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A unique cause of acute abdomen



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Strangulated adenoma of the liver. A unique cause of acute abdomen

Hepatic adenomas are uncommon benign tumours of the liver which may eventually present with acute onset following rupture of the lesion and haemorrhage. We present here a unique case of strangulated adenoma of the liver presenting as acute abdomen. A 27-year-old woman taking oral contraceptives, presented to the emergency department with abdominal pain, palpable abdominal mass, fever, and neutrophilia. An abdominal ultrasound showed a 3-cm hepatic nodule and an 11-cm mesogastric mass. Computed tomography of the abdomen revealed a 2.3-cm liver adenoma and a 13-cm pedunculated mass of the liver showing no contrast enhancement suggestive of pedicle torsion with ischemia of the mass. The patient underwent an emergent open resection of the strangulated liver mass, she recovered without complications, and was discharged home after three days. Final pathology confirmed an hepatocellular adenoma with areas of necrosis and hemorrhage. The clinical significance of the disease is discussed.

KEY WORDS: Acute abdomen, Liver cell adenoma, Surgery

Introduction

Hepatic adenomas are uncommon benign tumours of the liver which may eventually present with acute onset following rupture of the lesion and haemorrhage. We present here a unique case of strangulated adenoma of the liver presenting as acute abdomen.

Case Report

A 27-year-old woman taking oral contraceptives, was taken to the emergency department with acute abdominal pain. The past medical history was unremarkable. The pain had a gradual onset, was dull, localized in the epigastrium and radiated to the right and left upper quadrants, partially responding to non-steroidal anti-inflammatory drugs (NSAIDs), and associated to biliary vomiting. Physical examination revealed a mobile, tender, non-pulsatile abdominal mass with regular surface in the mid to lower quadrants, and fever (38°C). Laboratory exam showed elevated liver enzymes (alanine aminotransferase, 109 U/L [normal range, 7-30]), leucocytosis with neutrophilia (white blood count, 13.6×10^3 m/L [normal range, $4-11 \times 10^3$]; neutrophils, 12.4×10^3 m/L [normal range, $2-7.5 \times 10^3$]), and normal haemoglobin, bilirubin, and lipase. An abdominal ultrasound showed a 3-cm hepatic nodule and an 11-cm mesogastric mass. A contrast enhanced computed tomography (CT) of the abdomen revealed a 2.3-cm liver adenoma (Figure 1a – black arrow) and a 13 x 12 x 8-cm pedunculated mass

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originating from the lower border of the liver (Figure 1a – white arrow) and showing no contrast enhancement, suggestive of a pedicle torsion with subsequent strangulation of the mass (Figure 1b – white arrow). The patient underwent an emergent open resection of the strangulated liver mass, she recovered without complications, and was discharged home three days after the surgical operation. Final pathology confirmed a hepatocellular adenoma with areas of necrosis and haemorrhage.

Discussion

Hepatic adenomas are rare benign epithelial liver tumours that predominate in 20 to 44 years-old women. They are typically solitary (70-80%), but multiple adenomas have been observed in patients with prolonged oral contraceptive use. The correlation between the dose and duration of hormonal contraceptives use and the development of adenomas of the liver has been well documented; expectedly, the annual incidence of hepatic adenomas is 30 to 40 times greater among women who have used oral contraceptives as opposed to those who never have (30-40 per million *versus* 1 per million). The size of hepatic adenomas may vary from a 1-cm nodule up to a large 30-cm mass and symptoms, such as abdominal pain localized in the epigastrium or right upper quadrant, are more likely with larger lesions due to hepatomegaly, bleeding into the tumour, or tumour necrosis. Malignant transformation of hepatic adenomas

into hepatocellular carcinoma has been documented, particularly for lesions >5 cm in diameter, with a reported frequency of 4.2%.¹ The diagnosis of hepatic adenomas is based on the clinical setting combined with imaging studies to differentiate solid liver lesions.⁵ Haemorrhage and rupture of the tumour is a common complication, with haemorrhage occurring in up to 27.2% of patients.² Surgical resection has been recommended for patients with symptomatic lesions and those with large tumours (>5 cm).³ The surgical options include enucleation, resection, and liver transplantation for the rare patients not deemed to surgical resection due to tumour size or location. In peripherally located adenomas, a laparoscopic resection may also be considered if both expertise in liver surgery and advanced laparoscopic skills are available. In the presented case, the patient developed symptoms only when the vascular pedicle of the adenoma became irreversibly twisted, with strangulation of the mass. Therefore, the patient presented with an acute abdomen and the correct diagnosis of a strangulated liver adenoma could be established preoperatively based on the clinical setting and CT findings: a young woman on oral contraceptives showing on abdominal contrast enhanced CT a normal appearing liver with another lesion displaying the typical features of an adenoma (i.e., peripheral enhancement during the early phase with subsequent centripetal flow during the portal venous phase, isodense and then hypodense during the late phase). Due to the size of the lesion, an open resection of the mass via a 10-cm midline laparotomy was elected, although a



Fig. 1: A contrast enhanced computed tomography of the abdomen showing a 2.3-cm liver adenoma (1a – black arrow) and a 13 x 12 x 8-cm pedunculated mass originating from the lower border of the liver (1a – white arrow) with no contrast enhancement due to strangulation of the mass (1b – white arrow).



Fig. 2: The resected specimen.

laparoscopic resection has been reported in the only other such a case documented, to the best of our knowledge, in the literature.⁴ The patient has discontinued oral contraceptives and will repeat diagnostic imaging study after six months.

Riassunto

Gli adenomi epatici sono rari tumori benigni del fegato che possono manifestarsi acutamente a seguito di rottura della lesione ed emorragia. Presentiamo qui un interessante caso di addome acuto causato da un adenoma

epatico strozzato. Una donna di 27 anni in terapia con contraccettivi orali, si presentò al pronto soccorso con dolore e massa addominale palpabile, febbre e neutrofilia. L'ecografia addominale dimostrava un nodulo epatico di 3 cm e una massa mesogastrica di 11 cm. La tomografia computerizzata dell'addome rivelò un adenoma epatico di 2,3 cm e una massa epatica pedunculata di 13 cm che non acquisiva il mezzo di contrasto, suggerendo quindi torsione del peduncolo e ischemia della massa. La paziente è stata sottoposta a resezione chirurgica urgente della massa epatica strozzata per via laparotomica; non ha presentato complicazioni post-operatorie ed è stata dimessa a casa dopo tre giorni. L'esame istologico definitivo ha confermato la diagnosi di adenoma epatocellulare con aree di necrosi ed emorragia. Si discute il significato clinico del caso con revisione della letteratura.

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