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CASE REPORT

REVISED Case Report: Testicular artery pseudoaneurysm [version 2; peer review: 1 approved, 2 approved with reservations]

William P Parker, Ajay K Nangia

Department of Urology, The University of Kansas Medical Center, Kansas City, KS, 66160, USA

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Abstract

This is a case of an unusual cause of a testicular mass and the clinical features associated with its presentation and management. The patient presented with testicular pain and was found to have a testicular mass on ultrasound with a central 1cm anechoic region with arterial wave-form concerning for a pseudoaneurysm. The patient underwent orchiectomy with resolution of his symptoms. This case highlights the presentation of testicular artery pseudoaneurysm and outcome following orchiectomy.

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version 1 06 Jan 2014	✓ view	? view	? view

1. **Nelson Bennett** , Lahey Clinic Medical Center, Burlington, MA, USA

2. **Paul Turek**, The Turek Clinic, San Francisco, CA, USA

3. **Jay I. Sandlow** , Medical College of Wisconsin, Milwaukee, WI, USA

Any reports and responses or comments on the article can be found at the end of the article.

Corresponding author: William P Parker (wparker@kumc.edu)

Competing interests: No competing interests were disclosed.

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REVISED Amendments from Version 1

Revisions to the original version include a more detailed discussion of the patient counseling that led to the treatment option chosen. Additionally the discussion was edited to include discussion of partial orchiectomy as a treatment option.

See referee reports

Case history

A 34 year-old Caucasian man presented to the Emergency Department at the University of Kansas Medical Center (Kansas City, Kansas) with a 1 week history of right-sided orchalgia in December of 2012. The day prior to presentation the patient was admitted at an outside institution for presumed orchitis, where he was treated with intravenous levofloxacin 500mg. During that hospitalization a scrotal ultrasound was obtained which revealed hypervascularity of the right testicle but no masses or lesions within the testicle. He was discharged the next day, but due to persistent symptoms presented to our institution. He denied any constitutional symptoms and was voiding without difficulty or irritative symptoms. He additionally denied any prior genitourinary trauma or infections including any history of orchitis, prostatitis, urinary tract infection, or sexually transmitted infection. The patient was monogamous without any high-risk behavior. The patient had no past medical history and was on no prior medications. His examination revealed a swollen and indurated right testicle without involvement of the paratesticular structures. There was no discrete testicular mass palpable. Scrotal ultrasound revealed a region of hypoechogenicity measuring 3.3cm × 2cm felt to represent an intratesticular hematoma (see Figure 1). Within this there was a 1cm central focus that demonstrated an arterial wave form with alternating reversal of flow, suggestive of a pseudoaneurysm (see Figure 2). Our differential diagnosis included abscess, testicular artery aneurysm/pseudoaneurysm, or testicular neoplasm. We counseled the patient on the ultrasonographic findings

and our differential diagnosis, which included testicular artery pseudoaneurysm. Based on our working diagnosis, we discussed possible treatment options, to include observation with serial ultrasonography versus radical orchiectomy. The patient was in a considerable amount of pain, no longer interested in pursuing fertility options, and significantly concerned about the possibility of a testicular neoplasm. Due to these concerns, he ultimately elected to undergo radical orchiectomy. Tumor markers were obtained prior to orchiectomy and were within normal limits (AFP 14.9ng/ml, bHCG 1 U/L, and LDH 109 U/L). He tolerated the procedure without any adverse event and was discharged to home with resolution of his pain on the first post-operative morning. Pathologic evaluation confirmed the presence of significant intraparenchymal hemorrhage within a background of chronic orchitis (see Figure 3). At the time of post-operative follow-up – 2 weeks after his orchiectomy – the

Figure 1. Scrotal ultrasound of the right testicle in transverse revealing a hypoechogenic lesion within the central testicle with an anechoic central core.

Figure 2. Doppler ultrasound of the right testicle in transverse reveals an arterial waveform within the center of the anechoic portion of the testicular mass.

Figure 3. Gross section of the right testicle bi-valved with hematoma and surrounding intraparenchymal hemorrhage.

patient was in excellent condition with complete resolution of his pain. His surgical incision was well healed and he had no evidence of intra-scrotal pathology.

