CT of a renal mucinous tubular and spindle cell carcinoma

Yong Yang, Jinsong Zhang, Yi Huan, Junqing Xu

Department of Radiology, Xijing Hospital, Fourth Military Medical University, Xi'an 710032, China

Corresponding to: Junqing Xu. Department of Radiology, Xijing Hospital, Fourth Military Medical University, Xi'an 710032, China. Email: junqingxu@126.com; Yi Huan. Department of Radiology, Xijing Hospital, Fourth Military Medical University, Xi'an 710032, China. Email: huanyi3000@163.com.

Abstract: Mucinous tubular and spindle cell carcinoma (MTSCC) is a rare renal epithelial neoplasm which has only been recently described. It is characterized pathologically by tightly packed, elongated tubules with transition into spindle cell areas and mucinous stroma. Previous literature has laid particular emphasis on its pathology manifestations, while radiological features have not been well studied. We herein report the CT features of a case of MTSCC. The CT findings of MTSCC present certain characteristics in the case. The radiological morphology of this low-grade tumor helps its differentiation from sarcomatoid renal carcinoma.

Key Words: Mucinous tubular and spindle cell carcinoma (MTSCC); computed tomography (CT); low-grade

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CT examination incidentally detected a tumor in the lower pole of left kidney in an asymptomatic 62-year-old male. Plain and contrast-enhanced CT scans were performed. Plain CT showed a high density lesion (21-56 HU, 7.6 cm × 6.0 cm) relative to renal parenchyma, presenting as a well-marginated solid mass without a lobulated appearance and without fat (*Figure 1A*). Nodular and line shape calcification was observed in the mass (*Figure 1B*). Contrast-enhanced CT showed slight inhomogeneous enhancement of the mass (*Figure 1C*). Evaluation of the pattern of dynamic enhancement revealed the pattern of "lightly slow wash-in" (*Figure 1C,D*). CT findings were suspicious for a solid renal malignant neoplasm.

The patient underwent nephrectomy. The nephrectomy specimen measured 18 cm × 13 cm × 5 cm. Grossly, the nephrectomy specimen revealed a well-circumscribed 7 cm × 7 cm × 5 cm renal mass, located in the lower pole of left kidney. The gross cut surface showed a fleshy texture with regions of grey-white, grey-yellow and grey-red appearance (*Figure 2A*). The tumor was composed of tightly packed small bland tubules, spindle cells and partial mucinous stroma (*Figure 2B*). Immunohistochemistry was performed using standard methods. The tumor cells were positive for cytokeratins AE1/AE3, P504S, CD57, VIM, NSE, and negative for cytokeratins 34BE12/HCK, Act, CD10, CD117, CK34, CK7, Inhibin-a, VEGF. Ki-67 <10%.

MTSCC is a new entity in pathological classification proposed by the WHO in recent years. With increased understanding and recognition of the tumor, it should be considered as a primary differential diagnostic possibility from sarcomatoid renal carcinoma.

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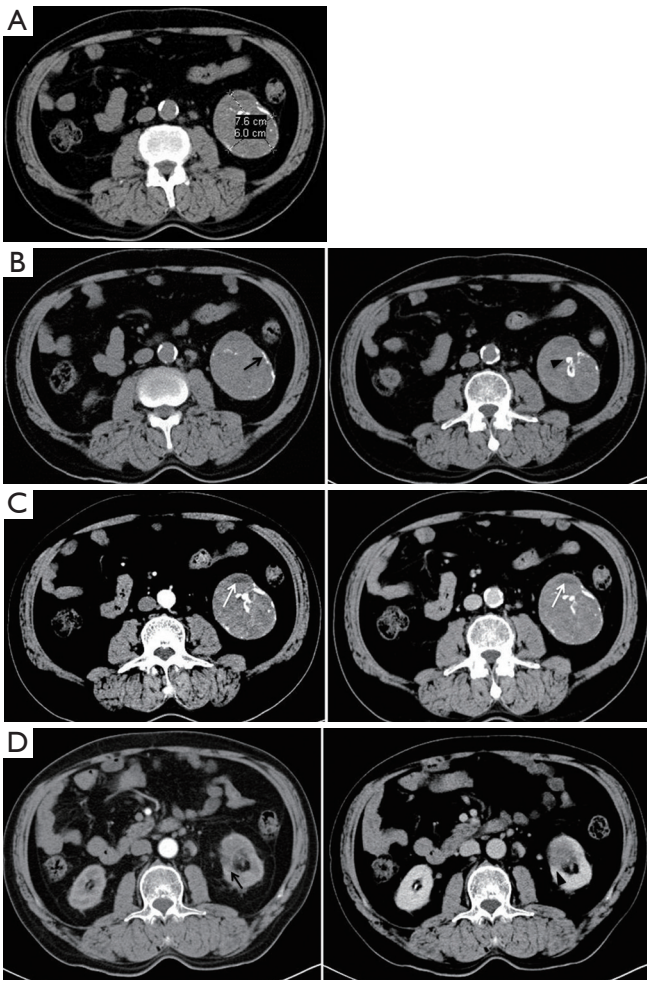

