CASE REPORT PEER REVIEWED | OPEN ACCESS

Rare case of thrombosed varicocele causing severe scrotal and groin pain

David Gregory Tighe, William Ziaziaris, Tushar Halder

ABSTRACT

Introduction: Thrombosed varicocele is an abnormal enlargement of the veins within the scrotum, which has developed a blood clot. This condition is relatively rare and can cause significant discomfort or pain. Here we present the case of a male in his early twenties with left-sided groin and scrotal pain shown to be caused by a thrombosed varicocele.

Case Report: A male in his twenties presented to the emergency department with five days of left-sided groin and scrotal pain. An outpatient ultrasound (US) one day prior to presentation demonstrated a reducible, left-sided indirect inguinal hernia and normal testes. Physical examination on presentation demonstrated a firm, tender, irreducible, left groin lump along the spermatic cord. However, no inguinal or femoral hernia was appreciable on physical examination on both supine and standing examinations. After careful consideration, a decision was made not to operate on this incidental, asymptomatic, image-detected small fatty hernia. A repeat inpatient US of the testes and scrotum was performed which did not show sonographic evidence of acute epididymo-orchitis, or inguinal lymphadenopathy. Repeat physical examinations again did not demonstrate clinical evidence of a hernia. A targeted US of the lump posterior to spermatic cord structures was performed, which demonstrated a thrombosed varicocele is an abnormal enlargement of the veins within the scrotum that has developed a blood clot. This condition is relatively rare and can cause significant pain.

Conclusion: Thrombosed varicocele is a rare cause of groin and scrotal pain that can produce a diagnostic challenge.

Keywords: Groin pain, Scrotal pain, Surgery, Thrombosis, Varicocele

David Gregory Tighe[1], William Ziaziaris[2, 3], Tushar Halder[2, 4]

Affiliations: [1]Crown Princess Mary Cancer Centre, Westmead Hospital, Sydney, NSW, Australia; [2]Canterbury Hospital, Department of General Surgery, Sydney, NSW, Australia; [3]Faculty of Medicine and Health, The University of Sydney, Sydney, NSW, Australia; [4]The University of Notre Dame Australia, School of Medicine Sydney Campus, Sydney, NSW, Australia.

Corresponding Author: David Gregory Tighe, Crown Princess Mary Cancer Centre, Westmead Hospital, Sydney, NSW, Australia; Email: david.tighe@health.nsw.gov.au

Received: 12 July 2024
Accepted: 14 August 2024
Published: 11 September 2024

How to cite this article

Tighe DG, Ziaziaris W, Halder T. Rare case of thrombosed varicocele causing severe scrotal and groin pain. J Case Rep Images Surg 2024;10(2):14–17.

Article ID: 100142Z12DT2024

****

doi: 10.5348/100142Z12DT2024CR

INTRODUCTION

In patients with acute scrotal pain, testicular torsion, and acute epididymo-orchitis are often the first diagnoses to be considered [1]. Once these pathologies have been excluded, less frequently encountered differentials should be investigated. Thrombosis of a testicular varicocele is a rare condition, reported in less than 50 cases [2]. Here we present the case of a male in his early twenties with left-sided groin and scrotal pain shown to be caused by a thrombosed varicocele.

CASE REPORT

A male in his twenties presented to the emergency department with five days of left-sided groin and scrotal pain. Pertinent negatives included no nausea, vomiting, dysuria, penile discharge, or changes in bowel habit. He was not sexually active and denied recent viral infection, lower limb cellulitis, or wounds. He had a past medical history of well-controlled asthma and mild scoliosis.

