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Renal Myxoma, an Incidental Finding

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ABSTRACT

Myxomas are mesenchymal tumors commonly found in the heart and skin. Renal myxomas are rare, having only been documented 14 times. Our case is a 55-year-old woman who presented to our clinic after a right renal mass was incidentally found on CT. Evaluation with MRI showed a mass that appeared to arise from the supero-medial cortex of the right kidney. As the imaging was concerning for renal cell carcinoma, the patient underwent a partial nephrectomy. Microscopic examination showed a well-circumscribed mass with polygonal to spindle-shaped cells in a granular eosinophilic cytoplasm. Immunohistochemical staining for CD-10, Desmin, HMB-45, and Pankeratin were negative.

Introduction

Myxomas are a type of benign mesenchymal tumor most often found in the heart, skin, bones, and viscera. The kidneys are one of locations where myxomas can be found. Through a NCBI search, 14 cases of renal myxomas have been documented but a majority of these arise from the renal parenchyma.[1] We were able to find only one case of renal myxoma arising from the renal capsule in the literature. Today, we report a second case of renal capsular myxoma, and herein we present the preoperative CT and MRI findings as well as the pathological findings.

Case presentation

A 55-year-old woman presented to our institution for abdominal pain. No fever, weight loss, or flank pain were reported at presentation. Full work-up of her pain revealed a 1.7 cm right renal mass on CT. Laboratory findings were negative for hematuria, proteinuria, or electrolyte abnormalities. She was referred to our clinic for evaluation of the renal mass. At this time, surgery was recommended for this patient due to malignant features on CT, and she underwent a robotic assisted partial nephrectomy. She had an uneventful post-operative course and was discharged home on post-operative day 3.

CT findings

Left kidney and bilateral adrenal glands are normal in appearance. Within the upper pole of the right kidney, there is a 17 mm hyperdense exophytic lesion. While it may simply represent a hyperdense cyst, a true mass is a primary concern.

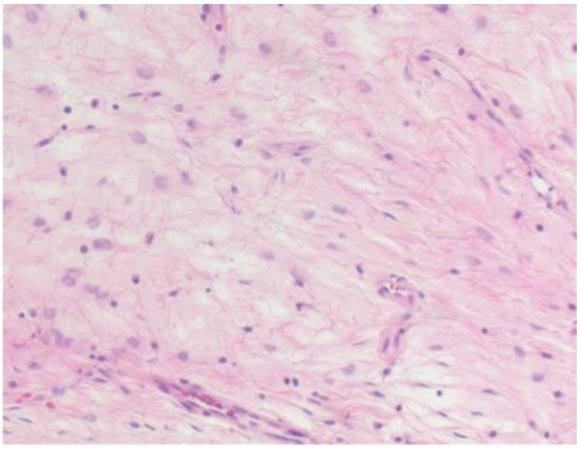

Figure 1. H&E stain of a fragment from the right-sided exophytic renal cortical mass.

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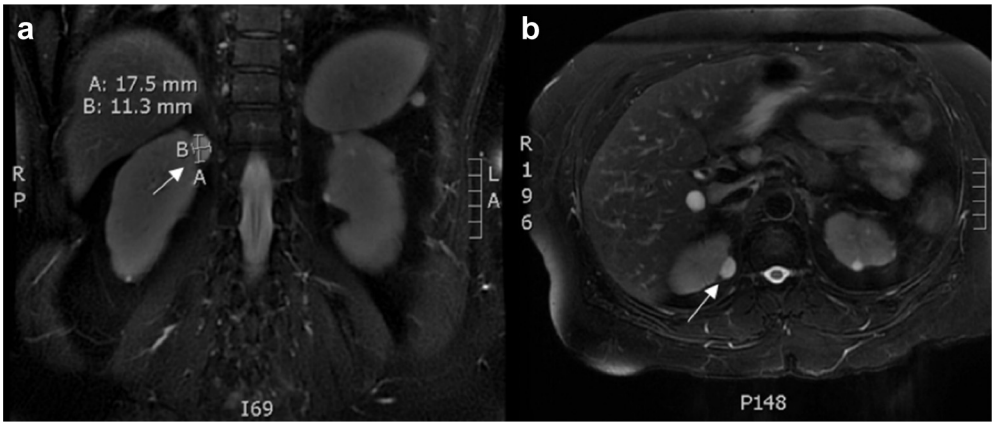

Figure 2. a (left). MRI showing 18 mm × 11 mm mass arising from the superomedial cortex of the right kidney. **b (right).** Contrast enhanced MRI showing enhancement of the mass.

