

TYPES OF TREATMENT AND INDICATIONS FOR FEMORAL NECK FRACTURES IN PATIENTS OVER 60 YEARS OF AGE

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ABSTRACT

The growth of seniors in Brazil has been occurring at a very accelerated rate. Despite the benefits of increasing life expectancy, it also brings with it problems such as femoral neck fractures. All current therapeutic approaches aim to restore patient mobility as early as possible. The fracture treatment decisions are based on the patient's clinical condition and the type of fracture, deviated or not.

KEYWORDS: Arthroplasty; hemiarthroplasty; elderly; Detour; osteosynthesis; cannulated; DHS; hip; femur; lap; comorbidities; functional; capacity.

INTRODUCTION

The growth of seniors in Brazil has been occurring at a very fast pace. According to WHO (World Health Organization) information, by the year 2025, Brazil will have more than 32 million inhabitants over 60 years of age.^[1]

It is estimated that in 2050 there will be around 6.5 million hip fractures in the world.^[2] A study carried out in the city of São Paulo, Brazil found that 28.6% of the elderly reported falls, which increased with age. It was observed that 26.2% occurred in people between 60 and 74 years old and 36.9% over 75 years old, occurring more frequently in women (33%) than in men (22.3%).^[3]

In the NIOT (National Institute of Orthopedic Trauma), Brazil 281 surgeries were performed for the treatment of fractures in the elderly, in 2015 alone. 3.91% were of high complexity and 96.09% were of medium complexity, 40 of which were fractures of the femoral neck.^[3]

Despite the benefits of increased life expectancy, it also brings with it the problems of this age group, such as fractures of the proximal femur, among which we will discuss fractures of the femoral neck.^[1]

The present study aims to carry out a systematic review addressing the most used indications and procedures for each type of femoral neck fracture in patients aged over 60 years.

METODOLOGY

The topic was reviewed using the search interface in the Online knowledge library - Scielo and Medline's PubMed, using the keywords, in English, "fractures of the femoral neck", "fractures of the femoral neck in the elderly". The articles were selected based on the relevance of their content, and the book Fractures in adults by Rockwood & Green, 8th edition, was also consulted.

THEORETICAL BACKGROUND

The incidence of hip fractures increases with age, doubling every ten years after the age of 50. After menopause, this increase is considerably more expressive and, in men, after the age of 70.^[3]

The incidence of mortality in the first year after femoral neck fracture varies from 10 to 30%.^[3] The main factors that lead to mortality after fracture are comorbidities, age, cognitive status, waiting time for surgery and the type of anesthesia used for surgery. Some complications presented after the surgical procedure also contribute to death.^[2]

Femoral neck fractures commonly result from low-impact trauma and are related to factors such as malnutrition, osteoporosis, decreased visual acuity, decreased activities of daily living and reflexes, and hypotrophic musculature.^[1]

These fractures are more frequent in women and, on physical examination, the limb may appear shortened and externally rotated.^[3]

All current therapeutic approaches aim to restore patient mobility as early as possible.^[4] Fracture treatment decisions are based on two aspects. The first is the patient's clinical condition, which includes activity level, comorbidities, and age. The second aspect is the type of fracture, subdivided into deviated or non-displaced.^[5]

According to Garden's classification, there is a division of fractures into four groups, according to the degree of deviation in relation to the trabecular lines in the head of the femur and the lines of the acetabulum.^[6]

Garden type 1 would be a subcapital fracture with valgus impaction. Type 2, the fracture is complete but not displaced. Garden type 3, the femoral head has not lost contact with the femoral neck, but is in extension and with varus. Garden type 4 has complete deviation and the femoral neck loses complete contact with the femoral head.^[6]

In addition to the Osteosynthesefragen/Orthopaedic Trauma Association classification, there is also the Pauwels classification, which is based on the fracture plane of the femoral neck. Type 1 fractures have an angle of 30° or less, type 2 fractures have an angle between 30 and 50°. Type 3 exhibit Angles greater than 50°. In this classification, the greater the angle, the worse the prognosis and risks of failure of fixation or pseudarthrosis.^[6]

Conservative treatment is only indicated for some fractures classified as incomplete or without deviation, being more restricted to bedridden patients, unable to walk or absolutely unfit for the surgical procedure.^[2]

