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Case Report

Perinatal Testicular Torsion: Case Report

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Abstract

Perinatal testicular torsion is described as rotation of the spermatic cord resulting in decreased vascular flow and ischemia and can occur from the prenatal period until before the first month of life. Patients with testicular torsion usually present asymptomatic, probably because most cases occur prenatally and present fewer inflammatory symptoms. The percentage of testicular salvage is low, for this reason some authors do not recommend performing emergency surgery. Some surgeons even opt for conservative treatment, but this is known to increase the risk of infection, malignancy, and production of antibodies against the contralateral testicle. We present the case of a full-term newborn with color changes and increase in size of the left hemiscrotum in whom a diagnosis of testicular torsion is corroborated by Doppler ultrasound. Bilateral testicular surgical exploration was performed, finding the left testicle completely necrotic. It was decided to perform left orchiectomy with contralateral orchidopexy due to the risk of testicular torsion at another time in the patient's life.

Keywords: *Testicle; Testicular Torsion; Neonatal Surgery; Pediatric Surgery; Emergency*

Abbreviations

INSL3: Insulin-Like 3 Hormone; US: Ultrasound

Introduction

Perinatal testicular torsion is described as the rotation of the spermatic cord, resulting in decreased vascular flow and ischemia [1]. This can occur from the prenatal period to before the first month of life.

The incidence is estimated at 6.1 per 100,000 live births [2], with approximately 75% of cases occurring prenatally [1,3]. However, since patients rarely present with symptoms, it is estimated that the incidence could be higher [2].

Although the etiology is unclear, certain associations with this pathology have been described, such as: preeclampsia, twin pregnancy, high birth weight for gestational age, gestational diabetes, prenatal hydronephrosis, or prolonged labor [1,3,4].

Familial cases have been described, so it is possible that genetic predisposition is part of the etiology of perinatal testicular torsion [5]. In some animal studies [6-8] it has been observed that the lack of expression of INSL3, which participates in the regulation of testicular descent, is strongly related to cryptorchidism, spontaneous testicular torsion and even evanescent tests.

Testicular torsion can occur in two forms: extravaginal or intravaginal. The extravaginal form is more commonly seen in newborns and occurs when the testicle, epididymis, and tunica vaginalis twist around the spermatic cord. On the other hand, intravaginal testicular torsion occurs when the testicle rotates on its axis due to a malformation called bell clapper, in which the insertion of the tunica vaginalis is located more superiorly on the spermatic cord [2,9].

Patients with perinatal testicular torsion are usually asymptomatic. This could be explained by the fact that most cases occur prenatally and present fewer inflammatory symptoms at birth. However, this condition should be suspected if, during the physical examination of the newborn, a hard, firm, enlarged testicle or scrotal discoloration is found [1,3].

The diagnosis is usually made clinically at the time of birth. If clinical signs suggest testicular torsion, a testicular US is not necessary, but if the diagnosis is uncertain, it can be confirmed with Doppler US. Testicular echogenicity on Doppler US can predict testicular viability. Parenchymal heterogeneity has been described as having a positive predictive value for testicular loss in up to 96.4% of cases [10], and therefore surgical exploration of the testis is not considered urgent. However, if Doppler US still shows evidence of testicular viability, such as parenchymal homogeneity [1], it is important to keep in mind that the likelihood of testicular salvage decreases after 6 hours of the onset of the condition.

In perinatal testicular torsion, the testicular salvage rate is low; for this reason, some authors do not recommend emergency surgery. Some surgeons even opt for conservative treatment [11], but this is known to increase the risk of infection, malignancy, and antibody production against the contralateral testicle. Due to the aforementioned complications, another treatment approach is to perform bilateral surgical exploration at the time of suspected or confirmed diagnosis, seeking to salvage the affected testicle and also performing an orchidopexy on the contralateral testicle, since contralateral testicular torsion has been described at other times in life [12].

The objective of presenting the following clinical case is to highlight the importance of surgical exploration of both testicles as soon as the diagnosis is made to avoid short- and long-term complications.

Case Report

A 40-weeks newborn male patient weighing 3.6 kg, son of a 19-year-old mother from her first pregnancy, was obtained vaginally. Normal prenatal US were performed, and she had a history of untreated hypertensive disease. After birth and during his stay in the rooming-in unit, the pediatric surgery department was consulted due to color changes and enlargement of the left hemiscrotum. Upon physical examination, the baby was calm and stable. The left hemiscrotum was observed to be enlarged and dark compared to the contralateral side (Figure 1), with negative transillumination and an enlarged and indurated left testicle. A testicular Doppler US was performed, which reported a left testicle with heterogeneous parenchymal echogenicity, decreased vascularity, and a 5.1 cc hematocele. The right testicle was normal. An emergency bilateral testicular examination was performed. The left testicle (Figure 2) was found adherent to the adjacent tissues, completely necrotic with extravaginal torsion. The right testicle (Figure 3) has a normal size and color without evidence of torsion. A left orchiectomy and right orchidopexy were performed. The postoperative period was uneventful. The pathology report described hemorrhagic necrosis of 100% of the left testicle (Figure 4).

