Hydrocele: an atypical presentation of metastatic sarcomatoid renal cell carcinoma

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Herein is a case of a 55-year-old man who presented with epididymitis. He subsequently failed medical management for the suspected infection and progressed to develop an acute scrotum and sonographic findings consistent with a pyocele. Concurrent computed tomography (CT), obtained for persistent abdominal pain, revealed a large enhancing upper pole renal mass suspicious for malignancy. He was taken for emergent scrotal exploration to drain the presumptive pyocele. However, during scrotal exploration, no purulence or evidence of infection was seen. Although, seemingly unrelated to the renal mass, the thickened hydrocele sac was excised and sent as a specimen. Pathology of the sac revealed a diagnosis of metastatic sarcomatoid renal cell carcinoma. Appropriate chemotherapy was initiated based on the scrotal pathology, circumventing the need for a CT directed retroperitoneal lymph node biopsy or nephrectomy.

Key Words: epididymitis, hydrocele, metastatic, pyocele, sarcomatoid, renal cell carcinoma

Introduction

The initial diagnosis of renal cell carcinoma (RCC) remains a challenge for clinicians as the disease can manifest with a variety of anatomic, laboratory, neoplastic or paraneoplastic disturbances with very little predictability. In the 1970's the classic triad of flank pain, hematuria and a palpable mass was the most common presentation of RCC but currently only comprises 9% of RCC diagnoses and is accompanied by a very poor prognosis.[1] More commonly, with advancement in modern imaging, the diagnosis of RCC is made after imaging for an unrelated complaint. However, even when imaging reveals the underlying nephrocentric pathology, staging may require invasive procedures if there is evidence of nodal involvement. The current treatment recommendations vary widely and include surgical excision alone, chemotherapy, immunotherapy or various combinations, but require accurate histologic and pathologic staging.[2]

Based on the malignant potential of RCC and often late stage at diagnosis, imaging may suggest metastatic spread to the common areas of the body (lymphatics, bone, liver, brain, adrenal glands or contralateral kidneys). Moreover, clinicians need to be cognizant of less common presentations at sites which may offer opportunities for histological evaluation and pathologic staging. The metastatic progression of RCC appears to be widely variable and there have been reports of metastatic spread to a plethora of locations including intraocular, oral, subungal, intestinal, vaginal and scrotal.[3-8] The wide variety of anatomic locations for disease spread lends some mystery to the mode of metastasis. Based on the variety of distant sites, it can be inferred that spread may involve vascular, retrograde venous spread, or drop metastasis. Therefore, in the setting of a suspicious renal malignancy, any new mass or atypical symptoms could be correlated with the primary malignancy.

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Case report

A 55-year-old-man initially presented for evaluation at an outside institution with low grade fevers, fatigue and severe scrotal pain. After clinical evaluation, he was diagnosed with right epididymitis and started on a course of antibiotics. Over the next 2 days his scrotum continued to swell and became increasingly painful. He continued to have fevers, fatigue, and increasing right lower quadrant pain. He presented to a different facility, where a CT scan was obtained to evaluate his persistent abdominal pain. The CT scan revealed a 7 cm left renal mass, retroperitoneal lymphadenopathy, omentum and liver masses as well as a right scrotal abscess, Figure 1. The patient was continued on antibiotics and referred to us with a 10 day history of scrotal pain and fevers suggestive of a right scrotal pyocele and left epididymitis.

At our initial evaluation, a scrotal ultrasound was performed, Figure 2, that supported the referring diagnosis of a pyocele. Upon scrotal exploration, the fluid was nonpurulent, Figure 3, and devoid of organisms on gram stain and culture. However, the thickened sac was excised and sent as a specimen. Pathology revealed the rare diagnosis of sarcomatoid renal cell carcinoma (SRCC) metastasized to the contralateral scrotum, Figure 4. The ability to make the renal diagnosis from the scrotal pathology circumvented the need for a nephrectomy or nodal biopsy.

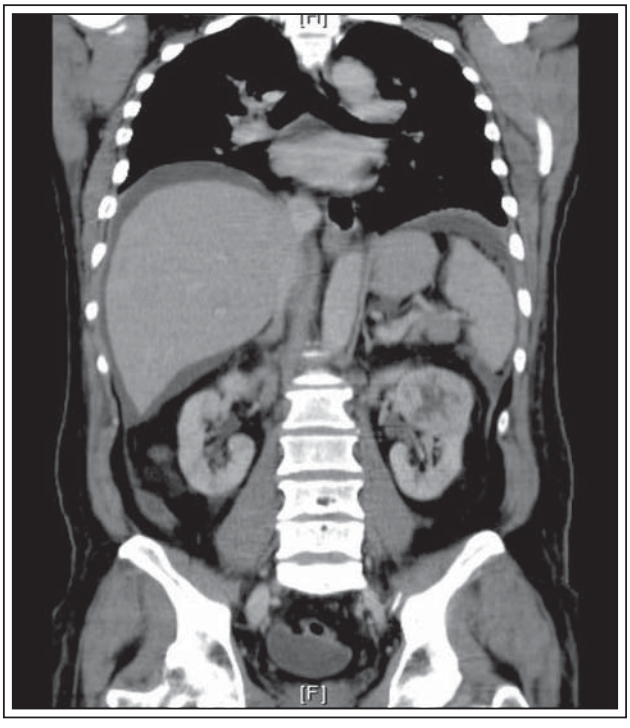

Figure 1. Coronal computed tomography image showing a left upper pole enhancing renal mass, low density lesions in the liver, and ascites.

