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STUDY OF FUNCTIONAL OUTCOME OF NON-SURGICAL AND SURGICAL TREATMENTS FOR PROXIMAL HUMORAL FRACTURES

Orthopaedics

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ABSTRACT

Background: The proximal humoral fractures are common injuries in osteoporotic old people. The aim of this study is to report the 2years clinical outcomes and re-evaluate the merits and demerits of conservative (non-surgical) and surgical (internal fixation) treatments of the proximal humoral fractures in elderly patients in a teaching hospital situated in a backward area of Chittoor district, AP.

Patients And Methods: In our study, we included 38 patients, 25 males and 13 females. Age group 55yrs to 75years, mean age was 65years. The mechanism of injury was fall from standing posture. As per NEER'S classification 28 patients are type-1, 8 patients are type-2 and 2 patients are type-3. We treated 28 patients non-surgically in the form of POP-J splint, and performed surgical procedures for 10 patients of closed 'K'-wire fixation, locking plating. The scoring functional methods used are Constant Shoulder score and DASH (Disabilities of Arm, Shoulder & Hand) score.

Results: After 16 months follow up, the range of movement and function are in favour of non-surgical treatment. The mean flexion in non-surgical cases is 120 degrees compared to 90 degrees in surgical patients. The mean abduction is 114 degrees in non-surgical cases and 80 degrees in surgical cases. The final outcome is better in non-surgical group of patients.

Conclusions: Our study indicates an advantage of functional outcome in conservative treatment compared to surgical fixation patients. The conservative management is more effective, acceptable in low socioeconomic patients.

KEYWORDS

Proximal Humoral Fractures, Conservative Treatment, Internal Fixation.

INTRODUCTION:

Proximal humoral fracture is one of the frequent osteoporotic fractures in the old age. Occurrence is 6% of all fractures [1,2]. Most of these fractures (80%) are un-displaced or minimally displaced (NEER-Type-1 & Type-2)-[4], can be treated successfully by non-surgical methods. The 20% fractures are NEER Type-3 & Type-4. Surgical fixation is advised in cases of younger patients and elderly osteoporotic patients provided their general condition permits without co-morbidities. We analysed the complications of surgical fixation and assessed the functional outcome of both the groups after treatment.

PATIENTS & TREATMENT PROCEDURES:

From august 2018 to November 2019, we treated 38 patients of proximal humoral fractures. 20-male, 18-female and age groups from 55yrs to 75yrs, mean age was 65yrs. All the patients were thoroughly investigated for the reason of fall, the cardiac and neurological conditions were ruled out. The nutritional status, osteoporosis and diabetes are investigated. The patient's pre-injury activity level, their expectations following treatment are enquired [16]. The functional needs of the patients like care-giver to relative or spouse, patient's ability to abide by range of movement (ROM) restrictions and actively participate in physical therapy were recorded. The modalities of treatment, non-surgical and surgical methods were advocated on individual basis considering all the above data.

Among the total 38 patients, 28 patients were treated non-surgically, male-14, female-14 patients in the form of Plaster of Paris "J" slab support for 2-3 weeks[5&6]. The physiotherapy for ROM started gradually and continuously after 3weeks.

The surgical procedures advocated are closed reduction and per-cutaneous fixation with "K" wires for 4 patients and locking plate fixation (MIPPO) for 6 patients [7,15,16]. All these surgically treated patients were mobilized to the pain tolerance from the 2nd post-op day. The patients of both groups were reviewed once in a month to assess ROM and X-RAY done for implant loosening, displacement of fragments. On average after 12 weeks the radiological and functional results evaluated by Constant Functional Score [13,14], and DASH Score.

RESULTS:

After the final fallow-up of 1 year and 4 months, the results are analysed. The range of movement and functional improvement are in favour of non-surgical treatment. The mean flexion in non-surgical cases is 120 degrees compared to 90 degrees in surgical patients. The mean abduction is 114 degrees in non-surgical cases and 80 degrees in surgical cases. The corresponding values for Constant Shoulder score are 61 for non-surgical cases and 58 for fixation cases. For DASH score, 35 for conservative group and 26 for fixation group. The two references, 10,11 that included 130 patients in their study stated that the overall results in terms of better functional outcome are in favour of non-surgical group. All our patients treated nonsurgically got excellent results, satisfied with the functional outcome, attending normal daily activities and giving care to spouse and grand children. The surgical group are having good results, with some restriction of movement, bearable pain and attending normal daily activities.

