Urology Case Reports 33 (2020) 101324

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: http://www.elsevier.com/locate/eucr

Inflammation and infection

Epididymo-testicular ischemia without torsion

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ARTICLE INFO

Handling editor; A Partin

Keywords:
Testicular infarction
Ischemia
Color Doppler ultrasound
Orchidectomy
Orchiepididymitis

ABSTRACT

Epididymo-testicular infarction associated with ischemia of spermatic cord without torsion secondary to an orchiepididymitis is an extremely rare pathological entity, of little known etiopathogenesis and idiopathic in the majority of cases. The authors report an original observation of a 23-year-old young patient with a history of untreated orchiepididymitis, which presented to the emergency department for testicular pain. The ultrasound has showed an ischemic testicle and the exploratory scrotomy objectified an epididymo-testicular necrosis associated with ischemia of spermatic cord without torsion. This case highlighted the interest of early diagnosis and effective treatment of orchiepididymitis to prevent this rare serious complication.

Introduction

The testicular ischemia without torsion is a very rare pathological entity in the literature.[1] To the best of our knowledge, we describe the first case of epididymo-testicular infarction associated with ischemia of spermatic cord without torsion. Its etiology is rarely found, certain risk factors by their frequency must be sought systematically, such as orchiepididymitis. The clinical picture can be misleading and can sometimes take on the appearance of a testicular tumor. The treatment can be conservative, in the case of segmental testicular ischemia, or requiring an orchiectomy in case of total testicular ischemia.[2]

We report a case of an epididymo-testicular infarction associated with ischemia of spermatic cord without torsion, in a 23-year-old young adult with a history of untreated orchiepididymitis. Through this exceptional case we discuss the different clinical, etiological, diagnostic and therapeutic aspects of this very rare pathology.

Case presentation

A 23-year-old patient, with a history of orchiepididymitis 11 days ago, he took nonsteroidal anti-inflammatory drugs with just two days of antibiotics, which presented to the emergency department 8 days later for non-improvement, and worsening of right testicular pain.

On clinical examination it was apyretic, the examination of the external genitalia found a right testicle increased in volume sensitive to palpation without signs of torsion, the scrotal wall has been infiltrated, the left testicle was normal and the rest of the clinical examination was unremarkable.

The biological examination carried out in emergency was normal and the urine strip test was negative.

The Doppler ultrasound has objectified a right testicle diffusely enlarged, include heterogeneous echogenicity with hypoechoic areas, and avascular on color doppler, without suspicious tumor lesion or torsion. The diagnosis of testicular ischemia was suspected and a scrotal exploration was decided in emergency.

An exploratory scrotomy concerning the right hemiscrotum was performed, it objectified a black ischemic testicle (Fig. 1A) and an edematous and ischemic epididymis and spermatic cord without signs of torsion (Fig. 1B), because of the extent of spermatic cord ischemia a homolateral inguinal counter incision was made to make a section of spermatic cord in a no ischemic zone, the ischemia of spermatic cord was extended to about 9 cm long, there is no tumor lesion or mass compressing the spermatic cord at the inguinal rings (Fig. 2).

An orchiectomy was performed (Fig. 3) and the anatomopathological study had objectified a hemorrhagic infarction of the right testicle with an epididymis site of hemorrhagic necrosis, the tunica vaginalis and the albuginea were thickened and congestive. The tumor markers performed postoperatively were normal as well as the cardiac exploration, the anticoagulants circulating within the framework of etiological research were normal. The patient was recovered and discharged 2 days after surgery with antibiotic for scrotal incision infection, and the diagnosis retained was that of epididymo-testicular necrosis with

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https://doi.org/10.1016/j.eucr.2020.101324
Received 29 May 2020; Received in revised form 17 June 2020; Accepted 22 June 2020
Available online 26 June 2020

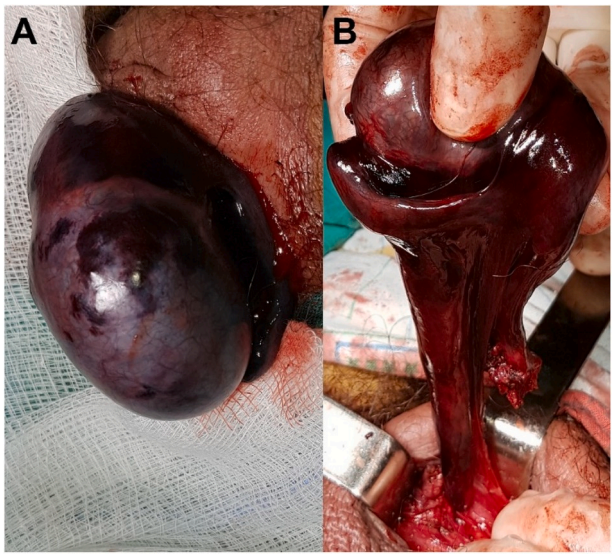

Fig. 1. A) Scrototomy showed an epididymo-testicular necrosis. **B)** Epididymo-testicular ischemia associated with ischemia of spermatic cord without torsion.

spermatic cord ischemia secondary to untreated orchiepididymitis.

