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Idiopathic scrotal hematoma simulating a testicular torsion, in association with cryptorchidism: US findings

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Summary

Background:

An acute scrotum concerns endoscrotal organs (testicles, spermatic cord, tunica vaginalis) and is characterized by pain, swelling and hyperemia of the hemi-scrotum. It represents one of the most common surgical emergencies in children often caused by testicular torsion; the diagnosis is mostly clinical but must be supported by ultrasonographic examination of the scrotal region in association with a colour Doppler study of the spermatic cord vessels and glandular parenchyma. An idiopathic scrotal hematoma is a very rare condition that can simulate it.

Case Report:

A 3-day-old full-term baby, otherwise in good health, showed swelling and pain of the left inguinal-scrotal region. A testicular torsion was suspected, so the baby underwent an ultrasound examination of the testis and spermatic cord that showed a left scrotal hematoma with superior displacement of the didymus; the right testicle was located in the internal inguinal canal. Surgical intervention confirmed the sonographic diagnosis of left testicular hematoma and of the right cryptorchidism.

Conclusions:

Although testicular torsion is the most frequent cause of acute scrotum, the possibility of a persistent idiopathic scrotal haematoma and/or haematoma secondary to a trauma of the inguino-scrotal region, must be always taken into account. US diagnosis can avoid unnecessary emergency surgical treatment, required in case of testicular torsion.

MeSH Keywords:

Cryptorchidism • Spermatic Cord Torsion • Ultrasonography, Doppler, Color

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Background

An acute scrotum concerns endoscrotal organs (testicles, spermatic cord, tunica vaginalis) and is characterized by pain, swelling and hyperemia of the hemi-scrotum. It represents one of the most common surgical emergencies in children [1]. There may be several causes, but the most common one is testicular torsion. It may present with variable clinical severity but an early differential diagnosis is essential as some of the conditions which determine the onset of symptoms may seriously jeopardize the integrity of the gonad. The diagnosis is mainly clinical but must be supported by ultrasonographic examination of the scrotal

region in association with a color Doppler study of the spermatic cord vessels and glandular parenchyma. Here we reported on a clinical case of idiopathic scrotal haematoma in a 3-day-old baby, associated with contralateral cryptorchidism, in which the clinical examination had erroneously assumed testicular torsion, successfully treated by surgical intervention.

Case Report

A full-term newborn baby with birth weight of 3,280 g, hospitalized at the Department of Neonatology of the Policlinic Federico II of Naples, in apparently good health,

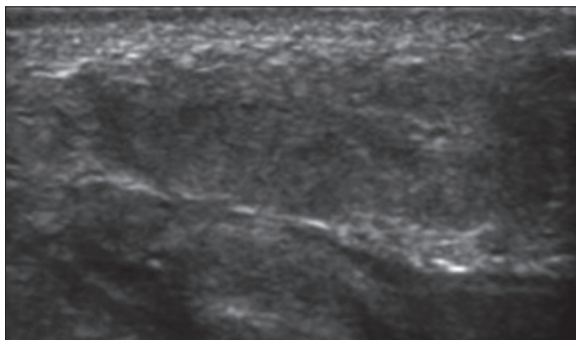


Figure 1. Ultrasound image of the left hemi-scrotum showing an oval iso-hypoechoic formation with a maximum diameter of 20 mm.

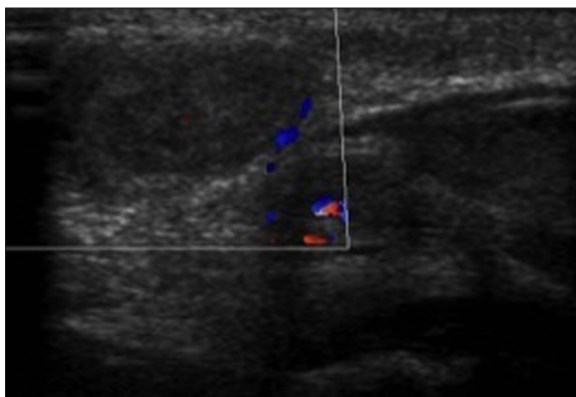


Figure 2. Ultrasound image of the left part of the interior inguinal canal, showing an ipsilateral testicle displaced cranially (top left). The left hemi-scrotum appeared to be occupied by the hematoma (bottom right) showing peripheral vascular spots.