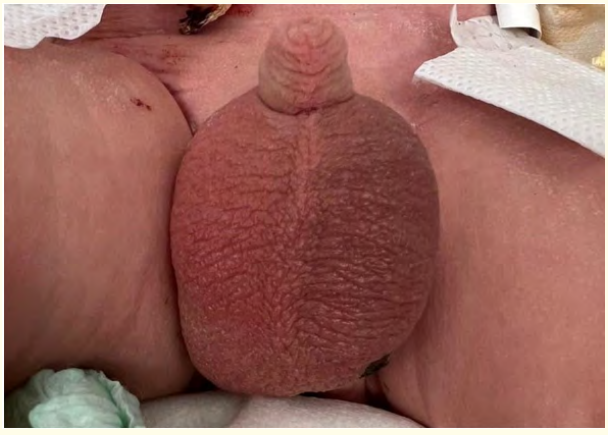

Figure 1: *Change in color and slight increase in size of the left hemiscrotum compared to the contralateral hemiscrotum.*

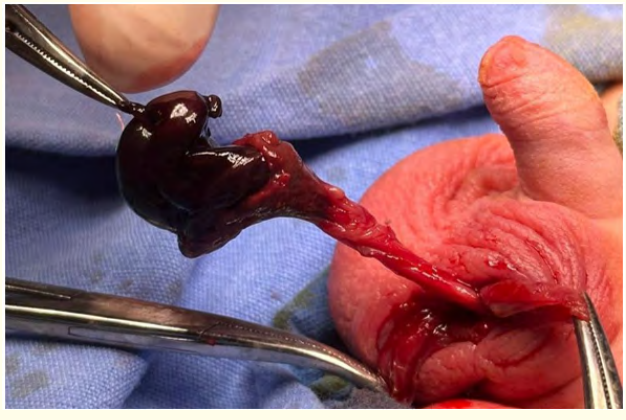

Figure 2: *Left testicle with no signs of viability and completely necrotic.*

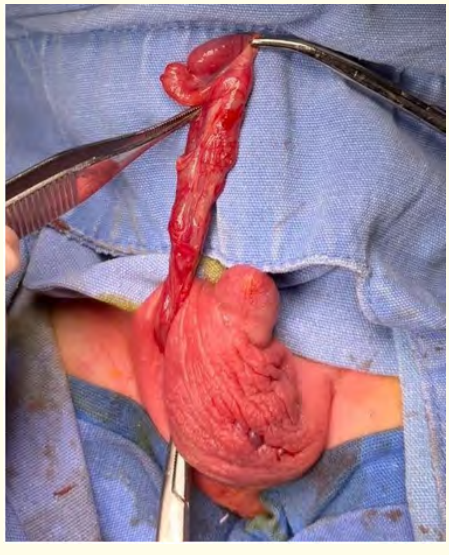

Figure 3: *Right testicle without torsion, adequate coloration, and expected size for the patient's age.*

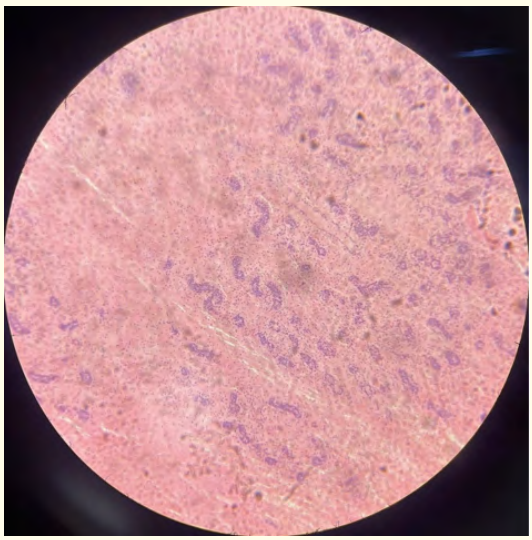

Figure 4: *Microscopic image of testicular parenchyma with necrosis.*

Discussion

Perinatal testicular torsion is a rare condition, but it should be suspected whenever a newborn's physical examination of the testicles reveals an abnormality. When this condition is suspected, the next step is to perform a Doppler US to confirm the diagnosis and assess testicular viability in both tests. As previously mentioned, the heterogeneity of the testicular parenchyma translates into a high probability of testicular loss, so immediate action is required. Although in the vast majority of cases the testicle is no longer viable at the time of surgical exploration, it is important to perform this procedure as soon as possible, primarily to examine the contralateral testicle. Perinatal testicular torsion is characterized by asynchronous torsion, i.e. contralateral testicular torsion at another time in life. For this reason, if a viable contralateral testicle is found, an orchidopexy of the testicle should be performed.

Conclusion

We recommend urgent testicular surgical exploration, as contralateral testicular torsion may be present but not detected during the physical examination or during testicular US. Furthermore, contralateral orchidopexy is essential due to the low but present risk of testicular torsion at another time in life.

Conflict of Interest

We declare we do not have any conflict of interest.

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