Andrology and fertility

Testicular dislocation: An atypical case and review of the literature

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A R T I C L E   I N F O

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A B S T R A C T

Traumatic dislocation of testis is a rare event. We report a case of traumatic testicular dislocation in a 27-year-old patient presenting a right inguinal lump in a context of acute alcohol abuse with transient global amnesia. There was a tender mass in the right inguinal region and right hemiscrotum. He ascertained a previous scrotal position of both testes. The Doppler ultrasound confirmed the diagnosis of a dislocated right testis in right inguinal canal and surgical reduction and orchidopexy was performed. It is necessary to perform a complete physical examination in a trauma patient, early detection and management are both essential to preserve normal spermatogenic function.

Introduction

Genitourinary injury represents approximately 10% of cases of abdominal trauma and up to 67% involve the external genitalia. About 80% corresponds to blunt trauma and 20% is due to penetrating injuries. It is more common in males owing to anatomical differences and their involvement in high impact and energy activities. Testicular dislocation is a rare entity that usually goes unnoticed because of the coexistence of other severe injuries as described in a multitrauma-injured motorcyclist. In most cases, treatment requires early surgical correction to reduce long-term morbidities such as infertility, testicular atrophy, testicular pain syndrome, testicular neoplasia and psychological effects.

Case report

A 27-year-old male went to the Emergency department after presenting multiple contusions and a right inguinal lump in the context of acute alcohol abuse with transient global amnesia. The patient was clinically stable. Physical examination revealed a left supraciliary incised wound and superficial erosions in the abdomen. A FAST scan, a thorax radiography and a brain computer tomography scan (CT) were performed without showing pathological findings. It was evaluated by the Urology service for the right inguinal lump. He denied hematuria, voiding symptoms and any history of testicular retraction, cryptorchidism, or inguinal hernia in the past. On palpation, a mass was appreciated in the right inguinal canal with associated erythema, hard and painful on superficial palpation. The penis had no apparent changes. The scrotum had no acute inflammatory signs, the left testicle was in scrotal sac being of normal size and consistency, not painful on palpation. The right hemiscrotum was empty. A Doppler ultrasonography (US) examination was performed and revealed a thick-walled anechoic liquid collection of size 51 × 32 × 64 mm in the right inguinal region identifying the right testicle in the distal portion. At 4-month follow-up, the patient was asymptomatic. Dislocation testicular is a rare perineal trauma. Only 158 cases have been reported in the literature being 9 Spanish. The pioneer in...
Dislocation of the testis is defined as the displacement of normally located one or both testes to a position other than the scrotum. It is generally related to motorcycle accidents. In most cases it is unilateral with only 30% of cases being bilateral.\(^3\)–\(^4\)

Testicles are relatively well protected due to: fixation by the gubernaculum to a strong capsule; the low friction sliding ability given by the lubrication that occurs between the two layers of the tunica vaginalis; the cremasteric reflex and the fibrous and tensile-resistant tunica albuginea.\(^1\) According to Alyea et al. the dislocated testis could then be displaced along a circle within the radius of the spermatic cord centered on the external inguinal ring.\(^1\) These hypothetic locations and their reported frequency have been described by Schwartz et al.\(^1\) Testicular dislocations occurred in the superficial inguinal pouch in 50% of patients.\(^1\)–\(^4\) Other sites are: pubic (18%); canalicular (8%); penile (8%); intra-abdominal (6%); perineal (4%); acetabular (4%) and crural region (2%). Predisposing factors for testicular dislocation reported are the pre-existing indirect inguinal hernia, a wide external inguinal ring, the cremasteric reflex and testicular atrophy. In patients with these abnormalities, direct trauma to the testis could lead it to the inguinal canal or the abdominal cavity.

In any polytrauma, a medical history and physical examination of the scrotum are necessary. It is essential to ask about any history of cryptorchidism, testicular retraction, or inguinal hernia in the past. Clinically, testicular dislocation shows such as empty scrotum and loose skin (Brockman’s sign), testicular hematoma and inguinal mass. This physical examination may be hampered by pain, edema, hematoma, hematocèle, deep testicular dislocation, damage to neighboring structures, or due to obesity of the patient. Doppler US or abdominopelvic CT are the ideal imaging modalities to confirm the diagnosis. Doppler US is helpful in detecting the blood flow, the viability of the dislocated testis and for postoperative follow-up. Abdominopelvic CT helps to diagnose other damage to the pelvis and scrotum.\(^3\)

The treatment of choice for testicular dislocation is manual reduction, but it has been successful in only 15% of cases.\(^1\)–\(^2\) In some cases, attempts have been made to defer manual reduction on the third or fourth day when the edema has subsided. Nevertheless, this has short-term complications such as torsion of the dislocated testicle, adhesions, hematocèle infection even get to the orchiectomy.\(^1\) Therefore, open exploration and orchidopexy is often required and recommended as the preferred initial treatment.

Delay in diagnosis and treatment is associated with infertility due to prolonged exposure to elevated temperature and the appearance of anti spermatozoal antibodies secondary to the contact between the germinal cells and the immune system, absence of spermatids, decrease in spermatogonia, and relative increase in Sertoli cells.\(^1\)–\(^3\)–\(^4\) Moreover, other complications have been reported like testicular atrophy, testicular pain syndrome, testicular neoplasia and psychological effects.\(^3\)–\(^4\)

Conclusion

In conclusion, traumatic dislocation of testis is a rare entity that requires an early diagnosis and surgical treatment by reduction and orchidopexy to maintain testicular viability. Doppler US is the gold standard and it is strongly recommended when the physical examination found that scrotum is empty.\(^1\) It is essential to keep this diagnosis in mind when faced with a polytrauma even when the Doppler US findings are negative in patients with predisposing factors and high suspicion on physical examination. A delay in diagnosis carries a risk of infertility, atrophy and testicular neoplasia.

Ethical approval

All procedures were followed in accordance with the ethical standards of the Human Research Ethics Committees (“HREC”) and the Declaration of Helsinki of 1975.

Informed consent

The authors have obtained the informed consent of the patient. The protocol of their hospital on the publication of patient data has been followed. The authors thank the patient for allowing them to publish the
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Declaration of competing interest

The authors have no funding and conflicts of interest to disclose.

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