

CASE REPORT

General Medicine

A rare case of bilateral testicular torsion in a 57-year-old man

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Abstract

Context: Testicular torsion, the twisting of the testis or spermatic cord, places the testis at risk of vascular compromise and is a surgical emergency. Testicular torsion is predominantly unilateral (98% of torsion cases) and primarily affects neonates and adolescents in a bimodal distribution. Bilateral testicular torsion is exceedingly rare (2% of cases) and is associated with neonates. To the authors' best knowledge, there have been no reports of bilateral torsion in adult males over the age of 24.

Case details: A 57-year-old man presented to the emergency department 9 days after developing testicular pain while lifting his lawnmower. Ultrasonography performed at an outside facility was unremarkable. He was encouraged to followup with urology as an outpatient. Despite outpatient analgesia, he continued to experience pain and returned to the ED, where repeat ultrasonography demonstrated bilateral torsion with hypoperfusion.

Discussion: Although testicular torsion is uncommon, the clinician must recognize torsion; if left untreated, torsion leads to infertility. Previous publications suggest that ultrasonographic findings of bilateral testicular torsion should be attributed to "technical failure" rather than a plausible diagnosis. However, this case demonstrates the importance of maintaining a high index of suspicion, especially with an atypical age range and pathological presentation, particularly among men during their reproductive years.

KEYWORDS

bilateral testicular torsion, testicular pain, testicular torsion

1 | INTRODUCTION

Testicular torsion is defined as the twisting of the testis or spermatic cord within the scrotum, and is a surgical emergency because of the risk of vascular compromise of the testis. About 0.5% of all emergency department visits are attributed to scrotal complaints, of which nearly one quarter are diagnosed as testicular torsion.^{1,2} Overall, tes-

ticular torsion is rare with an annual incidence of approximately 5.9 per 100,000 males under 18 years of age and 1.3 per 100,000 males 18 years and older.³

Testicular torsion can be unilateral or bilateral. Unilateral testicular torsion primarily affects neonates and adolescents in a bimodal distribution, whereas bilateral torsion primarily affects neonates.⁴ Moreover, bilateral torsion is uncommon, comprising less than 2% of all reported torsion cases.⁴

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In this case report, we describe a rare presentation of a 57-year-old man who presented to the ED with 9 days of testicular pain and was found to have bilateral testicular torsion.

2 | CASE PRESENTATION

A 57-year-old white man presented to our ED for testicular pain. His past medical history was significant for myelodysplastic syndrome (MDS), which was diagnosed 10 years before and treated with chemotherapy, total body irradiation, and subsequent stem cell transplantation, and radiation-associated hypogonadism treated with testosterone replacement therapy. He was previously informed by his oncologist that his MDS was in remission.

While lifting his lawnmower 9 days before, he felt a “pop” and developed right groin pain that progressively worsened over the subsequent days. His pain was localized to the bilateral testes and characterized as steady burning, with periodic “bursts” of pain. After 7 days of pain, he was evaluated at another ED, informed that his scrotal ultrasound was negative, and instructed to follow up with outpatient urology. Two days later, he continued to experience progressively worsening pain refractory to outpatient management with oral non-steroidal anti-inflammatory drugs and oxycodone, prompting his reevaluation at another ED. Repeat ultrasound showed “symmetric testicular hypoperfusion of unclear significance. As the likelihood of a bilateral torsion is extremely unlikely, the finding more likely reflects technical factors. Alternate considerations include vasculitis or systemic arterial thrombotic disease.” He was subsequently transferred to our tertiary care hospital ED for urological consultation.

On physical examination, he had no suprapubic or abdominal tenderness. His testes were high riding, atrophic, and tender bilaterally. The cremasteric reflex was absent bilaterally. There were no palpable hernias and no overlying skin changes. Initial laboratory findings, including complete blood count (CBC), basic metabolic panel, and urinalysis, were unremarkable. Scrotal ultrasound demonstrated a homogenous echotexture, absent venous flow, and diminished arterial flow of bilateral testes (Figures 1 and 2). Radiology interpreted the ultrasound as “markedly decreased flow in the bilateral testicle of uncertain etiology. This could be concerning for torsion, although this is an [un]usual presentation.” Computed tomography of the abdomen and pelvis demonstrated no acute abnormalities, specifically no hernias.

