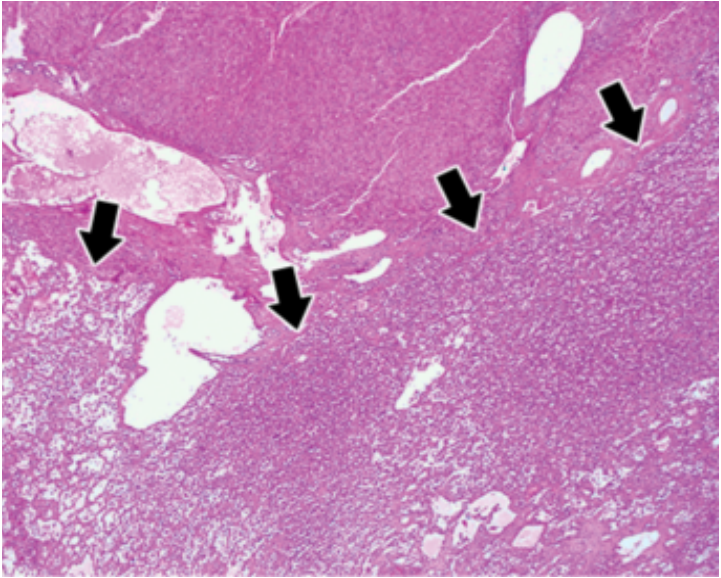
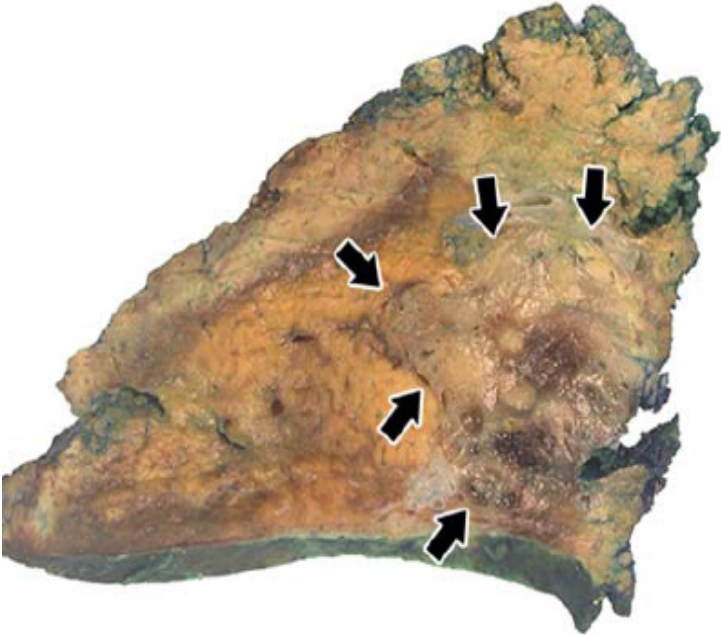
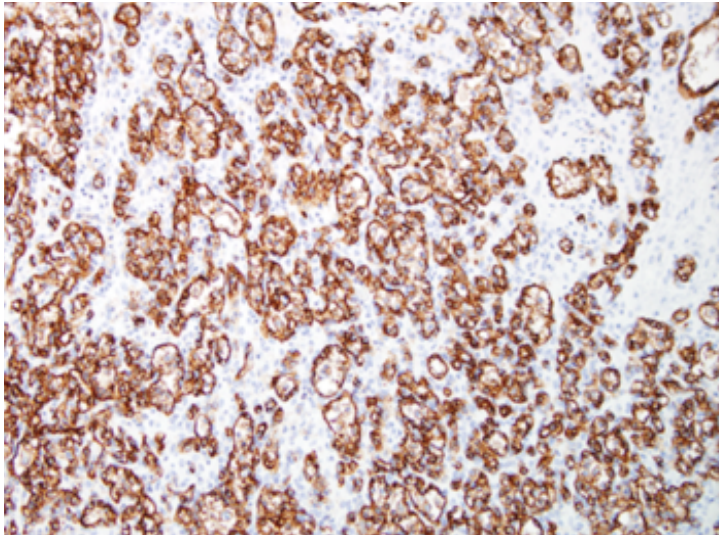
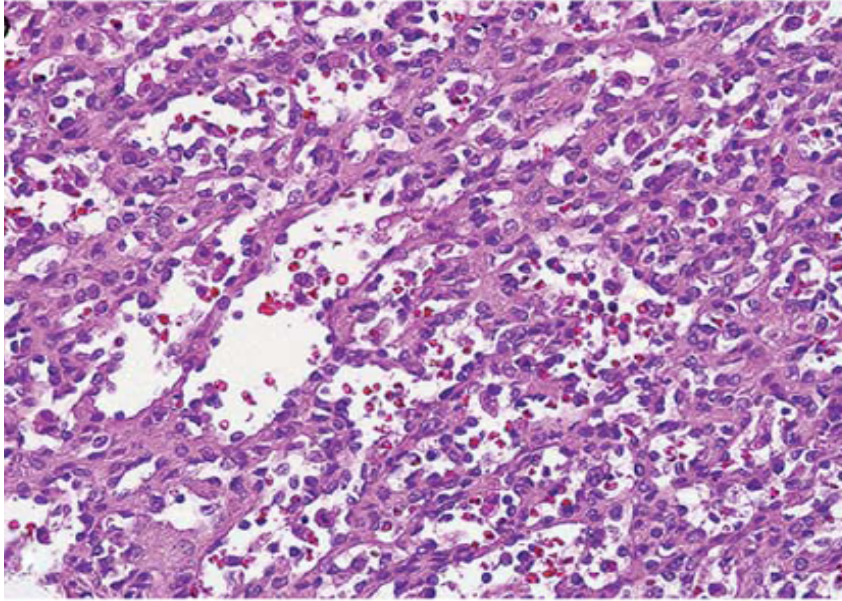


