



Case Report

Bilateral simultaneous neck femur fracture following domestic fall in an elderly patient: a rare case report[☆]

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ABSTRACT

Simultaneous bilateral neck femur fracture is a rare entity that has been associated with underlying bone disease, various metabolic diseases, high-energy trauma, and seizure disorders. Its occurrence following minimal trauma is very rare. This article presents the case of a 66-year-old female who sustained bilateral intracapsular fracture neck femur following a slip and fall at home. Single-stage bilateral cemented total hip replacement was done using a direct lateral approach with alternate right and left lateral positions. The authors report a satisfactory outcome, with Harris hip score of 98 at one year, which persisted until her last follow-up at 30 months.

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Fratura simultânea bilateral do colo do fêmur após queda doméstica em uma paciente idosa: relato de um caso raro

RESUMO

A fratura simultânea bilateral do colo do fêmur é uma entidade rara que tem sido associada a doenças ósseas, diversas doenças metabólicas, traumas de alta energia e distúrbios convulsivos. Sua ocorrência após trauma mínimo é muito rara. Este artigo apresenta o caso de uma mulher de 66 anos de idade que sofreu fratura intracapsular bilateral do colo do fêmur após um deslize e queda em casa. Uma artroplastia total do quadril, bilateral e cimentada foi feita em um único momento, usando uma abordagem lateral direta, alternando as posições laterais direita e esquerda. Os autores relatam um resultado satisfatório, com Harris Hip Score de 98 após um ano, que persistiu até o último seguimento, aos 30 meses.

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Introduction

Simultaneous bilateral femoral neck femur fracture is a rare entity and is often seen in patients with metabolic diseases¹ like osteomalacia, renal osteodystrophy, after epileptic attacks, electrical shock or trauma. Simultaneous traumatic bilateral neck femur fractures are even rarer and there are very few case reports published wherein fracture occurred due to low energy impact.^{2,3} Unilateral fracture neck femur are commonly seen in young adults after high energy injury and in elderly patients after low energy injury. Bilaterally simultaneous occurrence of fracture neck femur following road traffic accidents and high energy trauma such as fall from a height has been reported in literature but its association with low energy injuries like a fall at home is very rare.^{2,3}

We report here a case of a 66-year-old female who sustained bilateral intracapsular fracture neck femur following an accidental slip and fall at home (domestic fall) (Fig. 1).

Case presentation

A 66 year old fed to the emergency department following a history of simple fall while treading a slippery floor at home. After the fall, she was unable to stand on her own and was thus brought to the hospital. She had no prior complaints of hip pain and was mobilizing well without any aid. She was an active, independent woman with no associated comorbidities. Clinical examination revealed externally rotated limbs and pain on limb movements. Radiographs were taken which revealed bilateral intracapsular fracture neck femur Pauwell type III (Fig. 1). So a bilateral cemented total hip arthroplasty was planned following her medical fitness.

Single stage bilateral cemented total hip arthroplasty was done using CPT femoral stem (Zimmer, Warsaw, USA) and ZCA acetabular cup (Zimmer, Warsaw, USA) two days after injury (Figs. 2 and 3). Direct lateral approach with alternate left and right lateral position was employed. Following surgery, patient was mobilized full weight bearing with walker on first



Fig. 1 – Preoperative radiograph showing bilateral intracapsular neck femur fracture.



Fig. 2 – Postoperative anteroposterior radiograph after bilateral cemented arthroplasty.

post-operative day and discharged on 5th postoperative day. She had an uneventful wound healing and was ambulating independently without any aid by 6th week post surgery. She was symptom free at her protocolized follow-up of 3rd month, 6th month and at 1 year. Harris hip score at 1 year follow-up was 98 which she continued to maintain at her last follow-up of 30 months post surgery. Radiographs of the pelvis at 30 months follow-up are shown in Fig. 4.

Discussion

Bilateral fracture neck femur is a rare entity and only few cases have been reported in the literature. These fractures occur mainly due to high impact injury^{4,5} or fall from a height.⁶ Non-traumatic causes include chronic renal failure, pelvic irradiation, osteomalacia, pregnancy, renal osteodystrophy, chronic steroid, and antiepileptic use. Other uncommon causes are following epileptic attack, electrical shock, or post electroconvulsive therapy.