Urology was consulted for surgical evaluation and management of bilateral testicular torsion. After joint discussion between the urological service, patient, and patient’s wife, the consensus decision was to defer surgical detorsion given the duration of symptoms, unlikely salvageability, and risk/benefit of surgical exploration.

3 | DISCUSSION

Testicular torsion, the twisting of the testis or spermatic cord owing to abnormal fixation of the testis within the tunica vaginalis, can result in

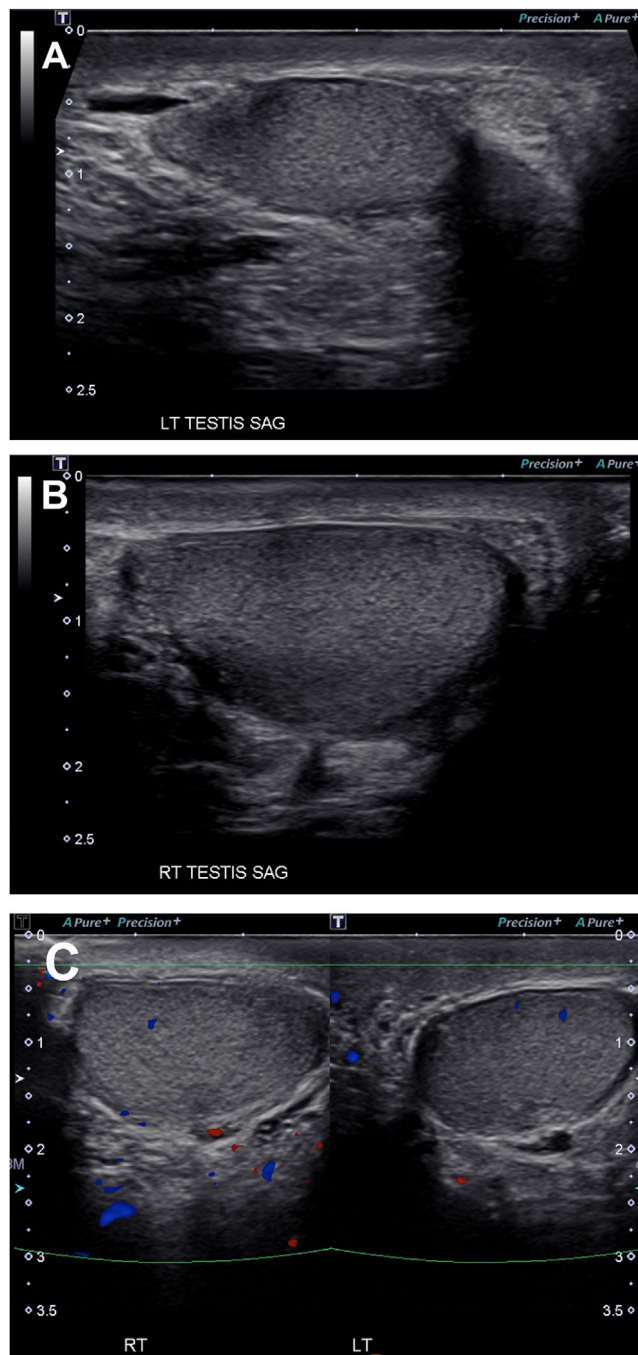


FIGURE 1 A. Left testicle noted to be atrophic and have a homogenous echotexture with a size of $2.9 \times 1.2 \times 1.9$ cm. B. Right testicle noted to be atrophic and have a homogenous echotexture with a size of $2.7 \times 2.7 \times 1.5$ cm. C. Color doppler ultrasound of both testicles

vascular compromise. If left untreated, torsion ultimately results in testicular infarction and infertility.^{5,6}

There are 2 types of testicular torsion: intravaginal and extravaginal. Extravaginal torsion is common in the perinatal period, where the attachments of the tunica vaginalis to the scrotal wall are incompletely developed. As the child grows and the attachments strengthen, the incidence of extravaginal torsion decreases. Intravaginal torsion occurs

