Misleading Symptoms in Testicular Torsion: Two Cases of Diagnostic Delay in Two Months

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Abstract

We present two clinical cases of testicular torsion which attended our primary healthcare center within a short period of 2 months. These were a 14-year-old teenage boy, and a 36-year-old male. Both cases had rather atypical features and unfortunately, both had to undergo orchiectomy due to delayed presentation. We will also review relevant literature to elucidate the findings of our cases in light of available evidence. Our aim is to highlight the utmost significance of clinician's alertness to this urgent diagnosis in patients presenting with acute scrotum and swift surgical intervention in an attempt to salvage a functioning testis.

Key words. Testicular, Torsion, bell clapper deformity, orchidectomy

Introduction

Acute scrotum is defined as a sudden painful swelling of the scrotum and/or its contents, accompanied by local signs or systemic symptoms [1]. Testicular torsion is the most important and potentially serious of the acute processes affecting the scrotal contents because, without prompt evaluation and surgical exploration, it may result in the loss of the testicle which can lead to subfertility or infertility, and psychological trauma in men [2]. Surgical exploration is the only definitive management option and should be performed without delay, preferably within 6 hours of the onset of symptoms, in order to have the highest chance of saving the affected testicle.

Case Presentations

Case No. 1:
In October 2024, a 14 year old male patient presented to a walk-in clinic in our primary care health center with a history of left sided testicular pain and swelling for 24 hours. There was no history of vomiting or fever. The patient was otherwise fit and well with no significant past medical history. There was no recent history of trauma or fever. The patient was up to date with immunizations.

Physical examination showed a grossly swollen and very tender left testis. The overlying scrotal skin was inflamed. The cremasteric reflex was absent. The rest of the examination of the abdomen and hernial orifices was normal.

It is worth noting that 2 days prior to this presentation, the patient was seen in the pediatric emergency department with complaint of left sided lower abdominal pain without diarrhea or vomiting or urinary symptoms. There was no fever. At that time, the patient had not complained of any scrotal symptoms. The patient was assessed and no obvious cause was found for the abdominal pain. Constipation was suspected. Patient was discharged with safety netting advice. However, records do not show any mention of genital/scrotal examination.

The possibility of testicular torsion was discussed with the patient and guardian, and the patient was transferred to the pediatric emergency department straightaway via ambulance for further evaluation. An urgent Doppler ultrasound was carried out and the following findings were noted:

“The left testis appears heterogeneous, with no detectable parenchymal flow and multiple hypoechoic areas, probably representing necrosis. No central perfusion on color Doppler. Epididymis is bulky and heterogeneous exhibiting no vascular flow. The spermatic cord is twisted and markedly thickened. Conclusion: left testicular torsion with potential necrotic changes.

Urgent surgical exploration was performed. The left testis was found dark with 270-degree clockwise torsion. Detorsion was done, warm compresses applied. The color remained the same after about 15 min. Left orchidectomy was performed. Right orchiopexy was also carried out.
Histopathology report showed a congested and hemorrhagic cut surface of testicular parenchyma and epididymis consistent with hemorrhagic infarction due to torsion.

Case No. 2:
In December 2024, a 36-year-old male patient presented to a routine family medicine clinic complaining of sudden onset of pain in left sided scrotum 2 days ago. The pain was present all the time and it was associated with swelling of the left hemi-scrotum but no vomiting or diarrhea. There was no history of injury. The patient did not complain of any fever and there was no dysuria or urethral discharge. The patient had no other significant past medical history. He was married and had one child. There is no history of past sexually transmitted infections.

Physical examination revealed tense and swollen left testis without any significant overlying inflammation. The testis appeared to be higher in the scrotal sac and lying transversely. The rest of abdominal examination was normal, and no groin hernia was present.

The Patient was admitted straightaway under urology for further evaluation, with suspected testicular torsion. A doppler ultrasound was carried out on an urgent basis.

The following findings were noted on ultrasound:
LT Testis: Edematous, hypoechoic with spots of calcifications, and no vascularity [Figure 1.] The left spermatic cord is bulky, heterogenous with whirlpool appearance, and peripheral vascularity but devoid of central vascularity [Figure. 2]. Conclusion: Left testicular total infarction likely due to neglected torsion.

Urgent surgical exploration of scrotum was carried out. The following findings were noted during surgery:

Left testicular torsion two and half complete twists. Testis was blue in color, left epididymis was black and gangrenous. Detorsion done. Vascularity was NOT regained even after 15 minutes of warm gauze application. Left orchiectomy was performed and Right orchiopexy carried out. The histopathology report confirmed the findings of necrotic left testis and epididymis due to infarction.

