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Original Article

Comparative study between lateral decubitus and traction table for treatment of pertrochanteric fractures with cephalomedullary nails☆

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ABSTRACT

Objective: To perform a retrospective radiographic assessment of the reduction and implant position in the femoral head in patients with pertrochanteric fractures treated with cephalomedullary nailing in the lateral position versus traction table.

Methods: Radiographs of patients with pertrochanteric fracture of the femur treated with cephalomedullary nailing in the lateral position and traction table were retrospectively evaluated. For the evaluation we used the anteroposterior radiographic view of the pelvis and the lateral view of the affected side. The cervicodiaphyseal angle, the tip-apex distance (TAD), and the spatial position of the cephalic component in the head were measured. Two patient groups were created, one group operated on the traction table and another group operated in the lateral position.

Results: Regarding the cervicodiaphyseal angle observed in the traction table group, the results of 11 patients (61.1%) were outside the acceptable parameters proposed in the present study. Both groups were equivalent regarding TAD and the position of the cephalic component in the head.

Conclusion: A difference in the cervicodiaphyseal angle was observed; the group operated on the traction table had 11 patients (61.1%) whose measurements were outside the acceptable parameters.

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Estudo comparativo entre decúbito lateral e mesa de tração para tratamento de fraturas pertrocantéricas com hastes cefalomedulares

Palavras-chave:
Pinos ortopédicos
Parafusos ósseos
Fraturas de fêmur

RESUMO

Objetivo: Fazer uma avaliação comparativa radiográfica retrospectiva da redução e posição do implante na cabeça femoral em pacientes com fraturas pertrocantéricas tratados com haste cefalomedular em decúbito lateral ou em mesa de tração.
Métodos: Foram avaliadas retrospectivamente radiografias de pacientes com diagnóstico de fratura pertrocantérica do fêmur tratados com haste cefalomedular em decúbito lateral ou em mesa de tração. Para avaliação radiográfica ambulatorial usamos as incidências anteroposterior da pelve e o perfil do lado afetado. Aferimos o ângulo cervicodiafisário, a *tip-apex distance* (TAD) e a posição espacial do elemento cefálico na cabeça. Foram criados dois grupos de pacientes, um operado na mesa de tração e outro em decúbito lateral.
Resultados: Com relação ao ângulo cervicodiafisário, observamos no grupo da mesa de tração 11 pacientes (61,1%) fora dos parâmetros aceitáveis propostos em nosso trabalho. Para a TAD e a posição do elemento cefálico na cabeça, os dois grupos se mostraram equivalentes.
Conclusão: Observamos diferença com relação ao ângulo cervicodiafisário, no qual o grupo operado em mesa de tração apresentou 11 pacientes (61,1%) fora dos parâmetros aceitáveis.

Introduction

Pertrochanteric fractures are common in the elderly, due to osteoporosis, and their incidence has increased significantly because of the longer life expectancy of the population. Their incidence is expected to double in the next 25 years.[1,2] Currently, there is a consensus that pertrochanteric fractures of the femur should be treated surgically.[3,4] The techniques for fixation of these fractures with cephalomedullary nails are best conducted with a traction table. However, in the absence or impossibility of its use, it is necessary to adopt another position, such as lateral decubitus.[5] In an earlier study conducted in the present hospital by de Oliveira et al.,[6] conditions that could influence the efficiency of the reduction and the positioning of the cephalic element in the femoral head in pertrochanteric fractures, when fixated in lateral decubitus, were assessed. Given the encouraging results of that study,[6] the present authors conducted a comparative study to assess the results regarding the reduction and the spatial positioning of the cephalic element (CE) in the femoral head (cervicodiaphyseal angle), tip-apex distance (TAD), and spatial position of the CE in the femoral head (circle of Baumgaertner et al.[7]) in pertrochanteric fractures treated on a traction table. The goal was to assess whether the reduction and positioning of the cephalic element in both positioning methods were equivalent.

The present study aimed to evaluate whether there are differences in the quality of reduction and in the spatial positioning of the CE of cephalomedullary nails in pertrochanteric fractures treated with these nails in lateral decubitus and on a traction table.

Patients and methods

Patients

Between January 2014 and June 2015, 35 patients diagnosed with pertrochanteric femoral fracture were treated with cephalomedullary nail on a traction table in a teaching hospital in a large urban center. Of those, 18 attended the retrospective final assessment, 14 could not be located, and three died, one in the hospital and two postoperatively. Five (27.8%) were female and 13 (72.2%) were male, with a mean age of 65 years (range 41–91 years). Regarding the trauma mechanism, ten had a ground-level fall; two, a fall from bed; two, a fall from stairs; one had suffered a beating; one, a fall from the roof; one, a motorcycle accident; and one, a fracture after the use of Reamer Irrigator Aspiration® (RIA). Five patients had fracture of the left side and 13, on the right side. Twenty-nine fractures treated in the lateral decubitus position between June 2012 and November 2013 were assessed. Of those, 19 attended the retrospective final assessment, eight could not be located, and two died in the hospital, due to postoperative trauma complications; 11 were female and eight male, mean age 60 years (range 18–87 years). The mechanisms of trauma were ground-level falls in 13 patients; motorcycle falls, in four; injury by firearm, in one; and bicycle fall, in one. Eleven patients presented fracture of the left side and eight on the right.[6]

Two groups of patients were created: Group 1 comprised patients with pertrochanteric fractures fixated with cephalomedullary nails treated in the lateral decubitus position and Group 2, patients with pertrochanteric fractures fixed with cephalomedullary nails treated on a traction table.

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