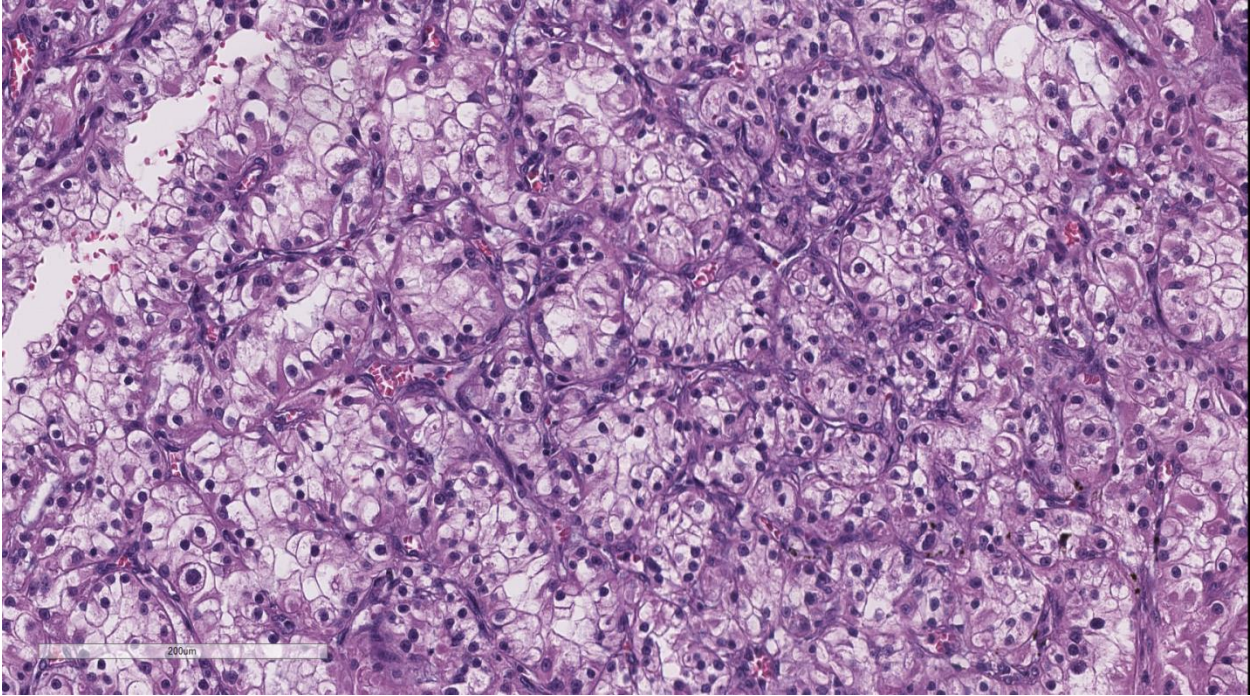
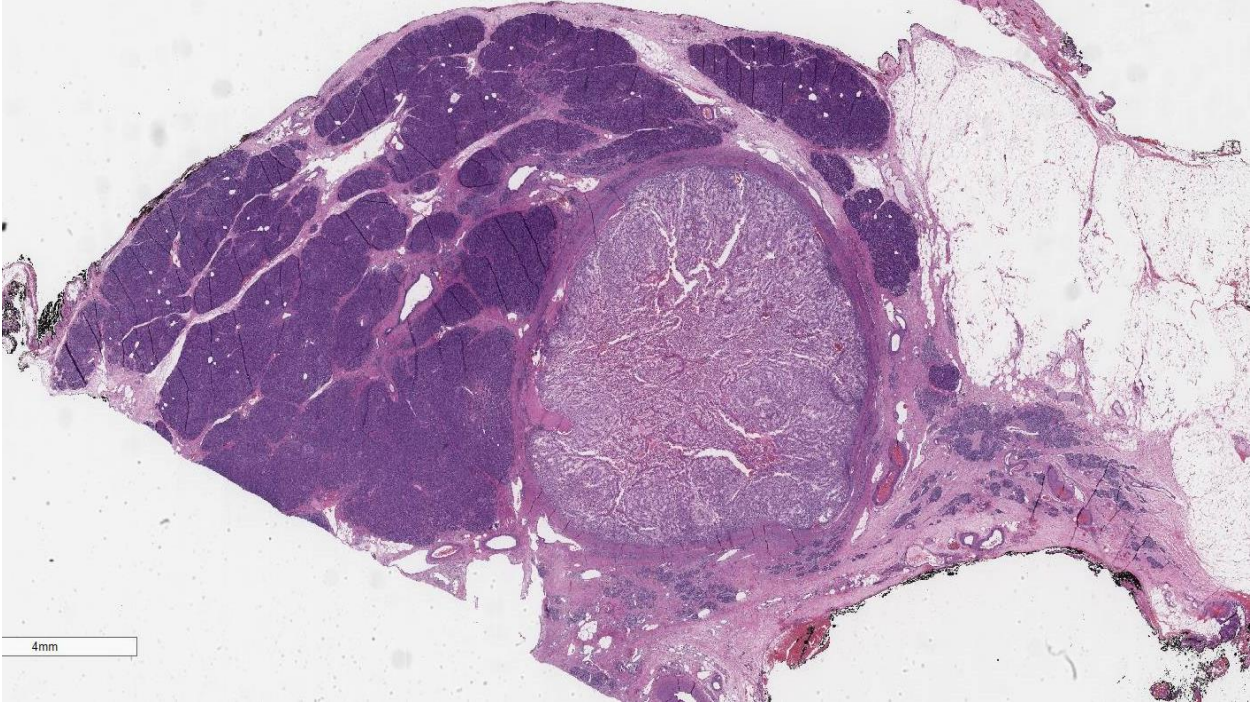


