A 62 year-old woman with a liver mass

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Clinical history

This case is of a 62 year old woman with a history of renal cell carcinoma that was removed years ago. A 2.4 cm mass was found in CT during follow-up. ALT, AST, Alk Phos and bilirubin were normal. No prior history of liver disease. Partial hepatectomy was performed.

Gross examination
Grossly, a 2.4 cm well circumscribed mass with a gray-brown focally spongy appearance in the liver.

Microscopy and
Immunohistochemistry

Fig. 1a
Final diagnosis

Hemangioma, anastomosing type

Discussion

Hepatic hemangioma is a common benign vascular neoplasm in both infants and adults that shares the same growth pattern and prognosis as its cutaneous counterpart.1,2 Based on its distribution, hemangioma can be classified as focal, multifocal, or diffuse.1,2 Most hepatic hemangiomas are of the cavernous type followed by the capillary type. Capillary hemangioma, including lobular capillary hemangioma (also known as pyogenic granuloma) commonly presents on the skin and mucosa, although rare liver or gastrointestinal tract examples have been reported.3-10 Capillary hemangioma is composed of a lobular proliferation of vascular channels with plump endothelial cells lining the vascular channels. Anastomosing hemangiomas in the liver11, as seen in this case, are rare hepatic vascular neoplasms characterized by an interconnecting sinusoidal-like pattern of tightly packed capillary channels. The tumor appears well circumscribed grossly with a gray-brown focally spongy appearance in the liver. Low-power magnification shows a well-demarcated lesion with lobular architecture in the liver. At higher magnification the tumors consists of anastomosing sinusoidal capillary-sized vessels with scattered hobnail endothelial cells within a framework of nonendothelial supporting cells. No mitotic figures or necrosis are observed. Mild cytologic atypia is appreciated. Immunohistochemical stain for CD31 is diffusely positive.

Primarily, the differential diagnosis of anastomosing hemangioma is angiosarcoma. Angiosarcoma of the liver and gastrointestinal tract is rare and behaves aggressively. The overall survival is poor and patients rapidly develop metastases and usually die within 6–12 months.12-16 Accurate diagnosis can be challenging, particularly if the patients have no history of exposure to specific toxins including thorium dioxide, arsenicals, and vinyl chloride monomer. Distinguishing anastomosing hemangioma from a well-differentiated angiosarcoma is challenging especially on small biopsies. Histologically, branching, jagged, slit-like vascular channels with prominent cytological alterations and a diffuse infiltrating border is characteristic of angiosarcoma, in contrast to the sharp demarcation, mild cytological atypia, and lack of mitotic figures in anastomosing hemangioma. The absence of multilayering of endothelial cells, high grade cytologic atypia, and mitotic activity coupled with circumscribed borders favor a benign process. Awareness of this entity and attention to cytological features and the overall lobular architecture are essential to avoid diagnostic errors.

Retiform hemangioendothelioma23,24 is essentially a type of well-differentiated angiosarcomas. These lesions are likely to recur but occasionally metastasize. They are most often found in the skin, although a case of “hobnail hemangioendothelioma” has been described in the gastrointestinal tract.17 Retiform hemangioma is characterized by a diffuse and infiltrative growth pattern with arborizing blood vessels arranged in branching configurations and lined by cuboidal and flattened cells with a prominent lymphoid infiltrate.

In summary, anastomosing hemangiomas in the liver is a rare entity and leads to concern for angiosarcoma. Awareness of this entity can minimize overdiagnoses of angiosarcoma and avoid unnecessary aggressive treatment.

References


