CASE REPORT

Diffuse hepatic haemangiomatosis: A case report and review of literature

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SUMMARY

Hepatic haemangioma is a solitary liver lesion and prevalent among the female patients. We report a case of diffuse hepatic haemangiomatosis in a 62-year-old man, who was referred for an incidental finding of multiple liver nodules. History and physical examinations were unremarkable. Computed tomography and magnetic resonance imaging of the liver were performed and showed multiple haemangiomatosis. In view of the rarity of this condition in men, a liver biopsy was done and confirmed haemangiomas. Available published literature on diffuse hepatic haemangiomatosis was reviewed.

INTRODUCTION

Incidental lesions in the liver are often encountered in many asymptomatic persons. These lesions are termed incidentaloma and usually require extensive work-up due to their unknown nature. The term incidentaloma was first coined by Miles Little in 1990.[1] He summarised data of 36 patients collected over a 3-year period. A total of 29 (81%) cases were benign and the remaining seven (19%) were malignant; five secondary tumours and two primary tumours. Of the benign lesions, 24 (67%) were non-neoplastic and five (14%) were benign. Among the non-neoplastic lesions, 20 were haemangiomas in which 14 of them occurred in women.

Non-neoplastic lesions include cystic incidentalomas, hepatic haemangioma (HH) and focal nodular hyperplasia (FNH). HH is the most common liver lesions. HH and hepatic haemangiomatosis are two different entities with the same histological presentation. In hepatic haemangiomatosis, the boundary of the lesions is ill-defined whereas haemangiomas have a well-defined periphery. Hepatic haemangiomatosis is further divided into nodular and diffuse (DHH). We report an extremely rare case of incidental finding of isolated DHH without extrahepatic manifestation.

CASE REPORT

A 62-year-old man with a history of primary hypoparathyroidism, hypertension, dyslipidaemia and benign prostatic hyperplasia (BPH), was noted to have unexplained raised creatinine level. There was no abdominal pain and weight loss and no family history of malignancy. Physical examination was unremarkable. Abdominal ultrasound was performed in view of his raised creatinine level and it showed multiple liver nodules. His liver function tests, full blood count and coagulation profile were normal. Tumour markers which include alfa-fetoprotein (AFP) 2.66ng/mL, carcinoembryonic antigen (CEA) 2.3ng/mL and prostate-specific antigen (PSA) 1.70ng/mL were normal. Viral hepatitis B and C screening were negative. With a possibility of liver metastases, upper and lower endoscopies were performed to look for a primary tumour and were both normal. Endoscopic Ultrasound (EUS) did not reveal any pancreatic lesion or para aortic lymphadenopathy. It showed a 1cm nodule at the right lobe of the liver which was not amenable for EUS-guided liver biopsy in view of the location of the lesion.

Computed tomography (CT) scan of the liver demonstrated multiple hepatic nodular lesions with peripheral rim enhancement on late arterial phase. These lesions also showed characteristic filling on portovenous phase and appeared isodense to liver parenchyma on delayed phase. Positron emission tomography (PET) scan showed physiological fluorodeoxyglucose (FDG) metabolism in the liver nodules with no FDG avid lesions. A magnetic resonance imaging (MRI) of the liver was performed subsequently, which showed multiple liver lesions of varying sizes in the right lobe, with the largest lesion measuring 1.8 x 1.6cm at segment VII. These lesions were T1 hypointense (Figure 1 (a) and (b)) and T2 hyperintense (Figure 1 (c)) with some showing peripheral rim enhancement and others showing nodular enhancement in the arterial phase. There was no portovenous washout. At this stage, liver haemangiomatosis or metastasis still cannot be excluded. Hence, diagnostic options of a technetium-99 m labelled scintigraphy or a liver biopsy were discussed, and the patient opted for liver biopsy. A targeted liver biopsy showed focal areas of sinusoidal dilatations lined by flattened endothelial cells. The liver architecture was preserved with normal sized portal tracts, and no evidence of fibrosis or interface hepatitis. No atypical or malignant cells were noted, and the lesions were confirmed as benign vascular lesions (Figure 2).

