

The Incidence of Knee Stiffness Following Femur Shaft Fracture

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Abstract

Knee stiffness is one of most common complications following femur shaft fractures, in this study we evaluate 67 patients with femur shaft fractures for Knee stiffness.

Patients with hip fractures intraarticular distal femur fractures, pathological fractures and those who has Knee stiffness before trauma are excluded.

We found incidence of knee stiffness is 64.7%, 44 patients had Knee stiffness ranging from mild to moderate and severe.

Keywords: Knee Stiffness; Femur Shaft Fractures; Trauma

Background

In our practice the knee stiffness is a common problem after fracture shaft of femur; and no study or research has been carried out about the incidence.

General Objective

The main objective is to study the incidence of knee stiffness in patient with femur shaft fracture.

Patients and Methods

Descriptive across sectional study done in Omdurman military hospital (OMH) in period from October 2014 to December 2015.

Sample size

Sixty seven patients with fracture femur were examined and well-designed questionnaire was filled out.

Inclusion criteria

All adult patients with non-pathological fractures of the femoral shaft treated in hospital operatively or non-operatively after six

months from the time of trauma were selected from referred clinics.

Exclusion criteria

Patients with intra-articular knee fractures, hip fractures and patients who already have knee stiffness before the femur fracture.

Analysis of data with SPSS was done.

Results

Total number of patients studied was 67 knee stiffness is present in forty four (64.7%) range from mild to moderate and severe.

For the sixty seven patients with fracture femur

Forty-three were road traffic accidents, twenty nine (67.4%) of them had stiffness; fall down were nineteen, twelve (63%) of them had knee stiffness; gun shot were four, three (75%) of them had stiffness and open fractures were sixteen, thirteen of them had stiffness (81.2%) and closed fracture were found in fifty one, thirty one of them had stiffness. Fractures of the ipsilateral limb

were found thirteen, nine of them had stiffness (69.2%); fractures of contralateral limb in five, five (100%) of them had stiffness, patients with upper third fractures were seventeen, nine of them had stiffness (53%); mid shaft fractures were thirty seven, twenty four of them had stiffness (64.8%) and lower third fractures were thirteen, eleven of them had stiffness (84.6%). 26 patients treated with Intramedullary nailing, fifteen (57.7%) of them had developed stiffness; ten (62.5%) out of sixteen treated with plate femur developed stiffness; nine (64.2%) out of the fourteen treated with dynamic hip or condyle screws developed stiffness; four (80%) out of five treated with external fixation were developed knee stiffness and six patients who treated conservatively, developed knee stiffness. out of fifty five males thirty nine (88.6%) of them developed stiffness and five (11.4%) out of twelve female were develop stiffness. Wound infection in relation to knee stiffness, ten (71.4%) out of the fourteen who had wound infection developed stiffness.



Figure

Discussion

- The percentage of knee stiffness following fracture shaft of femur is higher (64.7%) compared to other studies [1] and we refer that to Delay in surgery an physiotherapy and early mobilization.
- Knee stiffness in this study was found in 13 out of 16 patients with open fractures (81.2%), in comparison to (60.8%) of closed fractures, which is the same with other studies [1,2,5].
- The most frequent site of fractures is mid shaft followed by upper third and then lower third [9]. Yet the patients with fracture in lower third developed knee stiffness in (84.6%), compared to 64.8% in mid shaft and 53% in upper third. The lower third was found to be the most frequent type which lead to knee stiffness and this the same as found by David W who said that Knee stiffness is almost inevitable in Supra-condylar fracture of femur [8]. A long period of exercise is necessary but full movement is rarely regained [4,6,9].
- Knee stiffness was present in 100% of patients, who had injuries in the contralateral limb. And this can be attributed to the severe limitation of both limbs mobility at the same time. But patients with associated ipsilateral limb fractures; 69.2% of them had knee stiffness. And still this account high percentage among patients with associated injuries. This the same as that found by other studies [1,2,5].

Conclusion

Knee stiffness was found with high percentage in all modalities of fracture femur, in spite of being a common problem in Sudan, it has less attention in practice:

- The incidence of knee stiffness in this study is alarmingly.
- Knee stiffness is more frequent in male in a rate of eight folds to females.
- RTA was the more frequent mode of presentation of fracture femur but it came second to gun shot in causing knee stiffness.
- Knee stiffness was found with high percentage in the different modalities of treatment of fracture femur.
- Knee stiffness was present in 100% of patients, who had injuries in the contralateral limb.
- The lower third was found to be the most frequent type which lead to knee stiffness.

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