Inguinoscrotal hematocele of the newborn

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Neonatal inguinoscrotal hematocele is a very rare disease of the first few days of life. The cause of this pathology is thought to be related with the umbilical plastic clamp, with an incorrect clamping technique or with the infant's lying over the clamp. Surgical treatment is not necessary as long as testicular torsion is excluded. In this report, three cases of inguinoscrotal hematocele diagnosed at surgical exploration in our clinic are reported and the literature reviewed.

Key words: inguinoscrotal hematocele, hematoma, newborn.

Inguinoscrotal hematocele of the newborn is a very rare disease of the first few days of life[1,2]. The cause of this pathology is thought to be related with the umbilical plastic clamp or with an incorrect clamping technique, in which the clamp is either eccentric or too distal[3]. Other causes of acute scrotum should also be suspected in differential diagnosis. We present three cases of inguinoscrotal hematocele which were diagnosed between 1997 and 1998.

Case Reports

Case 1

Case 1 was a white male who was delivered vaginally at the 35th gestational week with a birth weight of 2500 g. There was no history of birth trauma. He was admitted to our clinic on the 1st postpartum day with symptoms of inguinoscrotal swelling and redness. On physical examination, redness and swelling of the right inguinoscrotal region were detected and an umbilical plastic clamp was present. The coagulation tests (platelet count, clotting and prothrombin time) were normal. The diagnosis of testicular torsion was suspected. On Doppler ultrasonography (USG), there was no blood flow in the right testis. At scrotal exploration it was observed that the testicular sheaths (dartos fascia and tunica vaginalis) were infiltrated by blood, but the testis was found inside the hematoma without evidence of torsion (Fig. 1). The hematoma was evacuated. Four days later the swelling had subsided, and the remainder of the hematoma in the inguinoscrotal skin had completely resolved by the end of the 8th day.

Case 2

Case 2 was a white male who was delivered vaginally at the 37th gestational week with a birth weight of 2800 g. There was no history of birth trauma. He was admitted to our clinic on the 3rd postpartum day with symptoms of right inguinoscrotal swelling and discoloration. On physical examination, redness, ecchymosis and swelling of the right inguinoscrotal region were detected and an umbilical plastic clamp was present. Coagulation tests were normal. The diagnosis of testicular torsion could not be excluded. On inguinoscrotal USG, intestinal segments were observed, but a Doppler examination could not be performed. The diagnosis of strangulated inguinal hernia was suspected. At inguinal exploration, hemorrhagic infiltration of the subcutis that extended to the homolateral scrotum was observed. Inguinal hernia was not present. The testicular sheaths were infiltrated by blood, but the testis was found inside the hematoma without evidence of torsion. The hematoma was evacuated. Three days later the swelling of the scrotum had subsided and the remainder of the hematoma in the inguinoscrotal skin had completely resolved by the end of the 7th day.

Case 3

Case 3 was a white male who was delivered vaginally at the 40th gestational week with a birth weight of 4200 g. There was no history of

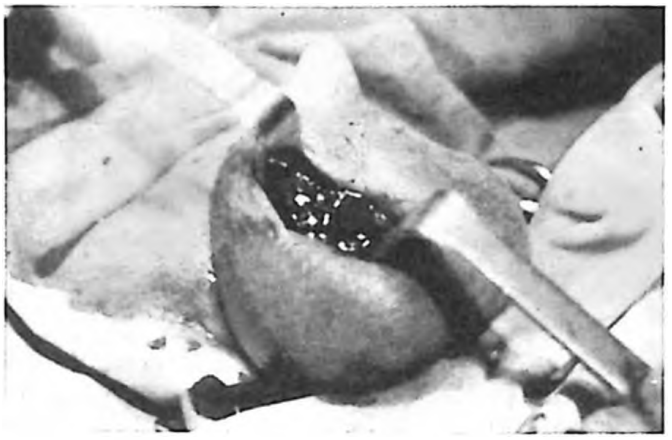

Fig. 1. Preoperative inguinoscrotal view of the first case.

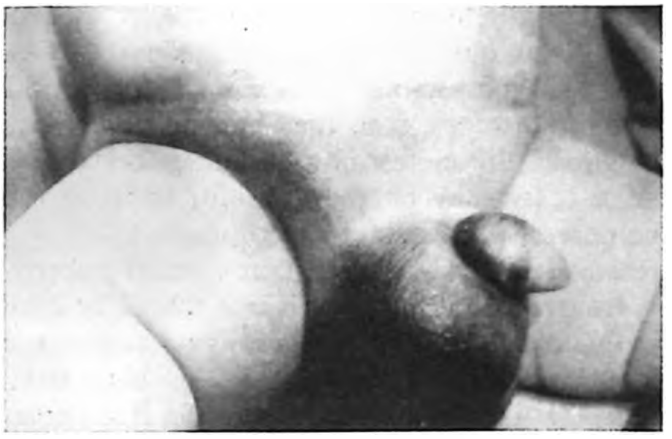

Fig. 2. Preoperative inguinoscrotal view of the third case.

birth trauma. He was admitted to our clinic on the 4th postpartum day with symptoms of right inguinoscrotal swelling and discoloration (Fig. 2). On physical examination, redness, ecchymosis and swelling of the right inguinoscrotal region were detected and an umbilical plastic clamp was present. The coagulation tests were normal. Blood flow in the right testis was determined on Doppler USG, but as testicular torsion could not be excluded by physical examination, he was explored via inguinal approach. The testicular sheaths were infiltrated by blood, but the testis was found inside the hematoma without evidence of torsion. The hematoma was evacuated. Two days later the swelling of the scrotum had subsided and the remainder of the hematoma in the inguinoscrotal skin had completely resolved by the end of the 7th day.