Figure 1 A. Plain CT image shows a large tumor in the lower pole of left kidney with heterogeneous density, measuring 7.6 cm × 6.0 cm in size; B. Plain CT images shows line shape calcification at the margin of the mass (arrow) and nodular shape calcification in the mass (arrow head); C. Contrast-enhanced CT images of arterial phase (left) and venous phase (right) show slight enhancement of the mass and slightly patchy low attenuation in some areas of the mass (arrow); D. Contrast-enhanced CT images show the tumor part located in the kidney was less enhanced compared with normal renal parenchyma

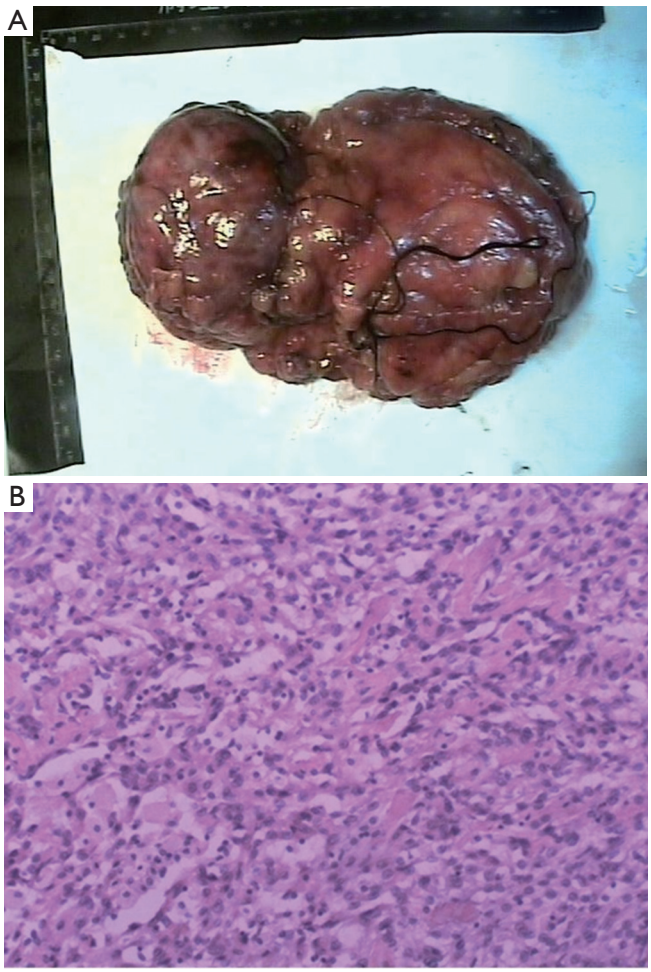

Figure 2 A. Nephrectomy specimen displays a large well-demarcated tumor in the lower pole of the left kidney. The tumor is grey-yellow and grey-red in color, and bulges the contour of the involved kidney; B. Histological appearance of primary renal MTSCC, showing bland small tubules, spindle cells, and mucinous stroma

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