

## **Case 10502**

### **A 17-month-old child with an abdominal mass**

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**Section:** Paediatric Radiology

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**Patient:** 17 month(s), male

#### **Authors' Institution**

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#### **Clinical History**

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A 17-month-old male patient with no previous history of significant disease after a monitored pregnancy was admitted via the paediatric emergency room after several episodes of vomiting. Massive abdominal distension was observed upon physical examination and a large elastic mass was palpated. Laboratory findings were unremarkable.

#### **Imaging Findings**

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Abdominal radiograph - large abdominal mass, with regular contour of the abdominal wall. Gastric bubble displaced to left with moderate distension. Bilateral elevation of the hemi-diaphragms. Non-obstructive bowel gas pattern.

Ultrasound (US) - Intra-peritoneal well-defined lesion, with a significant solid component and large cystic areas.

Computed tomography (CT) - Complex central area with fluid-density enveloped by a heterogeneously-enhancing solid component without calcifications, contacting the anterior and lateral abdominal walls, without an obvious point of origin. There is posterior displacement of the

bowel, pancreas, spleen and kidneys. The liver is superiorly displaced, and enhances homogeneously.

## Discussion

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**Background:** Mesenchymal Hamartoma of the Liver (MHL), sometimes referred to as pseudocystic mesenchymal tumour or giant cell lymphangioma [1] is the second most frequent benign liver tumour in the paediatric population, second to infantile haemangioma [1, 2]. Most cases present within the first 2 years of life and are very unusual after 5 years of age [1], although it has been reported in adults [3]. The exact aetiology of MHL is unknown, with suggestion of a development anomaly or that it may be a true neoplastic lesion [1, 4]. About 75% of the tumours are located in the right hepatic lobe. MHL is typically focal, arises from the mesenchyma of the portal tract, containing blood vessels, lymphatic spaces, bile ducts and hepatocytes [2].

**Clinical Perspective:** MHL often presents as an abdominal swelling with a nontender mass due to the slow rate of growth. It can be associated with symptoms related to compression such as abdominal pain, vomiting, jaundice, poor weight gain, ascites or inferior vena cava compression. In some cases the mass can show rapid increase in size secondary to rapid fluid accumulation. No laboratory findings are specific for MHL, the level of alpha-fetoprotein being normal and only rarely elevated [4], which is useful in ruling out other diseases such as hepatoblastoma. If malignancy is suspected an image-guided biopsy should be considered.

**Imaging Perspective:** Abdominal radiograms depict an unspecific abdominal mass. Ultrasound is usually the first exam performed characteristically showing a large multicystic multiseptated mass surrounded by solid areas ("Swiss cheese" appearance) [3]. Intraoperative ultrasound may be useful in defining the vascular anatomy to guide resection [1]. Sectional imaging allows a more accurate determination of the mass' size, origin and accessory findings [1]. Computed Tomography will show enhancement of the solid component. At Magnetic Resonance the cystic component will have high signal intensity on T2-weighted images while the solid stroma will translate into low signal intensity on T1-weighted images. Heterogeneity of signal is due to variable proteinaceous or haematic content within the cyst[5]. Imaging is crucial in the post-surgical follow-up.

**Outcome:** MHL is widely regarded as a benign tumour without malignant potential. Due to the suggested relation between MHL and Undifferentiated Embryonal Sarcoma, complete surgical resection is advocated [6]. In the rare cases when the tumour is unresectable transplantation might be considered [7].

