



Huge mucinous tubular and spindle cell carcinoma of the kidney: A case report

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ABSTRACT

Mucinous tubular and spindle cell carcinoma (MTSCC) of the kidney is a rare type of kidney cancer. Accurate diagnosis depends on pathological examination. A huge left renal tumor was incidentally found by computed tomography (CT) examination of a 52-year-old lady. She underwent Laparoscopic radical left nephrectomy. The postoperative pathological diagnosis is Mucinous tubular and spindle cell carcinoma. Eight months later, she showed no signs of recurrence.

1. Introduction

Mucinous tubular and spindle cell carcinoma (MTSCC) of the kidney is a rare low-grade renal epithelial neoplasm. MTSCC was first described by Ordonez¹ et al., in 1996, and currently there are less than 180 cases worldwide. This low-grade tumor is easily misdiagnosed as sarcomatoid renal cell carcinoma, papillary renal cell carcinoma or other highly malignant tumors. To avoid excessive treatment caused by misdiagnosis, we report a huge MTSCC to improve the knowledge of diagnosis and treatment of this tumor.

2. Presentation of case

A 52-year-old lady was admitted to the orthopedics department with neck pain. A left upper renal mass was detected incidentally by Chest CT. Then she was admitted to the urology department. No haematuria, loin pain or abdominal mass were reported at presentation, and other physical examinations of the urinary system were unremarkable. Laboratory findings showed elevated free triiodothyronine (FT3) and free thyroxine (FT4) levels with decreased thyroid stimulating hormone (TSH). Due to hyperthyroidism, contrast-enhanced CT was not performed. Unenhanced CT abdomen showed an 82 × 78 mm soft tissue mass in the middle and upper part of the left kidney (Fig. 1A). Contrast-enhanced MRI showed a 98 × 72 × 77 mm left renal mass, which mixed iso-intensity and slightly longer T1 and T2 signal, with moderate enhancement and clear boundary (Fig. 1B). We performed laparoscopic

radical nephrectomy for her. The postoperative pathology confirmed the disease as Mucinous tubular and spindle cell carcinoma. She did not receive any adjuvant therapy. After an 8-month follow-up, she recovered in a good condition without recurrence or metastasis.

3. Pathological findings

An 11 × 9 × 8 cm solid grayish-white nodule tumor filled almost the entire kidney in surgically resected specimens (Fig. 2A). Lymph nodes were not palpable in renal adipose tissue. Microscopic examination revealed spindle cells were spread across most areas of the tumor with some narrowly oblong and round tubules composed of scattered cuboidal cells. Some spindle cells were surrounded by blue-stained mucus. A greater number of plasma cells infiltrated spindle cells into intercellular space (Fig. 2B). Nuclear divisions <2/50 High Power Field (HPF). The tumor did not invade the renal surrounding tissues/organs. Immunohistochemistry: CK7(+) (Fig. 2C), EMA(+) (Fig. 2D), CK8/18(+) (Fig. 2E), Vimentin(+) (Fig. 2F), Pax-8(+), SMA(-), S-100(-), CD15(-), CD10(-), Desmin(-), Ki67(+5%). Integrating histology and immunostaining results, we have reached a diagnosis of Mucinous tubular and spindle cell carcinoma.

4. Discussion

MTSCC are rare tumors, accounting for less than 1% of the renal cell carcinoma incidence.² The cellular origin of MTSCC is still debated.

