
**MIXED EPITHELIAL AND STROMAL TUMOR OF THE KIDNEY (MEST)**

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**Summary.** - **OBJECTIVE:** To report an unusual case of renal tumor and review the literature.

**METHODS:** We present a 20 years old female with a history of acute right pyelonephritis. The ultrasound study revealed a tumor-like image in the lower pole of the right kidney. The CT-scan showed a mixed solid and cystic mass of 7 cm. in the lower pole of the right kidney.

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RESULTADOS: Se realizó una nefrectomía parcial laparoscópica en un tiempo operatorio de 90 minutos, con 24 minutos de isquemia caliente. El sangrado estimado fue de 50 ml y la estancia hospitalaria fue de 36 horas. El estudio histopatológico informó un tumor benigno estromal-epitelial de riñón.

CONCLUSIÓN: El tumor benigno estromal-epitelial (MEST) de riñón es una entidad rara que no presenta una clara diferencia con otros tumores renales en el preoperatorio. La cirugía conservadora es el tratamiento estándar siempre que sea factible de realizar.


INTRODUCCIÓN

The mixed epithelial and stromal tumor of the kidney is a rare entity. The acronym MEST (Mixed Epithelial and Stromal Tumor) was first introduced by Michael and Syucsek in 1998 and is not well categorized within the classification of renal tumors(1).

We report a case of MEST treated with laparoscopic partial nephrectomy and a review of the literature.

FIGURE 1. CT-Scan showing a lower pole tumor in the right kidney.
Faced with this finding in the pathology and knowing the benign behavior of this entity, we decided to perform medical close follow-up with CT-scan.

**DISCUSSION**

The mixed epithelial and stromal tumor (MEST) of the kidney is a rare entity. There are only few reports on the literature and has not been well classified among renal tumors. In the past it was known by the names of cystic hamartoma of the renal pelvis, adult mesoblastic nephroma and cystic nephroma with “cellular” or “ovarian-type” stroma (2). The most frequent age of presentation is between 36 and 80 years (average 49.7 years). The mean size reported by Antic et al., in an 8 cases series, was 2.9 centimeters ranging between 0.5 to 10 centimeters (3,4). Is more frequent in females with only one case reported in males and another case in pediatric patient (5). The etiology is still unknown and is typically presented in premenopausal women as a mixed cystic and solid tumor mass. It has been described the relationship between MEST and oral contraceptives.

Probably a hormonal imbalance could be responsible of this benign tumor. Moreover, there is known that MEST’s cells have estrogens and progesterone receptors, therefore, hormonal changes could induce proliferation of ectopic or fetal mesenchymal cells located in the kidney, with the ability to differentiate into epithelial and stromal cells (2,7). In the other hand, the presence of positive immuno-histochemical markers for Müllerian cells suggests the possibility that originates from dysplastic Müllerian remnant tissue during embryogenesis (2, 7).

Morphologically, this tumor is characterized by biphasic proliferation of stromal cells with epithelial component forming cystics dilatations (3).

Clinically, a 50% is manifested by back pain however, it can also be found incidentally, with gross or

**FIGURE 2.** Gross view of the cut surface of the tumor, which is white to tan, firm, with a whorled appearance and the presence of some cysts.

**FIGURE 3.** Biphasic tumor composed by hipocellular collagenous stroma intermingled with elongated and rounded epithelial ducts.

**FIGURE 4.** Benign epithelial cells with small sized, rounded, fine chromatin and uniform nuclei.
microhematuria, or, as in this report, with symptoms suggestive of upper urinary tract infection (acute pyelonephritis).

The most complex differential diagnosis is with cystic nephroma, being the most characteristic findings the presence of more stromal components than epithelial, also larger cystics images. Their similarity suggests that both tumors may be a variant of the same type of tumor. Turbiner et al. proposed to unify concepts and designate them as Renal Epithelial and Stromal Tumor (REST) (2), even more, Zhou et al (10) compared, by studying the mRNA expression, MEST with cystic nephroma and other renal tumors. They found strong molecular similarities between them, concluding that both types of tumors belong to a same group. However, as there are no specifics markers that distinguish among them, they cannot be categorized as a single entity yet (2,6).

MEST frequently has a benign behavior, however, there are few reports of malignant transformation. (one sarcomata’s differentiation and two cases of tumor recurrence with a fatal outcome) (8, 9).

Nephron sparing surgery is the standard treatment when is feasible. In our patient, a laparoscopic nephron-sparing surgery was performed with all the advantages of this surgical approach.

CONCLUSION

MEST is a rare and benign tumor and should be considered as a differential diagnosis in kidney masses with calcifications, especially in young women. Because there is not a characteristic pattern in the imaging and the definitive diagnosis is histological, surgical exploration and excision is indicated. Conservative surgery is the standard treatment when is feasible. The laparoscopic approach is safe and effective in experienced hands.

REFERENCES AND RECOMMENDED READINGS