Discussion

Intratesticular hemorrhage is frequently associated with trauma. In the absence of trauma, testicular artery aneurysm and pseudoaneurysm have been described as an infrequent source of hematoma formation. To our knowledge there have been two cases of testicular artery aneurysm and two of pseudoaneurysm reported in the literature, with etiologies of trauma¹⁻³ and infection⁴.

As in previous cases of testicular artery aneurysm and pseudoaneurysm, the diagnosis was established on ultrasonography. Furthermore this case describes a second scenario in which sonographically diagnosed orchitis has progressed to this clinicopathologic entity⁴. Our management included radical orchiectomy - to rule out possible malignancy - and the patient recovered with complete resolution of his pain. This case supports orchitis as a risk factor for pseudoaneurysm formation, the use of ultrasound for the diagnosis, and the use of orchiectomy as a potential treatment in patients with unremitting pain.

The management of this case is limited by the radical treatment offered – namely orchiectomy. In counseling the patient, we offered the more conservative option of observation with serial ultrasonography; however the patient was significantly concerned about malignant potential. In the absence of overwhelming evidence to rule out malignancy, the patient wished to pursue radical orchiectomy – a reasonable approach in the setting of any testicular mass. While the ultrasonographic features are distinct in this case, the rarity of this entity does not allow for a determination of the sensitivity of ultrasound in the diagnosis.

In the current case, the patient was no longer interested in fertility and was concerned about malignancy, leading to a radical orchiectomy. However, it would be reasonable to consider partial orchiectomy in appropriately screened and counseled patients, with the understanding that frozen pathologic assessment would guide the potential need for radical excision. Regardless, at the time of final follow-up the patient was satisfied with his course of care and the outcome.

Consent

The patient was unable to be reached for consent and no next-of-kin information was available to contact the patient. The write-up does not contain sufficient information to identify the patient as this is a case based mainly on radiology and pathology findings. We have made numerous attempts to contact the patient and it appears that his contact information as provided at the time of treatment is no longer valid.

Author contributions

William Parker prepared the manuscript; Ajay Nangia edited the manuscript and participated in the clinical care of the patient.

Competing interests

No competing interests were disclosed.

Grant information

The author(s) declared that no grants were involved in supporting this work.

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Nelson Bennett

Institute of Urology, Lahey Clinic Medical Center, Burlington, MA, USA

Nice addition to the report.

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 16 June 2014

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Jay I. Sandlow

Department of Urology, Medical College of Wisconsin, Milwaukee, WI, USA

The authors describe a fairly rare case of testicular artery pseudoaneurysm, presumably secondary to orchitis. The case history is complete and the figures are well-presented. Furthermore, based on the patient's history, age, and ultrasound findings, their management was not unreasonable. However, I would like them to describe in more detail the thought process that led to a radical orchiectomy, particularly since pseudoaneurysm was in their differential. Because the patient was of reproductive age, I wonder if it would have been possible to preserve some

functioning testicular tissue. Based on the gross appearance of the specimen, it appears that at least a third of the testis was unaffected. How accurate is scrotal ultrasound in identifying a testicular artery pseudoaneurysm? Finally, looking back, is there something that the authors could have done to prevent a radical orchiectomy? This might be helpful for those of us facing this situation in the future. I think with some revisions of the Discussion, this case report should be acceptable.

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 24 January 2014

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Paul Turek

The Turek Clinic, San Francisco, CA, USA

This case report is a classic “suspicious-looking-lesion-in-the-testicle” that is treated by removal and diagnosed definitively only after the fact, based on histology. The care provided was standard. However, besides learning about the existence of the lesion, there is no information in this case report that might help others PREVENT the extreme measure of radical orchiectomy for a benign lesion. What other diagnostic tests could have been done? Why wasn't partial orchiectomy considered in the treatment algorithm? The learning potential of this case is limited.

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

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Nelson Bennett

Institute of Urology, Lahey Clinic Medical Center, Burlington, MA, USA

This is a very nice presentation and description of a rare issue. The manuscript underscores that a complete scrotal/testicular ultrasound be carefully scrutinized. To further enhance the impact of the study, the authors may want to consider including the values of the testicular tumor markers.

Good Show.

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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