

Testicular Torsion: When Distance is the Enemy

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Abstract: **Background:** Acute scrotum is a medical emergency involving the scrotum or intrascrotal content with signs of local inflammation. The main causes include testicular torsion, torsion of testicular appendage, epididymitis and orchitis. Testicular torsion represents almost 25% of the causes of acute scrotum with an incidence of approximately 1/4000 under 25 years age with highest prevalence between 12 to 18 years old¹. Testicular torsion is the rotation of the testicle on its vascular pedicle, resulting in ischemia. Thus, it is important to exclude the diagnosis of testicular torsion as this condition requires immediate surgical intervention in order to preserve the affected testicle. **Objective:** To highlight the importance of immediate diagnosis and treatment of testicular torsion as delay in the treatment is directly related to the testicular salvage or loss.

Keywords: Testicular Torsion, Acute Scrotum, Prehn's Sign, Testicular ischemia, Orchidectomy.

1. Introduction

Testicular torsion is the most common cause of acute scrotal pain in prepubertal and adolescent boys. Testicular torsion is an emergency condition as there is rotation of the cord along with the vascular pedicle of testis which is responsible for the compromise of vascular supply and makes the testicle ischemic. Correct diagnosis and immediate treatment is important in this condition as time is an important factor in salvage of the affected testicle. Salvage rates of over 90% are seen when surgical exploration is performed within 6 h of the onset of symptoms, decreasing to 50% when symptoms last beyond 12 h. The chance of testicular salvage is less than 10%, when symptoms have been present for over 24 h.²

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2. Case Presentation

A 16-year-old patient presented in emergency with the history of acute onset and continuous pain in the left testicle. The pain radiates to the left inguinal region with nausea and 4-5 episodes vomiting from the past 3 days. On physical examination the left testicle was tender to touch and scrotum appears to be swollen. The left testicle seems high within the scrotum. The left epididymis was also tender to touch. Cremasteric reflex was absent on the left side. There was a positive Prehn sign. The right testicle was of normal size and non-tender. There were no inguinal or femoral hernias. The remainder of the physical examination was normal. Investigations if any. The Doppler Ultrasound showed changes suggestive of testicular torsion.

Emergency surgery was done on the same day of the admission. There was a necrotic left testicle with 540° rotation of spermatic cord for which left orchidectomy with right orchidopexy was performed. Post op period was uneventful and the patient was discharged the day after surgery.



Fig 1. Scrotal Exploration



Fig 2. Derotation of the testis



Fig 3. Orchidectomy done for necrotic testis

3. Discussion

Testicular torsion is a twisting of spermatic cord and its content and is a surgical emergency. It is the most common pediatric genitor-urinary emergency³. Its annual incidence is approximately 1 in 4000 males under 25 years of age. It accounts for approximately 10- 15% of acute scrotal disease

in children⁴. The age distribution of testicular torsion is bimodal, with one peak in neonatal period and second peak around puberty. In neonates, extravaginal torsion predominates, with the entire cord, including the processus vaginalis, twisting and typically presents as painless scrotal swelling, with or without acute inflammation. Testicular viability in neonatal torsion is

universally poor.

In older children and adults, testicular torsion is usually intravaginal (twisting of the cord within the tunica vaginalis). The bell-clapper deformity, in which there is abnormal fixation of the tunica vaginalis to the testicle, results in increased mobility of the testicle within the tunica vaginalis.

In a patient presenting with acute scrotum, it is imperative to rule out testicular torsion, which is a true surgical emergency. The differential diagnosis of the acute scrotum:

- Epididymo Orchitis
- Hematological Disorder
- Idiopathic scrotal edema
- Infection
- Inguinal Hernia
- Torsion of appendix testis
- Trauma
- Tumor
- Varicocele

The testicular torsion classically presents as sudden onset of unilateral testicular pain associated with nausea and vomiting. Precipitating factors are likely a history of trauma or strenuous physical activity. A high riding testicle can indicate a twisted foreshortened spermatic cord. On examination there will be diffuse testicular tenderness, abnormal lie, absence of cremasteric reflex. Pinpoint tenderness of the superior portion of testis may indicate a torsed appendage. Isolated tenderness along the epididymis may indicate epididymitis. The time to diagnosis of torsion is directly related to testicular salvage without atrophy. Human testis occasionally survives up to 10 hours of torsion; however, viability is considerably reduced after 4-6 hours of ischemia.

Diagnosis of torsion is mainly clinical. The Colour Doppler Ultrasound is highly specific and sensitive in diagnosing torsion. The findings are reduced or absent Doppler colour or waveforms and parenchymal heterogeneity compared with the contralateral testis. With equivocal findings, the history and physical examination should be weighed heavily to determine whether surgical intervention is needed.

Treatment involves rapid restoration of blood flow to the affected testis. Manual derotation can be performed but should not be used to delay surgery. Surgical intervention within 8 hours is critical to prevent permanent testicular loss or atrophy from compromised testicular arterial flow.

4. Conclusion

Testicular torsion is a true surgical emergency requiring early surgical intervention for successful salvage. The decision of orchidectomy is made intraoperatively. A contralateral orchiopexy is highly recommended.

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