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SPONTANEOUS RUPTURE: A RARE COMPLICATION OF HEPATIC HEMANGIOMAS

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Hepatic lesions are one of the possible visceral causes of spontaneous hemoperitoneum. Hepatic hemangiomas are congenital vascular malformations and are the most common benign tumours of the liver. Most cases are asymptomatic. Although they seldom rupture, it is important to diagnose them as their global mortality rate is high. An accurate diagnosis of a hemangioma as cause of a hemoperitoneum would result in correct clinical decision making and treatment.

Key-word: Angioma.

Case report

A 46-year-old woman was admitted to our hospital complaining of diarrhea, syncopal episodes and heavy abdominal cramps. Physical examination revealed remarkable pain and sensitivity over the whole abdomen. The patient's medical history was unremarkable, except having taken birth control pill for several years.

Blood analysis showed increased white blood cells, anaemia, thrombocytopenia, increased Gamma-GT and lactate dehydrogenase.

Due to the acute situation, no US was performed, but a CT scan with intravenous contrast was promptly performed. CT-scan revealed a massive hemoperitoneum with multiple voluminous hypodense lesions in the right and left liver lobes with inlying fluid-fluid levels and with peripheral enhancement. The imaging aspect of the biggest lesion of 10 centimeters rose the suspicion of acute rupture of a giant cavernous hemangioma (Fig. 1). Because of the emergency and the instability of the patient, no angiography was performed. The patient was urgently admitted to the Department of Surgery for a laparoscopic approach with reconversion. Partial capsulectomy with transparenchymal suturing was done. Peroperative images were taken (Fig. 2).

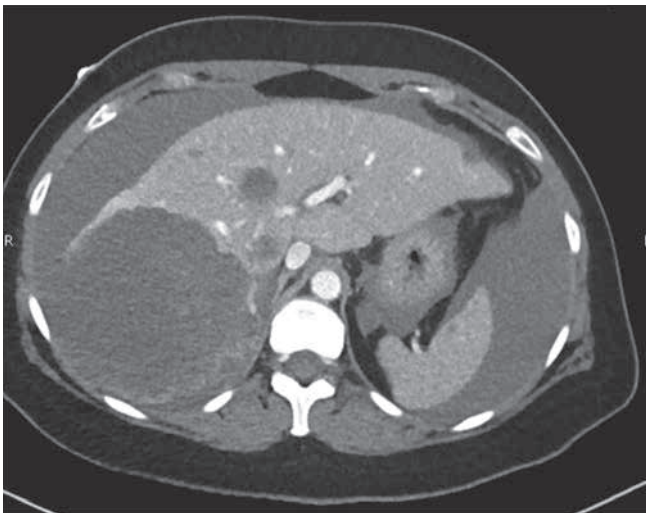

Fig. 1. — CT scan revealed a massive hemoperitoneum with a giant hemangioma as possible cause.

Discussion

Hepatic hemangiomas are congenital vascular malformations and are considered as the most common benign tumours of the liver and can measure up to 20 centimetres. These tumours can be found at any age, 70-95% occur in women especially in their fourth and fifth decades of live (1).

Macroscopically, they are well-circumscribed, reddish-purple, hypervascular lesions.

Hepatic hemangiomas can be divided in two major groups: capillary hemangiomas and cavernous hemangiomas. Respectively they are generally peripheral, small, and sometimes multiple and the second group are more rare and larger. Lesions larger than 4 cm are called 'giant hemangiomas'.

Hepatic hemangiomas enlarge by ectasia rather than neoplastic growth. Malignant transformation is extremely rare. They are often diagnosed as incidental findings on imaging studies of the abdomen or during exploratory surgeries.

Most cases of hepatic hemangiomas are asymptomatic although a few patients may present with a wide variety of clinical symptoms like intermittent right upper quadrant pain. Increasing size or intratumoral thrombosis or hemorrhage can cause pain, possibly secondary to capsular distension, focal necrosis or compression of adjacent structures. Giant hemangiomas can also cause biliary colic, obstructive jaundice, and gastric outlet obstruction. Laboratory studies show an elevation of transaminases, bilirubin and alkaline phosphatase even in asymptomatic cases.

Spontaneous rupture of hepatic hemangiomas is an uncommon complication representing 1-4% (2). In cases where spontaneous rupture occurs, clinical manifestations consist of sudden abdominal pain, and anemia secondary to a hemoperitoneum.

As the size of the hemangioma increases, the chance of rupture also

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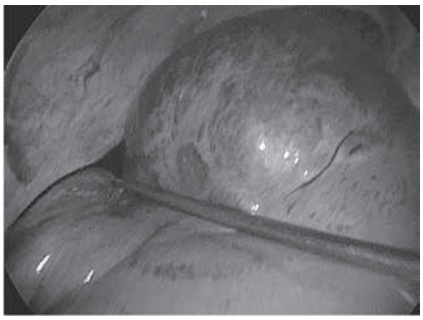

Fig. 2. — Peroperative image confirms the giant hemangioma as the cause of the hemoperitoneum.

increases, especially if the tumour is located on the surface of the liver and shows extrahepatic growth. If the patient receives steroid therapy for a coexisting disorder, the chance of rupture is even higher (3). The global mortality rate is high and about 60-75%.

Spontaneous rupture of a (giant) hepatic hemangioma can give rise to a spontaneous hemoperitoneum.

Hepatic hemangioma can be diagnosed in most patients using noninvasive studies inter alia ultrasonography, contrast-enhanced computed tomography and magnetic resonance imaging. Describing imaging features is beyond the purpose of this article.

Because most cases of hepatic hemangiomas are asymptomatic they could be followed up by periodic radiological examination. Surgery should be restricted to specific situations. Liver biopsy is contraindicated because of an increased risk of hemorrhage and should be used only when imaging studies and alpha fetoprotein (as a tumor marker of liver cancer) testing are inconclusive.

Absolute indications for surgery are spontaneous or traumatic rupture with hemoperitoneum, intratumoral bleeding, consumption coagulopathy (Kasabach-Merritt syndrome), when malignancy cannot be excluded and rapid growth. Lesions exceeding more than 10 to 11 centimeters in diameter may have greater likelyhood for internal bleeding, further growth or rupture and here a preventive excision is proposed (4). Persistent abdominal pain, obstructing jaundice, portal hypertension, a size greater than 5 cm, superficial localization because of traumatism risk, and an uncertain diagnosis are relative surgical indications.

The proposed surgical procedures are anatomic, nonanatomic resection, enucleation, use of transcatheter arterial embolization and liver transplantation.

Surgical resection and enucleation with temporary inflow occlusion (Pringle maneuver) are considered the treatments of choice (5). Segmental resection is usually selected if a hemangioma is localized in a single segment, and enucleation is usually selected if it is localized in the center of the liver (6).

Transcatheter arterial embolization has been suggested as a good treatment used either alone or as a preoperative procedure prior to surgical resection (7). In cases of rupture, transcatheter arterial embolization results in stanching or reducing the hemorrhage.

In conclusion, hepatic hemangiomas are congenital vascular malformations and are considered the most benign tumours of the liver. Most cases are asymptomatic. But they are a rare cause of spontaneous rupture. Because of the high global mortality associated with it, every radiologist may not overlook a spontaneous ruptured hemangioma as possible cause of a hemoperitoneum. So whenever a hemoperitoneum is presented with a liver lesion, radiologists should look for spontaneous rupture of hepatic hemangiomas.

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