A case of neonatal testicular torsion

CY Wong, SC Yong, NY Boo, KS Phang

INTRODUCTION

Neonatal testicular torsion is rare. In the last two centuries, only 100 such cases have been reported in the literature. This report will detail the case of a 3000 g Malay-term newborn infant with a right testicular torsion. He was born by spontaneous vaginal delivery. Physical examination at 1 hour of life revealed the presence of an enlarged, hard and tender right testis and a left cystic hydrocoele with normal testis. An urgent ultrasonography and Doppler imaging of the scrotum showed a hypoechoic area in the right testis with absence of Doppler signal, suggesting a diagnosis of testicular torsion.

A right orchidectomy and a left orchidopexy were performed on the same day. Histopathological examination of the right testis confirmed the diagnosis of torsion with infarction. The infant recovered well post-operatively and was discharged 4 days later. This case illustrates the importance of examining the genitalia of all male infants during neonatal screening examination to enable early detection of this condition.

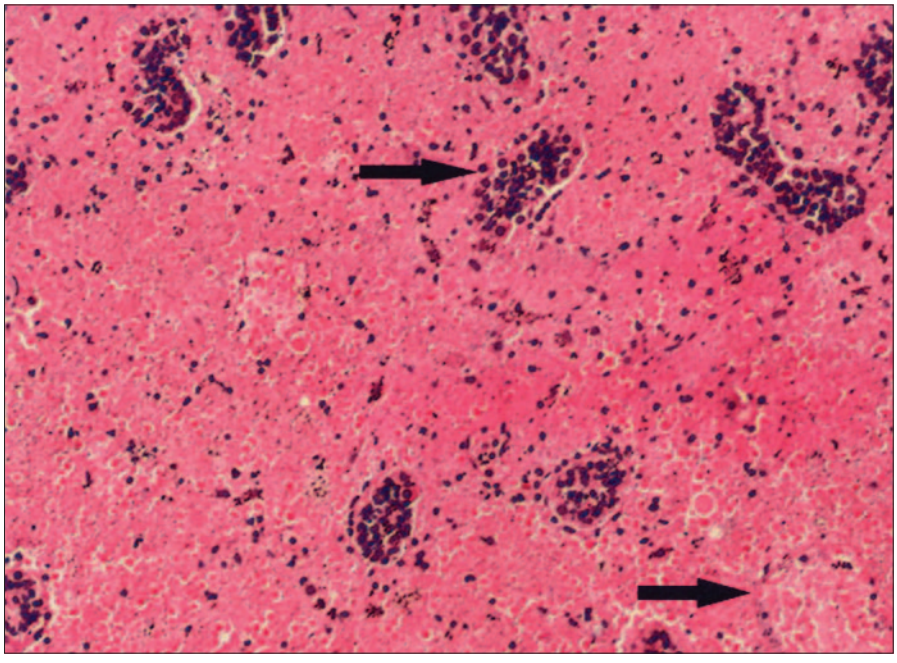

Figure 1. Viable and necrotic seminiferous tubules (x100).

DISCUSSION

Neonatal testicular torsion is rare, accounting for 12% of all cases of torsion throughout childhood. The most common type of neonatal torsion is of the extravaginal type. In the last two centuries, only 100 such cases have been reported in literatures worldwide. Minevich (2001) estimates that 20% of bilateral neonatal testicular torsion are bilateral synchronous and 3% are bilateral asynchronous type. Driver and Losty (1998) and Pinto (1997) reported that up to 72% of all neonatal testicular torsions develop prenatally and *in utero*. As these cases occur *in utero* and the duration of ischaemia is unknown, it is difficult to salvage these testes.

It was hypothesized by Al-Salem (1999) that it is the unusual mobility of the neonatal hemiscrotal contents, coupled with an active cremasteric reflex, which predisposes the neonatal testis to torsion. Torsion of the spermatic cord interrupts blood flow to the testis and epididymis with resultant testicular and epididymal congestion. This in

CASE REPORT

A Malay male infant of 3000 g was delivered via spontaneous vaginal delivery to a primigravida mother. His Apgar scores were 8 and 9 at 1 and 5 minutes, respectively. His mother had an uneventful antenatal and intrapartum period.

Physical examination performed at 1 hour of life detected an enlarged, hard and tender right testis with discolouration of his right scrotal skin. There was a left cystic hydrocoele and the left testis was of normal consistency and size. A clinical diagnosis of torsion of the right testis was made. Ultrasonography of the testes showed absence of Doppler signal within the right testis, which measured 1.46 x 0.91 cm with the presence of an ill-defined hypoechoic area in its superior pole, suggesting an area of infarction. The left testis was of normal size and Doppler signal.

Intraoperatively, the right testis was found to be gangrenous with torsion of the right testicular artery. The left testis was normal. Right orchidectomy and a left orchidopexy were performed. Postoperatively the infant recovered uneventfully and was discharged home on the fourth day of life. On follow-up, the left testis was growing well. Histopathological examination (*Figures 1 and 2*) of the right testis confirmed the presence of testicular torsion with infarction.

