

Isolated Spermatic Vein Thrombosis

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ABSTRACT

Isolated spermatic vein thrombosis is an uncommon pathology, mostly involving left side. These patients present with acute scrotal symptoms, and can be misdiagnosed as testicular torsion or incarcerated inguinal hernia. At this point, Doppler ultrasound (US) plays critical role for the prompt and correct diagnosis of this rare clinical entity. Herein, a 54-year-old man having left sided testicular enlargement and tenderness with an unremarkable etiology was reported as a rare case of isolated spermatic vein thrombosis which could easily be diagnosed by colour Doppler US.

Key Words: Spermatic vein, Thrombosis, Colour Doppler ultrasound, Scrotal pain.

INTRODUCTION

Venous thromboses usually are detected in the veins of limbs, especially the leg veins. However, these can also be seen in unexpected localisations. Other than venous thrombosis of leg veins, isolated spermatic vein thrombosis is an uncommon pathology, mostly involving left side. The etiology of this condition is unclear and generally, most of the patient presents with acute scrotum. The most common symptoms are testicular pain and swelling.¹

Doppler US plays critical role for the prompt and correct diagnosis of this rare clinical entity, so that it should be the first line diagnostic modality. Mostly, conservative treatment with anti-inflammatory drugs should be sufficient, if there is no other concomitant condition necessitating urgent surgical intervention.

CASE REPORT

A 54-year-old man was admitted to Urology Clinic having experienced left scrotal pain radiating to the groin for approximately 3 weeks. He was married and had three children. He had no significant past medical and surgical history. He did not take any supplements or medications. There was no history of trauma, heavy exercise, alcohol consumption, or smoking.

On physical examination; left sided testicular enlargement and moderate tenderness were noticed. For further evaluation with sonographic assessment, the patient was referred to Radiology Department.

In Radiology Department, US was performed as an initial diagnostic method, which showed that left spermatic

venous structures were tortuous and dilated, reaching 6 mm in anteroposterior (AP) diameter maximally (Figure 1A). The presence of dilated and tortuous left spermatic venous structures led us to perform colour Doppler US. On colour Doppler scan of left plexus pampiniformis, there was no bloodflow detected due to the thrombosis of left spermatic vein (Figure 1B). Some micro-calcifications were observed both at the head of epididymis and spermatic vein intraluminally, which could be associated with previous epididymitis or chronic thrombotic process (Figure 1C). The thrombosis was limited to the left spermatic vein. There was no extension visualised.

The patient had no evidence of predisposing coagulopathy including antiphospholipid-antibody syndrome, Protein C or S deficiency, anti-thrombin III deficiency or other thrombophilia. All blood clotting test results were normal. Additionally, there was no underlying condition which might have led to congestion of left spermatic vein. The patient was treated conservatively and was advised for regular follow-up for consequent complications.

DISCUSSION

Isolated spermatic vein thrombosis is a rare pathology. In literature, only 15 patients were reported as the largest case series.² According to the review by Hashimoto *et al.*, 13 patients with thrombosis were misdiagnosed as incarcerated inguinal hernia, preoperatively.² Only two thrombosis cases were correctly diagnosed prior to surgery in this study.² Among these, five were observed and 10 were operated, of these 8 patients successfully underwent thrombectomy and 2 had immediate orchiectomy.² Even if, an apparent predisposing factor for thrombosis was not described in their patient series, 5 patients presented in a post-exercise period as in the case of bilateral metachronous pampiniform plexus thromboses associated with heavy exercise in a soldier, reported by Kayes *et al.*³ They advocated that thrombosis occurs based on decreased blood flow within the gonadal system by the increased intra-abdominal pressure encountered during prolonged exertion.^{2,3}

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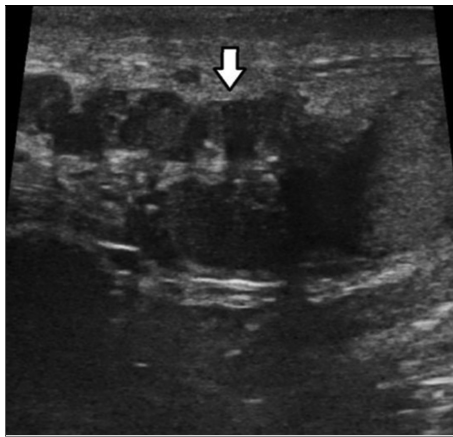


Figure 1a: Ultrasound scan showing dilated and tortuous venous structures.

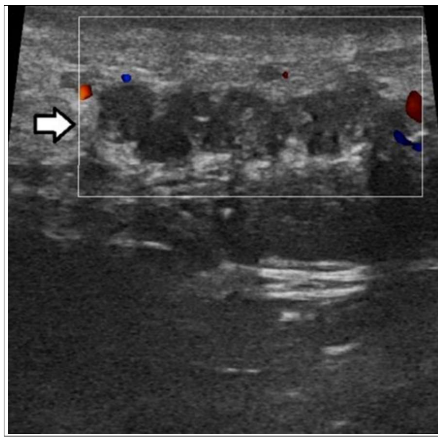


Figure 1b: Colour Doppler ultrasound showing no flow in the spermatic vein.



Figure 1c: Scattered microcalcification in the spermatic cord.

Moreover, it was shown that spontaneous vein thrombosis is also related to prolonged vigorous sexual activity, tumours of the genitourinary tract, infections, trauma, recent inguinal hernia surgery, long-hour flights, and the use of some drugs, especially corticosteroids.^{3,4} Besides this, Moore *et al.* revealed that laparoscopic surgery of inguinal hernia triggers acute thrombosis, mechanically.⁵

Bolat *et al.* showed primary hypercoagulability, heterozygosity for Factor V Leiden mutation, as a possible predisposing factor of spermatic vein thrombosis.⁶

Systemic inflammatory events triggered by sepsis or autoimmune diseases are also implicated in the etiology of thrombosis due to prothrombotic activities.⁷⁻⁹ In contrast to general population, patients with lupus have a 4.6 times and inflammatory bowel disease, a 3-fold risk in terms of venous thrombosis.⁸⁻¹¹ Furthermore, Murthy *et al.* reported a case of pampiniform plexus thrombosis induced by ulcerative colitis.¹²

On US, spermatic vein thrombosis was identified by a tubular hypoechoic noncompressible mass with no bloodflow on color Doppler imaging.²

Some authors claimed that, most of these cases should be managed surgically to remove the thrombus; and surgical approach is indicated to rule out some other diseases such as torsion of the spermatic cord or malignancy.¹³

According to other investigators, conservative treatment including anticoagulant and anti-inflammatory medications with bed rest and scrotal support, should be the standard of care. When the cause of venous thrombosis was identified, anticoagulation therapy was suggested for 3 months by the Canadian Association of Gastroenterology.¹⁴ In this case, conservative approach was preferred as a favourable treatment modality.

In conclusion, this case describes an isolated spermatic vein thrombosis in an adult patient with an unremarkable etiology as a rare case report, which could easily be diagnosed by colour Doppler US.

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