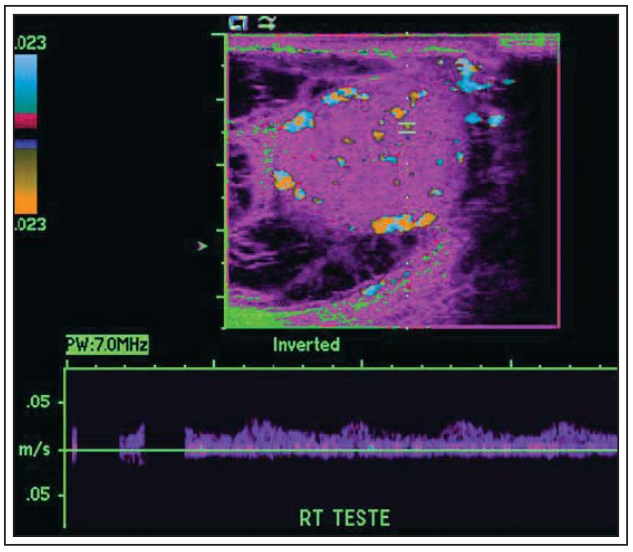

Figure 2. A doppler ultrasound shows normal flow to the right testicle, which is surrounded by a 6 cm reticulated fluid collection, consistent with a pyocele.

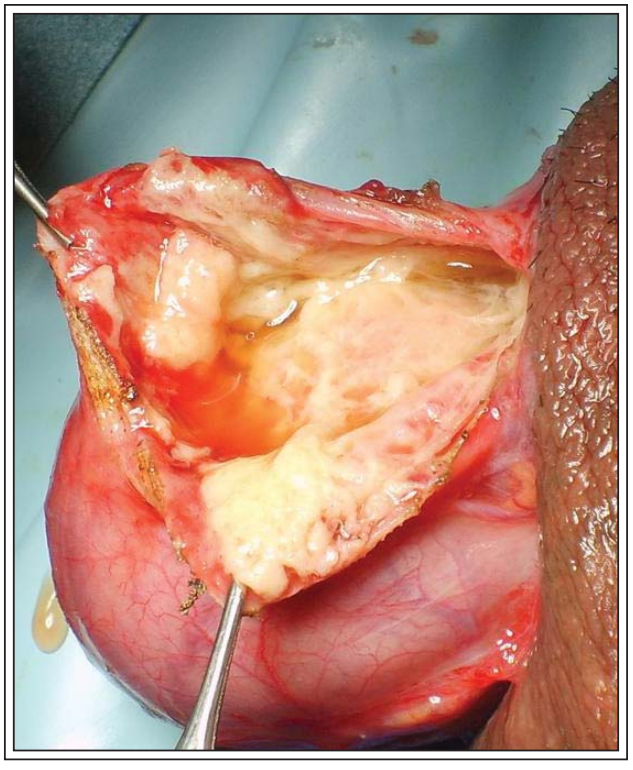

Figure 3. Intraoperative photo of the hydrocele with SRCC and non-purulent sterile fluid.

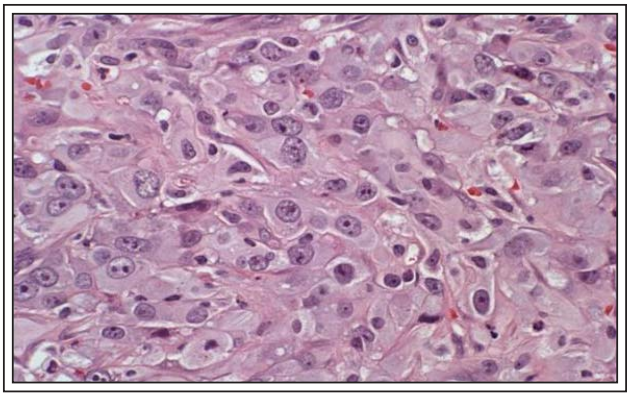

Figure 4. Hydrocele sac revealed anaplastic sarcomatoid renal cell carcinoma on hematoxylin and eosin stain at 40x magnification. This tissue diagnosis spared the patient other invasive procedures needed to establish a diagnosis.

SRCC is a rare form of RCC which is refractory to immunotherapy. However, modest results in treatment of SRCC have been reported with gemcitabine and doxorubicin.[9] Gemcitabine and doxorubicin was initiated and resulted in improvement of the tumor burden, but ultimately the patient succumbed to his disease 4 months after his diagnosis.

Conclusion

Metastatic RCC is a lethal disease and SRCC has an even worse prognosis with a median survival reported to be 4 to 7 months. However, with increasingly sophisticated tissue targeted chemotherapy, the survival and quality of life of RCC patients are improving.[9] We do not advocate the use of unnecessary invasive procedures in the evaluation of a new renal mass but when presented with an opportunity to send tissue, if even from an unlikely site of metastasis, it would seem prudent to do so and may provide an earlier diagnosis. □

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