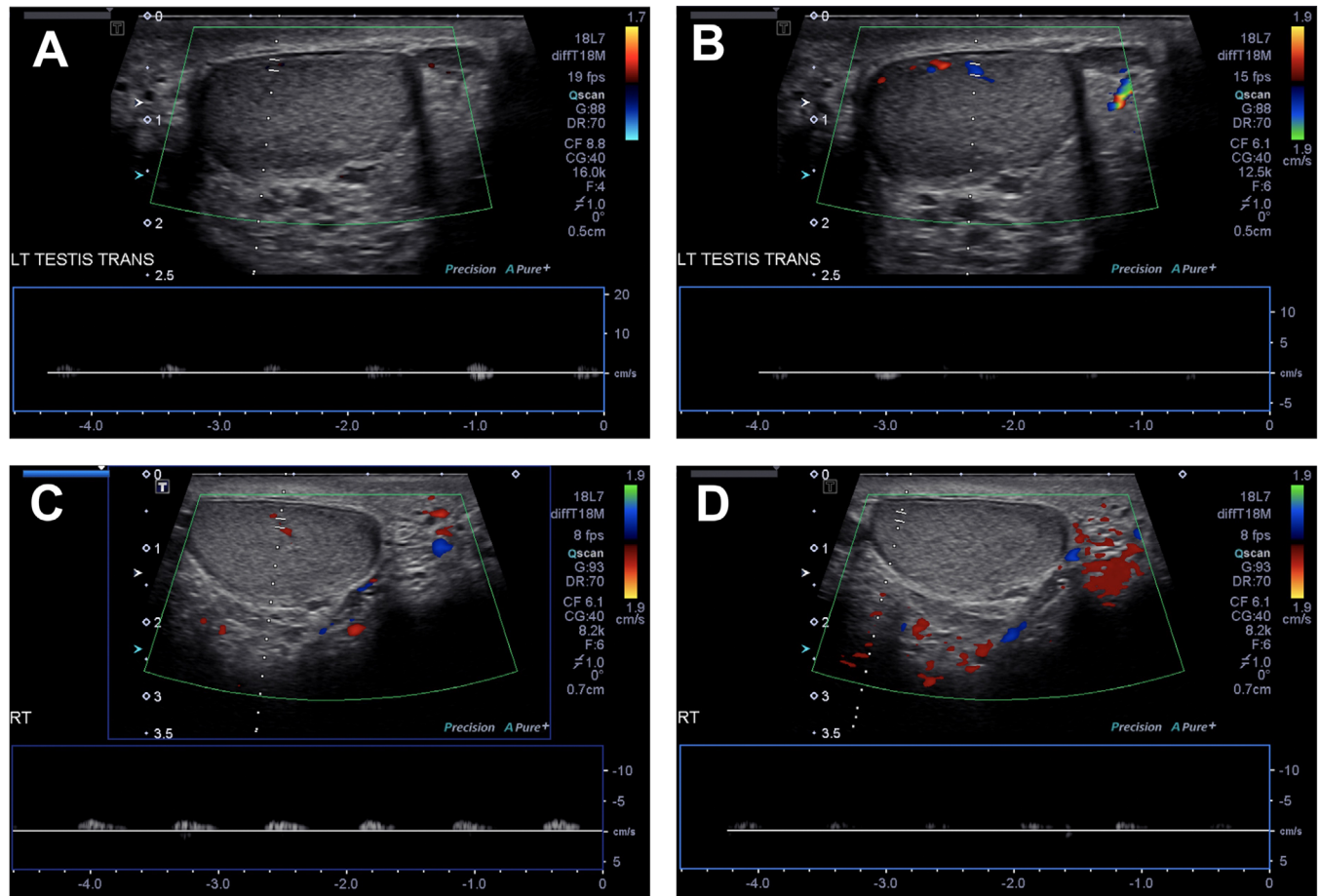


FIGURE 2 Diminished arterial flow on doppler ultrasound noted in different portions of the left testicle (A and B) and right testicle (C and D)

because of anatomic abnormalities within the tunica vaginalis (eg, Bell-Clapper deformity) and periods of testicular growth during puberty.^{7,8}

These anatomic differences help explain the bimodal distribution of testicular torsion, which primarily affects pediatric and young adult male patients with peaks in the neonatal period and during puberty.⁵ The annual incidence of testicular torsion in males under the age of 25 is 1 in 4000; 66% occur between the ages of 12 and 18 years with a peak incidence at 14 years.^{5,7-10}