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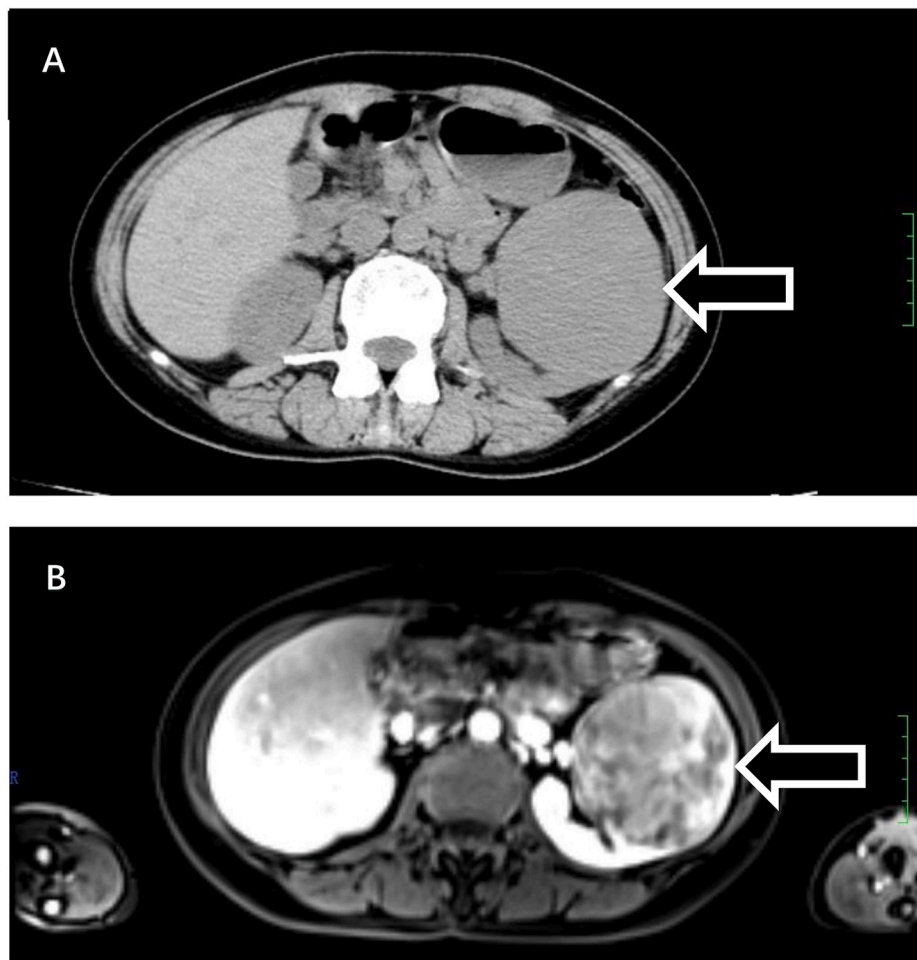


Fig. 1. Abdominal CT and MRI at presentation.

Unenhanced CT: an 82 × 78mm hypodense mass in the upper pole of the left kidney (A, arrow). Contrast-enhanced MRI: a 98 × 72 × 77mm left renal mass with moderate enhancement (B, arrows).

Most scholars believe it is derived from the distal nephron or collecting ducts, while some scholars have argued it is from proximal nephron. In the present case, the distal nephron markers (CK7, EMA) were positive, while proximal nephron marker (CD10) and Loop of Henle marker (CD15) were negative, which tended to support the origin of the distal nephron.

The mean age of MTSCC onset are 13–82 years (mean, 53 years). Meanwhile, MTSCC predominantly occurs in women (1:4 male-to-female ratio). Most patients have no obvious symptoms. Imaging examinations often reveal a poor blood supply tumor. The diagnosis of MTSCC mainly depends on pathological analysis.³ Histologically, MTSCC is composed of tightly packed tubular cells and braided spindle cells with myxoid stroma. Furthermore, some researchers found Heterotopic ossification, neuroendocrine differentiation or sarcomatoid variant in MTSCC.

Currently, surgical resection is recognized as the mainstay of treatment. A partial nephrectomy is considered for T1aN0M0 MTSCC with a tumor size <4 cm in diameter, but larger tumors (>4 cm in diameter) are recommended for radical surgery.⁴ Prognosis after surgery is generally

good without adjuvant therapy.⁵ To avoid excessive treatment, accurate diagnosis and treatment are significant in clinical work.

5. Conclusion

MTSCC is an extremely rare renal cell carcinoma, and may be derived from the distal nephron. The diagnosis of MTSCC primarily relies on pathological examinations. Surgical resection is vital to long-term survival.

