TESTICULAR TORSION OF UNDESCENDED TESTIS IN A CHILD

CASE REPORT
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ABSTRACT... The children presenting with acute scrotum have many diseases in differential diagnosis and testicular torsion in undescended testis and normal testis is an important consideration. Torsion of the testis, or more correctly, torsion of the spermatic cord, is a surgical emergency because it causes strangulation of gonadal blood supply with subsequent testicular necrosis and atrophy. In most of cases history and physical examination are sufficient to make an accurate diagnosis. While other causes may require simple treatment but torsion require immediate exploration to save the testis. Early diagnosis and prompt treatment is essential to help such children.

Key words: Torsion, Testicular, cryptorchidism, orchidectomy.

CASE REPORT

CASE 1

The first case was a child of 2 years of age presented with pain in right testis for the last 2 days. He was febrile 101, weeping and putting hand over scrotum, could not sleep comfortably, no vomiting and no bowel problem. He was passing urine normally. Mother was extremely worried and thought it hernia, some GP gave him antibiotics and brufen but no change. His USG did not show any significant change in density, there was mild leuckocytosis 12000/cmm ,urine was clear ,chest was clear. Clinical diagnosis of torsion of testis was made ,parents explained and surgery was advised. After proper preparations surgery was performed and it came out to be torsion with black non viable testis ,cord was normal, so orchidectomy was carried out. Other testis was prophylactically fixed. Post operative recovery was smooth, child discharged after 24 hrs.03 doses of 500 mg ceftrixone were given

CASE 2

The second was infant of 11 months age, presented with painful swelling in right groin for about three days. There was no fever, no vomiting, no urinary problem, baby was restless. Mother noted the swelling but she said it was there since birth and child was comfortable so she did nit bother. Now it became reddish and painful for few hours. Mother got worried and brought him. There was no leukocytosis. Urine was clear ,temp was normal, USG showed little fluid with doubtful density. Diagnosis was not very clear, so exploration UGA was planned. .Surgery revealed it to be torsion of testis and cord ,testis was blackish so orchidectomy was performed along with fixation of the other testis. Child was discharged home after 36 hrs. 03 doses of 500 mg CEFTRIAXONE were given.

CASE DISCUSSION

A child presenting with scrotal pain, swelling, or mass is considered a surgical emergency until the diagnosis is ascertained. The most common etiologies of scrotal swelling in the pediatric patients are epididymitis, testicular torsion, and torsion of appendix testis[1]. Treatment modalities differ in all these conditions but mainstay of treatment is antibiotics, analgesics and surgery. Numerous textbooks and articles have cited how epididymitis is rare and that testicular torsion is the most common diagnosis in the prepubertal male[2-4]. In a study by Knight and Vassy[5] of acute scrotal pain in 395 boys ranging in age from 30 days through 17 years, the frequencies of diagnosis were: testicular torsion (35%), torsion appendix testis (24%), epididymitis orchitis (31%). Lewis et al performed a retrospective review of 238 cases of acute scrotal pain encountered in a children's hospital emergency department. They found incidences of testicular torsion, torsion appendix testis, and epididimitis of 16%, 46% and 35% respectively. Kass

et al[6] studied 77 consecutive children from 1 day to 17 years of age evaluated for scrotal pain and swelling; 21 (27%) patients had a testicular torsion. History and physical examination are important for diagnosis and history of trauma does not exclude the diagnosis of testicular torsion. The testicular pain lasting more than 1 hour is not normal and merits investigations to rule torsion or rupture. In our case of undescended testis there was no history of trauma and torsion was of sudden onset with mild symptoms. A pain that recurs few days later after resolving suggests traumatic epididymitis. Acute onset of pain suggests intermittent torsion with spontaneous de-torsion. Testicular torsion is divided into two broad categories. Intravaginal torsion is the type most commonly associated with older children and adults. Intravaginal torsion is associated with a tunica vaginalis that not only surrounds the testicle and most of the epididymitis, as is the normal situation, but also surrounds the spermatic cord allowing free rotation of the structures within the tunica and is seen mainly in adolescents[7]. Extravaginal torsion is a different entity altogether, in which both the contents of the tunica and the tunica itself rotate, and is seen mainly in neonates. This condition is due to loose attachments of the tunica to the scrotal wall. As the child grows, the tunical attachments strengthen, lessening the likelihood of this type of torsion after neonatal period[8]. Torsion of the spermatic cord may interrupt blood flow to the testis and epididymitis. The degree of torsion may vary from 180-720o. Increasing testicular and epididymal congestion promotes progression of torsion. The extent and duration of torsion prominently influence both the immediate salvage rate and late testicular atrophy. Testicular salvage most likely occurs if the duration of torsion is less than 6-8 hours. If 24 hours or more elapse, testicular necrosis develops in most patients. In older boys, the classic presentation of testicular torsion is the sudden onset of severe testicular pain followed by inguinal and or scrotal swelling. Pain may lessen as the necrosis becomes more complete. Approximately one third of patients also have gastrointestinal upset with nausea and vomiting. In some patients, scrotal trauma or other scrotal disease (including torsion of appendix testis or epididymitis) may precede the occurrence of subsequent testicular torsion. A swollen, tender and high riding testis is usually found on physical examination and absence of the cremasteric reflex in a patient with acute scrotal pain supports the diagnosis of torsion. One of our cases presented with torsion in undescedned testis which is also rare and cryptorchidism is the most common birth defect in male genitalia. About 3% of full term and 30% of premature infant boys are born with at least one undescended testis. However, about 80% of cryptorchid testes descend by the first year of life(the majority within three months), making the true incidence of cryptorchidism around 1 % overall. Torsion usually occurs in the absence of any precipitating event[9]; only 4 to 8 percent of cases are as a result of trauma[10]. Other factors predisposing patients to testicular torsion include an increase in testicular volume (often associated with puberty), testicular tumor, testicles with horizontal lie, a history of cryptorchidism, and spermatic cord with a long intrascrotal portion. Torsion initially obstructs venous return with subsequent equalization of venous and arterial pressures compromises arterial flow, resulting in testicular ischemia. The degree of ischemia depends on the duration of torsion and the degree of rotation of the spermatic cord. In one study, investigators quoted a testicular salvage rate of 90 percent if detorsion occurred less than six hours from the onset of symptoms; this rate fell to 50% after 12 hours and to les than 10% after 24 hours. The degree of rotation range can be determined with surgical intervention. The salvage rate of the testicular torsion is in between 20% to 40% depending on the prompt surgical intervention. In the experimental models of testicular torsion ischemia, spermatogenesis is lost after 6 hours and endocrine secretion ceases at 10 hours. Besides, when patients with testicular torsion were followed up without immediate surgery, affected testis showed progressive atrophy[11]. For diagnosis urinalysis is performed to rule out urinary tract infection in any patient with an acute scrotum. Pyuria with or without bacteria suggests infection and is consistent with epididymitis. A white cell count is done routinely but is not always very helpful. Until recently, no imaging studies were useful in confirming the cause of an acute scrotum and immediate surgical exploration was thus the standard approach when torsion was suspected. To improve diagnostic accuracy and avoid needless surgery both nuclear medicine imaging and sonography have

