

Pediatric Testicular Torsion



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KEYWORDS

• Testis • Torsion • Acute scrotum • Epididymitis/orchitis

KEY POINTS

- Testicular torsion is a surgical emergency and requires prompt surgical exploration and management.
- The diagnosis of testicular torsion can be made by history and physical examination alone. When suspected, surgical management should not be delayed in an effort to obtain imaging.
- When unilateral testicular torsion is discovered, a contralateral orchidopexy should be performed to reduce the risk of asynchronous testicular torsion.

OVERVIEW AND HISTORY

The pediatric patient presenting with acute scrotal pain requires prompt evaluation and management given the likelihood of testicular torsion as the underlying cause. Although other diagnoses can present with acute testicular pain, it is important to recognize the possibility of testicular torsion because the best chance of testicular preservation occurs with expeditious management.

The first published report of testicular torsion was by Delasiauve in 1840, and Taylor first described newborn torsion in 1897. Torsion of a testicular appendage was recognized in 1922 by Colt.

EPIDEMIOLOGY

Although torsion of the spermatic cord and torsion of the testicular appendages can occur at any age, it is more common to see the former in postpubertal boys and the latter in prepubertal boys.^{1,2} Adolescent boys are most commonly affected, with a smaller increase in frequency seen in newborns as well.³ There is evidence to suggest that the risk of torsion can be inherited, particularly in cases of bilateral torsion.⁴ The annual incidence of torsion is estimated at 3.8 per 100,000 (0.004%) for boys age 18 years and under.⁵

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DIFFERENTIAL DIAGNOSIS

- Spermatic cord torsion
- Torsion of appendix testis/epididymis
- Tumor
- Hernia/hydrocele
- Epididymitis/orchitis
- Trauma/abuse
- Cellulitis
- Vasculitis
- Varicocele

PERINATAL TORSION

Torsion can occur during the prenatal or postnatal period and is collectively referred to as perinatal torsion. Establishing the timing of the torsion can have implications on future management but is often difficult to determine. Classically, prenatal torsion involves a twisting of the spermatic cord that occurs proximal to the tunica vaginalis—extravaginal torsion. It typically is identified at birth with a firm, discolored, and non-tender hemiscrotal mass. It is often difficult to palpate the testicle separate from the scrotal skin as the inflammation causes fixation of the skin to the inflamed testicular mass. Postnatal torsion, by comparison, appears with more classic signs of torsion: acute inflammation, erythema, and tenderness. The key clinical finding that suggests postnatal torsion is the report of a previously normal scrotum and testicle at birth. Understanding this, timing is critical given that postnatal torsion should be treated as a surgical emergency with immediate exploration, detorsion, and orchidopexy of the contralateral testicle to prevent later torsion.

The management of true prenatal torsion remains debated.⁶ The decision about the need for exploration, timing of exploration, and management of the contralateral testicle varies widely among practitioners. Factors that influence the decision include the age at which the torsion is diagnosed and overall health of the child. The debate exists because salvage of a prenatally torsed testicle is extremely unlikely,⁷ the risk of neonatal anesthesia is higher than in older children,⁸ and there is a risk of iatrogenic injury to the contralateral testicle. The age of the child at diagnosis influences the decision primarily because the tunica vaginalis becomes adherent to the surrounding dartos around 4 to 6 weeks of life. When the torsion is discovered after this 4- to 6-week age period, there is theoretically no longer a risk of asynchronous torsion and thus no need for prophylactic orchidopexy on the contralateral side. A prenatal (extravaginal) torsion event does not predispose the child to a future postpubertal (intravaginal) torsion event. **Fig. 1** outlines the authors' preferred management algorithm for perinatal torsion.

CLINICAL PRESENTATION

Testicular torsion classically presents with the sudden onset of severe unilateral scrotal pain. This pain is usually accompanied by nausea and vomiting. The pain is usually unrelenting and leads the child to immediately notify a caregiver, although very stoic children will often delay reporting the pain. Delays in recognition can also be seen in children who are unable to communicate with their caregivers.

Within hours of the torsion event, the scrotum will begin to show varying degrees of erythema, swelling, and induration. In cases where the evaluation occurs long after the

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