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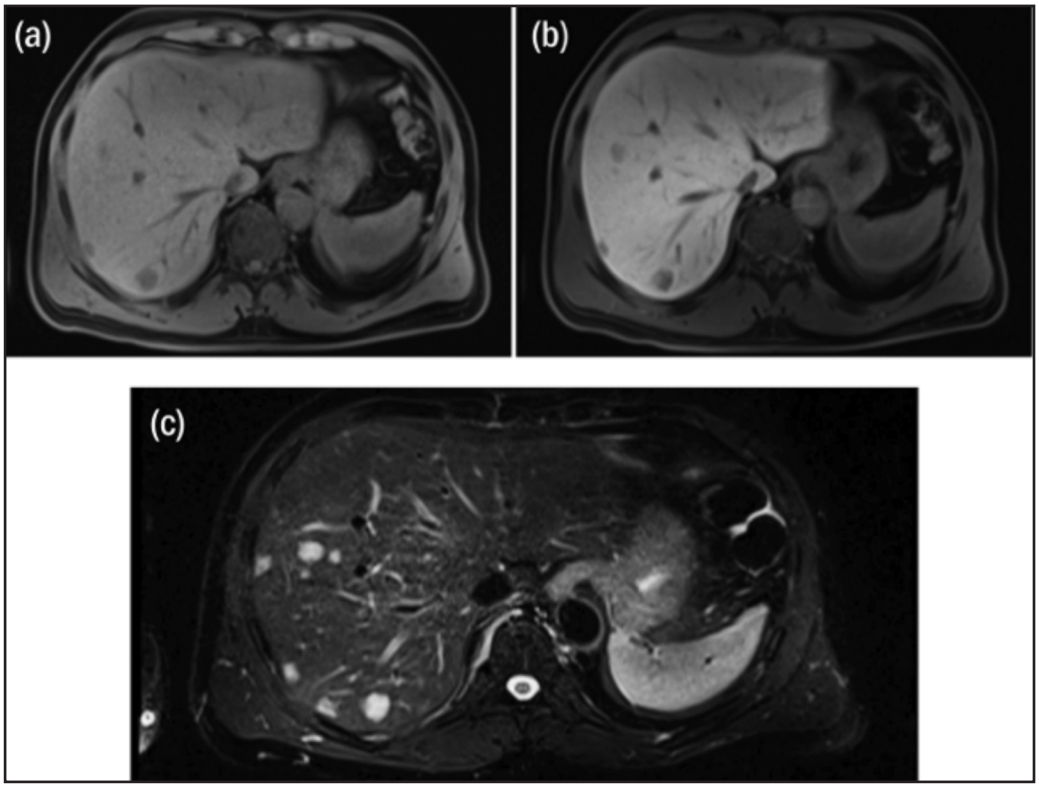

Fig. 1: (a) & (b): T1 weighted MRI images showing multiple foci of hypointensity with background of normal liver parenchyma, (c): T2 weighted MRI demonstrated a diffuse nature of the lesions which are hyperintense with different sizes but non-coalescing.

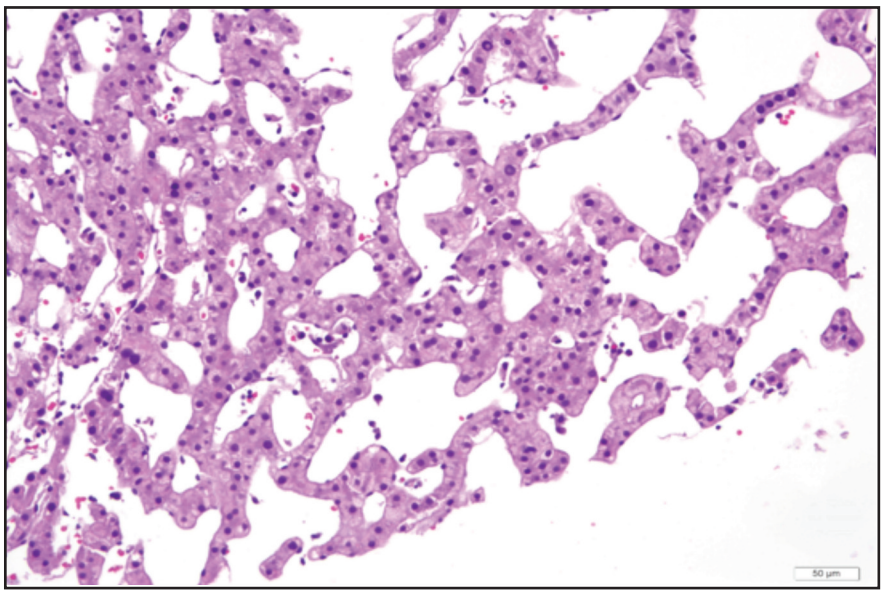

Fig. 2: Histopathology of liver biopsy demonstrated focal areas of sinusoidal dilatations lined by flattened endothelial cells (H&E, 20x magnification).

