



Oncology

Case report of renal cell carcinoma metastasis to the spermatic cord and groin presenting as a bleeding groin mass



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Introduction

Although primary spermatic cord neoplasms are exceedingly rare, secondary spermatic cord neoplasms are even more uncommon. The most frequent primary sites for secondary spermatic cord tumors are the stomach, prostate, kidney, ileum, and colon.¹ More common sites of renal cell carcinoma (RCC) metastasis include the lung, lymph nodes, bone, liver, and brain. To our knowledge, this case marks the 30th case of RCC metastasis to the spermatic cord.¹

The most frequently proposed mechanism for ipsilateral paratesticular metastasis of left sided renal mass is retrograde venous dissemination via the spermatic vein. Two other potential mechanisms of metastasis to the spermatic cord are retrograde lymphatic dissemination and transperitoneal seeding through a patent tunica vaginalis. Retrograde venous dissemination via the spermatic vein is the most likely explanation for dissemination as only two previous cases of renal cell carcinoma presented with paratesticular metastasis on the contralateral side.² Spermatic cord metastases of any kind present when there is a previously known disseminated cancer, seldom as the initial clinical sign of spread. The majority of recent cases have presented post-nephrectomy.

Small renal masses are increasingly prevalent, and the prevailing paradigm is one of active surveillance, especially in elderly patients. This is because metastasis of a 4 cm or smaller renal mass is uncommon with a reported incidence of 4.7%.³ It is thought that tumors must be large enough to gain direct contact with adjacent lymphatic and vascular structures to metastasize.³ In the 4 most recently published case reports of RCC metastasis to the spermatic cord with primary lesion size

listed, the primary renal mass was greater than 10 cm.^{1,4,5}

Case presentation

An 88-year-old male was transferred to our institution due to a 3 month history of a pruritic left groin mass that had pulsatile bleeding when excoriated. CT revealed a 4.0x2.1-cm left renal mass, a 3.2x2.4-cm left inguinal mass, and a 1.6x1.1-cm left scrotal mass. There was no additional lymphadenopathy or findings concerning for lung metastases on chest x-ray. He had an extensive smoking history. He did not have any significant known medical history, but he had not received care by a physician in over 30 years upon presentation. A follow up scrotal/inguinal ultrasound revealed two hypervascular masses: one within the left inguinal canal and the other arising from the left anterior scrotum. The differential diagnosis at the time was arteriovenous malformation versus metastasis with a plan for concurrent embolization and biopsy on an outpatient basis.

He then represented 3 weeks later to the emergency department due to continued intermittent bleeding and pain from the left inguinal mass. His hemoglobin and hematocrit were stable without transfusion. He was re-admitted and interventional radiology performed an angiogram (Fig. 1) and super selective catheterization of 4 branches of the left common femoral artery with N-Butyl Cyanoacrylate (NBCA) glue embolization. He was observed for 5 days following the embolization, and the mass continued to involute with minimal oozing. There was concern that excision of the mass at that time could cause disruption of the embolization, therefore we planned for close outpatient observation and a 3 month renal ultrasound for active surveillance of the renal

Abbreviations: RCC, Renal Cell Carcinoma; NBCA, N-Butyl Cyanoacrylate; CT, Computed Tomography

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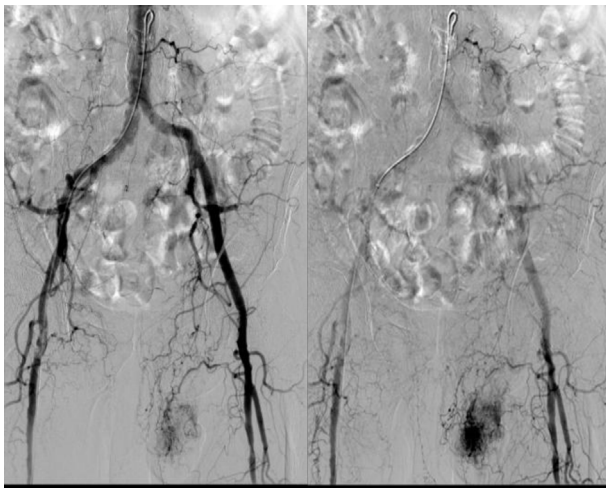


Fig. 1. Angiogram during embolization procedure demonstrating vascularity of groin lesion.

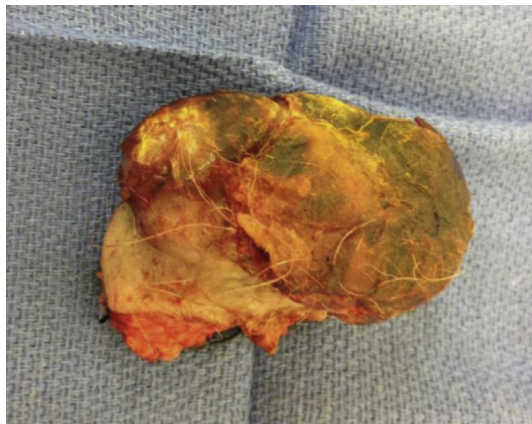


Fig. 2. Removed groin mass.

mass.