Case: The patient is a 62 year old woman with a history of renal cell carcinoma that was removed years ago. A 2.4 cm liver mass was found on CT during follow-up. ALT, AST, Alk Phos and bilirubin were normal and the patient had no prior history of liver disease. Partial hepatectomy was performed. Representative images of the resection are shown below.





CD31

What is your diagnosis?

- A. Metastatic renal cell carcinoma
- B. Hemangioma, anastomosing type
- C. Retiform/ Hobnail hemangioendothelioma
- D. Angiosarcoma

Answer and Discussion:

B: Hemangioma, anastomosing type

COMMENT:

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 tumor 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 staining for CD31 is diffusely positive.

Choice A is incorrect. Metastatic renal cell carcinoma in the liver is characterized by abundant vascular proliferation of the tumor. Renal cell carcinoma is composed of tumor cells with clearing cytoplasm and prominent nucleoli. If there is any concerns the immunochemical stains for RCC, Pax 2 and CD10 will be valuable.

Choice C is incorrect. Retiform hemangioendothelioma is an intermediate vascular malignancy with an indolent clinical course. 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. 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.

Choice D is incorrect. Histologically, branching, jagged, slit-like vascular channels with prominent cytological atypia 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.

The correct answer is B. Anastomosing hemangioma, an unusual variant of hemangioma, is a newly recognized entity that has been encountered primarily in the genitourinary tract and adrenal gland.¹⁻³ Anastomosing hemangioma in the liver and gastrointestinal tract is uncommon but has been encountered in daily practice.⁴ Due to its anastomosing architecture and the hobnail feature, histologically it simulates well-differentiated angiosarcoma, and thus anastomosing hemangioma poses diagnostic challenges, especially in needle biopsy. Awareness of this rare entity can minimize overdiagnosis of angiosarcoma and avoid unnecessary aggressive treatment.

Reference:

1. Montgomery E, Epstein JI. Anastomosing hemangioma of the genitourinary tract: a lesion mimicking angiosarcoma. *Am J Surg Pathol.* 2009;33:1364-1369.

2. Kryvenko ON, Gupta NS, Meier FA, et al. Anastomosing hemangioma of the genitourinary system: eight cases in the kidney and ovary with immunohistochemical and ultrastructural analysis. *Am J Clin Pathol*. 2011;136:450-457.
3. Ross M, Polcari A, Picken M, et al. Anastomosing hemangioma arising from the adrenal gland. *Urology*. 2012;80:e27-28.
4. Lin J, Bigge J, Ulbright TM, Montgomery E. Anastomosing hemangioma of the liver and gastrointestinal tract: An unusual variant histologically mimicking angiosarcoma. *Am J Surg Pathol*. 2013 Jul 24 (Epub ahead of print; PMID:23791208)

Contributed by:
Dr. Jingmei Lin