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A case report of mixed epithelial and stromal tumor of the kidney

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Abstract
Mixed epithelial and stromal tumor (MEST) represents a recently described biphasic kidney neoplasm, which predominantly affects perimenopausal females. We describe case of a 35 year male patient with a MEST. Computed tomography (CT scan) showed an expansive lesion affecting the right kidney. Grossly, Greyish-white, a solid-cystic tumor was identified, which measured 3x 3 cm. On microscopic examination, a biphasic tumor constituted by stromal and epithelial elements, without significant Atypias, was identified. The stromal element was composed of spindle cells revealing positive immunoexpression for SMA (α-Smooth Muscle Actin) and CD10. The epithelial component exhibited a predominantly tubular pattern showing positive immunoreaction for PAX8. The diagnosis of MEST was then established.

Keywords: Kidney, neoplasias, mixed epithelial and stromal tumor, immunohistochemistry

Introduction
Tumors of the kidney amount to 2% of the total human cancer burden and renal cell carcinoma represents, on average, over 90% of all malignances of the kidney. Mixed epithelial and stromal tumor (MEST) is a complex renal neoplasm composed of a mixture of stromal and epithelial elements [1-2]. These rare lesions have been termed cystic hamartoma of renal pelvis, adult mesoblastic nephroma, leiomyomatous renal hamartoma.
More recently, the term MEST has been proposed for these neoplasms. Patients with MEST range in age from 19 to 78 years with a distinct female preponderance. The common presenting features include a palpable abdominal mass, flank pain, and/or hematuria. In a recent study, most of the MESTs were incidental findings [3].

Case report
A 35-year old male presented with 6 months history of intermittent pain in abdomen and burning micturition. He also had chronic history of renal calculi. Family history was negative for genitourinary malignancies. Physical examination was unremarkable. Abdominal ultrasonography showed a right sided renal mass with mild splenomegaly. Contrast-enhanced CT showed neoplastic mass on right side. Total right sided nephrectomy was done to excise this mass.
Macroscopically, right whole kidney of size 11.5 x 6.5 x 3 cm was received. On cut section, a well circumscribed, partly solid and partly cystic renal mass of size 3 x 3 x 2 cm was seen. Ureter of length 7.5 cm was also received. Microscopically, it showed stromal component with interfacing fascicles of spindle cells with oval to elongated nuclei and scanty cytoplasm. Epithelial component consisted of very few dilated cysts lined by cuboidal epithelium showing hobnailing into the lumen. Few entrapped tubules were also seen. Areas of haemorrhage were also evident. Surrounding normal kidney showed cloudy change.
In light of all these findings, the tumor was diagnosed as MEST of the kidney.

Discussion
MEST is a rare, biphasic tumor of the kidney in adults. While most cases behave benignly, very rare malignancies have been reported.

The presenting symptoms are flank pain, hematuria, or symptoms of the urinary tract. The lesion corresponds to an incidental finding in 25% of the patients.

On gross examination, MEST is a centrally located, circumscribed, solid-cystic kidney lesion that frequently extends into the renal pelvis. A partial or complete capsule is often present. The tumor infrequently shows an infiltrative border [1, 2, 6].

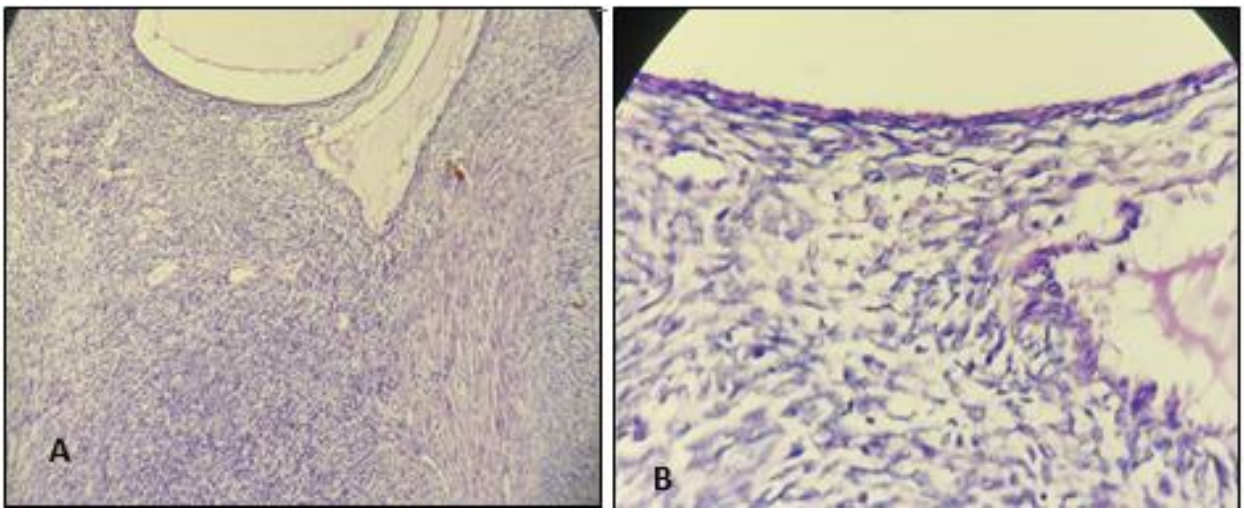

Fig 1: A) Dilated cyst lined by cuboidal epithelium showing hobnailing into the lumen. (10x; H&E)
B) Stromal component with interfacing fascicles of spindle cells with oval to elongated nuclei and scanty cytoplasm (40x; H&E)