Simultaneous bilateral torsion is even more rare than unilateral cases, accounting for roughly 2% of torsion cases overall. The vast majority of bilateral torsion involves neonates because of their incompletely developed scrotal attachments.⁴ To the authors' best knowledge, there are only 5 adult cases of bilateral testicular torsion in the literature, with ages ranging from 18 to 24 years.¹¹⁻¹⁵

A discussion in an *ACR Bulletin* regarding sonography in genitourinary disorders stated that "if no flow is seen on either side, consider the exam a technical failure."¹⁶ This attitude reflects general opinion regarding adult bilateral testicular torsion. However, as Lorenzo et al. and Washowich suggest, bilateral torsion can be misleading and must be considered within the differential diagnosis.^{7,15}

The 2 most important prognostic factors that determine salvageability and extent of testicular damage are duration of symptoms before detorsion and degree of twisting.⁷ The viability of the testis

begins to decline significantly after 6 hours of symptom onset.¹⁷ Furthermore, Tryfonas et al. found absent or severely atrophied testes if torsion was more than 360° and symptoms lasted beyond 24 hours.¹⁸ Therefore, it is imperative that the clinician recognize this surgical emergency and consult urology emergently if a clinical suspicion of torsion exists.

Doppler ultrasound can aid in the diagnosis of torsion when clinical suspicion is present. Early findings can range from a normal testis with homogeneous appearance to an enlarged testis due to edema from venous occlusion.¹⁹ As torsion progresses and arterial occlusion occurs, the hemorrhagic and ischemic portions of the testis demonstrate a more heterogenous echotexture on ultrasound.¹⁹ With further progression toward subacute and chronic torsion, the echogenicity of the testis decreases, and the testis may show focal or diffuse infarction and gradually appear atrophic.²⁰ In addition to the physical appearance and echotexture of the testis, color doppler, and spectral doppler are effective ways in detecting ischemia and may be useful in detecting partial or complete torsion.^{19,21} Literature has shown that by combining these radiographic features, doppler ultrasound has a sensitivity ranging from 88.9% to 100% and specificity ranging from 97.9% to 98.8% for the diagnosis of testicular torsion.²²⁻²⁴

In this case, we report on a 57-year-old male patient with bilateral testicular torsion with symptoms lasting more than 1 week. His

constellation of symptoms included persistent, intermittent, and worsening testicular pain. As previously discussed, torsion is a rare cause of testicular pain in older men. More common causes of testicular pain in adults over 40 years of age include hydrocele, epididymitis, orchitis, trauma, and neoplasm.²⁵ However, the acute atraumatic nature of this patient's bilateral testicular pain and the subsequent delay in evaluation clinically correlates with a subacute/chronic presentation, manifesting as atrophic testes, absent venous and diminished arterial flow, and homogeneous echotexture. Furthermore, a subacute presentation may not show the classic heterogenous echotexture of acutely infarcted testes. Finally, there were neither systemic symptoms nor radiographic or laboratory evidence to suggest another cause of testicular pathology.

Despite the reliable pattern of age distribution, Mattigk et al. reported a case of torsion in a man 82 years of age.²⁶ Therefore, it is incumbent on the clinician to maintain a high index of suspicion for torsion in patients of any age with testicular pain. Although more than 88% of testicular torsion occurs before the age of 25 years, torsion should not be ruled out based on age alone.^{28,29} Goh et al. hypothesized that as testicular volume decreases with age, the relative increase in intravaginal space could result in additional testicular mobility and torsion.²⁷ In a similar fashion, we hypothesize that our patient's prior history of radiation-associated hypogonadism and testosterone therapy are factors that increase his risk for torsion.

Given the patient's personal hesitation and preference regarding surgery, and the duration of his symptoms before presentation, the patient declined pursuing urological surgery. However, given this atypical presentation in an atypical age range, it must be emphasized that clinicians should maintain a high index of suspicion and recognize this time-sensitive and potentially organ-compromising condition that can present in adult male patients.

DISCLOSURES

The authors have indicated they have no financial relationships relevant to this article to disclose.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

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