Figure 1: Doppler Ultrasound of both testes. Edematous, hyperechoic left testicle (white arrow) with spots of calcifications and no vascularity.

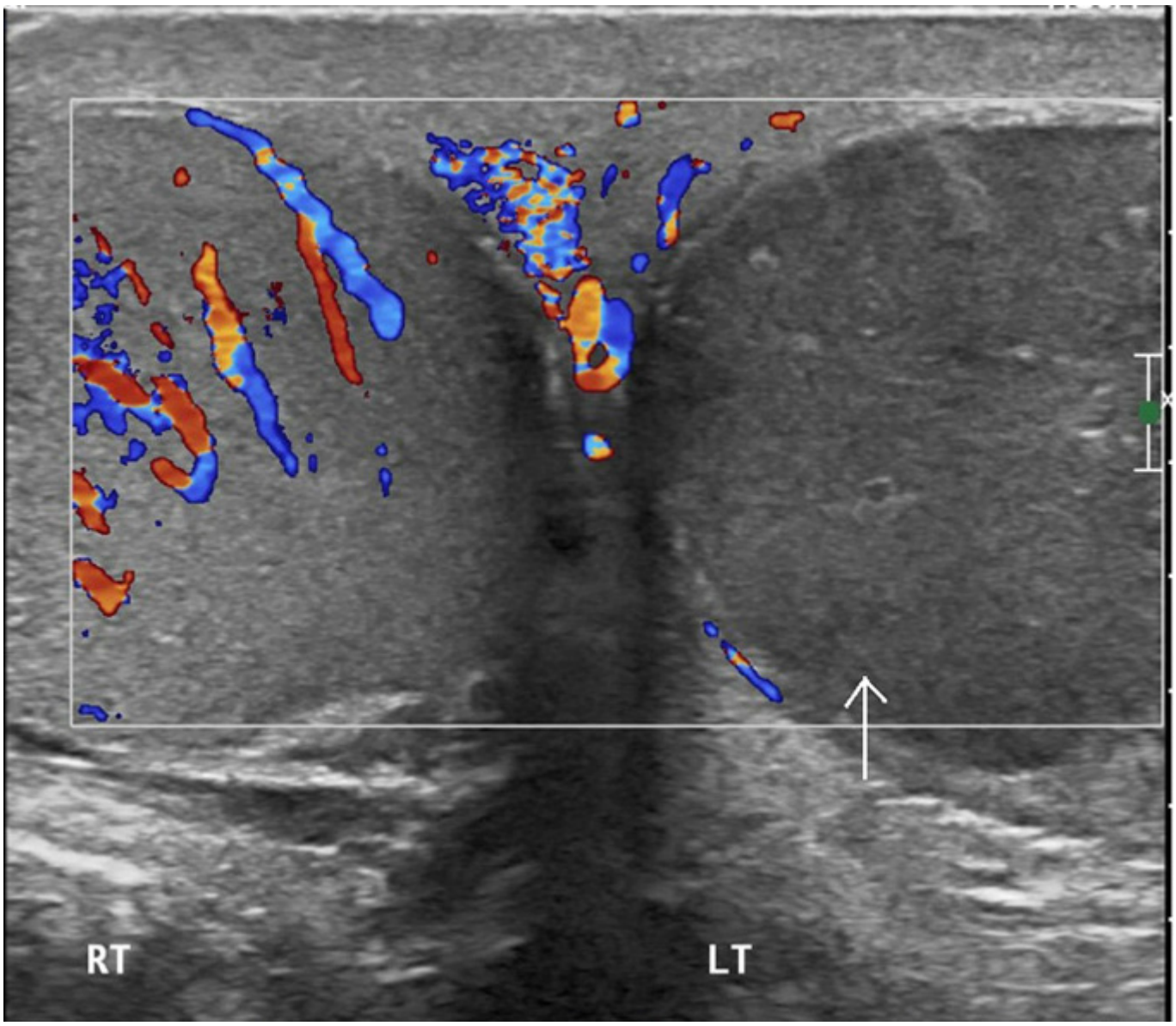
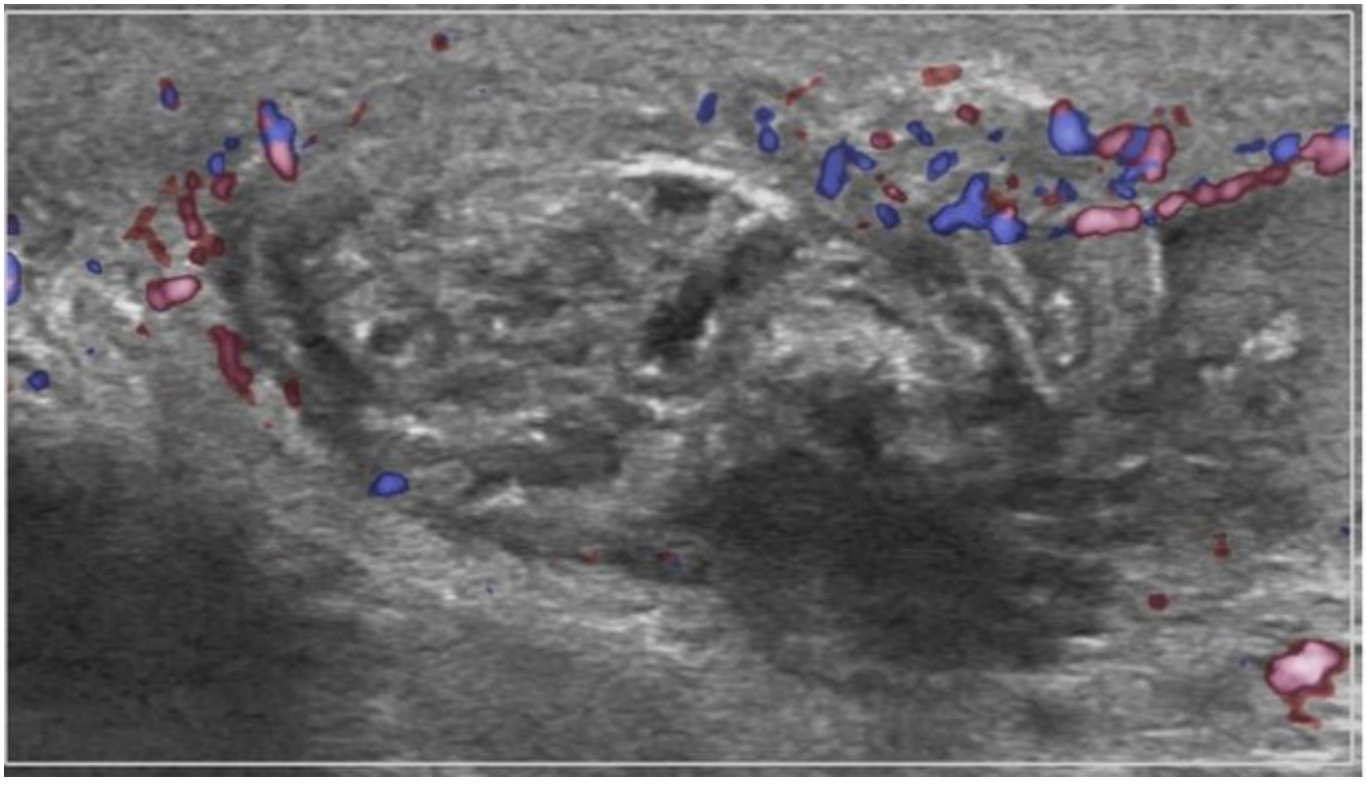


