

Testicular Torsion in undescended testis : A formidable challenge, Case report with review of literature

Shubh Narayan Ghanghoriya ¹, Divya Sengar ¹, Yadunandan Saraf ², Saibee Khan ², Pankaj Shastri ³, Advait Prakash ^{4*}

¹ Junior resident -III , Department of General Surgery Sri Aurobindo Institute of medical sciences & Post graduate Institute, Indore

² Junior resident -I , Department of General Surgery Sri Aurobindo Institute of medical sciences & Post graduate Institute, Indore

³ Associate professor, Department of Pediatric Surgery Sri Aurobindo Institute of medical sciences & Post graduate Institute, Indore

⁴ Professor & Head, Department of Pediatric Surgery Sri Aurobindo Institute of medical sciences & Post graduate Institute, Indore

***Corresponding Author:** Advait Prakash, Professor & Head, Department of Pediatric Surgery Sri Aurobindo Institute of medical sciences & Post graduate Institute, Indore

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Abstract

Torsion of an undescended testis is a surgical emergency whose frequency may be underestimated in the Pediatric population. Testicular torsion is the most serious cause of acute scrotum and may result in the loss of testicle. This event may occur even before the currently recommended age for surgery, which is at 6–9 months. The risk of torsion of UDT is understated. Testicular torsion in undescended testis is still diagnosed with delay which may affect testicular salvage Paediatricians should be educated about this complication and torsion should be included in the differential diagnosis when a boy with an empty scrotum presents with acute abdomen or red and tender swelling in the groin, as early detection and intervention can help salvage the testes. We present a rare case of torsion of undescended testes and its subsequent diagnosis and management.

Keywords: undescended testis; testicular torsion; orchidopexy; acute scrotum

Introduction

An undescended testicle (UT) is a rare, congenital or acquired condition where one or both testis have incompletely descended from the abdomen through the inguinal canal and are thus absent in the scrotum. Multiple genetic mutations have been found to be associated with maldescent of the testis resulting in ectopia, where the testicle deviates from normal path and ends up in unusual, non-scrotal position. [1] Recent data show that the prevalence of UDT is up to 40% in preterm boys, 5% in full-term male new-borns, 1–2% in 3 months old boys, and nearly 1% in 1 year old boys. [2]

Undescended testicles (UTs) and torsion of the testicle are a rare clinical combination. Symptoms may be misleading and interpreted as signs of other common conditions. Moreover, late identification of an UT may significantly delay the diagnosis and lead to adverse outcomes. [1] In cases of undiagnosed UT, implications of the development of torsion are significant as earlier identification could have prevented the need for

emergency surgery and possible orchiectomy; risk of future malignancy also needs to be taken into consideration [3] Further, despite the recommendations for early orchidopexy, most operations are performed late in childhood. This report focuses on this rare combination of UDT with testicular torsion with review of relevant literature.

Case report:

A 12 year old male was brought to our department with complaints of severe pain in lower abdomen with multiple episodes of non-bilious vomiting since three days. The patient was managed conservatively for three days at two hospitals in periphery considering the lesion to be an abscess. Subsequently, pain was reduced but the swelling persisted for which an ultrasound was performed which revealed testicular torsion. The patient was thus referred to us.

On examination there was a globular swelling of size 5 × 4 cm with ill-defined margins in right inguinal region which was tender, non-mobile and non-fluctuant with mild overlying erythema. Cremasteric reflex was

absent on right side. Right testis was not palpable in right scrotum, however, left testis and scrotum were normal. **[Figure 1]**



Figure 1

Haematological investigations were within normal limits. Ultrasound was suggestive of right side torsion testis with multiple necrotic areas with no vascularity seen in right epididymis and spermatic cord appeared thickened with twisting of pedicle. Patient had right undescended testis which parents noticed from infancy but was neglected and no medical advice was sought. Previously patient had undergone polypectomy for naso-ethmoidal polyp and squint surgery respectively.

The patient underwent emergency right inguinal exploration which revealed torsion of right testis with loss of vascularity and gangrenous testis was detected with twisted pedicle. right orchidectomy was performed with left orchidopexy from scrotal route.[Fig 2 a,b and c]. Left testis was found to be normal .Orchidopexy with three point fixation was performed.Patient recovered well and was discharged on post-operative day 5.

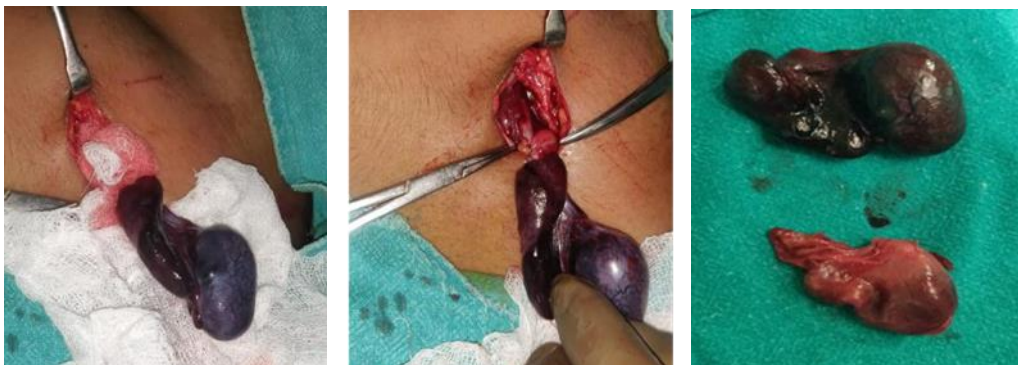


Figure 2 a, b and c

Discussion:

