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Asynchronous Bilateral Torsion of the Spermatic Cord in the Newborn : A Case Report

Asynchronous bilateral torsion of the spermatic cord in the newborn is extremely rare. We report such a case in a 4-day-old boy with subsequent operative discovery of prior in utero torsion of the contralateral spermatic cord. The diagnosis was made by physical examination, transillumination test, color Doppler ultrasound, and confirmed by emergent surgical exploration. To our knowledge, the present case is the 6th case of asynchronous bilateral torsion of the spermatic cord in the English literature, and the first case in Korea.

Key Words : *Spermatic Cord; Torsion; Infant, Newborn*

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INTRODUCTION

Bilateral spermatic cord torsion in the newborn is extremely rare, especially asynchronous torsion, and a true emergency because of the risk of anorchia (1, 2). The first case of bilateral torsion of the spermatic cord was reported in 1967 by Frederick and associates on a newborn who was explored 10 hours after birth (3). To our knowledge, to date, only 5 cases of asynchronous bilateral neonatal torsion have been documented in the English literature (4-7). We present such a case in a 4-day-old boy with subsequent operative discovery of prior in utero torsion of the contralateral spermatic cord.

CASE REPORT

A 2,930 g full-term male newborn with right scrotal swelling since birth was transferred to our institude for further evaluation and treatment on the 4th day after birth. He was afebrile and other vital signs were normal. The left testis with a knot of spermatic cord was small-sized, hard, nontender and nontranslucent. Color Doppler ultrasound of testes revealed no pulsations.

Bilateral transscrotal approach was immediately performed. The right testis had a 90° extravaginal torsion and revealed dark gray, hemorrhagic and necrotic. The left testis had a 360° extravaginal torsion and was gray and atrophic (Fig. 1). For the future Leydig cell function and salvage of some viable tissue of the testes, both testes were left in place after detorsion. Histologic examination of biopsies of both testes revealed infarction (Fig. 2). His postoperative recovery was uneventful.

At 2 months old, both testes were palpable, although they were smaller than normal. The parent were advised of the high probability of sterility and the possible need for exogenous androgen replacement to attain secondary sex characteristics at puberty.

DISCUSSION

Perinatal torsion of the spermatic cord or testis (PTT) is defined as spermatic cord torsion occurring prenatally and within the postnatal first 30 days (8, 9). PTT may be unilateral or bilateral. Bilateral PTT is a extremely rare condition and a true urologic emergency because incomplete physical examination or failure to diagnose this condition promptly may result in functional anorchia (2). Therefore, PTT must be recognized by the physicians who examine the newborn immediately after delivery.

The etiology of PTT is not clear. Speculation concerning etiology has included high birth weight, difficult labor or breech presentation, and an over-reactive cremasteric reflex (4).

PTT is extravaginal as opposed to intravaginal torsion in older children and adults (5). In contrast to the postnatal testicular torsion, PTT is asymptomatic, insidious, and the only abnormality is an enlarged, firm scrotal mass (8, 9).

The diagnosis of the spermatic cord torsion has been assessed by physical examination, transillumination test, and ultra-

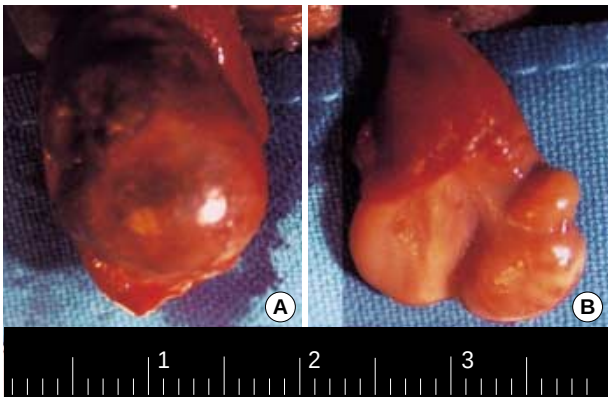

Fig. 1. Bilateral spermatic cord torsion. (A) the right testis is dark gray. (B) the left testis is small and atrophic due to the spermatic cord torsion in utero.

sonography/Doppler ultrasound.

The differential diagnosis of a testicular mass that does not transmit light in the neonatal period includes testicular tumor, hematocele, torsion of the testicular or epididymal appendages, incarcerated hernia, scrotal abcess, ectopic spleen or adrenal, and other conditions such as orchitis and epididymitis (5, 9, 10).

With increasing clinical recognition of PTT, the management of these cases has aroused some controversies including the surgical approach, timing of operation, need for contralateral exploration and orchiopexy, and treatment of necrotic testes, especially in bilateral torsions. The preferred surgical approach is controversial. However, an inguinal incision is generally recommended although a scrotal incision may be justified in cases of an emergency operation for postnatal torsion or in cases of suspected bilateral neonatal torsion.

In unilateral or bilateral PTT, an emergency detorsion and orchiopexy should be carried out in an attempt to salvage the affected testis or testes. When both testes are affected, exploration to confirm the diagnosis and remove the non-viable testes may be performed electively even several weeks after birth. However, in unilateral torsion, surgery should be undertaken during the first few days of life as contralateral torsion can occur within the first 48 hr of life (4). We believe that prompt exploration and contralateral orchiopexy generally is easy to do, carries a negligible risk, and is the only definitive way to establish the diagnosis and rule out other potential pathological conditions. Although asynchronous bilateral PTT is extremely rare, this report indicates that the spermatic cord is at risk for torsion during a length of time from in utero to sometime in the postnatal period.

The specific treatment of the spermatic cord torsion with infarction is very complex. The argument for removal is that it reduced the possibility of infection arising in the necrotic tissue and that the replacement of dead tissue contravenes established surgical rules. Our case showed smaller testes without blood flow on a color Doppler ultrasound even though

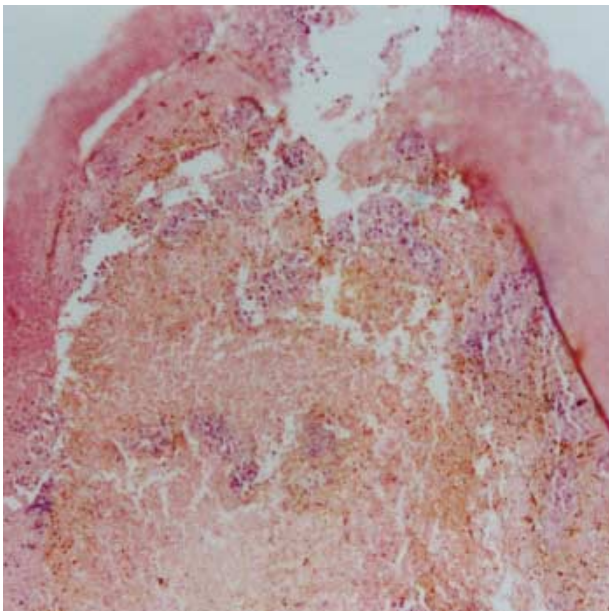

Fig. 2. The biopsy specimen of right testis shows hemorrhagic congestion and ischemic coagulative necrosis in the entire field (H&E, ×40).

detorsion and orchiopexy had been performed. In consideration of this outcome, the removal of obviously necrotic testes appears to be reasonable. However, some reports have supported that detorsion and orchiopexy, even if the testes are necrotic, is advocated to secure Leydig cell function for androgen secretion unless the child presents signs of systemic toxicity (9, 10). Also, there is little evidence of any harm ensuing from retaining damaged testes. We believe that these factors, as well as the psychological and cosmetic benefits of even a smaller-than-normal testis within the scrotum, must be considered at the time of exploration.

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