

Case Report

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Acute scrotal pain caused by spermatic vein thrombosis

Armas Alvarez Azucena Lirio, Osorio Manyari Angel Alois, Moreno Pérez De La Cruz Santiago, Abaigar Pedraza Irache, Camacho Monge Juan José, López De Alda González Andrés.

¹Department of Urology, Hospital de Don Benito-Villanueva de la Serena, Don Benito, Badajoz, Spain.

²Department of General Surgery, Hospital de Don Benito-Villanueva de la Serena, Don Benito, Badajoz, Spain.

***Corresponding Author: Armas Alvarez AL**

Department of Urology, Hospital de Don Benito-Villanueva de la Serena, Don Benito, Badajoz, Spain.

Mobile: 34645237899

Email: azli_1673@hotmail.com

Abstract

We report a case of a 17-year-old boy who presented with two-day progressive left testicular pain and an ultrasound finding of acute thrombosis of the left spermatic vein. Computed tomography and laboratory tests including tumor markers were normal. The patient was diagnosed as a heterozygous carrier of the Prothrombin G 20210A mutation. He completed a 3-month course of acenocoumarol. After which the patient was fully recovered, and his scrotal ultrasound was normal.

Acute thrombosis of the spermatic vein is a rare cause of scrotal pain, it usually affects the left side, and the initial treatment is conservative with anticoagulants.

Keywords: Acute spermatic vein thrombosis; Acute testicular pain; Anticoagulants; Thrombophilia; Scrotal ultrasound.

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Introduction

Acute testicular pain is a relatively frequent pathology that requires a correct diagnosis and timely treatment. Acute spermatic vein thrombosis is an uncommon cause of acute testicular pain that should be considered in its differential diagnosis [1].

Clinical case

A 17-year-old male with no previous medical history, presented to the emergency department with left testicular pain and swelling in the left hemiscrotum and ipsilateral inguinal region for the duration of two days. He did not display any other symptoms.

Physical examination showed painful and enlarged left testis and swelling in the left inguinal region.

Laboratory tests, including coagulation parameters and tumor markers were normal. Scrotal Doppler ultrasound demonstrated acute thrombosis of the left spermatic vein with normal testicles (Figures 1, 2 and 3) and computed tomography was normal.

Given the diagnosis of acute spermatic vein thrombosis, anticoagulation with enoxaparin and analgesia were started. The patient was evaluated by the hematologist to investigate potential causes of thrombosis, diagnosing that the patient was a heterozygous carrier of Prothrombin G20210A mutation. Enoxaparin was switched to acenocoumarol for 3 months. After 4 months a follow-up was conducted, and the patient was found to be clinically well, and the ultrasound showed no visible signs of thrombosis.

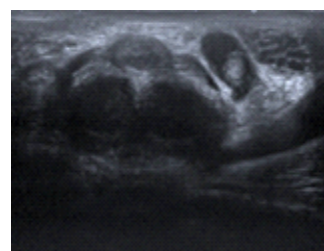


Figure 1: Ultrasound demonstrating echogenic intraluminal thrombus in the left spermatic vein.



Figure 2: Non compressed thrombosed left spermatic vein with thickened walls.

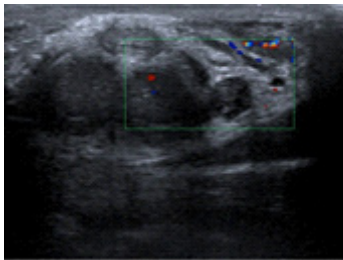


Figure 3: Doppler Ultrasound showing thrombosed left spermatic vein with no flow.

Discussion

The causes of acute testicular pain can be testicular torsion, torsion of the appendix testis or appendix epididymis, inflammatory-infectious pathology such as epididymo-orchitis, incarcerated inguinal hernia, tumor pathology such as testicular cancer among others.

Diagnosis is confirmed by scrotal Doppler ultrasound [1,2].

Surgical treatment is indicated in the case of incarcerated inguinal hernia, testicular torsion, and testicular tumor and medical treatment with antibiotics and nonsteroidal anti-inflammatory drugs in the cases of epididymo-orchitis.

Acute spermatic vein thrombosis is a rare cause of acute scrotum, generally involves the left side and is characterized by acute testicular pain and testicular swelling [3,4].

Doppler ultrasound is the gold standard diagnostic test. The characteristic image of thrombophlebitis of the spermatic vein is a non-compressible, hypoechoic tubular elongation of the vein, with no Doppler signal inside (despite the Valsalva maneuver). Sometimes an endoluminal hyperechoic thrombus can be identified, more easily detectable in the cross section of vein [5,6].

Computed tomography assesses whether the thrombosis is limited to the spermatic territory or extends beyond the external inguinal ring and establishes the etiological diagnosis [3,7].

The causes of acute thrombosis, according to Virchow's triad are endothelial injury (trauma, surgery, sepsis, punctures), stasis (advanced age, immobility, obesity, tumors) or hypercoagulability (cancer, pregnancy, drugs, thrombophilias) [1,7,8].

In adolescents, the most common cause of venous thrombosis is the use of oral contraceptives and hereditary thrombophilias in cases of unprovoked thrombosis [9].

Among the most common thrombophilias in children and

adolescents we have protein S deficiency, protein C deficiency, Factor V Leiden, Prothrombin G20210A mutation and anti-thrombin deficiency [10].

Our patient was diagnosed to be a heterozygous carrier of Prothrombin G20210A mutation, which in heterozygosis has a low risk of thrombosis.

The identification of an inherited thrombophilia provides information regarding thromboprophylaxis in situations of future risk and allows the family to be advised of the potential risk [9,10].

The initial treatment is conservative with anticoagulants and analgesics/anti-inflammatory drugs [11,12]. Cases have been described that have been resolved only with the use of analgesics.

Ultrasound is recommended at 48-72 hours to check the resolution of the thrombus [8]. Surgical treatment by exploration of the spermatic cord, thrombectomy or orchiectomy, is indicated in cases of suspected incarcerated inguinal hernia, poor testicular vascularization, and lack of response to medical treatment [1,7,8]. Open or laparoscopic spermatic vein ligation is indicated when the thrombus exceeds the internal inguinal ring and pulmonary thromboembolism associated [13].

The patient first started treatment with enoxaparin, thereafter, switching to acenocoumarol for 3 months. In this case, we did not perform an early control ultrasound since the patient was clinically well.

After 4-months a follow-up consultation was conducted and the patient was clinically well, and the ultrasound showed the disappearance of the thrombus.

Conclusions

Acute spermatic vein thrombosis should be considered in the differential diagnosis of acute testicular pain. Diagnosis requires Doppler ultrasound. It is recommended to establish the cause, considering the diagnosis of thrombophilia in young people. The initial treatment is conservative since it has been shown to be successful and a control ultrasound should be performed to verify the disappearance of the thrombus.

Declarations

Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent: The authors declare that no patient data appears in this paper.

Conflict of interests: All authors declare they have no conflict of interest.

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