DISCUSSION

Hepatic haemangioma is the commonest benign liver lesions. However, diffuse hepatic haemangiomatosis (DHH) is a rare occurrence. DHH is associated with Osler-Rendu-Weber disease whereby there are numerous small haemangiomas of the face, lips, tongue, oral mucosa, gastrointestinal tract and liver. DHH is also a common feature in patients diagnosed with giant cavernous haemangioma. A study by Jhaveri et al., found 44% of patients with giant cavernous haemangioma had DHH.[2] DHH is also found in neonates as early as two months of life and is a spectrum of diffuse neonatal haemangiomatosis (DNH). DNH is a rare disease of new-borns characterised by multiple cutaneous and visceral haemangiomas. Cases of isolated DHH has been reported as early as 1963.[3] It is prevalent among the female gender and affects women of reproductive age to early menopause. The incidence of DHH among men is rare and seems to affect those above 50 years old incidence

of DHH among men is rare and seems to affect those above 50 years old. DHH can occur either in separate lobes or simultaneously on all lobes of the liver. The causes, pathogenesis and the natural history of DHH remain unknown. Oral contraceptives, steroids, metoclopramide and pregnancy may accelerate its growth. The occurrence of DHH has not been associated with genetic component. There has been a reported case of progressively worsening DHH in a post-bariatric surgery patient.[4]

Presenting complaints are rare and include right upper quadrant pain, dyspeptic symptoms and early satiety with post-prandial epigastrium pain. Physical examination may reveal hepatomegaly with the presence of abdominal bruit, a right upper quadrant mass and ascites. Physical examination of our patient was normal, with no sign of cutaneous telangiectasia. MRI is the main diagnostic modality revealing liver nodules with hypointensity on T1-weighted sequences and hyperintensity on T2-weighted sequences. However, other causes of liver nodule hyperintensity on T2-weighted sequences include angiosarcoma and epithelioid haemangioendothelioma which are important differentials to be excluded. There are few other liver lesions that can give similar MRI characteristics (hypointense on T1 and hyperintense on T2) such as hepatocellular adenoma, focal nodular hyperplasia (FNH) and metastatic disease. However, each lesion might demonstrate their special MRI characteristics, which will help to differentiate from others. Macroscopic fat may be present in hepatocellular adenoma (give rise to hyperintense on T1), while FNH usually demonstrates central bright T2 signal due to its scar. On the other hand, the majority of metastatic lesions show heterogenous signal with erratic contrast enhancement.

Histological investigation shows large thin-walled vascular channels, lined with a single flat layer of endothelial cells containing red blood cells, without atypical cells or mitotic activity. Type IV collagen and laminin immunostaining can detect the basement membrane, which forms rings around the vascular components. In addition, immunostaining of endothelial cell markers such as factor VIII-related antigen, CD34 and CD31 will be positive. Some vascular channels may be collapsed with an arterial wall surrounding it. Sclerosing lesions may be found, which display a sclerotic centre surrounded by patent vessels. Sclerotic centres can have haemosiderin deposits or recent haemorrhage due to dystrophic calcification or infarction. Currently, there is no guideline regarding management of DHH. For most patients, a conservative approach is adequate. Embolization of the hepatic artery can be offered in symptomatic patients.[5] Transplant may be indicated if there is a concomitant congestive cardiac failure and liver failure. Mortality is mainly caused by the hepatic and cardiac failure.

In this case, our patient underwent several modalities of investigation. Dynamic MRI has a good diagnostic yield to characterise the liver lesions. Nevertheless, we proceeded with full investigations including liver biopsy in view of the rare occurrence of DHH, as well as good patient's factors (age and comorbid). Liver biopsy is an invasive procedure and complications include abdominal and shoulder (diaphragmatic) pain (1-20%), haemorrhage (intraperitoneal: 0.3-0.7%, intrahepatic: 0.59-0.23% and haemobilia: 0.05-0.2%) and sepsis (6-13%). However, the complications are greatly minimised in the hand of experienced operators and by using imaging (usually ultrasound) guided biopsy.

CONCLUSION

DHH without extrahepatic manifestation is a rare occurrence among males and affects those above the age of 50. There is no clear aetiology and most patients are asymptomatic. After exhaustive investigations, a conservative approach will usually suffice unless the patient develops symptoms, worsening liver function or congestive cardiac failure.

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