CASE REPORT

Bilateral testicular dislocation with pelvic ring fracture: A case report and literature review

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Summary We report a case of a bilateral testicular dislocation with B1-1 pelvic-ring fracture according to the modified Tile AO classification, in a patient of 62 years. The mechanism of injury was impaction on the tank of a motorcycle. Symphyseal plate fixation using a Pfannenstiel approach was associated to bilateral orchidopexy through scrotal approach. The posterior pelvic ring was stabilized by iliosacral screwing because the left sacroiliac joint was open. The outcome was favorable without disorders of gonadal function. Systematic testicular palpation and careful CT analysis of the genital organs enabled identification and effective management of these rare urinary tract lesions.

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Introduction

Primary urinary tract lesions are not uncommon in association with pelvic-ring fracture, especially in case of vertical and horizontal instability on the Tile classification [1]. Consequences are non-negligible, and notably involve impaired urinary continence and/or erectile disorder [2–6]. Testicular luxation is a much rarer association, especially when bilateral: to the best of our knowledge, no previous cases have been reported. The present report has three points of interest: awareness of the existence of such an association, to enable recognition and avoidance of iatrogenic complications caused by an anterior surgical approach; and multidisciplinary management between orthopedic surgeons and urologists.

Case report

A 62-year-old man who had been in a high-energy motorcycle accident was admitted to intensive care in our center. Clinical assessment on admission found stable hemodynamics with a Glasgow score of 15, Gustilo 3B open left tibial mid-diaphyseal fracture, Gustilo 3A open left wrist fracture and spontaneously reduced right knee dislocation with

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involvement of the central pivot and peripheral ligamentary formations. Plain AP pelvic X-ray found Tile B1 pelvic-ring fracture [1] with fracture of the left ilio-ischiopubic branch and right iliopubic branch and symphyseal disjunction of less than 2.5 cm (Fig. 1). Whole-body CT found hematoma in Retzius’ space (subperitoneal precystic) extending upward and backward of the abdominal rectus muscle with left pelvic contrast medium leakage. There was also left sacroiliac disjunction with anterior opening. Embolization of a hyperselective distal branch of the left pudendal artery was performed, with a check on right popliteal axis permeability. CT found an ectopic left testicle in the inguinoscrotal canal (Fig. 2).

Emergency surgery consisted in fitting an external fixator onto the left leg and covering the open fracture with a semi-soleus flap and an external fixator on the left wrist.

The pelvic ring was fixed the following day, using a screwed plate with six 3.5-mm holes, positioned via an anterior Pfannenstiel approach [7–9]. After linea alba incision and retraction of the abdominal recti, the left testicle was discovered in an intrapelvic position. Dissection revealed the other testicle in an ectopic location in the inguinoscrotal canal (Fig. 3). The testicles and their tunicae albuginea and vasa deferentia appeared intact. The pubic symphysis was reduced and fixed, followed by left iliosacral screwing to stabilize the sacroiliac joint (Fig. 4). The urologic surgeons then performed manual reduction of the testicles and bilateral orchidopexy via a scrotal approach.

Postoperative course was simple, without recurrence of testicular luxation. Sex hormone assay (total and bioavailable testosterone) was normal. There was no erectile dysfunction.

Discussion

The interest of the present case report lies in the description of an exceptional lesional association between bilateral testicular luxation and pelvic-ring fracture. Diagnosis relied on clinical examination, which should include testicular palpation, which may reveal an empty scrotum, to be completed by whole-body CT, now indispensable in pelvic ring lesions, to refine diagnosis [10].
Intrapelvic testicular luxation should be recognized as such, as it entails a risk of iatrogenic wounding associated with the anterior Pfannenstiel approach: in the present case, one testicle was in the inguinoscrotal canal and the second directly under the lacerated abdominal rectus muscle, as is often the case with symphyseal disjunction [7–9]. Surgical reduction and orchidopexy are required, to conserve spermatogenesis despite delayed initial diagnosis [11].

Testicular luxation was previously described without associated pelvic ring lesion; management comprises manual reduction, followed by orchidopexy on a scrotal approach in case of failure. Open reduction is indicated in long-standing luxation, especially if there is doubt as to testicular integrity or possible spermatic cord torsion [11]. Follow-up is biological, based on sex hormone assay and a late spermatogram, from which it is found that endocrine and exocrine function is rarely impaired.

In pelvic-ring fracture, urinary tract lesions are frequent, and frequently associated with urethra or bladder lesions, followed by lesions of the vagina or penis [2–4]. There is a correlation between lower urinary apparatus lesions and pelvic ring instability on the Tile classification [1]. These lesions are serious: Bjurlin et al. reported that they were associated with prolonged hospital stay, higher mortality and delayed return home [5]. Moreover, urologic and/or sexual sequelae are frequent [6]. Initial clinical examination, over and above scrotal palpation, should screen for urethrorrhagia and macroscopic hematuria [12], in which case it should be complemented by retrograde opacification of the lower urinary tract to screen for urethral or bladder rupture.

In pelvic ring lesions, clinical examination should include testicular palpation. Diagnosis is confirmed by whole-body CT, requiring urologic management after bone lesion fixation, to reduce and fix the testicles and prevent sexual sequelae.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References