

Bilateral hip dislocation in a 79 years patient

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Rezumat

Luxație bilaterală de șold la un pacient de 79 de ani

Luxația bilaterală de șold este o leziune rară, în special dacă nu există modificări anatomice ale șoldului sau laxitate ligamentară. Au fost publicate până în prezent mai multe cazuri de acest tip apărute de obicei la pacienți adulți. Cel mai frecvent au fost implicați pacienți în vârstă de 20-30 ani deoarece în cazul unui traumatism important la adulți femurul este suficient de rezistent pentru a nu se produce o fractură și astfel crește posibilitatea producerii unei luxații de șold. După știința noastră, cel mai vârstnic pacient descris în literatură cu luxație bilaterală de șold avea vârsta de 65 de ani. Prezentăm un pacient în vârstă de 79 de ani care a suferit un traumatism ce a constat în căderea unei greutăți pe coapse, cu direcție antero-posterioară. Pe baza examenului clinic și radiologic s-a stabilit diagnosticul de luxație posterioară bilaterală de șold. Au fost identificate și fracturi asociate (fractură acetabulară stângă și fractură ram ilioischio pubian stâng) dar acestea nu au influențat semnificativ conduita sau prognosticul. Sub rahianestezie luxațiile au fost reduse prin metoda ortopedică. Particularitatea cazului constă, pe lângă raritatea leziunii bilaterale, în vârsta pacientului și considerăm că acesta este cel mai vârstnic pacient prezentat în literatură cu luxație bilaterală de șold.

Cuvinte cheie: luxație bilaterală de șold, pacient geriatric

Abstract

Bilateral simultaneous dislocation of the hip is an unusual occurrence, especially if there is no previous history of hip abnormality or ligamentous laxity. Most of the reports published until now most frequently describe this type of injury in adults. The majority of case reports present patients with ages ranging between 20 and 30 years old, because at this age the bone is strong enough not to suffer a fracture but a dislocation. The oldest patient with bilateral simultaneous dislocation of the hip described in literature (to our knowledge) is 65 years old. We present the case of a 79 year old man that was involved in an agricultural accident in which a heavy load fell on both his feet while he was laying on the ground. Antero-posterior pelvic radiograph reveal bilateral posterior hip dislocation with an associated left-side acetabular fracture and also a minimum displaced anterior left pelvic ring fracture. Both hips were reduced within three hours of presentation by closed manipulation under spinal anaesthesia. Literature search revealed no case presentation that reported a bilateral simultaneous dislocation of the hip in elderly - to our knowledge, this is the first.

Key words: bilateral simultaneous dislocation of the hip, geriatric patient

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Introduction

Traumatic dislocation of the hip due to high-energy trauma is a severe, potentially life-threatening injury and represents an emergency due to frequent late presentation and complications. Hip dislocations are classified according to the direction

of the dislocation of the femoral head, and they can be either posterior (superior or inferior), either anterior (superior or inferior). There are also classifications of the dislocations associated with fractures of the femoral head or of the acetabulum, which are of great importance when choosing treatment method.

Bilateral simultaneous dislocation of the hip is a rare entity and appears especially in adults with healthy normal bone tissue (1). Elderly tend to suffer more frequently from femoral head fracture if a sufficient force is applied to the femur. If luxation does occur, it is caused by local or methabolical favouring conditions that lead to a weakening of the ligaments surrounding the coxo-femoral joint. Literature search revealed no case presentation that reported a bilateral simultaneous dislocation of the hip in elderly - to our knowledge, this is the first.

Several mechanisms are usually involved in the aetiology of bilateral hip dislocation - the most frequent one involves car and motorcycle-related injuries. Authors discuss the possible mechanisms and the way forces are applied in order to dislocate and not fracture the femur. Only one other case presentation reported an accident that occurred in an agricultural setting (2).

Case report

We present the case of a 79 year old man that was involved in an agricultural accident in which a heavy load fell on both his feet while he was laying on the ground. The approximate weight of that load was assessed at over 100 kg and the impact was antero-posterior.

On admission, he complained of extreme intense bilateral pain at hip level and total functional impotency that affected both his hips. No signs of open fracture were noted. Clinical examination revealed internal rotation, adduction and moderate fixed flexion for both inferior limbs, with the left one showing less pronounced clinical signs, except important shortening. These malpositions were considered to be irreducible due to the resistance encountered when trying to reduce them by gentle movements.

The patient was assessed for possible associated injuries. A pelvic radiograph was performed in the Trauma department, revealing bilateral posterior hip dislocation with an associated left-side acetabular fracture and also a minimum displaced anterior left pelvic ring fracture (Fig. 1). A geriatric consult was requested due to the advanced age of the patient and the need for a medical systematic evaluation. The geriatrics specialist's consult reported that he was in previous excellent health, with no associated pathologies. Anamnesis did not reveal any history of ligament abnormalities, tissue disorders or other general or local conditions that could have participated in the aetiology of the injury.

Both hips were reduced within three hours of presentation by closed manipulation under spinal anaesthesia; the stability of the reduction was tested by means of passive flexing 30°-70° of the hip performed in order to check if the dislocation would



Figure 1. Initial radiography of the patient



Figure 2. After-reduction radiography of the patient

reappear. A second radiograph was performed in order to assess the results of the treatment and to exclude any intra-articular fragments (Fig. 2). The acetabular fracture did not receive any treatment due to its small size, the age of the patient, and the fact that its existence did not affect ulterior hip stability.

