



DEPARTMENT OF PATHOLOGY

Case of the Week

Uropathology: Metastatic papillary renal cell carcinoma presenting with peritoneal carcinomatosis

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History

The patient is a 50 year-old female, with a past medical history significant only for kidney stones. Work-up for kidney stones revealed a large mass in the left kidney with thrombus of the inferior vena cava, enlarged perinephric, peri-caval, and para-aortic lymph nodes, and scattered lung nodules. An exploratory laparotomy was performed, in which the surgeon noted the renal mass encasing the aorta and left common iliac artery, diffuse peritoneal carcinomatosis, and metastatic disease in the left salpinx. Biopsies from the peritoneum and left salpinx were submitted for diagnosis

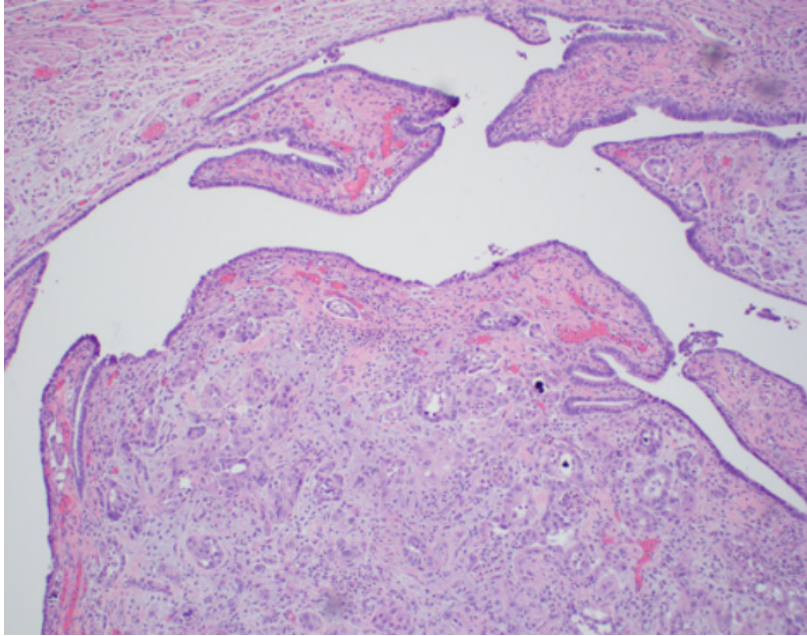


Figure 1: Metastatic carcinoma located within the mucosal folds of the fallopian tube. The overlying epithelium is benign. (H&E, 100x)

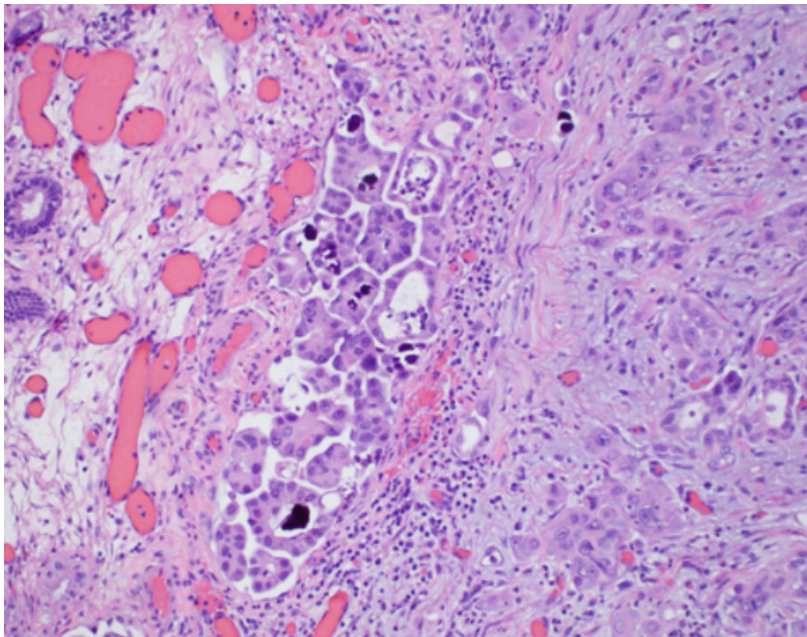


Figure 2: The peritoneal biopsy shows metastatic carcinoma with a focal micropapillary architecture and microcalcification. The tumor cells have large nuclei with prominent nucleoli (H&E, 200x)

Immunohistochemistry

CK7	Positive
CK5/6	Positive
34βE12	Positive
PAX8	Positive
p53	Patchy
CK20	Focal
PR	Focal, weak
INI1	Positive
WT1	Negative
GATA3	Negative
ER	Negative
p63	Negative
Ki67	20%

Diagnosis

Metastatic papillary renal cell carcinoma

Discussion

Papillary renal cell carcinoma is the second most common subtype of RCC, accounting for 15% of cases. It is characterized by papillary architecture, but can also display tubular and solid patterns. The papillae consist of fibrovascular cores lined by a single layer of amphophilic cuboidal cells (type 1), a pseudostratified layer of more deeply eosinophilic columnar cells (type 2), or a single layer of oncocyctic cells with low-grade nuclei linearly arranged toward the cell apices (oncocyctic type). Foamy macrophages are frequently seen within the fibrovascular cores. As in all renal epithelial tumors, PAX8 is positive, whereas CK7 is more often positive in type 1 rather than in type 2 tumors. The prognosis for papillary RCC is overall better than for clear cell RCC. While the most common sites for metastatic renal cell carcinoma are the lung, liver, and bones, peritoneal metastasis has been reported, and in one series was more frequent in metastatic papillary RCC than in metastatic clear cell RCC¹.

References

1. Tirumani, S.H., Souza, D., Krajewski, K.M. et al. *Abdom Radiol* (2016) 41: 295. <https://doi-org.ezproxy.med.nyu.edu/10.1007/s00261-015-0569-7>