**Take home message:** The Radiologist should consider MHL when evaluating an infant with a large abdominal mass.

## Final Diagnosis

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Mesenchymal hamartoma of the liver

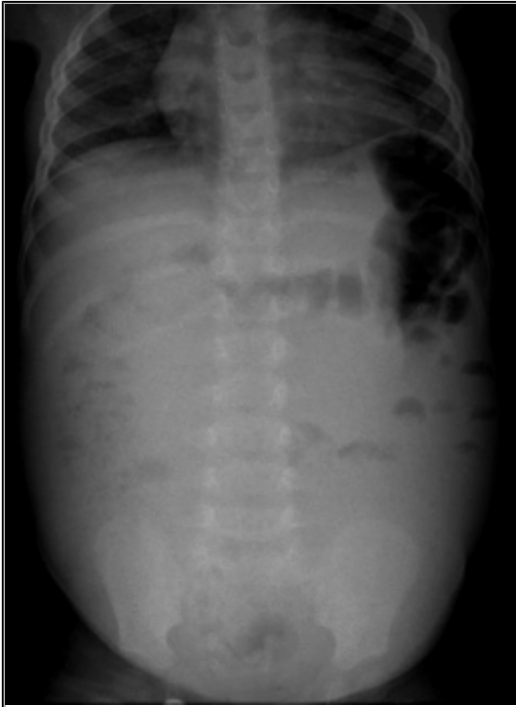
## Differential Diagnosis List

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## Figures

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**Figure 1 Abdominal Radiogram**



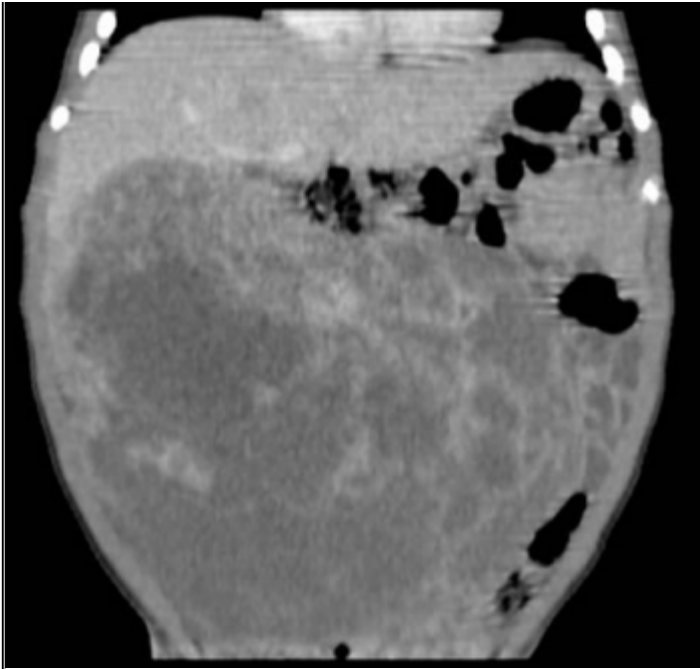
Large abdominal mass with no bowel dilatation.

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Area of Interest: Abdomen;  
Imaging Technique: Conventional radiography;  
Procedure: Education;  
Special Focus: Neoplasia;

**Figure 2 CT 2**



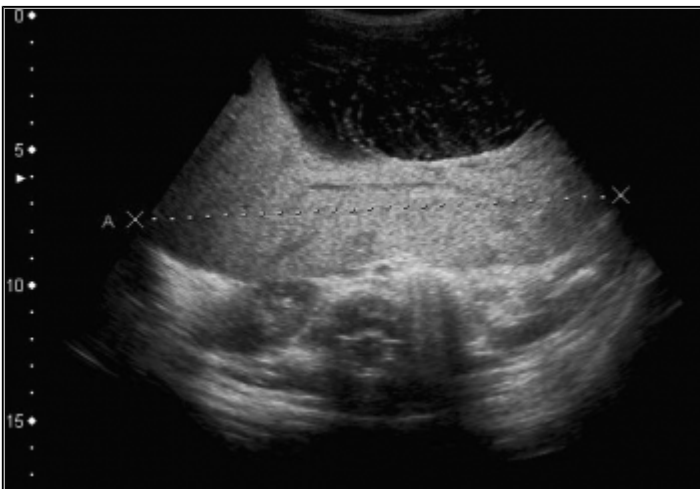


Coronal reformation.