Cryptorchidism or undescended testis (UDT) is one of the most common genital disorder identified at birth. The incidence of cryptorchidism is 1-4% in full-term newborns and in up to 45% of preterm male babies.[4] The literature concerning UDT mainly concentrates on the increased risks of infertility and germ cell tumor development as the primary sequel of this condition. [5]

A UDT may be located in the abdomen, the inguinal canal, the superficial inguinal pouch, and the upper scrotum. Approximately 70% of UDT are palpable. For testes that are not palpable, approximately 30% will be found in the inguinal-scrotal area, 55% will be intra-abdominal, and 15% will be absent or vanishing.[6] The most serious complications of cryptorchidism are a high rate of infertility and a high incidence of testicular cancer It is important to note that UDT is also at higher risk for torsion. Misdiagnosis or delayed diagnosis of testicular torsion with subsequent testicular loss is a relatively common subject. Testicular torsion is a urologic emergency that needs to be diagnosed and treated rapidly for the salvage of testis. [7-10] The incidence and relative risk of torsion in a UDT is still unknown. Several studies have shown that torsion is more common with a UDT compared with a completely descended testis. There are articles proposing 10 times higher risk of torsion in

cryptorchid testis. Johnson reported an incidence of 21% of torsion in cryptorchid testes. Even though it is more frequent, the literature of torsion of UDT is mostly limited to case reports.[8-11]

The mechanism which causes spermatic cord torsion in the UDT is not clearly understood; however, a number of possibilities have been postulated. Abnormal contractions or spasms of the cremasteric muscles and adduction contractures of the hips called “scissor-leg deformity” that block the entrance to the normal scrotum or force normal testes out of the scrotum are two theories that have been described.[5] Torsion of cryptorchid testis in patients with spastic neuromuscular disease has also been reported. The size of the UDT has also thought to be associated with the risk of testicular torsion due to increased weight and distortion of the normal dimensions of the organ.[5]

The clinical symptoms of UDT torsion include non-specific abdominal or groin pain, poor oral intake, vomiting, and restlessness. Physical examination findings include inguinal swelling and erythema with a firm, tender mass in the inguinal region and an empty ipsilateral hemiscrotum.

Diagnosis is more difficult because it can mimic several entities such as acute abdomen, incarcerated inguinal hernia, and inguinal lymphadenitis. Genital examination should be routinely included in abdominal examination for acute abdomen.[5,12]

The diagnosis of torsion of a UDT should be considered in every child presenting with unexplained groin or abdominal pain in the presence of tender groin swelling and an empty ipsilateral hemiscrotum. [9] Imaging studies such as CDU, computed tomography (CT), and technetium Tc-99m scrotal scintigraphy can offer more detail; however, they may be misleading. [13] Doppler findings include decreased or absent blood flow to the affected testis as compared to the normal testis. Echogenicity of the torsed testis may initially be decreased as a result of edema but may appear increased after infarction has occurred. However, in cases of intermittent torsion or early torsion when arterial inflow is still preserved, the sonographic appearance may be normal. Ultrasound may also be useful in ruling out the possibility of incarcerated hernia and other testicular diseases like tumors. [14,15]

CT showed a well-circumscribed, isodense or heterodense mass and had proper fine anatomic detail in locating the undescended testis. [13] Technetium Tc-99m scrotal scintigraphy revealed a complete avascular image, called a cold spot, both on flow and static phase, but no sufficient evidence exists in the diagnosis of torsion of UDTs. [13]

Delayed presentation of torsion continues to be an inherent obstacle to testicular salvage. In contrast, 27% of the patients undergoing orchiopexy within 4 h of onset of symptoms developed testicular atrophy during follow-up. [16] Two other variables could account for the different effects of torsion on testicular outcome, the degree of torsion and the thickness of the cord. [17] When rotation is >360, torsion as short as 4 h may facilitate testicular atrophy. If the torsion is not complete (<360), testicles with torsion within 24 h may be salvaged. [18] Thicker cords lead to formation of longer helices with a minor degree of blood flow impairment than thinner cords do for the same degree of twisting. [17]

The treatment of choice for suspected, acute, testicular torsion is immediate surgical exploration, regardless of the location of the testis. Once the diagnosis has been established, the clinician can be faced with a dilemma, whether or not to remove the testis. This decision is usually taken fact that no objective criteria exist to assess testicular viability. [5] Cimador et al. have studied three parameters which can be helpful in treatment choice. When the history longer than 10 h, there is no flow on CDU and there is no bleeding 10 min after incision of the tunica albuginea, then orchietomy is the appropriate option. Orchidopexy is appropriate when all these variables are negative. [19] Recently, a second-look exploration was demonstrated to be more effective to assess testicular viability. [20] The surgeon is confronted with another dilemma of whether to try to mobilize the testis and perform scrotal orchiopexy or postpone this definitive surgical treatment. Prophylactic fixation of the scrotum to the contralateral testis is recommended by the majority of authors. [5]

Conclusion

UDT is associated with a higher risk of infertility, testicular cancer and torsion; therefore, awareness regarding this entity should be increased among primary care physicians and pediatricians. Testicular torsion in UDT is still diagnosed with delay which may affect testicular salvage. This report clearly demonstrates poor rates of surgical salvage compared to the higher figures reported in patients with torsion of a normally descended testis. Authors highlight the importance of examination of external genital organs which should be more considered by emergency physicians in abdominal examination for abdominal or groin pain.

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