Discussion

Testicular infarction without torsion is a very rare pathology, only about thirty cases are described.[1,2] It can be segmental, or total, or as in our case touch the testicle, epididymis and the spermatic cord. It can occur at any age, even in the neonatal period and up to the age of 55, with a predilection between 16 and 35 years.[2] Ischemia can be bilateral, but it is unilateral in majority of cases, its etiopathogenesis is still poorly understood and it may be due to arterial occlusion on an area of terminal vascularization, venous thrombosis or embolis; certain risk factors are involved in its genesis and must be sought systematically such as orchiepididymitis, hypercholesterolaemia, protein S or antithrombin III deficiency, sickle cell anemia, malakoplakia, lymphoid leukemias, familial Mediterranean fever and Wegner's granulomatosis, or diabetes.[1–3] Among these risk factors, orchiepididymitis is the most frequent and can be the cause of serious complications in 39% of cases such as testicular necrosis, late ischemia or testicular infarction which can be observed approximately in 3%–5% of cases of orchiepididymitis.[4] In our case the etiology retained was an orchiepididymitis, but an underlying ischemic or vascular cause was not formally excluded and probably these phenomena have been aggravated or triggered by the infection and the prolonged taking of nonsteroidal anti-inflammatory drugs, despite the fact that the other etiologies have been eliminated by biological and radiological explorations.

Fig. 3. Postoperative specimen showed a total necrosis of testis, epididymis, and spermatic cord.

The clinical presentation is dominated by exquisite acute testicular pain, generally unilateral, without traumatic or infectious context, clinical examination is often normal with the presence of a sensitive testicle with a normal spermatic cord.[2] This clinical presentation can simulate a testicular tumor with normal tumor markers. Sometimes the signs of failure of an orchiepididymitis treatment may be suggestive, such as the appearance or persistence of a fever, sepsis, severe testicular pain, pronounced scrotal oedema, and scrotal wall inflammation, the presence of a positive urine culture has also been highlighted as a poor prognostic factor.[4]

Ultrasound coupled with doppler is the first-line examination, it most often makes it possible to make a diagnosis with evidence of an avascular testicle of variable echogenicity depending on the time of examination by compared to the onset of symptoms,[5] sometimes the testicular lesion is difficult to differentiate from a testicular tumor, testicular hemorrhage or an abscess.[2] More recently, scrotal MRI has become the examination of choice for the etiological diagnosis of acute scrotal pathologies, especially in cases of segmental lesion or doubtful cases.

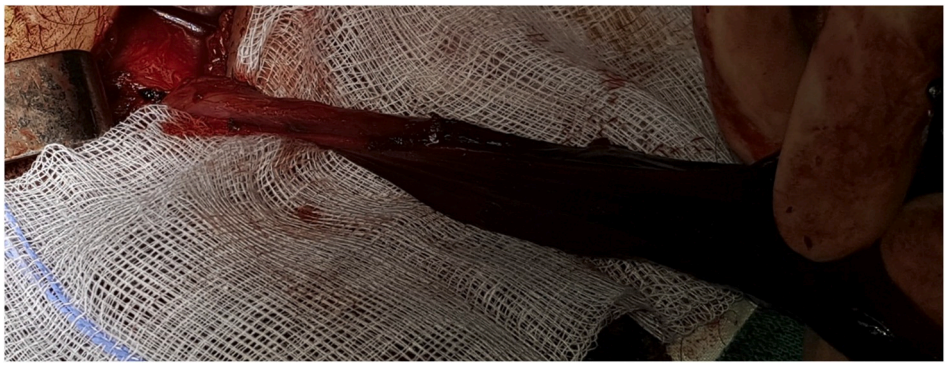

Fig. 2. Inguinal counter incision showed an ischemia of spermatic cord extended to about 9 cm long.

In case of doubt, surgical exploration is indicated by inguinal route with primary vascular clamping and bivalve orchidotomy, in case of diffuse infarction an orchiectomy remains indicated, whereas in cases of segmental infarction an extemporaneous examination is required in order to eliminate a tumor lesion and to keep the testicle.[1,2] In our case we had chosen the scrotal route because the testicular tumor was removed by ultrasound and because there was a doubt about a neglected torsion.

Conclusion

Epididymo-testicular infarction without torsion is a rare serious complication of orchiepididymitis. Its prevention is based on early diagnosis and effective treatment of different etiologies and risk factors.

Consent

Consent was obtained from the patient for the above information to be released for research purposes.

Funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of competing interest

The authors declare that they have no conflicts of interest.

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