Discussion

Inguinoscrotal hematocele seen after delivery is thought to be due to compression by the umbilical clamp of the superficial inguinal vasculature (scrotal branches of the femoral or saphenous vein) or to an incorrect clamping technique, in which the clamp is either eccentric or too distal. Rupture of these vessels produces an inguinal hematoma, and consequent drainage to the homolateral scrotal area causes the scrotal hematoma. If the infant is in a prone position, the umbilical clamp makes a compression on the inguinal region which leads to the rupture of the superficial branches of the femoral vein[3,4]. In all three cases, as there was no history of birth trauma and as all the infants with normal coagulation tests had umbilical plastic clamps, the etiology of the inguinoscrotal hematocele could be explained by the same mechanism. Treatment of newborn hematocele may be conservative but surgical exploration is needed whenever the diagnosis is equivocal, since torsion of the testis may lead to testicular loss. In the first case, because Doppler USG did not show any blood flow, the diagnosis of testicular torsion could not be excluded and he was explored by scrotal approach. In the second case, the differential diagnosis of incarcerated hernia could not be made by physical examination and he was explored after an intestinal segment was determined on USG. In the third case, while blood flow of the right testis was determined on Doppler USG, exploration was performed because physical examination findings strongly suggested the diagnosis of testicular torsion. In all three cases, inguinoscrotal hematocele with no testicular torsion was observed at exploration. The differential diagnosis between inguinoscrotal hematocele and neonatal testicular torsion, appendicular testis torsion, idiopathic scrotal swelling, epididymo-orchitis, incarcerated hernia and Henoch-Schönlein purpura should be made. Epididymitis tends to occur with urinary tract symptoms, such as frequency, dysuria, fever, and pyuria, and it is seen more rarely in the neonatal period. Incarcerated hernia occurs as an irreducible mass in the inguinoscrotal region. Inguinoscrotal USG may show intestinal segments. Idiopathic scrotal swelling and Henoch-Schönlein purpura are rare pathologies causing acute scrotum. Neonatal testicular

torsion is often detected as a painless mass on initial post-delivery examination. The scrotal skin may be discolored ecchymotic, or edematous, as seen in inguinoscrotal hematocele. Doppler USG and radioisotope scan may help in differential diagnosis. In adolescents beyond pubertal age, such tests may be more useful because the volume of the testis is large enough to allow a reasonably high level of accuracy. Before puberty, however, when the testis is less than 1 or 2 ml in volume, such tests are of lower accuracy and have limited clinical usefulness. For this reason, differential diagnosis may be difficult. If testicular torsion is strongly ruled out and the diagnosis of inguinoscrotal hematocele is clearly apparent, non-operative treatment is suggested, but if there is even slight suspicion of testicular torsion, surgical exploration must be performed[5,6].

It is concluded that newborn hematocele is a benign, self-resolving condition that should always be considered when scrotal swelling and discoloration appear in the first few days of life. Surgical exploration is indicated when the differential diagnosis cannot be made. Otherwise, non-operative treatment is sufficient. For the prevention of this pathology, umbilical plastic clamps should be placed correctly and of infants with umbilical clamps should be positioned more carefully so as not to cause compression of the inguinoscrotal region.

REFERENCES

1. Klauber GT, Sant GR. Disorders of male external genitalia. In: Kelalis P, King L, Belman B (eds). Clinical Pediatric Urology. Philadelphia: WB Saunders; 1985: 878-858.
2. Rodríguez DD, Rodríguez WC, Rivera JJ, et al. Doppler ultrasound versus testicular scanning in the evaluation of acute scrotum. J Urol 1981; 125: 343-346.
3. Miliaras EV, Koutsoumis G, Miliaras D, Manios S. Neonatal inguinoscrotal hematocele. Pediatr Surg Int 1996; 11: 505-506.
4. Rodríguez-Alarcon J, Vargas LM, Solaun MR. Neonatal inguinoscrotal lesion produced by plastic umbilical clamp. J Pediatr 1978; 93: 1024-1025.
5. Noseworthy J. Testicular torsion. In: Ashcraft KW, Holder TM (eds). Pediatric Surgery (2nd ed). Philadelphia, Pennsylvania: WB Saunders; 1993: 595-601.
6. Hutson JM. Undescended testis, torsion, and varicocele. In: O'Neill JA, Rowe MI, Grosfeld JL, Fonkalsrud EW, Coran AG (eds). Pediatric Surgery (5th ed). St. Louis: Mosby-Year Book, Inc; 1998: 1087-1109.