At his first follow up visit, the mass continued to involute and eschar was removed. However, 2 months later, regrowth of the left groin mass to 4x5-cm was noted, and he was re-admitted. Vascular surgery recommended a CT Angiogram, which showed enlargement of the left groin mass to 4.9 × 2.6 cm, and also visualized the inferior left scrotal mass to be 2.2 × 1.7 cm, with hypertrophied feeding arteries arising

from the common femoral artery and hypertrophied draining veins. To improve intraoperative hemostasis, interventional radiology performed a second NBCA glue embolization of 3rd order branches of the left internal iliac artery and central femoral artery. Two days later, a joint procedure was performed with vascular surgery and the left groin mass was excised, in addition to a left orchiectomy (Fig. 2). Pathologic analysis of both excised vascular masses from along the spermatic cord revealed clear cell renal cell carcinoma, Fuhrman grade 3 (Fig. 3).

Discussion

The presentation of a 4 cm renal mass with metastasis to two sites along the spermatic cord represents a unique clinical scenario. Additionally, this represents the only case where arterial embolization was attempted to manage a metastatic site.

The ipsilateral spread of RCC in our case to two sites along the left spermatic cord provides strong evidence for the theory of retrograde venous dissemination along the cord.

There was clinical suspicion that the patient's presentation could be consistent with a separate benign paratesticular mass and arteriovenous malformation in the left inguinal region, given the unique presentation and no previous reports in the literature of a mass extending beyond the skin. Additionally, it does not appear that embolization was utilized for a spermatic cord metastasis in previous reports.

Conclusion

This case demonstrates the unpredictable nature of renal cell carcinoma metastasis. Clinicians should hold a high degree of suspicion for metastasis in a patient over the age of 60 with a renal mass with concurrent testicular swelling or a groin mass. Additionally, our case demonstrates the considerable angiogenic potential of RCC metastases. Consideration should be given to pre-operative embolization if the patient presents with a bleeding groin mass in the setting of suspected RCC. Additionally, when a renal mass of 4 cm or greater is present, a tissue diagnosis of any metachronous masses is of paramount importance.

Declarations

None.

Ethics/consent

Project waived of institutional review by the institutional review board of health sciences research at the University of Virginia.

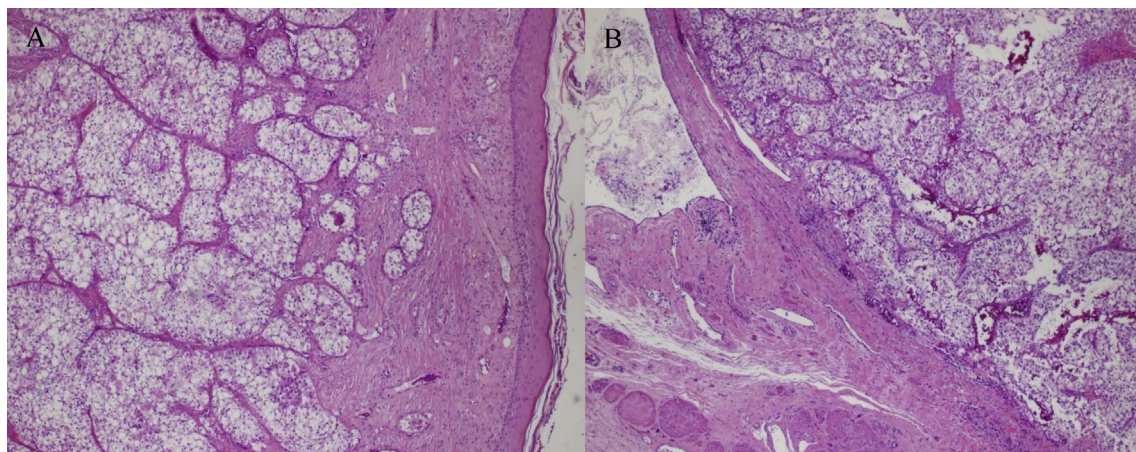


Fig. 3. Pathology results from mass removed (A) Fuhrman grade III clear cell renal cell carcinoma from left groin mass (B) Fuhrman grade III clear cell renal cell carcinoma from paratesticular mass.

Consent to publish

Obtained signed form from the patient.

Availability of data and materials

Data set was not used for publication of this case report.

Conflicts of interest

The authors have no competing interests or disclosures to report.

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Author's contributions

Tracey Krupski, MD MPH– Primary attending. Responsible for work-up, medical/surgical management and follow-up. Assisted in editing process.

Matthew Clements, MD MS– Co-author, assisted in writing the manuscript, editing, and literature review.

Jacques Farhi, MD MBA – Co-author, assisted in writing the manuscript, editing, and literature review.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eucr.2018.09.006>.

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