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CASE REPORTS

DELAYED CONTRALATERAL TESTICULAR METASTASES FROM RENAL CELL CARCINOMA: A CASE REPORT

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INTRODUCTION

The survival of patients with metastatic renal cell carcinoma (RCC) is poor, the majority dying within one or two years after diagnosis. However, patients with solitary metastasis and/or late onset of metastatic disease may have better survival outcomes. Intrascrotal metastasis is considered a rare event in the course of the disease. The left side is more often involved than the right. It is commonly believed that left testicular metastases from RCC occur via the left testicular vein, while the pathogenesis of right testicular involvement is less clear[1]. Like other metastases it is most probably due to hematogenous spread. The rarity of RCC metastasising into the contralateral testis and also the fact that it may explain one of the modes of spread of RCC in its natural history of progression have prompted us to report this case.

CASE REPORT

A 79-year-old man was admitted in 1993 with a history of intermittent right flank pain. On abdominal ultrasound he had a 6 cm mass at the lower pole of the right kidney confirmed by computed tomography (CT). A bone scan revealed no osseous metastases, and a chest X-ray revealed no pulmonary metastases. He underwent radical nephrectomy, and the pathological examination revealed a 4 x 5.5 cm right lower pole tumor with invasion of the renal capsule but without capsular break-through (and thus without invasion of the perinephric fat tissue). The histological diagnosis was clear renal cell carcinoma (RCC) (pT1N0M0). Eight years later the patient presented with a 1-month history of progressively increasing testicular swelling. Physical examination revealed normal external genitalia with the exception of swelling and induration of the left testis. Ultrasound examination resulted in high suspicion for testicular tumor. A bone scan revealed no osseous metastases, and a chest X-ray revealed no pulmonary metastases. Routine blood chemistry was normal, specifically for human chorionic gonadotropin (HCG) and alpha-fetoprotein (AFP). Therefore, left inguinal orchidectomy was carried out. The histological findings demonstrated metastasis from a clear cell carcinoma. The histological patterns of this tumor were strikingly similar to the clear RCC of the kidney on the right side (Fig. 1 A, B). The diagnosis was supported by immunohistochemical findings that showed positive staining for vimentin, CD10 and negative for cytokeratin 7 (in favour of RCC), negative for placental alkaline phosphatase (PLAP) (to exclude primary germ cell tumor), and prostate specific antigen (PSA) (to exclude metastatic prostatic cancer). On the 3-year postoperative follow-up visit, the patient showed no signs of recurrence or other metastasis.

DISCUSSION

Testicular metastases are indeed rare. Carcinoma of the prostate and the lung are the most common primaries. Only 6% of all testicular metastases originate from renal cell carcinoma. In a series of 24,000 autopsies, only 0.06% of cases had secondary testicular ma-

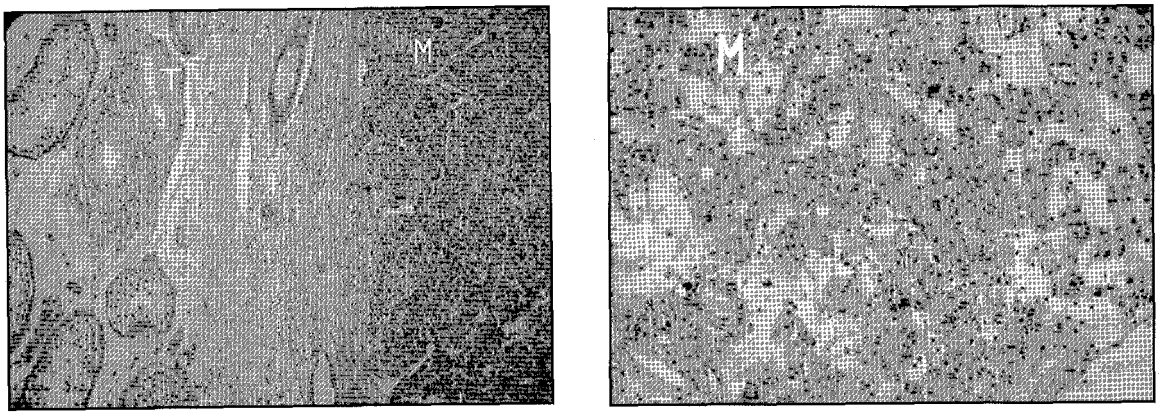

Fig. 1: A: Clear-cell renal cell carcinoma metastatic to the testis (HE, x 250). T = seminiferous tubule, M = metastasis of clear cell cancer. **B:** M = typical pattern of renal cell carcinoma with large cells arranged in trabecular and tubular formation (HE, x 400)

lignancies[2]. This rare incidence was attributed to the low temperature in the scrotum, which supposedly inhibits the growth of tumor cells[3].

Metastases of renal cancer have been observed in virtually every organ, even in tissue which usually is not affected by tumor spread: heart, gall bladder, larynx, iris, etc.[4]. To date, 31 cases of intrascrotal metastases have been described[4]. Usually the ipsilateral testis was affected, and most cases were located on the left side. This phenomenon can be explained by the retrograde descent of tumor cells via the left testicular vein. Our case is the fourth reported contralateral testicular metastasis in the literature. We propose a spread of tumor cells via the blood circulation. However, the regional route (ipsilateral renal capsular veins - Batson's plexus - contralateral renal capsular veins - contralateral spermatic cord vessels) cannot be ruled out.

As far as diagnosis is concerned, differential diagnosis of a scrotal mass in a patient who has had previous nephrectomy for carcinoma should always include metastatic disease. Diagnosis, as well as treatment, is established by inguinal orchidectomy. Patients who develop metastases following radical nephrectomy for RCC may have survivals superior to those who present with metastases. This difference is more pronounced if the interval between nephrectomy and the appearance of metastases exceeds two years[5]. With late metastases, the 5-year survival rate of 45% is similar to that of patients with non-metastatic carcinoma[6]. In the present case, the metastatic disease was noted 8 years after nephrectomy, and the patient was apparently well 3 years later.

This case demonstrates another rare possibility of metastatic spread and aggressive behaviour of renal cell carcinoma of the clear cell type.

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