Chee-Yeng Wong is Postgraduate Trainee of Master of Medicine in Paediatrics, **Sin-Chuen Yong** is Associate Professor of Paediatrics and Lecturer, Department of Paediatrics, **Nem-Yun Boo** is Professor of Neonatology and Head of Neonatal Intensive Care Unit, and **Koon-Seng Phang** is Lecturer, Department of Pathology, Hospital Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

Correspondence to: Sin-Chuen Yong

turn promotes progression of the torsion. Al-Salem (1999) and Brandt et al (1992) have shown that other risk factors predisposing to testicular torsion include full-term infants with birth weights above the reported mean (between 2.9 and 4.2 kg with a mean of 3.6 kg), trauma from difficult labour, breech presentation and an overactive cremasteric reflex.

The gold standard for diagnosing neonatal testicular torsion is ultrasonography with Doppler imaging. Driver and Losty (1998) quoted the finding that 80% of cases of neonatal testicular torsion show no vascular return signals on colour Doppler imaging. Several other authors have done vascular flow studies and radioisotope scans showing decreased perfusion and 'cold' images in 95–100% of cases of testicular torsion.

Preservation of a functioning testis after a prenatal event is extremely rare. An animal experimental model of testicular ischaemia showed that loss of spermatogenesis occurs between 4 and 6 hours and loss of hormonal function occurs within 12 hours after occlusion of the artery. The reported salvage rate for neonatal testicular torsion was 5%. In view of such a low salvage rate, an elective orchidectomy is recommended by Driver and Losty (1998).

After orchidectomy and orchidopexy, it has been found that infertility occurs in 25% of patients with unilateral testicular torsion. Driver and Losty (1998) postulated that the impaired fertility could be immune-mediated. The body could have produced anti-sperm antibodies to the necrotic gonad, which then caused damage to the contralateral normal testis.

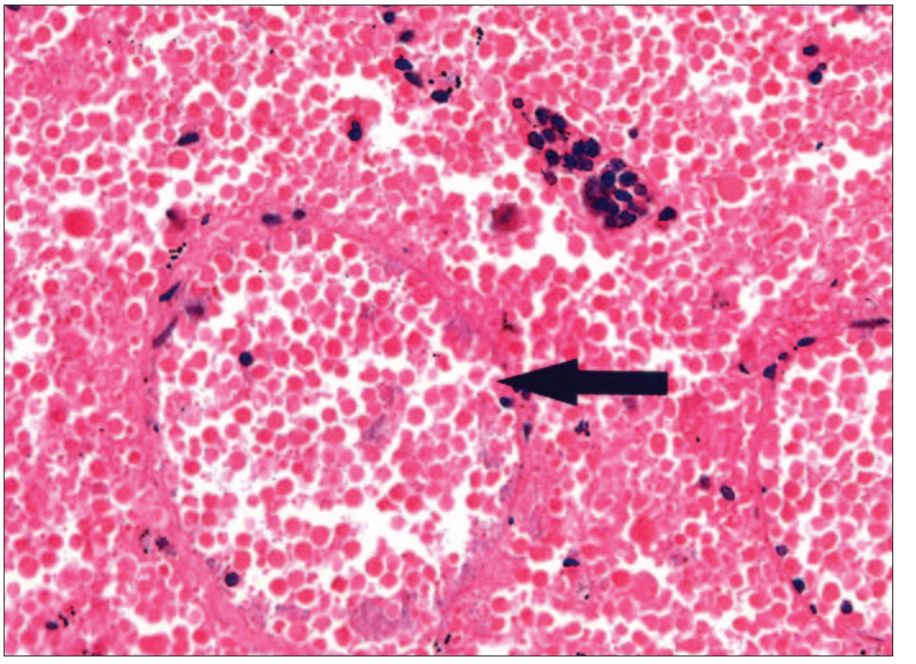

Figure 2. Necrotic seminiferous tubules at a higher magnification (x200).

CONCLUSIONS

All newborn genitalia should be carefully examined during screening examination. In the absence of screening cases of testicular torsion may be under-diagnosed and may present later as 'vanishing testis syndrome'. HM

Al-Salem AH (1999) Intra-uterine testicular torsion: early diagnosis and treatment. *BJU Int* **83**(9): 1023–5

Brandt MR, Sheldon CA, Wacksman J, Mathews P (1992) Prenatal testicular torsion: principles of management. *J Urol* **147**(3): 670–23

Driver CP, Losty PD (1998) Neonatal testicular torsion. *BJU* **82**(6): 855–8

Minevich E (2001) Testicular torsion. *eMedicine*. www.emedicine.com/med/topic2780.htm (accessed 9 May 2005)

Pinto KJ, Noe HN, Gerald R (1997) Management of neonatal testicular torsion. *J Urol* **158**(3): 1196–7