Testicular torsion in a neonate; a case report

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Abstract

The testicular torsion which is typically seen in prepuberty is very rare in the early neonatal period; prenatal diagnosis is difficult. Herein, we report a five day-old male neonate with swelling and erythema of the right scrotum. Following Doppler ultrasound suggestive of testicular torsion, surgical exploration was undertaken. There was gangrene of the right testis with discoloration and necrosis due to complete extravaginal torsion. Right orchidectomy, along with a fixation of the left testis was performed. While perinatal testicular torsion is a rare condition, if a case is found it should be considered as an emergency situation. Treatment in the neonatal period is mandatory.

Keywords:
Neonate, Testes, Torsion

Introduction

The testis descends into the scrotum in the neonatal period while the gubernaculums has not yet attached to the scrotal wall. Consequently, the testis and gubernaculums are free to rotate within the scrotum (1). Therefore, the entire testis, epididymis, and tunica vaginalis may twist together in a vertical axis on the spermatic cord which is named extravaginal torsion of the testis in the neonatal period. In contrast to perinatal torsion, intravaginal torsion is more common after puberty(1, 3). Testicular torsion, as a cause of scrotal swelling, is an emergency situation in neonates which necessitates urgent pediatric or urologic consultation(2, 4). We report a case that was treated with immediate surgical intervention and review the clinical aspects of this issue.

Case Presentation

A 3600 g term male infant was delivered by normal vaginal delivery at home after uneventful pregnancy to a 25 year-old primiparus woman. Apgar scores were 9 and 10 at 1 and 5 min, respectively. He was referred to the hospital when he was five days of age by a local family physician for circumcision. He was admitted to the neonatal ward with history of enlarged and swollen scrotum present since birth. He had no history of fever, irritability or poor feeding. His general condition at the time of admission was satisfactory with normal vital signs. The only positive finding was enlarged and indurated right testicle which was nontender. Discoloration of the right scrotum with the absence of transillumination was also noted. The laboratory evaluations were within normal limits except elevated white blood cell count up to 24500/mm3 with shift to the left, and 2+ positive C-reactive protein. The blood culture was reported negative. The ultrasonographic study revealed nonhomogeneous echoes with enlargement of the right testis, septation, and fluid collection (Figure 1).

Doppler ultrasound demonstrated complete lack of blood flow on the right side with normal blood flow within the contralateral testis. Intrauterine testicular torsion with tissue necrosis was suspected. Surgical exploration revealed diffused necrosis in the right testis measuring about 3.5 cm accompanied with testicular torsion, obvious redness, and edema (Figure 2). Right orchidectomy was performed along with fixation of the left testis. Histopathological

Figure-1. Sonography of the right testis with an inhomogeneous echo pattern

Figure-2. Gross imaging of necrotic right testis after orchidectomy

examination confirmed hemorrhagic necrosis of the right testis. The wounds healed without any complication and the infant was discharged on the 3rd postoperative day in good general condition.

Discussion

Since Taylor first described intrauterine torsion of the spermatic cord in 1897, over 100 cases of unilateral testicular torsion have been reported in neonates (1, 5). In about 28 neonates with bilateral torsion have been reported which were asynchronous only in 5 cases (6- 9). Neonatal testicular torsion can be prenatal presenting at birth (torsion in utero), or postnatal (torsion within the first 30 days of life) 72% of reported cases occurred in utero. (1,8) About 0.5% of the reported cases had confusing onset of presentation(8). Neonatal torsion accounts for about 12% of all cases of torsion throughout childhood, and are considered mostly extravaginal in origin(1). The newborn infant in this case report had perinatal testicular torsion that presented with as a testicular mass since birth.

The differential diagnosis included inguinal hernia with or without incarceration, torsion of the testis appendage, hydrocele, hematocele, scrotal abscess, epididymitis or orchitis, scrotal abscess, idiopathic infarction of the testis, benign or malignant tumors of the testis, and epididymis, and ectopic splenic or adrenal tissue(8, 12). The prenatal testicular torsion in newborn infants is mostly insidious and asymptomatic, in contrast to postnatal torsion. Clinical presentation is characterized by the presence of bluish discoloration of the scrotum, associated with a scrotal mass which is not light-transmitting. Scrotal tenderness or neonatal distress is unusual(1,4). In a full-term infant, attachment of the testicular tunica vaginalis to the scrotum is thought to occur within the first 7-10 days after birth and thus, theoretically, the risk of contralateral extravaginal torsion is anticipated to decline to almost negligible levels after the first few weeks(14). Birth weight is often exceptionally high, with 60% of affected babies above the 90th centile for weight.

The significance of these findings is at present unclear(10, 11).

In summary, prenatal testicular torsion in neonates is uncommon. However early diagnosis is important to enable timely management and proper follow-up. Doppler ultrasound is a diagnostic modality of use for a newborn with a

painless scrotal swelling and a palpable mass to show the characteristic features of prenatal torsion of the testis and testicular flow(7, 14). The surgical management of neonatal testicular torsion remains controversial, with the review of the current literature yielding no clear consensus on the optimum management of the affected gonad and the contralateral testis(1, 10, 15). Within a few hours after absence of testicular blood flow, irreversible loss of spermatogenesis may ensue (4). Unfortunately most testes are gangrenous at time of exploration. Even though with prompt diagnosis and exploration, the majority of testes are not salvageable with a salvage rate of only 5% when prenatal and neonatal cases are combined (4, 15).

Conclusion

Although testicular torsion is not common in the neonatal period, pediatricians should be familiar with the clinical presentation of this condition for immediate management.

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