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Area of Interest: Abdomen;  
Imaging Technique: CT;  
Procedure: Education;  
Special Focus: Neoplasia;

**Figure 3 ultrasound 1**



Transabdominal ultrasound, AP view, depicting a large intraperitoneal mass with significant solid and cystic components.

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Area of Interest: Abdomen; Gastrointestinal tract; Liver;  
Imaging Technique: Ultrasound;  
Procedure: Education;  
Special Focus: Neoplasia;

**Figure 4 ultrasound 2**

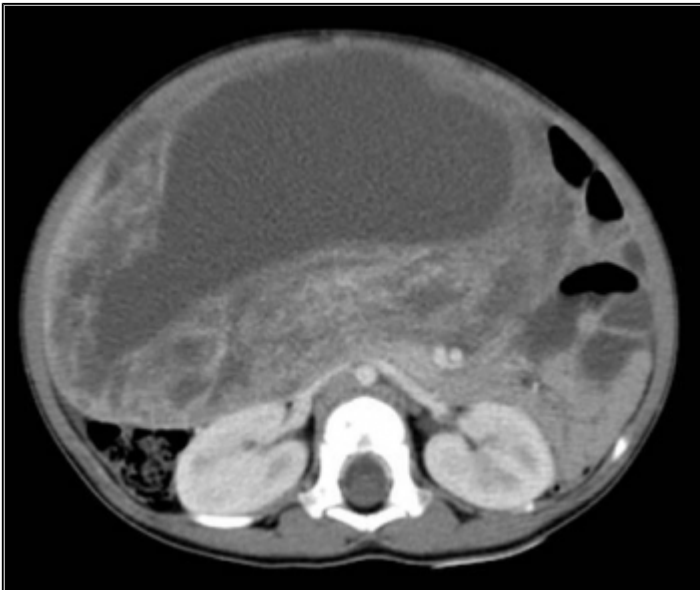


Transabdominal ultrasound, lateral view.

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Area of Interest: Liver;  
Imaging Technique: Ultrasound;  
Procedure: Education;  
Special Focus: Neoplasia;

**Figure 5 CT 3**



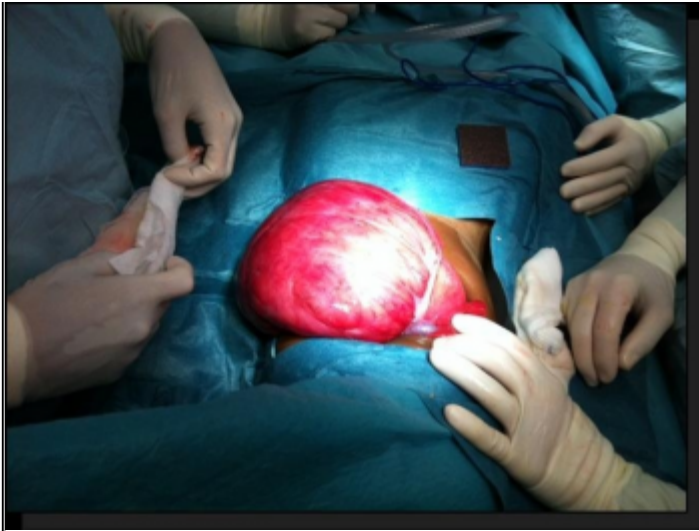
Axial enhanced-CT image depicting the large volume of the lesion, its intraperitoneal location, with no obvious point of origin.

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Area of Interest: Abdomen;  
Imaging Technique: CT;  
Procedure: Education;  
Special Focus: Neoplasia;

**Figure 6 surgery**





Intraoperative image of the tumour

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Area of Interest: Abdomen;  
Imaging Technique: Percutaneous;  
Procedure: Education;  
Special Focus: Neoplasia;

## MeSH

**Liver** [A03.620]

**Liver Neoplasms** [C06.552.697]

Tumors or cancer of the LIVER.

## References

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## Citation

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