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A rare but important cause of focal hepatic lesions

S Manjunath, Y L Hock, A R Cunningham

A 57-year-old man presented with a 3-month history of right hypochondrial pain which was a constant dull ache often radiating to the back. There was no history of nausea, vomiting, gastro-intestinal bleeding, jaundice or weight loss. Clinical examination was unremarkable apart from hepatomegaly; the liver was felt 2 cm below the right costal margin with a vertical span of 10 cm and was smooth, firm and non-tender. There were no signs of chronic liver disease. A basic haematological and biochemical screen was normal, with the exception of an isolated rise in γ -glutamyl transpeptidase (γ -GT) at 104 IU/l (normal 10–50 IU/l). He had not taken any hepatotoxic or enzyme-inducing drugs. His admitted alcohol intake was less than 15 units per week. An abdominal ultrasound (figure 1) and computed tomography (CT) (figure 2) were done. A liver biopsy was done under ultrasound guidance (figure 3). The patient was well after 6 months and had improved with symptomatic treatment.

Figure 1 Abdominal ultrasound

Figure 2 Abdominal CT scan

Figure 3 Liver histology

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Questions

- 1 What are the findings on the abdominal ultrasound?
- 2 What are the findings on the abdominal CT scan?
- 3 What does the liver biopsy show?

Answers

QUESTION 1

The abdominal ultrasound (figure 1) shows abnormal liver parenchyma with multiple hyperechoic areas.

QUESTION 2

The abdominal CT scan (figure 2) shows multiple low attenuated areas in the liver. The appearances on the ultrasound and CT can easily be mistaken for multiple abscesses or metastases.

QUESTION 3

Liver biopsy shows dilated bile ducts lined by attenuated bland epithelium. Inspissated bile can be seen in one bile duct. These findings are consistent with bile duct microhamartomas or von Meyenburg complexes (VMC).

Discussion

Bile duct microhamartomas were described by von Meyenburg in 1918.¹ They are small, usually multiple, greyish hepatic nodules and result from the maldevelopment of ductal plates, thus explaining the similarities or association with congenital hepatic fibrosis, hepatic and choledochal cysts, polycystic kidneys, medullary sponge kidney, Caroli's disease, etc.² The persistence or lack of remodeling of embryonic duct plates is an essential precursor of this lesion. Histologically, they are characterised by cystically dilated bile ducts lying in a collagenous stroma. The bile duct structures are lined by regular cuboidal epithelium and may contain bile plugs.³

VMC do not usually produce symptoms or abnormalities in liver function tests. The isolated rise in γ -GT in our patient, in the absence of an attributable cause such as alcohol, drugs, etc, can be regarded as non-specific. It is well known that sometimes even very high values of γ -GT can be seen without an obvious cause. The diagnosis of VMC is usually made at autopsy as an incidental finding. The lesions are not uncommon with a prevalence ranging from 0.7% to 2.8% in different autopsy series.³

The increasing use of ultrasound and CT has led to a rise in the diagnosis of VMC. The ultrasound appearance of VMC has been described as multiple hyper- or hypo-echoic areas.³ The CT appearance consists of multiple, irregular, small, low attenuated areas that do not normally enhance on contrast injection,⁴ although exceptions have been reported.⁵ These appearances are likely to be mistaken particularly for hepatic abscesses or metastases. On magnetic resonance imaging (MRI), bile duct hamartomas are hypointense

von Meyenburg complexes

- von Meyenburg complexes are hepatic microhamartomas and are a part of a family of hepatic and renal fibropolycystic disorders
- they are a relatively uncommon incidental finding and do not normally cause symptoms or disturbances in liver function
- the histological appearances are specific, consisting of dilated bile ducts lined by attenuated epithelium with inspissated bile
- abdominal ultrasound, CT, and MRI are used increasingly for diagnosis

on T1-weighted spin echo sequences and hyperintense on T2-weighted ones. Dynamic MRI (Gd-DTPA) displays a slow perfusion pattern in the nodules.⁵

It is probable that VMC will be more frequently recognised as ultrasound and CT are increasingly used in the diagnosis of abdominal diseases. Therefore, VMC should be included in the differential diagnosis of multiple hyper- or hypo-echoic lesions on radiological investigations, particularly if these lesions are seen in patients with otherwise good health and normal liver function tests. Interestingly, Lef-Toaff *et al*⁶ reported 18 patients with primary extra-hepatic malignancy who had liver biopsy for evaluation of possible metastases which showed biliary hamartomas without any evidence of metastatic disease. The spectrum of findings varied from one or two circumscribed lesions to innumerable lesions of varying sizes from 2–15 mm.⁶ The final diagnosis, however, must be confirmed by liver histology. VMC can very rarely produce portal hypertension but these cases cannot be differentiated from congenital hepatic fibrosis.³ Some cases of cholangiocarcinoma have been reported in patients with VMC, suggesting that malignant change is possible, but this is very unusual.^{3,7}

In summary, VMC are normally asymptomatic, and are a chance finding at autopsy or during investigation for another disorder. They are a part of a family of fibropolycystic diseases and the diagnosis rests on histological confirmation.

Final diagnosis

von Meyenburg complexes or bile duct microhamartomas.

Keywords: bile duct microhamartomas; von Meyenburg complexes; hepatic abscesses; metastatic liver disease

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Acute abdominal pain following anticoagulation

I S Cook, K Amar

An 87-year-old woman was admitted with a 2-month history of worsening shortness of breath. She had a non-productive cough and denied any history of chest pain. She had a history of pulmonary tuberculosis, diverticular disease, and a ventral suspension. Respiratory function testing identified severe airways obstruction and she was commenced on inhaled bronchodilators to good effect. Arterial blood gas examination on air revealed pH 7.44, pCO₂ 6.7 and pO₂ 9.0. Full blood count, urea and electrolytes, and liver function tests were all normal. Two days after admission she complained of left pleuritic chest pain although with no increase in breathlessness. Repeat arterial blood gas examination showed pH 7.38, pCO₂ 5.9 and pO₂ 7.7. A diagnosis of possible pulmonary embolism was made and she was anticoagulated with intravenous heparin. The following morning she complained of severe left lower abdominal pain and nausea. Photographs of her abdomen are shown in figure 1. On examination she was tachycardic and had tenderness over the left lower quadrant where a 15 × 20 cm mass was felt. An abdominal X-ray showed no evidence of intestinal obstruction and there was no sign of air under the diaphragm on chest X-ray. Blood investigations revealed haemoglobin 7.9 g/dl and an activated partial thromboplastin time ratio of 4.63 (ideal therapeutic range 1–2.5). Platelets were normal. She had no history of trauma. Ultrasound examination was carried out and a computed tomography (CT) scan made (figures 2 and 3).

Figure 1 Photographs of the patient's abdomen (reproduced with her permission)

Figure 2 Ultrasound findings

Figure 3 CT appearance

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Questions

- 1 Describe the appearances of the patient's abdomen in figure 1.
- 2 Describe the radiological appearances in figures 2 and 3.
- 3 What is the cause of the patient's abdominal pain?