Uncomplicated trauma is a rare cause of bilateral fracture neck femur.⁷ Dhar⁸ described a case of bilateral fracture neck femur in a 9 year old following a road traffic accident and Carrell et al.⁶ in a 8 year old following fall from a height. Atkinson et al.⁹ also has reported four cases of bilateral fracture neck femur following violent trauma, one after vehicular accident, two after fall of heavy object and one due to fall from height. There have been few reports of bilateral fracture neck femur in elderly patients following minimal trauma.¹⁰ Also, it is important to have radiographs of pelvis with both hip in initial assessment for every patient, especially for elderly patients and patients with co-morbid conditions to rule out this rare entity.

Various modalities of treatment have been advised for treating such fractures. In younger patients, osteosynthesis with closed/open reduction and cannulated screw fixation is being advocated and in elderly patients, arthroplasty is recommended to be the treatment of choice.

Sood et al.² advised single stage cemented arthroplasty in supine position, using anterolateral approach for bilateral

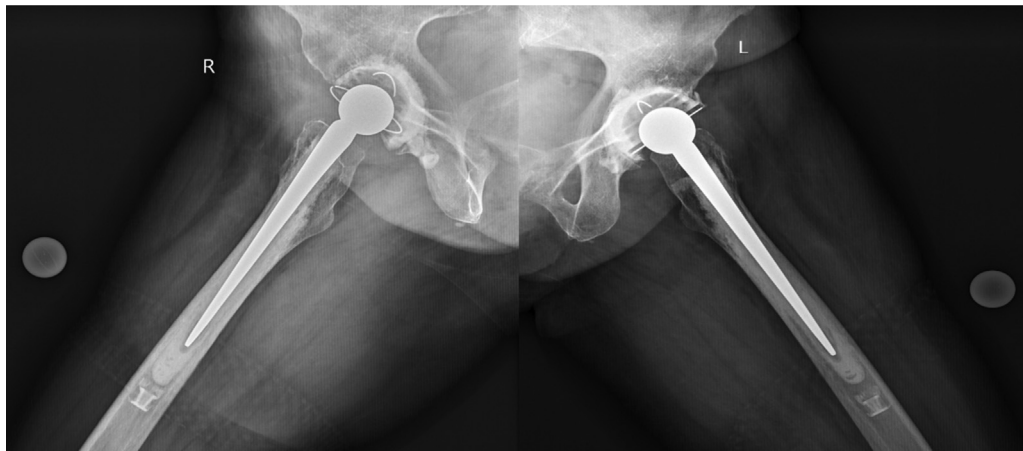


Fig. 3 – Postoperative lateral radiograph after bilateral cemented arthroplasty.

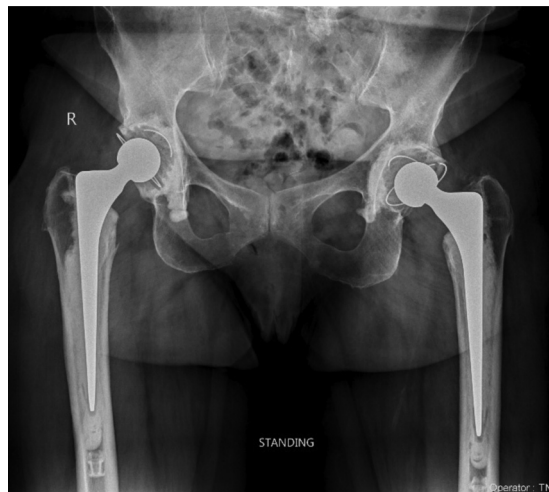


Fig. 4 – Anteroposterior radiograph of pelvis at 30 months follow-up.

fracture neck femur fracture in elderly patients. McGoldrick et al.⁵ also advised for single stage total hip arthroplasty but with alternate lateral position. Although lateral position increases operative time and requires repeat draping, both authors agree that no technique is superior.

Conflicts of interest

The authors declare no conflicts of interest.

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