



A newborn with antenatal testis torsion

Fatma Çakmak Çelik, Canan Aygün, Tuğba Ayçiçek, Mustafa Alper Aykanat, Suat Ayyıldız

Department of Pediatrics, Ondokuz Mayıs University Faculty of Medicine, Samsun, Turkey

Abstract

Testis torsion in the newborn (especially antenatal testis torsion) is observed very rarely and constitutes 10-12% of childhood testis torsions. In testis torsion, firm and painless testicular tissue is palpated on physical examination. Doppler ultrasonography is a sensitive method in the diagnosis. In cases of neonatal testis torsion, the testis can be saved with appropriate surgical exploration in only 0-5% of the cases. Here, a newborn with antenatal testis torsion who underwent orchiectomy in the first day of life was presented.

(Türk Ped Arş 2014; 49: 254-6)

Key words: Antenatal testis torsion, orchiectomy, newborn

Introduction

Neonatal testicular torsion (NTT) includes cases which occur in the first 30 days of life and is divided into two groups as prenatal and postnatal torsion. Prenatal testicular torsion develops in the intrauterine period and its etiology has not been elucidated fully. Prenatal testicular torsion is diagnosed at birth or on the first examination of the baby. In the postnatal testicular torsion, the first examination of the baby is normal and a firm testis is palpated in the follow-up. The incidence of neonatal testicular torsion is 6.1/100 000 (1) and it constitutes 10-22% of childhood testicular torsions (2). Prenatal cases are observed more rarely; there is no information about the incidence. In the literature, less than 200 cases of prenatal testicular torsion have been reported. On physical examination, discolouration in the scrotum and firm testicle are observed. Only 0-5% of prenatal torsions can be saved (2). However, it should be kept in mind that shortening of the time between the diagnosis and operation is important in terms of saving the testicle in cases of NTT. Here, a newborn who underwent orchiectomy because of prenatal testicular torsion was presented and the importance of detailed examination of the genital organs on the first physical examination was emphasized.

Case

The first and fifth minute Apgar scores of a baby born at the 35th gestational week from the first pregnancy of a 46-year old mother following in vitro fertilization were 8 and 9, respectively. In the prenatal period, the mother had gestational diabetes. The baby was admitted to the Neonatal Intensive Care Unit because of respiratory distress and preterm delivery and monitored with mechanical ventilation. On the first physical examination, the body weight was found to be 3 390 g (>97p), the height was found to be 52 cm (>97p), the head circumference was found to be 35.5 cm (>97p). The respiratory rate was 70/min, the heart rate was 140/min, the body temperature was 36.5°C and the blood pressure was measured to be 55/35 mmHg. There was hydrocele in the right scrotum as seen on Figure 1 which was taken after obtaining consent from the family. The right testicle had a size of 10x10 mm. The skin of the left testicle was darker than normal and a firm mass with a size of 15x15 mm was palpated in the scrotum (Figure 1). The left testicle was firmer and located more upwards compared to the right testicle. Paratesticular structures could not be differentiated fully. Since the patient was mechanically ventilated and receiving fentanyl infusion, it could not be fully evaluated if the testicular structures were painful. Other examination findings were normal. In the laboratory tests, complete blood count, blood glucose, blood gases, hepatic and renal functions were found to be normal. Scrotal Doppler ultrasonography revealed that both testicles were in the scrotum, the right testicle had a size of 7x7 mm and

Address for Correspondence: Fatma Çakmak Çelik, Department of Pediatrics, Ondokuz Mayıs University Faculty of Medicine, Samsun, Turkey.
E-mail: clkfatma@yahoo.com

Received: 02.07.2012 **Accepted:** 05.11.2012

©Copyright 2014 by Turkish Pediatric Association - Available online at www.turkpediatricsivi.com

DOI:10.5152/tpa.2014.1079

the left testicle had a size of 16x11 mm. The parenchymal echo of the right testicle was normal. The parenchymal echo of the left testicle was decreased and heterogeneous and an anechoic cystic space was observed in the middle (Figure 2). There was no blood supply in the left testicle. Left intravaginal testicular torsion with necrosis was considered observing that the left spermatic cord was directed from the left testicular hilus towards the parenchyma and its diameter was increased. The patient was operated on the 6th hour of life and it was found that the left spermatic cord was rotated 360° around its own axis intravaginally. It was observed that the blood supply did not improve, when the torsion was corrected. Hematoma and necrotic tissue were removed from the testicular capsule and orchiectomy was performed. Pathological examination revealed testicular tissue with hemorrhagic necrosis. No complication occurred after operation and the patient was discharged at the age of 15 days.



