

CASE REPORT

Testicular infarction and rupture: an uncommon complication of epididymo-orchitis

Daniel Chia*, Peter Penkoff, Matthew Stanowski, Kieran Beattie, and Audrey C. Wang

Department of Urology, Westmead Hospital, Sydney, New South Wales, Australia

*Correspondence address. Department of Urology, Westmead Hospital, Sydney, New South Wales, 2145, Australia. Tel: +61-2-9845-6693; Fax: +61-2-8890-4661; E-mail: daniel.chia8@gmail.com

Abstract

Epididymo-orchitis is a common diagnosis in men presenting with unilateral testicular pain. It can be of an infectious or non-infectious aetiology. Clinical examination and laboratory investigations do not reliably differentiate testicular infarction secondary to epididymo-orchitis from uncomplicated epididymo-orchitis. Definitive diagnosis is usually made by ultrasound. Misdiagnosis and under-treatment can lead to poor outcome, such as infarction and loss of the affected testis. We present an uncommon case of epididymo-orchitis resulting in testicular infarction and rupture despite normal initial investigations.

INTRODUCTION

Epididymo-orchitis is an important condition to recognise in a patient presenting with testicular pain. Identification is crucial as it can be managed conservatively with antibiotics, unlike testicular torsion that requires urgent surgery. Testicular infarction secondary to epididymo-orchitis can be difficult as clinical examination and laboratory investigations do not reliably differentiate it from uncomplicated epididymo-orchitis. Ultrasound with colour duplex is a useful investigation in this case.

Conservative management, however, does not preclude the need for follow-up and reassessment if symptoms do not resolve. Failure to do so can result in infarction, and as reported in this case, rupture of the testis. Consequently, the patient underwent an orchidectomy, with subsequent effects on fertility. In addition to the risks included with surgery, if the patient had not completed his family, the resulting infertility would add a significant morbidity. In this case, early recognition and investigations with appropriate treatment were unable to prevent this outcome. Informed consent has been provided by the patient with guarantee of confidentiality.

CASE REPORT

A previously healthy 50-year-old man presented to hospital with a 4-day history of macroscopic haematuria, left testicular pain and dysuria. He was commenced on cephalexin by his general practitioner after his urine grew *Escherichia Coli* (*E. Coli*), and scrotal ultrasound showed left epididymo-orchitis.

On arrival to hospital, he was afebrile and haemodynamically stable. Examination found a swollen and erythematous scrotum with tender left testis. Right testis examination was normal. Prostate was small and non-tender on digital rectal examination. Other examination findings were unremarkable.

Investigations showed an elevated C-reactive protein (CRP) of 253 mg/l and white cell count (WCC) of $22.0 \times 10^9/l$. Haemoglobin and renal function were normal.

He was admitted and treated with 48 hours of intravenous ceftriaxone and gentamicin. His symptoms improved, and he was discharged home after 48 hours with 2 weeks of norfloxacin. He re-presented 17 days later with worsening scrotal swelling and pain, with no other systemic symptoms. He was afebrile and haemodynamically stable and examination found

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Figure 1: The 1 × 1 cm defect in the left scrotum with purulent discharge found on examination.

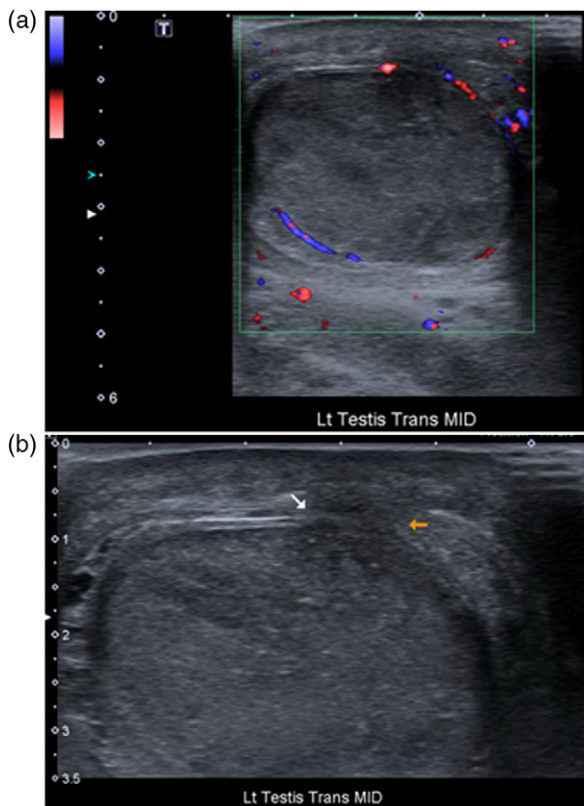


Figure 2: Ultrasound of the left testis on re-presentation to hospital showing: (a) absent blood flow consistent with infarction (b) rupture in the mid-zone anteriorly (indicated by arrows).

a swollen, tender, erythematous scrotum. There was a 1 × 1 cm defect in the left scrotum with purulent discharge, where the patient reported squeezing a pimple two days earlier (Fig. 1).

