The Case of the Silent Abdominal Mass and Elevated αFP in an Infant

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Patient Presentation

- A previously healthy 9-month-old male presents with a right upper quadrant (RUQ) abdominal mass was noted at a well child visit.
- Parents report mild constipation; no abdominal distention or pain, changes in appetite, fever, weight change or easy bruising and bleeding
- Medical, surgical and social history are unremarkable. Immunizations are up to date.

Physical Exam

- Vitals: Temp: 36.6 C, HR 132, RR 32, BP 100/75
- Well-demarcated, nontender RUQ mass that crosses midline, extends from right costal margin to 2cm above iliac crest
- No splenomegaly
- Cardiovascular, Pulmonary, Skin, and Neurologic exams all within normal limits

Diagnostic Evaluation

- CBC, UA, LDH, Uric Acid, and CMP within normal limits
- Alpha Fetoprotein (αFP) **elevated to 387ng/mL** (normal range 0-12 ng/mL)
- Abdominal U/S & MRI conducted (Figure 1)
  - U/S findings **- large complex cystic and solid mass** in the RUQ that appears to be originating from the right lobe of the liver, measuring 12 x 8.5 x 11.3 centimeters
  - MRI Findings - **exophytic, complex mass with stromal elements and no nodularity** in the inferior right hepatic lobe; mass effect on adjacent hepatic and extra hepatic structures (no vascular or biliary tree invasion)

No conflicts of interest to disclose

Hospital Course & Diagnosis

- Differential included hepatoblastoma, hemangioma, mesenchymal hamartoma, teratoma, malignant germ cell tumor, and rhabdoid tumor, based upon most common causes of hepatic masses in this age group group.
- Due to concern for malignancy, patient underwent surgical resection and was discharged.
- Gross and microscopic pathology results confirmed a diagnosis of Mesenchymal Hamartoma (Figure 2).

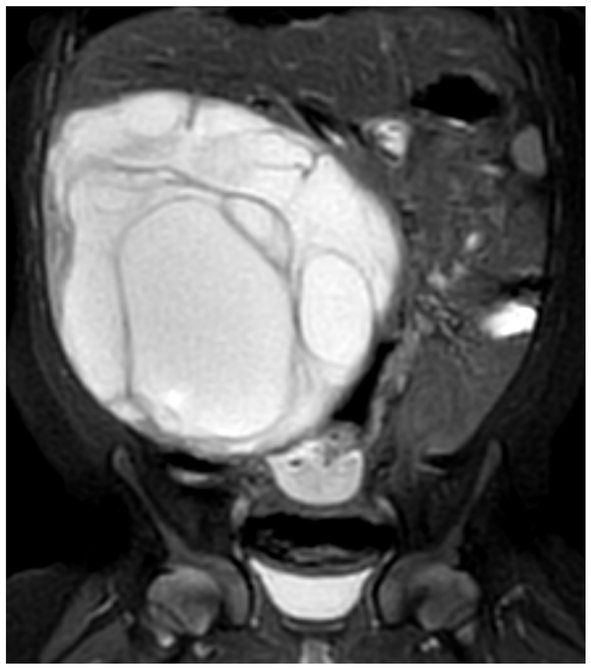

Figure 1. T2 MRI Abdomen

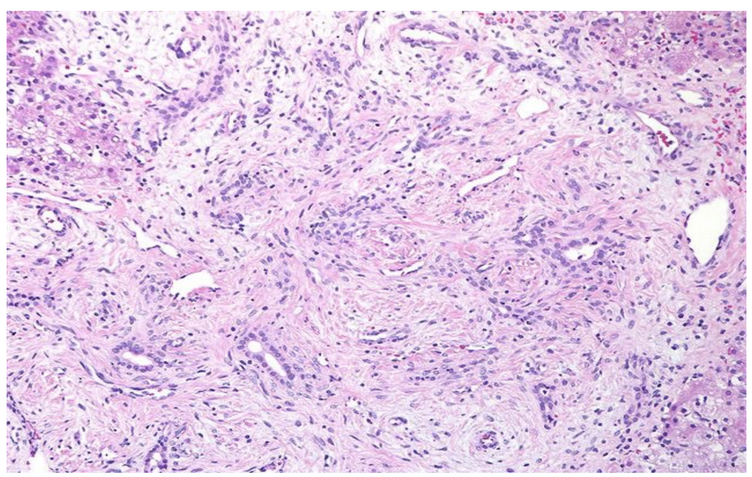

Figure 2. Mesenchymal Hamartoma Histology

Discussion

- Incidence of benign liver tumors in children is rare with reported incidence of 0.7 cases per million population per year.[2]
- Mesenchymal hamartoma is the 2nd most common benign pediatric liver tumor (6% incidence).[4]
- Complete surgical resection is typically curative. **(Figure 3**)
- Elevated αFP is classically associated with hepatoblastoma cases; however, it can be elevated in cases of mesenchymal hamartomas, germ cell tumors, and teratomas.[2,8]
- αFP is physiologically elevated in fetuses and neonates and may take up until 3 years of age to normalize.[5]

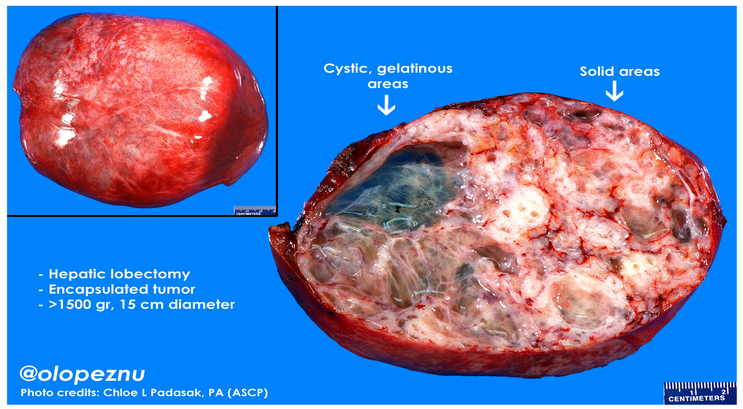

Figure 3. Resected Mesenchymal Hamartoma

Take Home Points

- **Abdominal masses often present asymptomatically** in pediatric patients; thorough physical exams are important for early intervention.
- **αFP is a critical initial screening tool** in the workup of a pediatric hepatic mass; **however, it is not indicative of malignancy & can be elevated in benign processes & physiologically** in young children.