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CASE REPORT

Extravaginal testicular torsion in a newborn: report of the diagnosis in the birth room

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Abstract

OBJECTIVE: To report a case of intrauterine testicular torsion diagnosed from the physical examination performed in the delivery room. **CASE REPORT:** Male newborn patient, natural birth. During the initial physical examination in the delivery room, the skin of the scrotum on the right was found to be slightly hyperchromic and more retracted, increased testicular volume on the right compared to the contralateral and hardened consistency, raising the diagnostic hypothesis of intrauterine torsion or testicular neoplasm. Ultrasonographic evaluation with color Doppler showed enlarged right testis, hyperechoic image suggestive of spermatic cord node and absence of blood flow signs within it. The newborn underwent surgical exploration with intraoperative finding of a necrotic testis, with subsequent orchiectomy and contralateral testis orchidopexy. Laboratory screening did not suggest testicular neoplasia. The anatomical specimen was sent for histopathological examination, which contains findings compatible with testicular torsion with absence of malignancy. **CONCLUSIONS:** Neonatal testicular torsion is a rare condition, but it is important to know this condition in order to be able to detect it during the physical examination of a newborn. Testicular torsion occurs when the spermatic cord twists on its own axis, which can lead to an ischemic infarction of the testis. Once the diagnosis is confirmed, a surgical exploration aims at the detorsion of the testicle or its removal if this is not feasible, and may be considered an exploration and correction of the contralateral testicle as a prophylactic way of future torsion.

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INTRODUCTION

The physical examination of the newborn (NB) in the delivery room should be summary, yet systematic and complete, in order to prioritize key points that are determinant for morbidity and even mortality of the NB. In the physical examination of the male genitalia, palpation of the scrotum aims to check the presence of testicles, testicular masses, in addition to the observation of penile alterations such as phimosis, alteration of the location of the urethral meatus, among others.

Testicular torsion is an alteration that can be observed in the first physical examination of the NB, still in the delivery room, being able to predict whether there was intrauterine torsion or in the immediate postnatal period through this physical examination, which is extremely important, since torsion in the postnatal care requires immediate surgical exploration of the testicle in an attempt to preserve its functionality.

The present work aims to report a clinical case of an intrauterine testicular torsion, diagnosed during the first physical examination of the NB in the delivery room, in which right orchiectomy and orchidopexy of the contralateral testicle were performed. The case is justified due to its rarity in the literature, as well the importance of a systematic and complete physical examination in the delivery room.

CASE REPORT

This was a newborn by vaginal delivery, in need of neonatal resuscitation using positive pressure ventilation in a manual "T" ventilator. He had an Apgar score of 4/7/9; respectively, at the 1st, 5th and 10th minute of life. Capurro evaluation of 39 weeks and 5 days, weight of 2,460g and 48 cm in length. Prenatal history without pathologies such as hypertension, gestational diabetes or any other comorbidity, in addition to a negative serology.

Upon physical examination, the only alteration was a slight increase in the volume of the testis on the right compared to the contralateral one, in addition to local skin with mild hyperchromia and a more retracted scrotum (Figure 1). The consistency was hardened, making it possible to accurately outline the testicle. No signs of pain on palpation or any phlogistic sign. Transillumination was negative. The left testicle had no visual or palpable changes. Abdominal and inguinal examination showed no relevant alteration. After a technical opinion from the Pediatric Surgery team, which, based on the semiological data, defined the diagnostic hypotheses of chronic testicular torsion or testicular tumor (less likely), an imaging test and laboratory markers for testicular neoplasia were ordered.

The ultrasound evaluation showed the right testis with enlarged dimensions, slightly lobulated contours, heterogeneous hypoechoic echotexture, without signs of blood flow in its interior with color echo Doppler in contiguity with the spermatic cord with a hyperechoic image, suggestive of a spermatic cord knot.



Figure 1. Ectoscopy of the scrotum of the newborn.

The newborn was submitted to surgical exploration via the inguinal route, under general anesthesia, after completing the fasting period. A necrotic testis was found in extravaginal torsion, with subsequent right orchiectomy (Figure 2) and contralateral orchidopexy in the scrotal wall. The anatomical piece was sent for anatomopathological examination.

Laboratory tests, retrieved later, were negative for germ tumors when examined together; showed DHL 1108U/l, alpha-fetoprotein 33,355 ng/mL and Alkaline Phosphatase 287U/L and quantitative Beta-HCG 27.6mUI/mL.