Investigations found an elevated CRP of 96 mg/l and WCC of $19.5 \times 10^9/l$. Blood tests were otherwise unremarkable. Repeat scrotal ultrasound showed an infarcted left testis with rupture in the mid-zone anteriorly with associated scrotal wall cellulitis (Fig. 2). The right testis was of normal size and had normal vascularity.

He was commenced on intravenous flucloxacillin and gentamicin and underwent a left orchidectomy. Intraoperative examination found oedematous scrotal wall with significant left testicular adhesions, and seminiferous tubules were visible through the defect in the left testis (Fig. 3).

Postoperatively he recovered well and was discharged 2 days later with 4 weeks of ciprofloxacin and to follow up at the urology clinic. Histopathology showed epididymo-orchitis with abscess, necrosis and perforation.

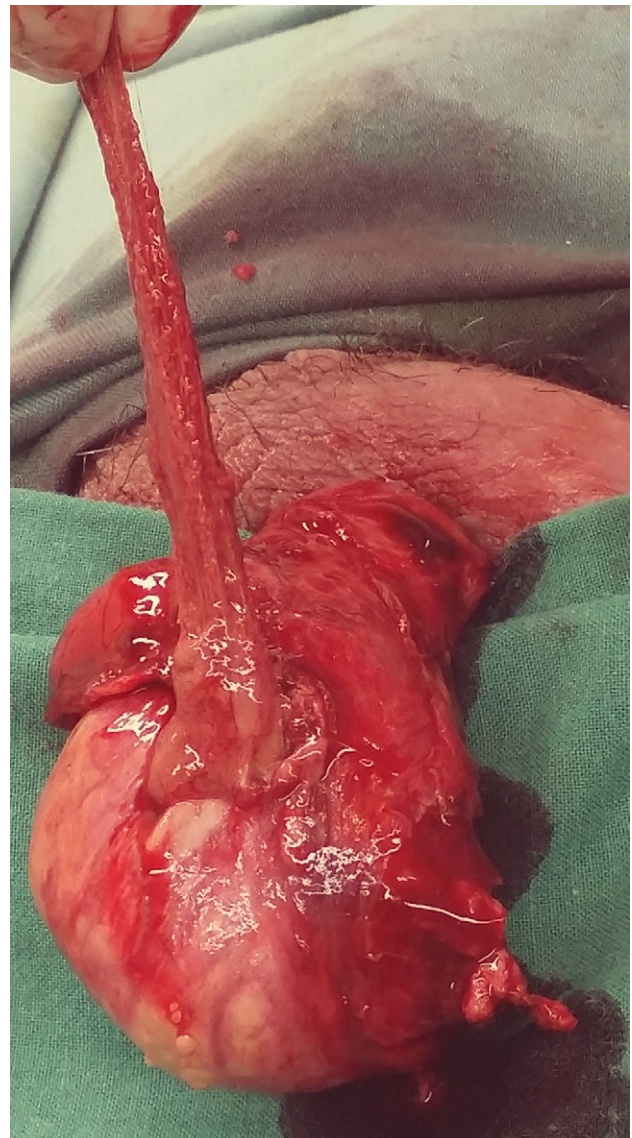


Figure 3: Intraoperative photograph showing the seminiferous tubules through the defect in the left testis.

DISCUSSION

Epididymo-orchitis is a common diagnosis in men presenting with unilateral testicular pain, which can be of an infectious or non-infectious aetiology. With infections, sexually transmitted pathogens such as *Neisseria gonorrhoeae* and *Chlamydia trachomatis* are the most common cause in men younger than 35 years, while in older men, urinary tract pathogens such as *E. coli* are the most common [1]. Other less common pathogens include *Proteus mirabilis*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Treatment on most cases is conservative with antibiotics, analgesia and scrotal support. However, complications such as abscess formation and testicular infarction may occur which are rare [2, 3]. Occurrence of testicular rupture is even rarer with very few cases reported [4]. Complications have been reported to be more common with urinary tract pathogens than sexually transmitted pathogens [5].

In context of epididymo-orchitis, testicular infarction is caused by the compression of the testicular vasculature by the inflammation and swelling of the epididymal tissue [6]. Endothelial damage secondary to bacterial toxins leading to a vascular thrombus has also been reported to contribute [7].

Clinical examination and laboratory investigations do not reliably differentiate testicular infarction secondary to epididymo-orchitis from uncomplicated epididymo-orchitis. Diagnosis is usually made by ultrasound with colour duplex, which is followed by orchidectomy if infarction or torsion is detected. Risk factors predisposing to necrotic and perforated epididymo-orchitis are difficult to identify; however, complex hydrocele on ultrasound may be associated [8].

Testicular rupture secondary to epididymo-orchitis is a rarely reported complication. It is difficult to differentiate from uncomplicated epididymo-orchitis clinically. Diagnosis is usually confirmed by ultrasound or intraoperatively. In this case, the clinical findings pointed to a more complicated

case, which was confirmed ultrasonographically and intraoperatively. Awareness of such consequences is important as testicular pain or acute scrotum is a common emergency and general practice presentation. Immediate recognition and intervention is important as a delayed diagnosis can lead to sepsis and infertility.

CONFLICT OF INTEREST STATEMENT

None declared.

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