

Testicular torsion

Author: George Kirby

Publication date: October 2016 – updated from July 2010 by Mr S Paramalingam & Dr M Lazner

Review date: October 2018

Background

Testicular torsion is a surgical emergency

- The age distribution of testicular torsion is bimodal; peak incidence in the **neonatal period** and a larger peak in **puberty**. ~65 % of cases occur in boys between the ages of 12 and 18 years.
- Torsion represents the twisting of the spermatic cord resulting in venous compression; oedema of the affected testicle and cord; and ultimately testicular ischaemia. The chances of salvaging the testis are higher within the **first six hours**.
- Torsion is more likely with congenital inadequate fixation of the testis to the tunica vaginalis. The most common of these abnormalities is the ‘bell clapper’ deformity, which may be bilateral.
- In neonates, the tunica vaginalis is not attached to the scrotal wall, and torsion involves the whole testicle including the tunica vaginalis. Neonatal testicular torsion = prenatal, or up to 30 days after delivery. In older children the cord twists within the tunica vaginalis.
- Torsion may follow trauma.

Assessment

Symptoms	Signs
<ul style="list-style-type: none"> • Severe testicular or scrotal pain, which may radiate to the inguinal region or abdomen. • Nausea and vomiting • Episodic pain, which may indicate preceding intermittent torsion. 	<ul style="list-style-type: none"> • Tender testis • Oedema and swelling of testis • Horizontal lie of affected testis • Elevated testis • Erythema of hemiscrotum • Scrotal oedema • Absence of cremasteric reflex
Investigation:	
<ul style="list-style-type: none"> • The definitive investigation for cases of likely testicular torsion is surgical exploration, and imaging should not delay this. • All boys presenting with an acute scrotum should have urinalysis. • Doppler ultrasound has been found to be a useful adjunct in the evaluation of the acute scrotum where physical findings are equivocal. The presence of testicular flow does not exclude torsion. Ultrasound may also provide information on the viability of torqued testes, influencing the decision regarding orchidectomy. Doppler ultrasound has a significant false negative rate, and must not delay definitive surgical exploration and de-torsion. 	

Differential diagnosis

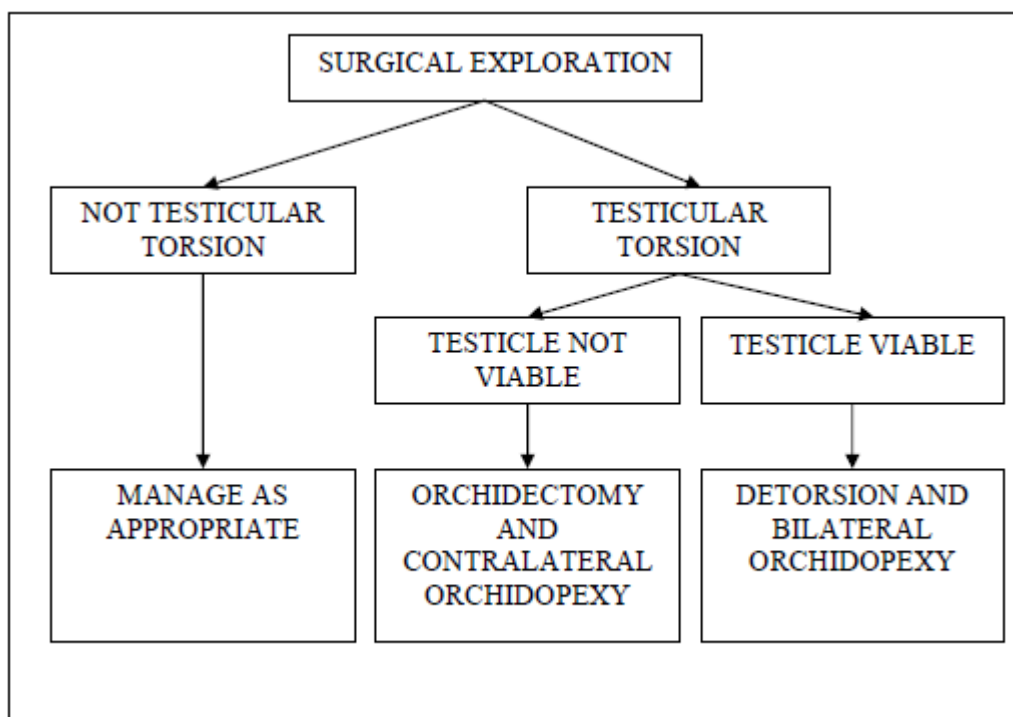
- Torted hydatid of Morgagni
- Epididymo-orchitis
- Idiopathic scrotal oedema
- Incarcerated inguinal hernia
- Testicular trauma
- Testicular neoplasia

Management

Initial:

1. Triage category: Amber
2. Ensure the child is nil by mouth
3. All cases of suspected testicular torsion should be urgently reviewed by the surgical team.
4. Analgesia as appropriate
5. Consent for surgery
 - Exploration and fixation
 - Orchidectomy if testicle not viable
 - Impaired growth of testis due to ischaemic insult, even if testicle viable
 - Bleeding
 - Infection
 - Fixation of contralateral testis

Surgical management



References

- Kadish HA & Bolte RG. A retrospective review of pediatric patients with epididymitis, testicular torsion, and torsion of testicular appendages. *Pediatrics* 1998;102(1):73-76. [Article available on request from [Library Services](#)]
- Zini L, Mouton D, Leroy X, et al. Should scrotal ultrasound be discouraged in cases of suspected spermatic cord torsion? *Progrès en Urologie* 2003;13(3):440-444. [Article in French, available on request from [Library Services](#)]
- Gnassingbe K, Akakpo-Numado GK, Songne GB, et al. Acute Scrotum in Children. *Le Mali Médical* 2009;24(3):31-35. [Article in French, available on request from [Library Services](#)]
- Tajchner L, Larkin JO, Bourke MG, et al. Management of the acute scrotum in a district general hospital: 10-year experience. *TheScientificWorldJournal* 2009;9:281-286. [Article available on request from [Library Services](#)]
- Brenner JS & Ojo A. Causes of scrotal pain in children and adolescents. In: *UpToDate*, 2010. [Available from [UpToDate](#) on BSUH computers]
- Gunther P, Schenk JP, Wunsch R, et al. Acute testicular torsion in children: the role of sonography in the diagnostic work up. *European Radiology* 2006;16(11):2527-2532. [Article available on request from [Library Services](#)]
- Karmazyn B, Steinberg R, Kornreich L, et al. Clinical and sonographic criteria of acute scrotum in children: a retrospective study of 172 boys. *Pediatric Radiology* 2005;35(3):302-310. [Article available on request from [Library Services](#)]
- Hittelman A. Neonatal testicular torsion. In: *UpToDate*, 2010 [Available from [UpToDate](#) on BSUH computers]