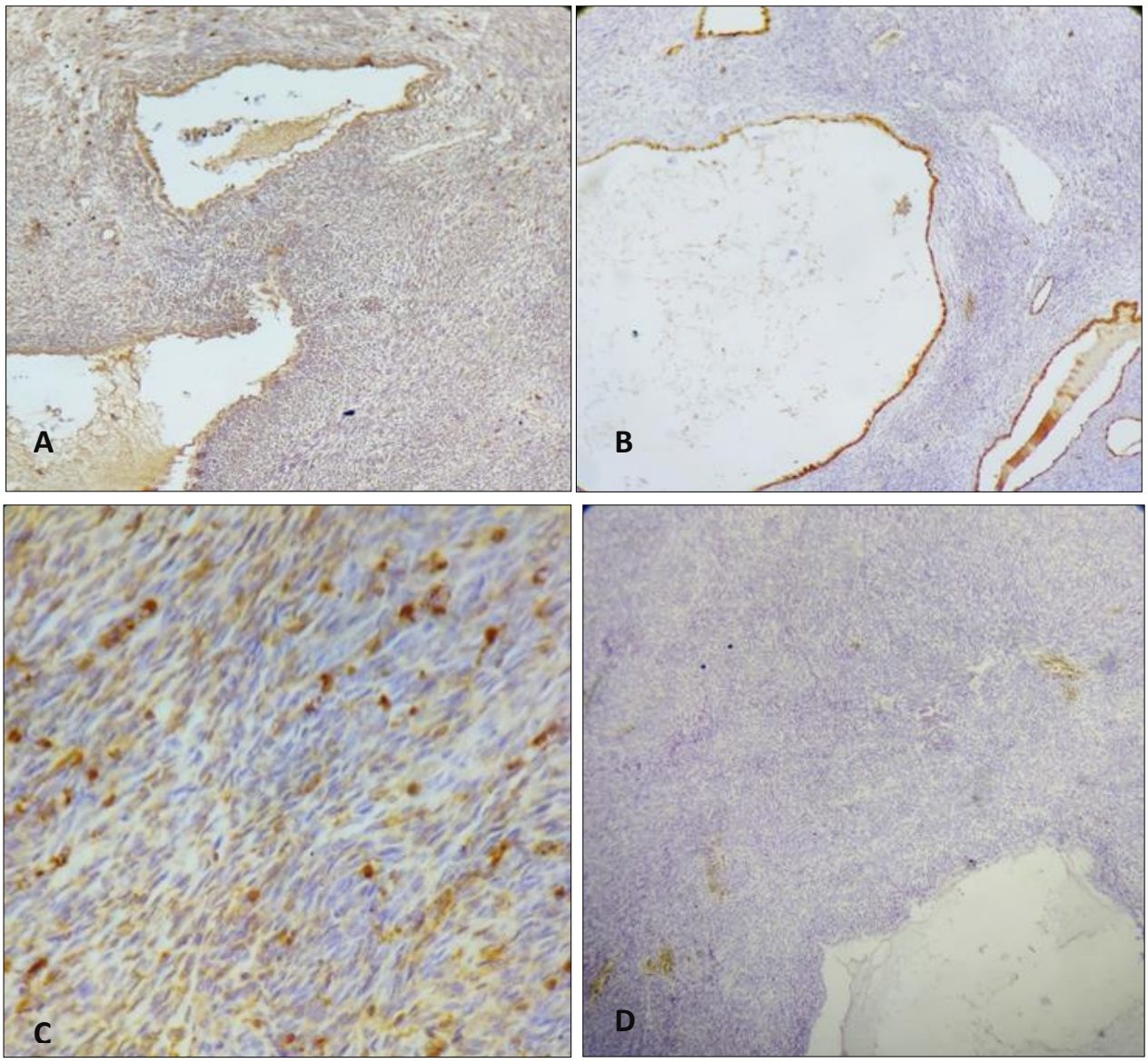

Fig 2: A) Stromal component positive for CD10; B) Epithelial component positive for PAX8; C) Stroma positive for SMA; D) WT1 negative

Microscopically, MEST can be composed of cysts, microcysts, tubules, and complex branching glandular formations. Epithelial component ranges from low cuboidal to columnar or hobnail, with clear to pale, eosinophilic, or vacuolated cytoplasm [2, 4-8]. Ciliated cells, urothelium, presence of mucin, or epithelial cells exhibiting müllerian findings have been described. The stromal component exhibits spindle cells with plump nuclei and abundant cytoplasm. Stromal areas can vary from hypocellular, collagenous and fibrotic to densely cellular, with a woven pattern resembling ovarian stroma [2, 6, 8, 9]. Fascicles of smooth muscle cells or areas exhibiting a myxoid stroma can be found. Adipose tissue is occasionally present [2, 4, 7-9].

Conclusion

MEST is a relatively rare and distinct neoplasm of the kidney. Although the overall prognosis is favorable, recurrence and malignant transformation of MEST can occur. As it is more commonly found in perimenopausal female, in order to add a case to medical literature, we wanted to present our case, who is 35 years old male.

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