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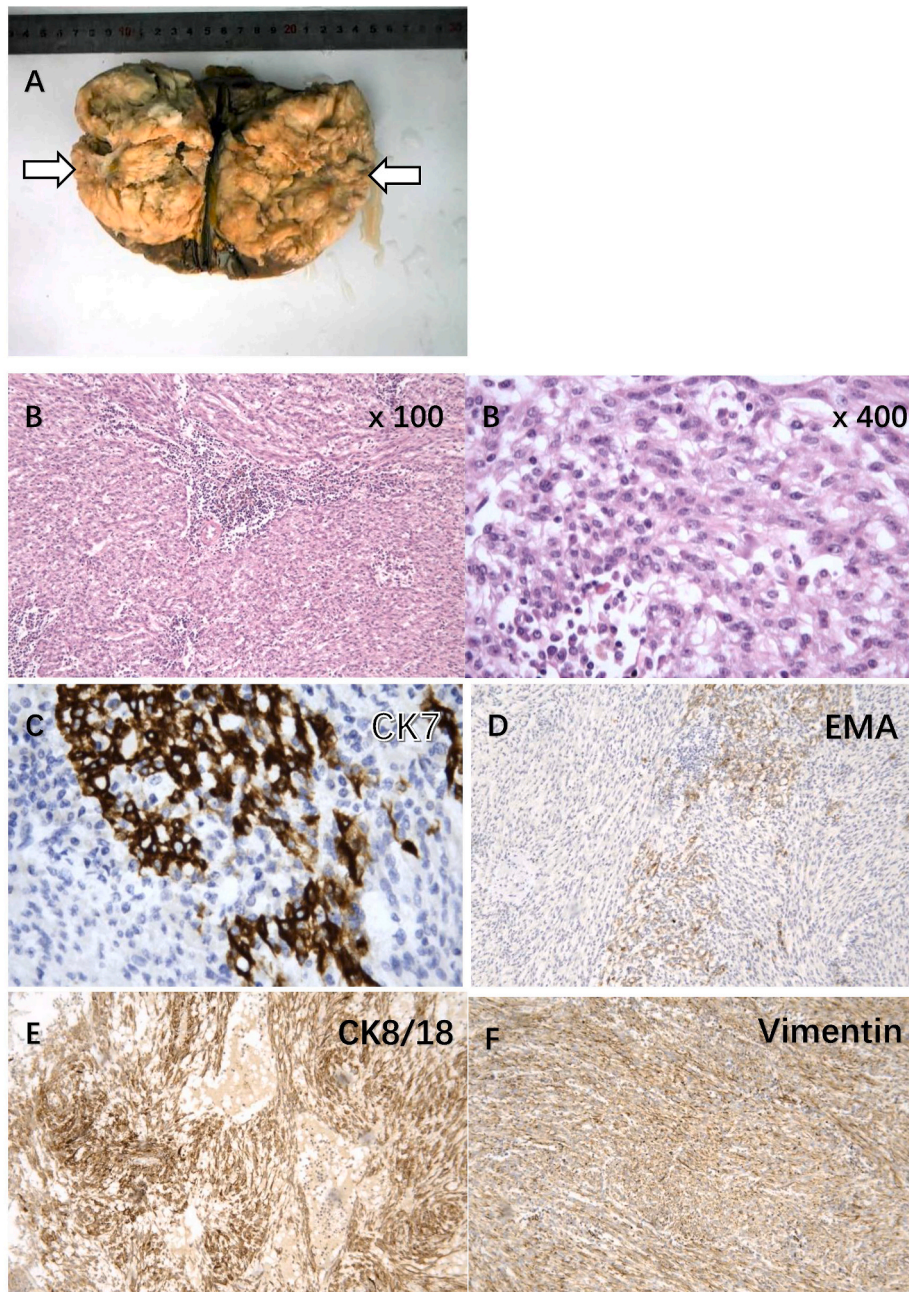


Fig. 2. Histopathological features of MTSCC of the kidneys.

Macroscopic image of surgical specimen after incision (A, arrow). Microscopic findings: spindle cells were spread across most areas of the tumor, and narrowly oblong and round tubules composed of scattered cuboidal cells (B, magnification: $\times 100$, $\times 400$). Immunohistochemical staining: C. CK7 D. EMA E. CK8/18 F. Vimentin.

Declaration of competing interest

The authors have no conflicts of interest to declare.

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