Inflammation and infection

Intratesticular pseudoaneurysm secondary to orchitis: A case report

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Introduction

Intratesticular pseudoaneurysm in the setting of orchitis is exceptionally rare. It has been described in a single case report where the patient underwent orchiectomy for suspected malignancy and was found to have ruptured pseudoaneurysm on histology with no malignancy identified.1 To our knowledge we report the first case of Intratesticular pseudoaneurysm secondary to orchitis successfully managed non-operatively.

Case report

A 37-year-old gentleman presented with a 3-day history of gradual onset left-sided scrotal pain. He denied any history of trauma, fevers or lower urinary tract symptoms. He had no previous history of urinary tract infection (UTI) or sexually transmitted infection (STI). On further questioning, he reported having hand, foot and mouth disease 10 days prior to his presentation which he had contracted from his 2 young kids. There was no other pertinent medical history and he was not on any regular medications.

On presentation, he was afebrile and his vital signs were within normal limits. Scrotal examination revealed the left testis to be enlarged, generally tender with a small palpable mass. The right testis was normal on examination. Scrotal ultrasound (USS) revealed the left testis was enlarged (54 x 40 x 34mm) with heterogeneous internal echotexture and demonstrated increased vascularity on doppler throughout. There was an approximate 20 x 16 x 30mm well-defined heterogeneous area close to the epididymis, without internal vascularity (Fig. 1). Anterior to that was a 15 x 14 x 10mm area which was pulsatile and demonstrated a to-and-fro flow pattern in keeping with a pseudoaneurysm (Fig. 2a and b). Laboratory investigation revealed elevated White cell count (WCC) of 12.60 x 10^9/L and c-reactive protein (CRP) of 75 mg/L. Tumour markers were all within normal limits (AFP 2, BHCG <1, LDH 240). The findings were concerning for an underlying marker negative testicular malignancy, but the appearance of a pulsatile pseudoaneurysm, elevated inflammatory markers and recent history of hand foot and mouth disease raised the possibility of an underlying infective process resulting in a benign lesion. The case was discussed in the uro/radiology multidisciplinary team meeting (MDT) meeting where the decision was made to discuss with the patient, the options of close surveillance and delaying/avoiding surgical intervention versus proceeding straight to radical orchiectomy. Following a discussion of the risks and benefits of both approaches the patient opted for a non-operative approach.

Urine microscopy and culture did not reveal evidence of infection. Similarly, urine PCR for chlamydia, gonorrhoea, enterovirus, rhinovirus and mumps were also negative. His pain was controlled with analgesia and was discharged home after being carefully counselled about the importance repeat serial imaging and to return to the hospital if there were any signs of worsening of his condition.

Patient symptoms continued to improve following discharge. Repeat imaging at 3 weeks showed resolution of the pseudoaneurysm and reduction in size of the well-defined heterogeneous region (Fig. 3). Repeat USS at 3 months showed complete resolution of the hypoechoic areas with normal appearance of left testis.

Discussion

A pseudoaneurysm represents a vessel leak that is surrounded and contained by a pseudocapsule. Intratesticular pseudoaneurysm in the absence of trauma is exceedingly rare.2 Although viral infections have been known to cause orchitis, only one previous case of a patient having a pseudoaneurysm in the setting of orchitis has been reported.3 The rarity of this condition in the reported literature means there is no established pathophysiology for the formation of intratesticular pseudoaneurysms in the setting of
In our patient the findings were worrisome for testicular malignancy but the clinical history, laboratory investigation and radiological imaging favoured an infective cause as the likely unifying diagnosis. Coxsackie virus, known for causing hand, foot, and mouth disease, is one type of enterovirus that has previously been documented as a cause of orchitis. Given the rarity of this condition, the patient was offered both operative and non-operative options with explanation of risks and benefits of each approach. After careful counselling and discussion, our patient opted for non-operative management with repeat USS imaging confirming resolution and the benign nature of this condition.

The typical USS appearance of a pseudoaneurysm demonstrates an anechoic area within the testis which is filled by a mosaic of colours (typically known as the yin-yang sign). There is usually a to-and-fro flow pattern at the neck of the pseudoaneurysm that is diagnostic of the condition. The possibility of spontaneous rupture of intratesticular pseudoaneurysm exists as reported by Mujoomdar et al. Given the rarity of this condition there are at present no predictive features of likelihood of spontaneous rupture. Our case however shows that intratesticular pseudoaneurysm are likely to spontaneously thrombose, as seen in pseudoaneurysm in abdominal viscera.

The finding of a pseudoaneurysm in the setting of orchitis also raises concern of an underlying malignancy, particularly if there is a palpable mass. Hurtt et al. reported two cases of palpable testicular mass in the setting of viral orchitis with both patients undergoing radical orchietomy. Both patients had normal tumour markers and the final histopathology in both cases did not show any malignancy. As with our patient, a careful delayed approach can be undertaken if there is high degree of suspicion for a primary infective cause and the patient is appropriately counselled. Tumour markers should be performed to assist with the diagnosis. This approach can potentially avoid patients undergoing orchietomy for a benign condition. In patients undergoing non-operative management, the risk should be weighed against the risk of metastatic spread from a testicular malignancy. They should be advised to represent to the hospital if symptoms worsen and be counselled about the importance of repeat serial imaging to ensure resolution of the pseudoaneurysm and other abnormal findings on USS.

**Conflicts of interest**

All authors declare no conflict of interest.

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