



Isolated falciparum ligament necrosis causing right upper quadrant pain

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Dear Editor,

A 38-year-old male patient with complaints of persistent right upper quadrant pain for 2 days was admitted to the emergency room. He had no history of an additional disease, trauma, gallbladder stone, previous surgery, and drug use. Abdominal examination revealed severe tenderness in the previous abdominal surgery epigastrium. Other systemic examinations revealed no abnormality. Laboratory test results showed an elevated white blood cell count ($13500/\text{mm}^3$) and C-reactive protein level (78 mg/L). Other laboratory values were normal.

Ultrasound examination revealed hyperechogenic nodules measuring 38×22 mm in diameter with minimal fluid in the area, compressing the liver. Computed tomography (CT) revealed edematous inflammation of the falciform ligament, which was confirmed by diagnostic laparoscopy (Figure 1). Intraoperatively, the gallbladder and other organs were normal. Falciform ligament was edematous, and omentum was attached. The omentum was separated from the falciform ligament (Figure 2).

Torsional ligament was observed in the fifth segment of the liver, causing pressure and degeneration of the liver (Figure 3). Second postoperative day, the patient was discharged with stable follow-up. *Pathological examination showed* necrotic and inflamed fat tissue.

Falciform ligament necrosis, which can be observed in all age groups, is a rare condition. In general, necrotizing pancreatitis is a secondary infection of peripheral tissues. However, isolated ligament necrosis is a more rare condition and usually occurs because of ligament torsion (1). The *pathophysiology* of infection can be explained the bacterial contamination

of lymphatic and hematogenous pathway from surrounding tissues. However, in the absence of an infection in this region, torsion and ischemic necrosis cause this clinical condition. Torsion of the falciform ligament can mimic many diseases such as acute cholecystitis, perforated duodenal ulcer, transverse colon appendicitis, omentum torsion, and hematoma of the falciform ligament which causes peritonitis in the right upper quadrant (2,3).

Ultrasonography (USG) and CT findings are specific for diagnosis. Ultrasound helps in diagnosis by revealing a slightly heterogeneous, non-compressible, hyperechoic mass that corresponds to the point of maximum tenderness. CT shows the area of inflammation in the fat tissue, the appearance of a slightly free mylar around noticeably. Occasionally, as in our case, torsion of the edematous falciform ligament mass can compress the fifth segment of the liver (4). These findings show the maximum similarity with those of omental torsion and transverse colon appendicitis.

According to the literature, excision is generally preferred as treatment. However, Puylaert published a series of seven diseases and reported that he treated all patients conservatively (5). Diagnostic laparoscopy and excision are the current common methods. Although there is no complication, it should not be forgotten that there may be serious bleeding during the excision. Delay in treatment can lead to more serious clinical conditions such as sepsis; thus, emergency operation is usually preferred. With the removal of the torsion tissue, a very rapid improvement was observed in the clinical outcome of our patient. The torsionalised falciform ligament was removed laparoscopically.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

Peer-review: Externally peer-reviewed.

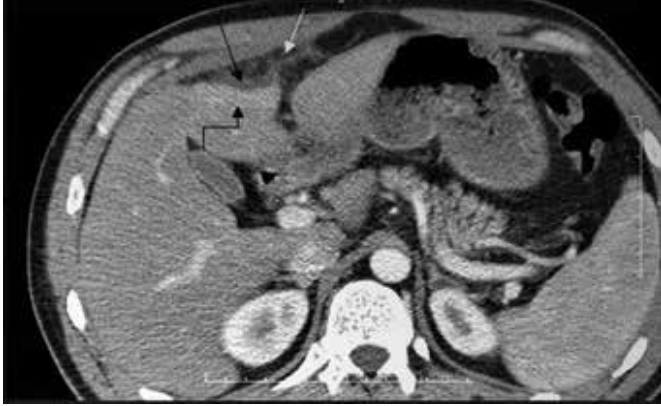


Figure 1. Contrast-enhanced axial CT image of the upper abdomen. There are both ill-defined increased density areas and linear fat stranding anterior and inferior to the left lobe of the liver and adjacent to the falciform ligament, consistent with inflammatory-edematous changes (white arrow). Focal reactionary fluid accumulation leads to indentation of the anterior liver capsule (black arrow). Moreover, note the reactive local hyperemic attenuation difference in the subcapsular liver parenchyma (elbow arrow) CT: computed tomography



Figure 2. Operative image of the edematous and inflated falciform ligament



Figure 3. Laparoscopic view of the degeneration of the liver

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