Physical examination demonstrated a firm, tender, irreducible, left groin lump along the spermatic cord between the pubic tubercle and upper border of left epididymis. The epididymis was non-tender. There was no inguinal or femoral hernia appreciable on physical examination on both supine and standing examinations. There was no swelling along the left inguinal canal, Hasselbach's triangle, or femoral canal area. There was no cough impulse over the deep ring. Routine bloods showed mildly raised white cell count (WCC) (11.5) and C-reactive protein (CRP) (69.5). Urine dipstick and cultures were negative. Outpatient ultrasound (US) one day prior to presentation demonstrated a reducible, left-sided indirect inguinal hernia and normal testes. Computed tomography (CT) of the abdomen and pelvis was performed given the severity of the patient's pain which confirmed a small, fat-containing left indirect inguinal hernia, without features of fat strangulation (Figure 1). Clinically, a decision was made not to operate on the patient for incidental, asymptomatic, image-detected small fatty hernia, and the patient was admitted for observation. Other key differentials that were excluded included testicular torsion, torsion of the appendix testis, epididymo-orchitis, acute abdominal pathology with radiation of pain to the scrotum, and painful lymphadenopathy.

The patient was managed with simple and opiate analgesia and intravenous (IV) antibiotics for possible epididymo-orchitis. His WCC and CRP trended downward and a repeat inpatient US of the testes and scrotum was performed which did not show sonographic evidence of acute epididymo-orchitis, or inguinal lymphadenopathy. The US again showed a small, fat-containing, reducible, left-sided indirect inguinal hernia with a 7 mm neck. Importantly there was no strangulation or probe tenderness over the hernia contents.

Repeat physical examination did not demonstrate clinical evidence of a hernia. The left testicle remained tender, and a painful, firm lump was again noted posterior to spermatic cord structures. Differentials for this were painful lymphadenopathy or a varicocele, so a targeted ultrasound of this region was performed. When imaging the lump, a non-compressible, serpiginous, 3 mm hypoechoic structure was seen with significant probe tenderness. It demonstrated internal echogenicity and no internal flow on color Doppler (Figures 2 and 3). These findings favored a thrombosed left varicocele.

Based on a brief literature review, a decision was made to trial conservative treatment prior to proceeding with surgery. We did not identify any literature strongly supporting the use of anticoagulation for our patient, and he did not have any malignancy or known prothrombotic factors. The patient was discharged home with oral antibiotics, oral analgesia including non-steroidal anti-inflammatories, and advice regarding scrotal support. On follow-up three months later, the patient reported that the pain had reduced to a mild level two weeks after discharge, due to taking ibuprofen. The pain had completely resolved four weeks after discharge.

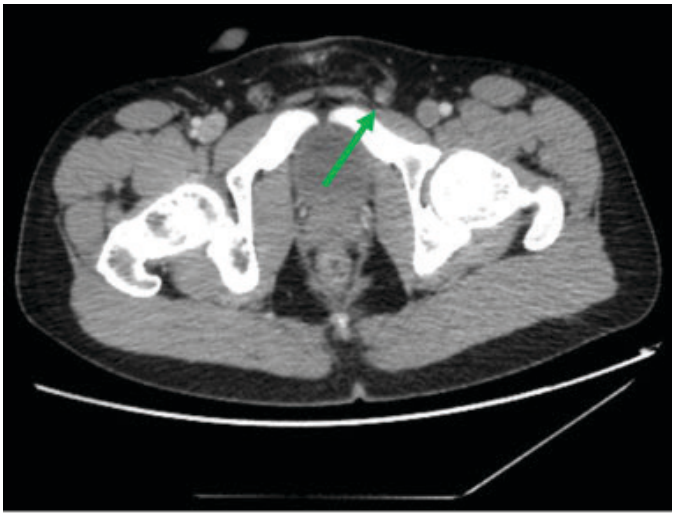

Figure 1: Computed tomography demonstrating small, fat-containing left indirect inguinal hernia, without features of fat strangulation.

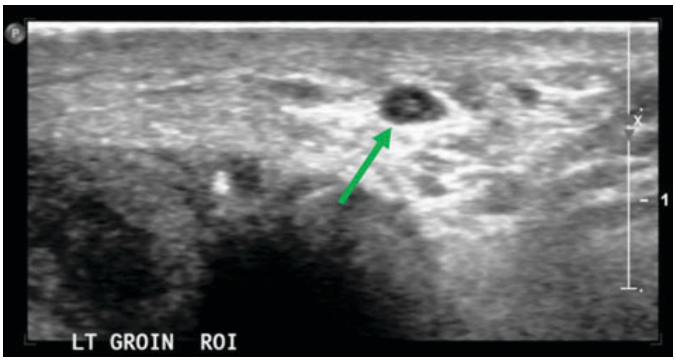

Figure 2: Ultrasound of left groin demonstrating 3 mm hypoechoic structure.