Figure 2: The left spermatic cord is bulky, heterogenous with peripheral vascularity but lacking central vascularity



Discussion

The differential diagnosis of the acute scrotum is broad and the proportion of patients present¬ing with each of these conditions varies [3]. The most common causes of acute scrotal pain in children and adolescents include testicular torsion, torsion of the appendix testis, and epididymitis. A 2-year retrospective review of 238 cases of acute scrotal pain encountered in a children's hospital emergency department revealed the incidences of testicular torsion, torsion of a testicular appendage, and epididymitis as 16%, 46%, and 35%, respectively (making up 97% of all causes) [4]. Because testicular parenchyma cannot tolerate ischemia for more than a short time, testicular torsion must be ruled out rapidly as the cause [5].

Various countries have reported similar incidence rates with some variation. In USA, the incidence of testicular torsion has been reported as 4.5 cases per 100,000 in 1-25 years of age in male subjects per year [6]. Two peaks of incidence have been reported when plotted by age group. A small peak happens during the neonatal period, but the majority of cases occur around the average age of puberty [7]. Although, the incidence decreases after 25 years of age, testicular torsion can happen in older adults. Therefore, age is not useful in discriminating between patients with testicular torsion from other patients with scrotal pain [8]. Thus, one of our cases presented at 36 years of age where an infective cause would normally be suspected in most cases.

The typical symptoms of testicular torsion include sudden onset of severe unilateral testicular pain associated with nausea and vomiting [1,9,10].