The postoperative period was performed in the Intermediate Unit (UI) of the maternity unit without complications. The histopathological examination of the surgical specimen showed testicular parenchyma with hemorrhagic infarction, and macrophages containing hemosiderin; mild lymphocyte inflammatory process, also observed in congested soft tissues; Epididymis with serous hemorrhage; There was no malignancy in the present sample. In conclusion, the microscopic findings matched the clinical proposition of testicular torsion with extensive necrosis.

DISCUSSION AND COMMENTS

Neonatal testicular torsion is a rare genitourinary condition, defined as torsion, that occurs prenatally or in the first 30 days of life^{1,2}, with an incidence of 6.1/100,000 newborns³.



Figure 2. Intraoperative orchiectomy.

Testicular torsion is divided into extravaginal and intravaginal torsion. In extravaginal torsion, the testis and tunica vaginalis are involved, as the tunica vaginalis and gubernaculum are not yet attached to the dartos muscle of the scrotal wall. Intravaginal torsion, on the other hand, is found in older children and young adults, and involves only the testicle, which rotates on its own longitudinal axis within the tunica vaginalis^{1,2,3}.

In a series of 150 analyzed cases of perinatal testicular torsion, 85% were unilateral, it is estimated that 70% of extravaginal torsions are present at birth and may have occurred during intrauterine life².

As risk factors for neonatal testicular torsion, there are high birth weight, prolonged duration of pregnancy, breech presentation, prolonged labor, twinning, preeclampsia and gestational diabetes^{2,4,5}.

Clinical findings differ between types of torsion. Postnatal testicular torsion presents with pain, redness, and swelling of the affected testicle and requires rapid surgical intervention to restore blood flow and prevent ischemic necrosis. On the contrary, prenatal testicular torsion tends to present as an indurated mass and without significant phlogistic signs at the initial examination of the newborn.

It is important to quickly distinguish between prenatal and postnatal torsion cases in the initial physical examination of the newborn in the delivery room, as this allows for the indication of testicular torsion in an emergency surgery in cases of postnatal torsion, while the treatment of prenatal torsion is less urgent⁶.

The differential diagnosis of testicular mass includes testicular or testicular appendage torsion, incarcerated inguinal hernia, congenital hydrocele, trauma, adrenal hemorrhage, scrotal abscess, epididymitis, orchitis or testicular tumor^{6,7}.

Physical examination of the abdomen, groin, and scrotum should be accurate enough to exclude most possible diagnoses. Thus, the absence of an inguinal mass rules out the diagnosis of hernia; in cases of infection, the affected scrotum appears soft and the skin is red; hydrocele, very common in neonates, is softer on palpation and has positive transillumination; testicular tumors, on the other hand, are very rare in newborns and require laboratory and imaging tests. To ensure the diagnosis, ultrasound of the scrotum and lower abdomen can be combined, provided that this does not delay emergency surgical treatment of the diagnosis, even if presumptive, of postnatal testicular torsion.

In cases of postnatal torsion, surgical exploration is an emergency and must be performed to try to avoid ischemic necrosis^{2,5}. The scrotal exploration aims at the detorsion and verification of the testis viability, observing its color, superficial perfusion or after the incision of the tunica albuginea. If feasible, it should be fixed and, if unfeasible, it should be removed.

In prenatal testicular torsion, as reported in this study, the treatment is not an emergency and serves to remove the necrotic testicle and prevent contralateral torsion of the healthy testicle^{1,2,5}. Some pediatric surgeons suggest removing the necrotic testicle (orchiectomy) due to the risk of tumor formation^{1,3,4,5}. The strategy of fixing the contralateral testis (orchiopey) to avoid posterior torsion of the healthy testis is controversial⁶. In a study with 17 neonates, in which seven of them did not undergo contralateral orchiopey, no torsion was observed in the observation period of 4.2 to 13.7 months⁴. In the present case, the surgical team chose to fix the contralateral testicle in view of the possibility of posterior torsion, a conservative and zealous strategy due to the fact that the patient now has only one testicle, but which is not a consensus among professionals and in the specialized literature.

CONCLUSION

Neonatal testicular torsion is a rare condition; however, it is important to know this condition to physical examination of a newborn with indurated scrotal edema. An accurate physical examination of the abdomen, inguinal region and scrotum may suggest whether the testicular torsion was a late event, still in utero, or a recent, postnatal event, in addition to ruling out most of the differential diagnoses of testicular masses. Ultrasound examination is useful to aid diagnosis; however, it should not delay surgical exploration in cases of acute scrotum with some possibility of testicular vitality. In prenatal torsion, the treatment is not an emergency, presenting a more elastic diagnosis-surgery time, including the possibility of ordering serum tumor markers, even if neoplasms are quite rare in neonatology, in addition to the anatomopathological study of the excised part.

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