showed a clinical picture of acute scrotum on the third day of life. Objective clinical assessment showed scrotal asymmetry with increased volume of the left hemiscrotum, which appeared oedematous, blue-violet in colour, of hard-elastic consistency and apparently painless. The baby, afebrile, was first subjected to laboratory tests that reported blood chemistry as almost normal except for a slight increase in the value of LDH (1060 U/L; n.v. 408–1018 U/L), APTT (45.1 sec; n.v. 26–40 sec) and fibrinogen (387.35 mg/dL; n.v. 160–350 mg/dL), and a slight reduction of WHO (4979 U/L; n.v. 5400–13200 U/L) and antithrombin III (62.7%, 70–120%). In the context of a clinical suspicion of acute scrotum from left testicular torsion, the baby was sent as an urgent case to our Department for further diagnosis. An ultrasound examination of the inguinal-scrotal region, which appeared swollen and hyperemic on the left, was performed with Philips HD11 instrument through a 5–12 MHz linear probe with longitudinal and transverse scans, supplemented by an Echo-Doppler study of the vessels of the spermatic cord and the glandular parenchyma. As concerns the left hemiscrotum, a dishomogenous formation was distinguished with predominantly peripheral vascular spots of about 20 mm maximum in diameter (Figure 1). At the level of the internal orifice of the left inguinal canal another oval formation was present, of 8×5 mm in diameter with internal vascular spots. The finding did not suggest testicular torsion of the



Figure 3. Surgical exploration of the left hemi-scrotum showing evidence of a large hematoma involving the peri-testicular tissues with didymus, and of the epididymis, which were normal in morphology, volume, consistency and vascularization.

left gonad, but of the left didymus located at a high level with an associated haematoma in the scrotal sac (Figure 2). Furthermore, in the internal orifice of the right inguinal canal, a small formation of 7×4 mm in diameter was found related to the right didymus, so it was not present in the scrotal site itself, but in the abdomen. The examination was extended to the abdomen, but revealed no other pathological findings, such as adrenal haematoma. Subsequently, the infant was subjected to surgery under emergency procedures. A left scrotal incision was performed which confirmed the presence of a subcutaneous and peri-testicular hematoma with edema in the tunica vaginalis of the testicle, spermatic cord and surrounding ipsilateral tissues. Bilaterally to the operated testicle at the level of the inguinal canal, a small testicle of discreet colour was found, subsequently fixed to the scrotum (Figure 3).

Discussion

Acute scrotum is the major surgical emergency in children. The most common causes include: testicular torsion, torsion of testicular annexes and appendices, orchitis-epididymitis and scrotal trauma [2,3]. Idiopathic scrotal edema, hydrocele and Henoch-Schonlein purpura [4] are among the minor causes. From a clinical – objective viewpoint, this condition is manifested by pain, swelling and hyperemia of the testicle involved [5]. The diagnosis is mainly clinical but must be supported by a careful ultrasound examination by Echo-Doppler of the vessels of the spermatic cord and the glandular parenchyma. In case of acute scrotum secondary to testicular torsion, with color-Doppler the vascular signal of the testicle concerned appears to have decreased intensity or to be absent, sometimes showing evidence of hyperemia surrounding the ischemic or infarcted testicle; a spiral appearance of the vessels of the spermatic cord has also been described as a sign of torsion [6]. In inflammatory conditions (orchitis-epididymitis), the vascular signal with color-Doppler is greatly increased. Testicular trauma is a rare condition, especially in infants, due to the anatomical location of didymi and their mobility in the scrotum. Testicular failure

or fracture is associated in 80% of cases with the formation of a scrotal hematoma, which may require a surgical drain. In the case of scrotal hematoma, the color-Doppler examination is characterized by the absence of flow within the hematoma itself [7–10]. When acute scrotum is suspected, the diagnosis should be made quickly as timely surgery is essential to save the gonad concerned. In our case, the clinical laboratory examination of the scrotal region of the newborn baby led to a suspicion of testicular torsion, but the ultrasound exam with Echo-color-Doppler showed, with regard to the left hemiscrotum, the presence of a heterogeneous hypo-isoechoic formation characterized by an absence of flow within it (with peri-vascular lesions causing spots), and therefore indicated a suspected scrotal haematoma. The ultrasound diagnosis was confirmed by subsequent surgical exploration, which led to the removal of the haematoma and the correct positioning of the didymi in the scrotum. To our knowledge, this is the first case of idiopathic scrotal haematoma associated with cryptorchidism. Association of scrotal haematoma with adrenal haemorrhage is reported in the literature [11,12] but it was not present in our case. In the

recent literature, only a study by Diamond et al. reported five cases of scrotal haematoma mimicking testicular torsion [13]; four of five patients had risk factors for developing a scrotal haematoma. No delivery-related trauma or haemorrhagic diathesis was present in our patient. Differential diagnosis between testicular torsion and idiopathic scrotal hematoma could be very difficult [14]. US diagnosis can avoid unnecessary emergency surgical treatment, required in case of testicular torsion. However in our case, because of the compression and dislocation of the testis, surgical drainage was performed to avoid testicular damage and to reposition the didymi. The patient had a follow-up examination which showed no sequelae.

Conclusions

In conclusion, although testicular torsion is the most frequent cause of acute scrotum, the possibility of a persistent idiopathic scrotal haematoma and/or haematoma secondary to a trauma of the inguino-scrotal region, must always be taken into account.

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