On examination, the ipsilateral scrotal skin may be indurated, erythematous, and warm, although changes in the overlying skin reflect the degree of inflammation and may change over time [10]. The spermatic cord shortens as it twists, so the testis may appear higher in the affected scrotum. This is a very specific finding and, when present, is strong evidence of testicular torsion. Because of venous congestion, the affected testis also may appear larger than the unaffected testis [11]. The affected testicle can also have an abnormal horizontal orientation. The presence of the cremasteric reflex suggests, but does not confirm, the absence of testicular torsion [10]. The well-known TWIST score (Testicular Workup for Ischemia and Suspected Torsion) which is based mainly on the above features is a useful tool for testicular torsion diagnosis. Meta-analyses revealed that the TWIST score achieves high sensitivity and high specificity [12].

Unfortunately, not every patient with testicular torsion presents with straightforward testicular pain. A significant minority of males with testicular torsion may present with vague abdominal or groin pain and not initially report testicular pain [13]. The lower abdominal pain or inguinal pain may move to the scrotum a few hours after the onset of the initial abdominal presentation [13].

Similarly, in our first case the presentation was atypical. In the case of the 14-year-old patient, he initially presented to emergency department with flank/abdominal pain without any scrotal symptoms. After 2 days, he presented to our clinic with 24 hours history of left sided scrotal swelling and pain. It can be assumed that his symptoms were initially abdominal but later shifted to scrotum, thus resulting in significant delay in diagnosis and, sadly, loss of one testicle. This presentation emphasizes the importance of a complete genitourinary examination in all males who present with abdominal pain. In particular, the external genital organs should be examined in every child or adolescent with acute abdominal pain.

Ultrasound is an effective diagnostic tool for testicular torsion. Studies have found that the diagnostic sensitivity of color doppler ultrasound for testicular torsion can reach 80% to 98%, and the specificity can reach almost 99% [14]. However, as discussed later, the window of opportunity for achieving the highest rates of salvaging testis is very brief (6 hours) with the chances falling drastically with every passing hour. Some researchers argue that the delay associated with performing imaging can extend the time of testicular ischemia, thereby decreasing testicular salvage rates [8]. Both our patients underwent immediate pre-operative Doppler ultrasound which confirmed testicular torsion.

Surgical exploration is the only definitive management option and should be performed without delay. Prompt restoration of blood flow to the ischemic testicle is critical in cases of testicular torsion [15]. The viability of the testicle in cases of torsion is difficult to predict; hence, emergent surgical treatment is indicated despite many patients presenting beyond the four- to eight-hour time frame [16]. Reported testicular salvage rates are 90% to 100% if surgical exploration is performed within six hours of symptom onset, decrease to 50% if symptoms are present for more than 12 hours, and are typically less than 10% if symptom duration is 24 hours or more [11,17]. Systematic review of the literature demonstrates that survival percentages are significant even past 24 hours of torsion (25 to 48 hours, 24.4%; and greater than 48 hours, 7.4%) [17]. Hence, these percentages should be considered approximate rather than absolute for the purpose of counseling patients or making clinical decisions [3].
Orchiectomy is performed if the affected testicle appears grossly necrotic or nonviable [3]. If the affected testicle is deemed viable, orchiopexy with permanent suture should be performed to permanently fix the testicle within the scrotum [18]. Contralateral orchiopexy should be performed regardless of the viability of the affected testicle [19]. The bell clapper deformity that increases testicular mobility and, therefore, the risk of torsion, is bilateral in up to 80% of patients [20]. It is assumed to be present contralaterally in all patients with testicular torsion [11].

The absence of a testicle has been shown to be a psychologically traumatic experience for males of all ages. This is more likely in patients who have lost a testis

(e.g. due to testicular torsion) compared to those born with an absent testis. Testicular prosthesis have been shown to reduce the psychological impact resulting from loss or absence of a testicle. Therefore, prosthesis insertion should be offered to all patients undergoing orchidectomy either at the same time, or as future procedure [2].

Conclusion

Testicular torsion is the most urgent of all the acute processes affecting the scrotal contents because it can very quickly result in the loss of the testicle which can lead to subfertility or infertility, and psychological trauma in men. It can occur in older adults although the incidence decreases after 25 years of age. A significant minority of males with testicular torsion may present with vague abdominal or groin pain rather than typical testicular/scrotal pain. Therefore, a low threshold of suspicion for possible testicular torsion and complete genitourinary examination is crucial because surgical exploration is the only definitive management option and should be performed without delay, preferably within 6 hours of the onset of symptoms in order to have the highest chance of saving the affected testicle.

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