After reduction, the patient was monitored for a few days in our department and was afterwards discharged; he was advised to maintain bed rest for 45 days, followed by six weeks of non-weight bearing and kinetotherapy; the next check-up was scheduled after 3 months.

Although this was not a case of late presentation, the fact that a closed reduction was performed together with the fact that the patient was elderly required increased vigilance and screening for complications of the hip reduction: avascular necrosis of the femoral head and arthrose; 6 month and one year follow-up revealed no such complications.

Discussions

Hip dislocations are quite rare due to the anatomy of the hip joint: the acetabular cavity is deep and the surrounding ligamentous structures are strong. Car and motorcycle accidents represent the most common cause for this type of injury due to the high energy transfer that appears in such situations. The most frequent the hip dislocations (almost 90%) are posterior - in such cases the force is applied in the long axis of the femoral shaft while the hip is flexed - followed by anterior superior dislocations (abduction and external rotation in extension) and anterior inferior (adduction and external rotation in flexion) (3,4).

Bilateral simultaneous dislocation of the hip is an even more unusual occurrence, more so if there is no previous history of hip abnormality or ligamentous laxity (5). The case reports published until now most frequently describe this type of injury in adults. The oldest patient with bilateral simultaneous dislocation of the hip described in literature (to our knowledge) is 65 years old (6); the majority of case reports present patients with ages ranging between 20 and 30 years old, because at this age the bone is strong enough not to suffer a fracture (7,8,9). Elderly normally present with femoral head fracture or with other types of injuries of the hip.

While bilateral hip dislocations most frequently occur due to automobile accidents or, less commonly, due to automobile-pedestrian accidents, other mechanisms can be responsible for this injury as well. Sinha (10) reported a case of simultaneous anterior and posterior bilateral hip dislocation associated with injuries of the pelvic ring was reported as a consequence of a plane crash and Azar (7) presented a 21-year old patient with bilateral hip dislocation, injured due to a landslide during a canal excavation. Similar to the mechanism that occurred in our case presentation, Patton (2) describes this injury due to an agricultural accident: a heavy load fell on the pelvis of a farmer, while he was bending forward.

The high-energy trauma associated with hip dislocation commonly implies the presence of other injuries or complications that influence the outcome and sometimes the treatment. Due to the fact that car and motorcycle accidents are the most frequent cause for this type of lesion, the spine is quite often injured as well. Levine (11) reports a case that presented with ligamentous disruption at the L4/L5 level in association with bilateral, traumatic dislocations of the hip, combination that posed some difficulties regarding the timing and the technique of the treatment.

Furthermore, many bilateral hip dislocations are associated with other lesions of the surrounding bones or tissues. For instance, Singh (1) describes a case of bilateral hip dislocation associated with bilateral sciatic nerve palsy and bilateral acetabular fracture, while Chung (12) reports a concomitant unstable lumbar burst fracture and Sah (13) presents a patient with traumatic simultaneous asymmetric hip dislocations with associated asymmetric acetabular wall fractures. The femur can itself be fractured while being dislocated. Literature reports the occurrence of femoral head fractures, mostly associated with the anterior dislocation or femoral shaft fractures associated

with bilateral hip dislocations. There are only a few cases reported in literature that present without associated lesions. (14,15).

Regarding the treatment of bilateral hip dislocation, the methods of election varies according to associated soft tissue lesions, time of presentation, fractures, nerve palsies. Several of the reported cases were treated conservatively (7,16). Others were treated by means of closed reduction as well, but afterwards underwent immobilization and/or skin traction (17,18). Martinez (19) reported a case of bilateral simultaneous asymmetric hip dislocation associated with ipsilateral acetabular fracture in a 36-year-old man that was treated by means of closed reduction of both hips, followed by delayed internal fixation of the acetabular fracture, similar to the treatment method chosen by Pascarella (8). Open treatment is rare used, but there are older case reports that present the successful outcome of this method (20).

Follow-up and evaluation are important especially in such cases due to an increased risk in complications; previously reported cases generally have a long follow-up period, ranging from 2 years to 10 and a half years (7), depending mostly on the associated lesions and the presence of nerve palsy.

Regarding recovery procedures after a bilateral hip dislocation, Bilsel (21) presents a case of asymmetric dislocation treated by means of closed reduction that begun immediately after reduction hip range of motion exercises and was mobilized at the end of the sixth week. Full recovery was achieved after a period of 16 weeks. Another case report presents a period of recovery of 14 weeks, 6 of which were spent performing Buck's traction as well (22).

Several serious complications can be associated with this injury, not only because of the high-energy trauma it requires, but also because the most frequent treatment option is represented by closed reduction (23); conservative treatment combined with a late presentation time increase the risk for avascular necrosis of the femoral head; the risk rises after a delay of more than six hours or after several attempts at performing a closed reduction. Among others, Kaleli (24) reported a unilateral avascular necrosis at 2-year follow-up in a 28-year old man.

Among other potential complications, arthrose and femoral neck necrosis are reported in literature (18), as well as double intra-articular incarceration (25). Singh (1) reported a case of bilateral hip dislocation associated with bilateral sciatic nerve palsy in which both hips were treated by conservative methods and acetabular reconstruction was performed bilaterally. The patient developed several complications: heterotopic ossification, avascular necrosis of the femoral head and partial recovery of nerve function on one side.

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