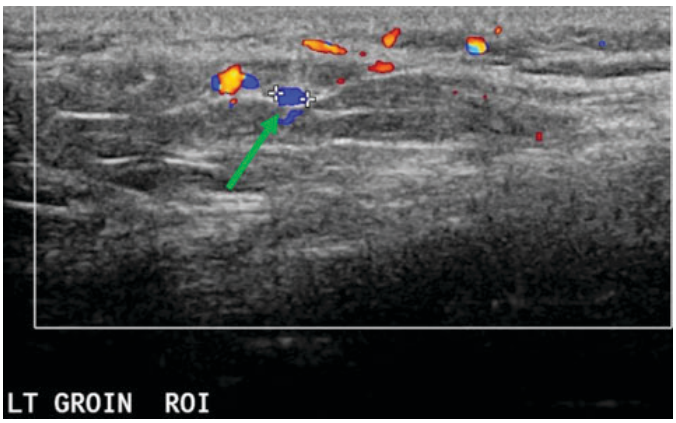

Figure 3: Color Doppler ultrasound image demonstrating thrombosed varicocele.

DISCUSSION

Here we present a case of a young male with spontaneous thrombosed left varicocele. A significant element of this case was the co-existence of an ultrasound- and CT-proven uncomplicated fat-containing indirect inguinal hernia, which caused diagnostic uncertainty. Relying solely on the imaging rather than clinical examination

could have resulted in an unnecessary hernia operation, potentially worsening the patient's groin pain considerably. Instead, repeated examination and focused imaging ensured a correct diagnosis which could be conservatively managed. Notwithstanding this, surgical exploration of undifferentiated acute scrotal pain remains an entirely appropriate option, particularly in instances where ultrasound is difficult to obtain in a timely fashion.

Whiteley et al. identified 41 cases of thromboses of the spermatic vein, pampiniform plexus, or testicular vein [2]. There was a predominance of left-sided thromboses, which is thought to relate to increased venous pressures within the system of left gonadal veins due to drainage via the left renal vein [3]. The patient we report also had left-sided thromboses, similar to previously reported cases. Less than half of patients reported by Whiteley et al. had associated trauma or high-intensity activity prior to development of pain [2]. A small number of reported cases developed thrombosis iatrogenically after varicocelectomy [2, 4]. Thrombosis related to an underlying prothrombotic hematological condition has also been described [5]. There were no aggravating mechanical or physiological factors present in our reported case. The clinical grading of a non-thrombosed varicocele allocates grade 0 for non-palpable varicoceles visualized only on ultrasound; grade 1 if palpable with Valsalva maneuver; grade 2 if palpable without Valsalva but not visible; and grade 3 for visible varicoceles [6]. Given their rarity, no grading system exists for thrombosed varicoceles.

Due to the paucity of published cases, there is no literature comparing physical examination to imaging in diagnosing thrombosed varicoceles or differentiating it from an incarcerated hernia. Importantly, ultrasound has 100% specificity for clinically palpable inguinal hernias, but this drops to 77% when the hernia is not appreciable on physical exam [7, 8]. Thus, some patients without a hernia but with a positive ultrasound may be committed to unnecessary surgery if the imaging findings are not closely correlated with physical examination. The diagnosis of a clinically suspected thrombosed varicocele is confirmed in most cases by ultrasound, particularly with the added advantage of color Doppler images [2, 9, 10]. A small number of patients also receive a CT scan, which can be helpful in distinguishing a thrombosed varicocele from other groin pathologies [2, 9]. In our case, the initial inpatient ultrasound did not demonstrate the varicocele but was performed by a general sonographer. The repeat targeted ultrasound was performed with both the surgical and radiology teams present to ensure the area of interest was properly imaged.