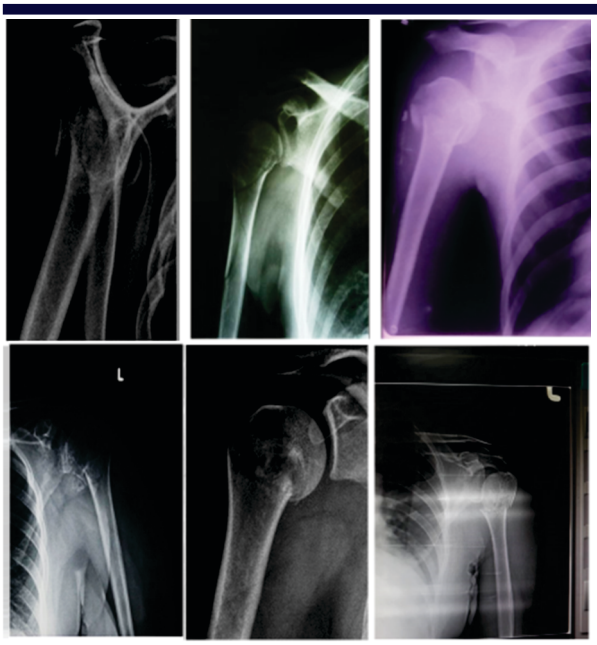
DISCUSSION:

The methods for the treatment of proximal humoral fractures is still evolving, [4], non-operatively, surgical fixation and with arthroplasty. Patients with pre-existing neurological impairment on the side of injury due to stroke or traumatic spinal injury and who lead very inactive lifestyle can be managed non-operatively. Medically unstable patients also can be treated conservatively. These patients are at low risk for future displacement, non-union or avascular necrosis and have high union rates. The major complications with conservative treatment are symptomatic non-union, severe loss of motion, avascular necrosis and post traumatic arthritis are not seen in our study of short duration of fallow-up.

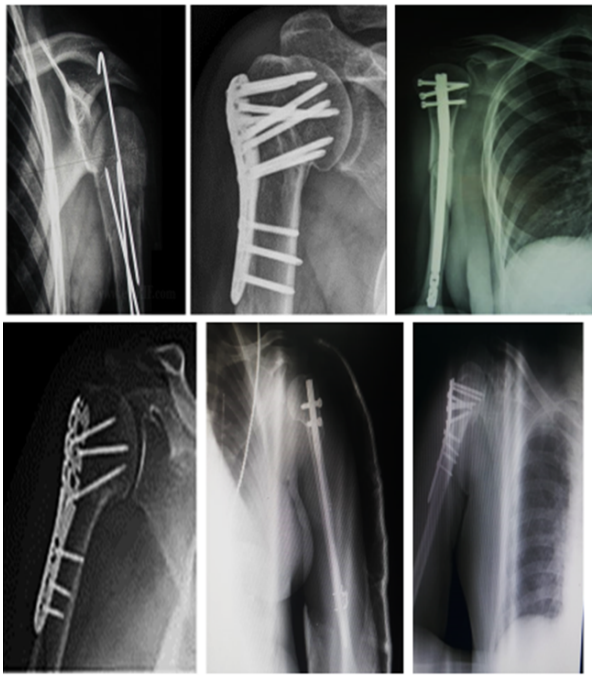
In the past the method of fixation was based on fracture pattern seen in X-rays. The indications for surgeries are open fractures, vascular injuries and repairable neuronal injuries. With development of locking plates better results are reported [15] in older patients.

CONCLUSION:

Proximal humoral fractures are common injuries in elderly population and the incidence is increasing due to osteoporosis. Treatment decisions are tailored each case depending upon pre-injury function and activity expectations. Recently locking plates have expanded the indications for successful fixation but implant failure is common if applied to a mal-reduced fractures. In general non-operative treatment remains the mainstay for the majority of proximal femoral fractures.



PRE-OPERATIVE RADIOGRAPHS



POST OPERATIVE RADIOGRAPHS

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