been shown to help in cases with acute scrotum. Nuclear testicular flow studies can be helpful but require too much time. Doppler stethoscopes and conventional gray scale ultrasonography have not been much useful[12]. Color Doppler ultrasonography is being used commonly in the evaluation of suspected testicular torsion. It is non invasive and has a diagnostic accuracy at least equal to that of nuclear scanning. It can semiquantitatively characterize blood flow, and it can distinguish intratesticular and scrotal wall flow[13,14,15].

The "bell clapper" deformity is one underlying cause of testicular torsion in older children. It is important to remember that most patients with an acute scrotum do not have testicular torsion. Surgery is performed to correct torsion in the affected testis and to anchor the other testis to prevent future torsion, which otherwise occurs in most patients with contralateral torsion. In our case orchidectomy was performed as the torsion was more than 3 days old and 2 days old without any sign of viability. In both the cases 2nd testis was fixed to prevent torsion in the other testis.

REFERENCES

1. Lewis A, Jarvis P, Wacksman j, **Evaluation of acute scrotum in the emergency department.** J Pediatr Surg. 1995; 30:277-282[Medline].

2. Klein B, Ochsenschlager, D. **Scrotal masses in children and adolescents: a review for the emergency physician.** Pediatr Emerg Care, 1993; 9:351-356 [Medline].

3. Snyder H, Caldmanone A, Duckett j. **Scrotal pain.** In: Fleisher G, Ludwig S, eds. Textbook of Pediatric Emergency Medicine. 3 rd ed. Baltimore, MD: Williams&Wilkins; 1993:382-387.

4. Seigel A, Snyde H, Duckett J. **Epididymitis in infants and boys: underlying urogenital anomalies and efficacy of imaging modalities.** J Urol. 1987; 138:1100-1103 [Medline].

5. Knight P, Vassy L. **The diagnosis and treatment of acute scrotum in children and adolescents.** Ann Surg. 1984; 200:664-673 [Medline].

6. Kass E, Stone K, Cacciarelli A, **Do all children with an acute scrotum require exploration.** J Urol. 1993; 150:667-669 [Medline].

7. Melekos MD, Asbach HW, Markou SA, **Etiology of acute scrotum in 100 boys with regard to age distribution.** J Urol 1998;139:1023-1025.

8. Rozanski T, Bloom DA, Colodny A. **Surgery of the scrotum and testis in children.** In: Walsh PCm Retnick AB, Vaughan ED Jr, Wein AJ, eds. Campbell's urology, 7 th ed. Philadalphia: Saudners, 1998: 2193-2209.

9. Noske HD, Kraus SW, Altinkilic BM, Weidner W. **Historical milestons regarding torsion of the scrotal organs.** J Urol. 1998;159:13-6.

10. Seng YJ, Moissinac K. **Trauma induced testicular torsion: a reminder for the unwary.** J Accid Emerg Med. 2000;1:381-2.

11. Candocia FJ, Sack-Solomon K. **An infant with testicular torsion in the inguinal canal.** Pediatr Radiol. 2003;33:722-724.

12. Laris E, Gale JS, Evan J, Kass, M.D. **Diagnosis and treatment of the acute scrotum.** Feb 15-1999-AFP.

13. Brown JM, Hammers LW, Barton JW, Holland CK, Scout LM, Pellerito JS, et al. **Quantitative Doppler assessment of acute scrotal inflammation.** Radiology 1995; 197:427-31.

14. Dewire DM, Begun FP, Lawson RK, Fitzgerald S, Foley WD. **Color Doppler ultrasonography in the evaluation of the acute scrotum.** J Urol 1992; 147:89-91.

15. Wibert DM, Schaerfe CW, Stern WD, Strohmaier WL, Bichler KH. **Evaluation of the acute scrotum by color-coded Doppler ultrasonography.** J Urol 1993; 149:1457-7.

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