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Case Report

CASE REPORT

Simultaneous bilateral hip fractures following a simple fall in an elderly patient without predilecting comorbidities

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Abstract

Simultaneous bilateral hip fractures are rare, mostly being caused by violent forces or in patients with bone metabolism disorders. We present the case of an elderly patient who sustained simultaneous bilateral hip fractures following a simple fall without having any known predilecting comorbidities other than advanced age. Only four cases have been described of elderly patients without comorbidity with simultaneous bilateral hip fractures following low-energy traumas. This rareness potentially leads to misses of this diagnosis.

INTRODUCTION

Until now, only four cases have been described of elderly patients without comorbidity with simultaneous bilateral hip fractures following low-energy traumas [1–3].

A unilateral hip fracture is a very common diagnosis in most hospitals, while bilateral hip fractures are not [1]. A literature study did yield many case reports describing bilateral fractures caused; however, they had been caused by violent forces [4] or in patients with metabolic disorders [5]. Simultaneous bilateral hip fractures due to a simple fall in a patient with no relevant comorbidity appear to be very rare.

We, however, present the case of an elderly patient with simultaneous bilateral hip fractures after a simple mechanical fall who did not suffer from any predilecting comorbidities. This rareness potentially leads to misses of this diagnosis.

CASE REPORT

A 90-year-old man was admitted to our emergency department after a simple fall from his bed (height ~1 m). He had wanted to get out of bed independently and had forgotten that he needed his walker. There was no mention of prodromal symptoms leading to the fall. He was found on the floor by caretakers after a call for help and was unable to get up. He was unable to explain how he fell. His medical history was remarkable for obesity (body mass index, 35), cardiac ischemia, Parkinson's disease and chronic renal insufficiency. Before hospital admission, he resided in a convalescent home and he mobilized with the aid of a walker. Clinical examination revealed external rotation of both legs and pain on passive movement of both sides of the hips. Motor and sensory functions were intact. Plain radiographs of the pelvis showed bilateral slightly displaced intertrochanteric fractures of both femoral bones (Fig. 1). In the AO classification of trochanteric femoral fractures classified as type 31.A3 [6], a reverse oblique fracture with the fracture line passing between the minor and major trochanters, with an abduction of the proximal fragment due to the pull of the abductor muscles. There were no signs of osteoporosis or osteopenia due to decreased mobility nor did the patient have any signs of an underlying malignant

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Figure 1: Plain anterior–posterior radiograph of the right hip showing a displaced intertrochanteric neck of femur fracture. Plain anterior–posterior radiograph of the left hip showing a slightly displaced intertrochanteric neck of femur fracture.

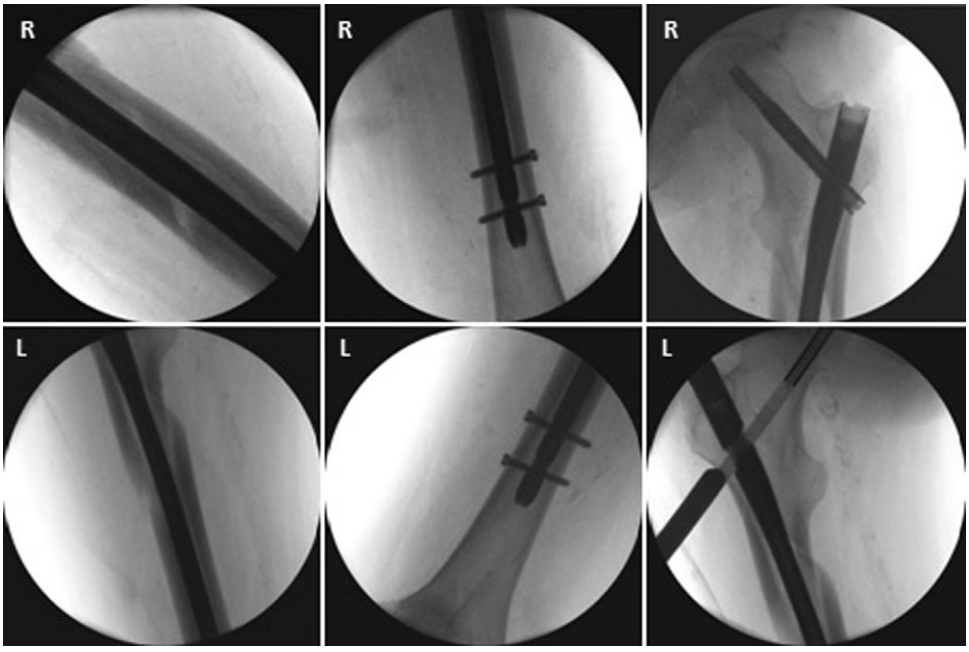

Figure 2: Compilation of intraoperative radiographs demonstrating correct placement of the gamma nails bilaterally.

illness on chest X-ray. The glomerular filtration rate was 34 with slightly increased serum values of urea (13.6 mmol/l) and creatinine (152 μmol/l). Surgical treatment was discussed with the patient and his family, and informed consent was obtained. Under general anesthesia both fractures were treated by bilateral intramedullary nailing using the extended Stryker Gamma3 intramedullary nail fixation (Kalamazoo, MI) in one surgical session. The extended gamma nails were locked statically leaving the possibility to convert them to the dynamic state at a later point in time. Intraoperative radiographs (Fig. 2) confirmed correct placement of the gamma nails. The combined surgical procedure lasted 4 hours and 21 minutes with an estimated blood loss of 200 ml and without occurrence of hypotension, bradycardia or decreased oxygen saturation. The patient was able to mobilize, fully bearing weight, supervised by a physical therapist within 4 days postoperatively. He was ready to be discharged back to his convalescent home 9 days postoperatively with improved kidney function (glomerular filtration rate of 51).

DISCUSSION

As mentioned earlier, bilateral hip fractures are rare. A retrospective study in a Level I trauma center concluded that over a

10-year period, only 8 out of 2426 patients with hip fractures had simultaneous bilateral hip fractures (0.3%), all following high-energy traumas [1]. Following low-energy traumas simultaneous bilateral hip fractures are progressively infrequent, especially in patients without relevant comorbidity.

The first case describing this rarity was published in 1997 by Kumar [2] delineating the case of an 89-year-old woman after a simple trip and fall in her own home. Her medical and surgical history included hypertension and cecal carcinoma for which she underwent a right colectomy 10 years earlier. The pathology report showed mild osteoporosis. In 2008, Grisoni [1] described two elderly patients with simultaneous bilateral hip fractures, both were women of 86 and 88 years of age sustaining the fractures after simple mechanical fall and significant comorbid health conditions: (i) hypertension, coronary artery disease, congestive heart failure, atrial fibrillation and chronic renal insufficiency and (ii) chronic obstructive pulmonary disease, hypertension, coronary artery disease and breast cancer. These patients died subsequently 12 and 7 days, respectively, after trauma. Sood in 2009 [3] reported the first man sustaining these fractures; an 84-year-old man who fell down three steps of stairs and sustained bilateral neck of femur fractures. He had no significant comorbidities.

In conclusion, a low-energy trauma is a common mechanism of injury often leading to a unilateral hip fracture in the elderly. We must conclude that simple mechanical falls can, very rarely, also lead to simultaneous bilateral hip fractures in patients with no specific risk factors other than their age. Clinicians must be alert to the possibility of simultaneous bilateral hip fractures especially in the elderly.

CONFLICT OF INTEREST STATEMENT

None declared.

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