

Renal Medullary Fibroma- A Histopathological Surprise in a Patient with an Asymptomatic Abdominal Mass

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Abstract

Renal medullary fibroma is a fairly common, but unusual benign mass lesion of the kidney. These are often small in size, and rarely produce symptoms; hence they frequently go unnoticed, diagnosed only during autopsy in most cases. Very rarely, they achieve large enough sizes to produce compressive symptoms or a clinically palpable mass. This tumor, however, poses a radiological dilemma, as it cannot be differentiated from malignant lesions of the renal parenchyma. Here we present a unique case of an asymptomatic, incidentally detected left renal mass, which was reported as renal medullary fibroma, a benign disease.

Introduction

A 42 year old female presented to the gynecologist for pain abdomen and increased bleeding during menstruation since 6 months. She has no history of pain during menstrual cycles, hematuria, and loss of weight or urinary symptoms. She has, in the past, undergone laparoscopic cholecystectomy 15 years back, which was seemingly uneventful. Patient has no known comorbidities, and hasn't undergone any other intervention in the past. On examination, patient was found to be pale; however, she was not icteric and had no generalized lymphadenopathy. On per abdomen examination, patient had minimal tenderness in the left lumbar region, though there was no palpable mass or hepatosplenomegaly. Per vaginum and per rectal examination was also found to be unremarkable.

For the above mentioned complaints, patient underwent a serological examination, which showed an incidental finding of a left renal mass, for which she was referred to us. To confirm the findings, CECT abdomen and pelvis was done, which showed a 6.9 x 5.6 x 5.4 cm heterogeneously enhancing mass lesion involving the mid and lower pole of the left kidney (Figure 1 and Figure 2).



Figure 1



Figure 2

As there was no evidence of lymphadenopathy or renal vein involvement on the CECT, a radiological diagnosis of renal malignancy was made, with a staging of T1BN0M0.

With the above mentioned findings, patient was worked up for surgery i.e left partial nephrectomy.

Patient was planned for open partial nephrectomy through a subcostal trans peritoneal approach. On dissection of the lower pole, dense adhesions were noted to the mesentery of the left descending colon. A mid and lower pole mass lesion was noted in the left kidney, measuring approximately 7 x 6 cm. Due to the clinical suspicion of advanced malignant lesion, we proceeded with a left radical nephrectomy. Post-operative period was uneventful, and patient was discharged on POD 4. There was, however, a history pathological surprise in waiting with the pathologist as the mass showed features suggestive benign medullary fibroma (Figure 3).

Section reveal extensive areas of collagenisation with focal areas showing entrapped atrophic tubules and thick walled blood vessels. Foci of bone formation is also noted. No evidence of atypia, mitosis or necrosis seen

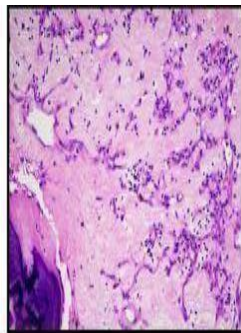


Figure 3

To confirm the diagnosis, immunohistochemistry markers were applied to the specimen, which was confirmatory for benign medullary fibroma (image 4 and 5). The histopathology specimen showed positivity for

1. Pan CK
2. Vimentin
3. PAX 8 (tubules)
4. BCL2 (tubules)

It was decided that patient doesn't require any further chemotherapy or radiotherapy as it was a benign mass. Patient has since been on follow-up, and remains asymptomatic.

MARKERS (CLONES)	RESULT	IMAGES
Pan CK (AE1/AE3)	POSITIVE	
Vimentin (V9)	POSITIVE	
Ki-67 (MIB-1)	03%	
PAX8 (ZR-1)	POSITIVE IN TUBULES	
SMA (1A4)	NEGATIVE IN TUBULES	

Figure 4

MARKERS (CLONES)	RESULT	IMAGES
Pan CK (AE1/AE3)	POSITIVE	
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Figure 5

Discussion

Renal medullary fibroma is a common tumor found in the kidney, present in 26% of consecutive autopsy specimens. As they do not achieve large sizes, they are often missed and remain asymptomatic during the life of the patient. It is a radiological challenge as well, as it cannot be accurately differentiated from renal malignancies. Hence, this is usually identified as a histological surprise following partial or radical nephrectomy. They are not encapsulated but well-defined nodules that are usually solitary, but can be multiple and bilateral at times. Prevalence increases with age and the distribution of sex is equal. Over 50% of patients are over the age of 20 years. Few renal medullary fibromas are sufficiently large to become clinically apparent and cause tumor torsion symptoms, such as hematuria due to venous stasis and infarction (1). Pre-operative diagnosis especially via radiological assessment, in the form of calcifications on X-rays, echogenicity on CECT abdomen and pelvis and arteriogram to confirm vascularity, mimics renal cell carcinoma.

Evaluation of renal medullary fibroma by magnetic resonance imaging (MRI) may be helpful. On MRI, renal medullary fibroma presumably shows low signal intensity in T1 and T2 weighted images due to its dense collagen content and low cellularity.

There are several differential diagnoses, especially other calcified lesions of the renal parenchyma. These include osteosarcoma of the kidney, Xanthogranulomatous pyelonephritis secondary to Staghorn calculus, renal leiomyoma, hematoma (increased hemosiderin), inflammatory pseudotumour and malignant fibroma of renal parenchyma etc (2, 3). Usually these patients undergo radical nephrectomy as it is not possible to rule out malignancy with certainty. These entities are completely benign, however, and patients have an excellent prognosis and, if this lesion is radio logically suspected, there may be a role for biopsy. There is still no clear definition of the role of positron emission tomography (PET) scan in renal masses. Benign tumours are usually photogenic on PET scan; malignant tumors have avidity for fluorodeoxyglucose, with few exceptions (4). These clinical scenarios can be evaluated by MRI and PET scans to prevent unnecessary removal of normal renal parenchymal tissue. In these cases, prudent use of the available imaging methods can help us decide to perform nephron-sparing surgery. Radiologists and clinicians need to be aware of the potential for further evaluation of these kinds of lesions.

Conclusion

Renal medullary fibroma is a rare but benign tumor of the kidney that is often mistaken for renal cell carcinoma. If there is a clinical suspicion of this condition, we can avoid radical surgical procedures for the patient.

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