Osteosynthesis should always be the first option in patients younger than 50 years. In those over 65 years of age, arthroplasty should be preferred. There is an interval between 50 and 65 years of age that leads to doubts and uncertainties regarding the best possible treatment.^[7]

DISCUSSION

According to Rockwood, it is not recommended to treat femoral neck fractures with conservative treatment, although it is a treatment option, the risk of deviation is considerable. One possibility for this type of treatment would be in a patient with a prolonged fracture time that presents late and is asymptomatic.^[6]

Non-displaced fractures of the femoral neck can be treated with cannulated screws for fixation, regardless of age. Three screws are used in parallel alignment in the AP and profile projections, particularly in the inverted triangle configuration.^[6]

The Ministry of Health of Brazil, reinforces that regardless of age, in femoral neck fractures without deviation, the prognosis is better when the patient undergoes osteosynthesis using cannulated screws or Dynamic Hip Screw plate, with preservation of the femoral head being of great importance.^[1] The author Lutoso demonstrates that, in general, the results of patients treated surgically were superior to those submitted to conservative treatment.^[2]

When it comes to displaced femoral neck fractures in the elderly, Rockwood separates them into two large groups, the healthy elderly and those with limited functional demands.^[6]

Currently, for healthy elderly people over 60 years of age, there is a trend towards the use of total hip arthroplasty. This would be the first choice of treatment, the functional result is far superior to that of other treatment techniques for this particular group. A lateral approach and cemented total hip arthroplasty would be preferred.^[6]

Dos Santos reinforces that hip hemiarthroplasty is not a good choice for healthy patients over 60 years of age, without morbidities or with a life expectancy of more than 5 years. Total hip arthroplasty promotes greater independence and functional capacity for these patients, without increasing the rate of complications.^[8]

The Ministry of Health of Brazil, reinforces the recommendations described above and also evaluates attention, judgment, reasoning, memory, language and community functional demand, in addition to comorbidities such as functional capacity.^[1]

According to Irene, the number of hip hemiarthroplasty has been growing and was the second most requested procedure for fractures of the proximal femur, surpassing the number of total hip arthroplasty, mainly between 2006 and 2015.^[9]

Selecting the group of displaced fractures in elderly people with functional limitations, Rockwood points out that displaced fractures occur more commonly in elderly women, with the incidence of significant clinical comorbidities being 70% and 25 to 30% having a certain degree of cognitive impairment.^[6]

As treatment for these patients, cemented bipolar hemiarthroplasty is preferred for most cases. Although there is no evidence regarding the advantage of a bipolar implant over a unipolar implant, the bipolar implant provides correct leg length and soft tissue tension at the

time of surgery.^[6] The Ministry of Health of Brazil, and Albuquerque also agree with this propaedeutic, especially in patients with a life expectancy of less than 5 years.^[1,3]

Even patients with cognitive deficits can be mobile in their home, and the use of a modern cemented implant is associated with better functioning compared to an older uncemented implant.^[6]

Giordano carried out a comparative study that showed that both generalist and specialist orthopedists agree on replacement of the femoral head in deviated fractures, but specialists are more likely to indicate total hip arthroplasty compared to hemiarthroplasty, which is the preference of orthopedists, not specialists.^[4]

Despite greater blood loss, greater risk of infection, among other complications, Lutoso reports greater benefit due to lower numbers of complications and revisions in patients undergoing total hip arthroplasty compared to internal fixation methods, demonstrating greater reliability, functionality and lower risk for seniors. It also portrays that those elderly who underwent cemented arthroplasty had a lower level of pain and greater functional capacity.^[2]

CONCLUSION

Non-displaced fractures can be treated with internal fixation with cannulated screws. In very elderly patients or those with chronic diseases, orthopedists tend to indicate hemiarthroplasty. Total hip arthroplasty has currently been reserved for younger, more active patients or elderly patients without comorbidities with a high life expectancy.

After analyzing the studies found, it can be stated that there is no specific treatment for femoral neck fractures in the elderly, there are hundreds of different treatment methods available, which ends up convincing us that none is absolutely satisfactory.

However, the results showed that surgical treatment seems to promote more effective rehabilitation and minimize the worsening of the health condition of the elderly.

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