MRI findings

Exophytic 1.8 × 1.1 cm mass arising from the medial cortex of the superior pole of the right kidney. The mass is hypointense on T1 on both the in and out of phase sequences and hyperintense on T2. There is a thin imperceptible wall to this lesion with no internal septation. On the diffusion sequence, the mass is hyperintense but is also hyperintense on the ADC map indicating a large component of T2 shine through. The contrast enhanced sequences show enhancement of the mass suspicious for renal cell carcinoma (Fig. 2).

Pathological findings

Sections demonstrate fragments of a well-circumscribed tumor, which appears to arise from the right renal capsule. The tumor demonstrates medium-sized polygonal to spindle cells with a somewhat granular eosinophilic cytoplasm. Nuclei are pale and horseshoe-shaped and show inconspicuous nucleoli. Mitotic figures are rare. There appears to be focal areas of lipomatous differentiation (Fig. 1). The renal cortex is unremarkable. Findings are consistent with a mesenchymal tumor. Although the overall appearance of the tumor is very bland, there is some concern that this may represent a well differentiated liposarcoma. Thus, a second opinion was obtained from another institution. They concluded that this specimen was most consistent with a benign mesenchymal tumor.

Discussion

Pure renal myxomas are extremely rare, as many of the reported cases display characteristics of sarcoma, myxolipoma, fibroepithelial polyps, or any other soft-tissue tumor with secondary myxoid properties. Only 14 cases of pure renal myxoma have been reported to this day most of which were intraparenchymal tumors. Myxomas originating from the renal capsule are even rarer with only one case reported to date.[1] Renal myxomas are considered a benign fibroblastic tumor because the cellular components are devoid of pleomorphism and have scant nucleoli or mitotic figures.[2,3] Cells of a myxoma originate from fibroblast-like primitive mesenchymal cells but lack the ability to polymerize collagen.[4] Instead, they produce an excessive amount of glycosaminoglycans giving them a gelatinous or glistening appearance on gross examination.[1,4] The majority of the cases reported were asymptomatic and discovered incidentally. The remaining cases presented with hematuria, renal colic, UTI, or obstructive uropathy.[1] While ultrasound is an excellent initial diagnostic tool, CT or MRI are recommended in the evaluation of an unknown renal mass, as renal cell carcinomas also tend to appear as homogeneous cystic structures if they are small in size. Larger tumors can have irregular enhancement due to areas of necrosis.[5] Since the radiologic features tend to mimic that of malignancy, they should be treated as such, with the patient undergoing surgical intervention. While imaging is certainly a useful tool in the diagnosis, pathologic evaluation is the only true diagnostic means in differentiating a myxoma from malignancy. Tumor enucleation of the myxoma is sufficient for diagnosis and treatment, and presents a good prognosis.[1]

Renal masses should be evaluated thoroughly with both imaging and immunohistochemistry to reveal any mixed tumor origin and to ensure the mass is not a renal cell carcinoma. Without delineating the origin of the tumor, extensive and costly post-operative follow-up is required to survey for recurrences. Thus, thorough evaluation of renal masses can prevent significant cost burden, radiation, and distress for patients.

Conclusion

Renal myxomas are extremely rare mesenchymal tumors of the kidney. However, delineation between this benign tumor and renal cell carcinoma on imaging proves to be difficult. Therefore, immunohistochemistry should always be done to confirm to avoid unnecessary post nephrectomy surveillance cost.

Conflict of interest

There are no conflicts of interest.

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Not applicable.

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