

Abscess of the falciform ligament mimicking extrahepatic bile duct tumour: a case report and review of the literature

Aris Alexiadis

University of Exeter

Daive Di Mauro (✉ davidedimauro@nhs.net)

Royal Devon and Exeter NHS Foundation Trust <https://orcid.org/0000-0003-2348-5664>

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Abstract

Introduction: Falciform ligament (FL) abscess is uncommon in adults and can occur in the context of acute cholangitis, acute pancreatitis, torsion of the FL itself or spontaneously. Abdominal imaging often helps making a correct diagnosis.

Case Presentation: We report a case of an adult male patient who developed appendagitis of the FL in the context of acute pancreatitis secondary to hypercholesterolaemia. Abdominal computed tomography (CT) scan confirmed the initial diagnosis but condition evolved towards the formation of FL abscess. Clinical and radiological follow-up raised the suspicion of extrahepatic bile duct tumour; given the diagnostic uncertainty, the patient underwent diagnostic laparoscopy. That allowed for correct diagnosis and treatment. A review of recent literature is also reported.

Conclusions: FL abscess is uncommon in adults and radiological findings can be misinterpreted as other clinical conditions; a high index of suspicion is required to formulate a correct diagnosis with the aid of diagnostic laparoscopy.

Introduction

The falciform ligament (FL) is a peritoneal fold that attaches the anterior surface of the liver to that of the inferior diaphragm and anterior abdominal wall [1]. Abscess of the FL is quite uncommon in adults as it occurs more frequently in neonates [2-5]. The disease may develop in the context of acute cholangitis, acute pancreatitis or torsion of the FL itself but spontaneous onset had been described too [6-14]. Abdominal ultrasound (USS) and computed tomography (CT) scan have been regarded as standard imaging modalities [4,5] to confirm diagnosis and treatment options include percutaneous drainage, surgical drainage and surgical excision [6,7,12].

Ethics

The patient gave written consent for the publication of the case-report and no identifiers have been used.

Case Presentation

A 78-year-old male presented to the hospital with a four-day history of post-prandial vomiting, upper abdominal pain and bloating, on 23/01/2019. On examination, there were no signs of systemic compromise and the abdomen was soft, distended and tender on deep palpation of the epigastrium. Patient's comorbidities were medically-controlled essential hypertension, hypercholesterolaemia and gout and he underwent coronary stent insertion for ischaemic heart disease, eighteen years before. There was no history of alcohol and tobacco use. As shown in Table 1, serum blood tests demonstrated leucocytosis with neutrophilia, hyperamylasaemia, derangement of liver and renal functions, respectively.

Table 1

<i>Serum test</i>	<i>Result</i>	<i>Reference Range and Unit</i>
Haemoglobin	170	130–180 g/L
White blood cells	11.3	3.8–10.6 x 10 ⁹ /L
Neutrophils	10.10	1.8–6.5 x 10 ⁹ /L
Platelets	132	150–400 x 10 ⁹ /L
C-reactive protein	20	0–5 mg/L
Total bilirubin	95	0–21 umol/L
Alanine-amino transaminase	321	10–41 iu/L
Alkaline Phosphatase	146	30–130 iu/L
Albumin	48	35–50 g/L
Creatinine	118	62–106 umol/L
Estimated glomerular filtration rate	50	>90 ml/min/1.73m ²
Amylase	2615	28–100 U/L

An abdominal ultrasound (USS) was prompted and no abnormalities were demonstrated; given the clinical and biochemical presentation, computed tomography (CT) of the abdomen and pelvis was arranged, to evaluate the periampullary area; the scan showed mild inflammatory changes of the FL only (Fig. 1). A diagnosis of mild acute pancreatitis, in accordance with the modified Atlanta 2013 [15] and FL appendagitis, was formulated; the patient was treated with naso-gastric tube insertion, intravenous Ringer's lactate infusion, opioid analgesia and aminoglycoside antibiotics. Following clinical and biochemical improvement, he was discharged 8 days after admission with planned clinical and radiological follow-up. Magnetic resonance cholangio-pancreatography (MRCP) demonstrated deformed FL surrounded by local inflammatory changes, diffuse narrowing of the common hepatic and intrahepatic ducts, abnormal soft tissue signal at the porta hepatis on T2 sequences, respectively (Fig. 2). At the time, the patient complained of poor appetite, weight loss and epigastric discomfort, while serum liver function tests were within normal range.

After discussion at multidisciplinary level, a thoraco-abdominal CT scan was arranged in two weeks-time; that showed progression of the abnormal soft tissue density at the porta hepatis, therefore diagnostic laparoscopy was planned on 14/05/2019. Upon surgery, the FL looked bulky, while the liver was unremarkable. Total excision of the FL was performed with the harmonic scalpel (Fig. 3). The early postoperative course was uneventful and the patient was discharged home, on day 2; the histo-

pathological analysis of the specimen showed abscess in the context of fat necrosis with no evidence of malignancy.

Clinical and radiological follow-up was prompted at 6 months; the patient did not report abdominal symptoms and the abdominal CT scan demonstrated a marked reduction of the abnormal the soft tissue abnormality at the porta hepatis. A further abdominal USS was performed 16 months after surgery and no abnormalities were demonstrated.

Conclusions

This case reports on the diagnostic challenge of an uncommon clinical condition. The initial CT scan demonstrated appendagitis of the FL but further imaging failed to evaluate disease progression towards abscess formation and findings were even misinterpreted as concerning for extrahepatic bile duct tumour. Moreover, while patient's abdominal symptoms persisted, serum biochemistry was within normal range, thus contributing to the suspicion of neoplastic disease. Eventually, diagnostic laparoscopy allowed for a correct diagnosis and treatment of patient's condition.

In conclusion, FL abscess is uncommon in adults; when the inflammation spreads to its liver insertion, findings can be misinterpreted on radiological imaging. In such circumstances, diagnostic laparoscopy may help achieving the correct diagnosis and allowing for definitive treatment at the same time.

Declarations

Authors' contribution

All authors contributed to the study conception and design, material preparation, data collection and analysis, writing of manuscript's first draft, comments on previous versions of the manuscript and final approval.

Conflicts of Interest and Funding

The authors do not have any conflict of interest to disclose and have not received funding.

Ethical Approval

Ethical approval was not obtained, as the study consisted of a case report.

Consent to Participate and for Publication

Participant's consent to the study and its publication was obtained.

Data Transparency

Participant's data utilized in current study are not publicly available, in accordance to the Confidentiality Policy in force at the Royal Devon and Exeter NHS Foundation Trust; this is a legal requirement under the Data Protection Act 2018 (United Kingdom). Data are available from the corresponding author on reasonable request.

Code Application

Not applicable as not software was used.

Authors' Contributions

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Aris Alexiadis. The first draft of the manuscript was written by Aris Alexiadis and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Conceptualization: Davide Di Mauro.

Methodology: Davide Di Mauro, Aris Alexiadis.

Formal analysis and investigation: Aris Alexiadis.

Writing - original draft preparation: Aris Alexiadis.

Writing - review and editing: Aris Alexiadis, Davide Di Mauro.

Supervision: Davide Di Mauro.

Disclosure of interests:

Aris Alexiadis and Davide Di Mauro have no conflicts of interest and/or financial ties to disclose.

Ethics:

The patient gave written consent for the publication of this case-report.

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Figures

Figure 1

Abdominal computed tomography performed on first patient's hospital admission

Figure 2

Abdominal magnetic resonance cholangio-pancreatography

Figure 3

Intraoperative findings

Supplementary Files

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