Mesenchymal hamartoma of liver

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Section: Abdominal imaging
Area of Interest: Liver
Procedure: Diagnostic procedure
Imaging Technique: CT
Special Focus: Neoplasia Case Type: Clinical Cases
Authors: Abhijit Patil, Rahul Nikam, Dhabalia Nimit
Patient: 1 years, female

Clinical History:

One-year-old female child, presented with gradually increasing distension of abdomen and palpable lump since six months. There was no history of fever or failure to thrive. Developmental milestones were within normal limits. Clinically, liver was palpable 7 cm below the costal margin. Rest of the systemic examination was normal.

Imaging Findings:

On non-contrast CT, a well defined, large, hypodense cystic lesion is seen occupying the whole of the left lobe and part of the right lobe of liver. There are few internal septae visualised (Fig. 1).

On post-contrast axial and coronal reformatted CT, multiple enhancing septae are seen within the cystic lesion. Moderately enhancing pseudo capsule due to compressed hepatic parenchyma is demonstrated (Fig. 2 - 5).

Discussion:

Mesenchymal hamartoma is a rare, benign liver neoplasm that probably represents a congenital malformation. It usually occurs in children under 2 years of age and is slightly more common in boys. It rarely occurs in adults [1]. Mesenchymal hamartoma is a developmental cystic liver tumour. It consists of disordered arrangement of primitive fluid-filled mesenchyme, bile ducts and hepatic parenchyma [2]. The margin between the liver and the lesion is distinct, but a true capsule is generally not present [2, 3]. On the cut surface, multiple cysts in an oedematous stroma are seen; the cysts vary in size, from millimetres to 15 cm, and in number and distribution, being discrete or connected. Their appearances on cross-sectional imaging may reflect these spectra of cystic changes observed pathologically and can range from multiple small cysts in a solid mass resembling Swiss cheese to a multilocular cystic mass with intervening solid septa.

On ultrasonography, mesenchymal hamartoma can be solitary or multiple. It usually appears as rounded cystic areas on an echogenic background. Occasionally, solidly echogenic lesion in fetus may appear, due to multiple microcysts creating innumerable tissue fluid interfaces.

On Computed Tomography, single or multiple hypodense, cystic septated lesions with attenuation depending on the composition of stromal versus cystic elements are seen. On post-contrast scans, there is enhancement of the internal septae, with pseudo capsule formation due to the compressed hepatic parenchyma. On Magnetic Resonance Imaging, cystic component usually shows varying signal intensity on T 1 and T 2 W images depending on the protein content of the fluid or the mesenchymal tissue [4]. Post-contrast enhancement of the septae and the pseudo-capsule is seen as with the CT imaging.

The differential diagnosis in this age group usually includes a large congenital hepatic cyst, Necrotic embryonal sarcoma, necrotic hepatoblastoma and rarely infantile haemangioendothelioma. Hepatoblastomas usually present as large heterogeneously enhancing mass with areas of necrosis and calcifications. Alfa Feto protein is usually markedly raised. Infantile haemangioendotheliomas usually show peripheral nodular enhancement with central fill in,
calcifications, large tortuous feeding vessels and usually present with congestive cardiac failure secondary to arteriovenous shunting.

**Differential Diagnosis List:** Mesenchymal hamartoma of liver, Large congenital hepatic cyst, Necrotic embryonal sarcoma, Necrotic hepatoblastoma, Infantile haemangioendothelioma

**Final Diagnosis:** Mesenchymal hamartoma of liver

**References:**


Michael Moore , Sudha A. Anupindi , Peter Mattei , Anita Sengupta , Kassa Darge (July) Mesenchymal cystic hamartoma of the liver: MR imaging with pathologic correlation. Radiology Cases DOI: 10.3941/jrcr.v3i7.243
Description: Hypodense, cystic lesion occupying the whole of left lobe and part of right lobe of liver with few internal septae. Origin: Dr. Abhijit Patil, Department of Radiology, Jaslok Hospital and Research Centre, Mumbai, India.
Description: Arterial phase: There are enhancing septae within the lesion, along with an enhancing pseudo-capsule. Origin: Dr. Dhabalia Nimit, Department of Radiology, Jaslok Hospital and Research Centre, Mumbai, India.
**Description:** Venous phase: Progressive enhancement of the septae. Pseudo-capsule is formed by compressed hepatic parenchyma. **Origin:** Dr. Rahul Nikam, Department of Radiology, Jaslok Hospital and Research Centre, Mumbai, India.
Figure 3

Description: Coronal reformatted image

Origin: Dr. Rahul Nikam, Department of Radiology, Jaslok Hospital and Research Centre, Mumbai, India.
Description: Sagittal reformatted images
Origin: Dr. Dhabalia Nimit, Department of Radiology, Jaslok Hospital and Research Centre, Mumbai, India.
Figure 4

Description: Histopathology slide
Origin: Dr. Abhijit Patil, Department of Radiology, Jaslok Hospital and Research Centre, Mumbai, India.