater omentum or epiploic appendages. These epiploic appendages are peritoneum-lined protrusions of subserosal fat that arise from the surface of the colon. Around 50-100 appendages cover the surface of the cecum to the rectosigmoid junction [4]. Torsion of the appendix epiploic of the colon (appendagitis epiploica) is an uncommon cause of abdominal pain [5]. In the adult population presenting with abdominal pain the frequency of appendagitis epiploica is around 1.3% [6]. A torsion of the appendage of the falciform ligament is much rarer; up till now 24 cases are described [7]. Both conditions can mimic many other (common) causes of abdominal pain, such as an appendicitis, cholecystitis or diverticulitis.

On computed tomography scan a torsion of the fatty appendage of the falciform ligament reveals itself by fat induration in this area. This induration is seen due to ischemic changes caused by compromised blood supply due to the torsion. The same radiological signs can be recognized at epiploic appendagitis or omental infarction. As our case presents, induration can be subtle. An infarction was less likely because the patient had no cardiovascular risk factors, the symptoms were already present for 2 days at the time the scan was made in combination with just subtle local changes of fat induration. There were no signs of infection: no fever, no signs of infection in the blood results and the patient recovered without antibiotics.

As with epiploic appendagitis, torsion of the appendage of the falciform ligament is a self-limiting disease and requires
no surgical management. Therefore it is an important entity to recognize.

Patient consent

Hereby I declare that written informed consent for publication of the case was obtained from the patient.

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