A 56-year-old man was found on imaging to have multiple masses in his pancreatic body and tail. Distal pancreatectomy was performed, resulting in the microscopic findings shown in the photomicrographs below. The tumor immunophenotype included positivity for CD10 and EMA, and negativity for synaptophysin, BCL10, and beta-catenin. Mucicarmine stain was negative. Which of the following is the most likely diagnosis?



- a. Acinar cell carcinoma
- b. Foamy gland carcinoma
- c. Metastatic renal cell carcinoma
- d. Neuroendocrine tumor
- e. Solid pseudopapillary neoplasm, clear cell variant

**EXPLANATION:** The correct diagnosis is metastatic clear cell renal cell carcinoma (RCC), which is typically immunopositive for CD10, EMA, RCC, and PAX8. The morphologic appearance of this neoplasm is similar to that seen in the primary renal site: nests, sheets, and cords of polygonal clear cells with variably prominent nucleoli and distinct cell borders, often associated with a rich sinusoidal vascular network (“chicken wire vasculature”). RCC is thought to metastasize to the pancreas via the hematogenous route (by draining collateral veins from the primary tumor) or the lymphatic route (by retrograde lymph flow through the retroperitoneal nodes). Given that RCC often presents with the pancreas as its sole site of metastasis, some authors have suggested that the RCC tumor cells have a particular affinity for the distinctive biochemical properties of the pancreatic parenchyma. Broadly speaking, metastatic tumor from any site to the pancreas accounts for only 2-5% of all pancreatic malignancies, and direct spread to the pancreas is rare.<sup>i ii iii</sup>

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<sup>i</sup> Shaun Kian Hong Cheng and Khoon Leong Chuah (2016) Metastatic Renal Cell Carcinoma to the Pancreas: A Review. Archives of Pathology & Laboratory Medicine: June 2016, Vol. 140, No. 6, pp. 598-602.

<sup>ii</sup> Ballarin R, Spaggiari M, Cautero N, et al. Pancreatic metastases from renal cell carcinoma: the state of the art. World J Gastroenterol. 2011;17(43):4747–4756.

<sup>iii</sup> Sotiropoulos GC, Lang H, Liu C, Brokalaki EI, Molmenti E, Broelsch CE. Surgical treatment of pancreatic metastases of renal cell carcinoma. JOP. 2005;6:339–343.