Management of thrombosed varicoceles remains controversial, with conservative and surgical options described. Conservative therapies include analgesia, anti-inflammatories, antibiotics, and anticoagulation. Surgical management is with either excision of the thrombosed varicocele or in some severe cases orchidectomy [2, 11]. The view espoused by several authors is that conservative management should be trailed initially, with surgery reserved for patients whose pain persists, or in case of diagnostic uncertainty [1, 9, 11, 12]. Notwithstanding this, Raghavendran et al. reported success and resolution of pain following upfront varicocelectomy in their patient, though larger cohort studies comparing conservative versus surgical management are required to inform future treatment protocols [11].

CONCLUSION

Thrombosed testicular varicoceles are a rare clinical phenomena and cause of acute scrotal or groin pain but should be considered once testicular torsion and epididymo-orchitis are excluded. Our case adds to the body of literature describing this pathology and serves to aid clinicians in differentiating causes for acute scrotal and groin pain. Important in our case was the reliance on clinical examination to distinguish a scrotal pathology from a radiologically proven but clinically asymptomatic indirect inguinal hernia.

REFERENCES

1. Sieger N, Di Quilio F, Stolzenburg JU. What is beyond testicular torsion and epididymitis? Rare differential diagnoses of acute scrotal pain in adults: A systematic review. Ann Med Surg (Lond) 2020;55:265–74.
2. Whiteley MS, Abu-Bakr O, Holdstock JM. Testicular vein thrombosis mimicking epididymo-orchitis after suspected Covid-19 infection. SAGE Open Med Case Rep 2021;9:2050313X211022425.
3. Kayes O, Patrick N, Sengupta A. A peculiar case of bilateral, spontaneous thromboses of the pampiniform plexi. Ann R Coll Surg Engl 2010;92(7):W22–3.
4. Zampieri N, Castellani R, Mantovani A, Scirè G, Peretti M, Zampieri G, Camoglio FS. Thromboses of the pampiniform plexi after subinguinal varicocelectomy. Pediatr Surg Int 2014;30(4):441–4.
5. Jacobs J, Sharma D, Vnencak-Jones C. The first report of a JAK2 V617F-positive myeloproliferative neoplasm with initial manifestation as a rare pampiniform venous plexus thrombosis and review of the literature. J Thromb Thrombolysis 2022;53(1):213–7.
6. Partin AW, Dmochowski RR, Kavoussi LR, Peters CA, Wein AJ. Campbell Walsh Wein Urology. 12ed. USA: Elsevier; 2020.
7. Bradley M, Morgan D, Pentlow B, Roe A. The groin hernia – An ultrasound diagnosis? Ann R Coll Surg Engl 2003;85(3):178–80.
8. Robinson A, Light D, Kasim A, Nice C. A systematic review and meta-analysis of the role of radiology in the diagnosis of occult inguinal hernia. Surg Endosc 2013;27(1):11–8.
9. Bakshi S. Bilateral spontaneous thrombosis of the pampiniform plexus mimicking incarcerated inguinal hernia: Case report of a rare condition and literature review. Surg Case Rep 2020;6(1):47.
10. Hamdouni W, Bchir S, Abidi M, Boukhrissa N, Ktari K, Saad H. Right-sided varicocele thrombosis

complicating an acute epididymo-orchitis: A case report and review of the literature. Urol Case Rep 2021;39:101710.
11. Raghavendran M, Venugopal A, Kiran Kumar G. Thrombosed varicocele – A rare cause for acute scrotal pain: A case report. BMC Urol 2018;18(1):34.
12. Bolat D, Gunlusoy B, Yarimoglu S, Ozsinan F, Solmaz S, Imamoglu FG. Isolated thrombosis of right spermatic vein with underlying Factor V Leiden mutation. Can Urol Assoc J 2016;10(9–10):E324–7.

****

Author Contributions

David Gregory Tighe – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

William Ziaziaris – Conception of the work, Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Tushar Halder – Conception of the work, Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.