Figure 1. Discolouration of skin on the left scrotum



Figure 2. Decreased heterogeneous appearance in the left testicular parenchymal echo and anechoic cystic space in the middle (black arrow) on ultrasonography

Discussion

70% of NTTs in the literature are prenatal testicular torsions, the remaining have been diagnosed in the first month (2). Our patient was considered prenatal testicular torsion, since a mass was found in the testicle on the first examination performed after birth. The etiology of prenatal testicular torsion has not been elucidated fully, but difficult delivery, breech presentation, large baby, hyperactive cremasteric reflex and multiple pregnancy have been reported to be predisposing factors (3). The fact that our baby was born as a large for gestational age baby was found to be the single risk factor.

In cases of neonatal testicular torsion, discolouration in the scrotum and firm, unpainful mass is palpated in the scrotum. Scrotal edema is usually not present. In our patient, darkening on the skin on the left side of the scrotum and firm testicular tissue were present. 2/3 of prenatal torsions are extravaginal (4). Our patient had intravaginal torsion which is observed more rarely. In a review examining neonatal testicular torsions, it was reported that 90.6% were extravaginal, 5.4% were intravaginal, 48% were in the left side, 44% were in the right side and 8% were bilateral (5). In the differential diagnosis of acute scrotum, testicular torsion, appendix testicular torsion, repairable or strangulated inguinal hernia, trauma caused by breech presentation, hematocele, scrotal abscess, malignancy, ectopic spleen and ectopic adrenal gland should be kept in mind, though rarely observed in the neonatal period. Doppler ultrasonography is a sensitive diagnostic method. On ultrasonography, an enlarged testicle, a heterogeneous-avascular testicle with a normal size or a small hyperechogenic testicle may be observed (6). Presence of an enlarged testicle suggests that torsion has developed previously. Nuclear scintigraphy may show decreased blood supply to the testicle (2, 7).

There is no consensus on the pathophysiology, requirement for surgery and time of surgery and management of the contralateral testicle. Immediate or late scrotal exploration may be performed with or without orchiectomy. In addition, contralateral orchiopexy may or may not be performed. In unilateral torsion, leaving the necrotic testicle in its place may theoretically damage the contralateral testicle by production of antisperm antibody (2). In our patient, unilateral orchiectomy was performed and no intervention was performed on the other testicle.

Unfortunately, the testicle can not be saved most of the time even with appropriate surgical exploration (1). In a review, the rate of saving of NTT was reported to be 8.96%. This rate increases to 21.7%, if urgent operation is performed (5). One can wait in unilateral torsion, but urgent surgery is recommended in bilateral torsion to protect the remaining healthy testicular tissue (2). Some advocate urgent surgery even if the torsion is unilateral to protect the other testicle from future torsion (8). Since the testicle has a chance of being saved,

though low, NTT should be kept in mind in the differential diagnosis of scrotal masses in the newborn and examination of the genital organs should be performed carefully and without delay.

Informed Consent: Written informed consent was obtained from patients' parents.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - F.Ç.Ç.; Design - F.Ç.Ç.; Supervision - T.A., M.A.A., S.A.; Materials - T.A., M.A.A., S.A.; Data Collection and/or Processing - T.A., M.A.A.; Analysis and/or Interpretation - F.Ç.Ç., T.A., M.A.A., S.A.; Literature Review - F.Ç.Ç.; Writer - F.Ç.Ç.; Critical Review - C.A., S.A.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

References

1. John CM, Kooner G, Mathew DE, Ahmed S, Kenny SE. Neonatal testicular torsion- a lost cause? Acta Paediatr 2008; 97: 502. [\[CrossRef\]](#)
2. Kaye JD, Levitt SB, Friedman SC, Franco I, Gitlin J, Palmer LS. Neonatal torsion: a 14-year experience and proposed algorithm for management. J Urol 2008; 179: 2377-83. [\[CrossRef\]](#)
3. Brandt MT, Sheldon CA, Wacksman J, Matthews P. Prenatal testicular torsion: principles of management. J Urol 1992; 147: 670.
4. Serdaroğlu E, Takcı Ş, User R, Güçer Ş, Yiğit Ş, Yurdakök M. İntrauterin testis torsiyonu: Bir vaka takdimi. Çocuk Sağlığı ve Hastalıkları Dergisi 2011; 54: 223-6.
5. Nandi B, Murphy FL. Neonatal testicular torsion: a systematic literature review. Pediatr Surg Int 2011; 27: 1037-40. [\[CrossRef\]](#)
6. Traubici J, Daneman A, Navarro O, Mohanta A, Garcia C. Original report. Testicular torsion in neonates and infants: sonographic features in 30 patients. ARJ Am J Roentgenol 2003; 180: 1143. [\[CrossRef\]](#)
7. Driver CP, Losty PD. Neonatal testicular torsion. Br J Urol 1998; 82: 855. [\[CrossRef\]](#)
8. Olguner M, Akgür FM, Aktuğ T, Derebek E. Bilateral asynchronous perinatal testicular torsion: a case report. J Pediatr Surg 2000; 35: 1348-9. [\[CrossRef\]](#)