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"TO STUDY THE EPIDEMIOLOGY OF DISPLACED AND UNSTABLE PROXIMAL HUMERUS FRACTURES IN ELDERLY"

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ABSTRACT

BACKGROUND: Proximal humeral fractures, most often occur in the aged people whose bones are osteoporotic. The problem with fractures of proximal humerus is difficulty in attaining a good anatomical reduction by closed reduction. Proximal humeral fractures that occur in elderly are mostly displaced and unstable.

AIMS: To assess the epidemiology of displaced and unstable proximal humerus fractures in elderly.

RESULTS: Most of the patients (18, 54.54%), were from the age group 51-60 years. 16 (48.48%) were males and 17 (51.51%) females. 16 (48.48%) had right side and 17 (51.51%) left side affected. The mode of injury was self-fall in 25 cases (75.75%), road traffic accidents (RTA) in 7 cases (21.21%). 2 parts type of fracture was seen in 12 cases (36.36%), 3 parts type of fracture in 15 cases (45.45%), 4 parts type of fracture in 6 cases (18.18%). Associated injuries were seen in 10 (30.30%) cases. Right distal radius fracture and facial injury were seen in 2 (6.06%) cases each and we had 1 case each of head injury, left acetabulum fracture, left clavicle fracture, left eye contusion, left fibula midshaft fracture, left supracondylar fracture.

CONCLUSION: Proximal humerus fracture (PHF) commonly occurs in people over the age of 50 due to osteoporotic bones. Incidence of PHF increasing as a result of increased rate of fall in elderly and road traffic accidents in middle aged population.

KEYWORDS : Proximal humeral fractures, Closed reduction, mode of injury

INTRODUCTION-

The Proximal humeral fractures are responsible for approximately 5-6% of all the fractures and among them most of fractures take place in the aged people whose bones are osteoporotic [(1)]. Almost half of the fractures that occur in the proximal humerus are displaced and unstable[(2)]. The problem with fractures of proximal humerus is difficulty in attaining a good anatomical reduction by closed reduction. [(3-5)]

The closed proximal humeral fractures have been treated with a wide range of options, namely non-operative, open reduction internal fixation, external fixation, closed K-wire fixation, percutaneous screw fixation, and tension band fixation. Each procedure is has some limitations and complications.[(5)] The blood supply of the head of the humerus is at risk however, not only from the injury, but also from dissection of the soft tissues at open reduction and fixation[(6)] The incidence of malunion, nonunion, and avascular necrosis (AVN) after ORIF have been reported [(7,8)].

In view of all this said in the above, we conducted a study to assess the epidemiology of displaced and unstable proximal humerus fractures in elderly.

AIM-

To assess the epidemiology of displaced and unstable proximal humerus fractures in elderly.

MATERIALS AND METHODS-

The study is a prospective observational study. After obtaining informed consent, displaced and unstable proximal humerus fractures in elderly >55 years with closed proximal humerus fractures and medically fit for surgery were included in the study. Patients having fractures due to Malignancy, Open fracture, Medical contraindication to surgery, Patient less than 55 years of age and with distal neurovascular deficit were excluded. Approval from the Institutional ethics committee was obtained.

RESULTS-

Age wise distribution:

In the present study, most of the patients, 18 (54.54%), were from the age group 51-60 years, 7 (21.21%) cases were from age group 61-70 years, 4 (12.12%) cases were from the age group 71- 80 years, 4 (12.12%) cases were from the age group >80 years. (Table 1) There were 16 (48.48%) males and17 (51.51%) females.

Table 1: Age wise distribution

Age Groups	Number of Patients	Percentage
51-60 Years	18	54.54%
61-70 Years	7	21.21%
71- 80 Years	4	12.12%
>80 Years	4	12.12%
Total	33	100.00%

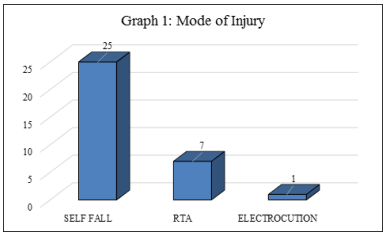
Side of Involvement:

In the present study, out of 33 cases, 16 (48.48%) had right side affected and 17 (51.51%) cases had left side affected.

Mode of Injury:

The most common mode of injury was self-fall in 25 cases (75.75%), road traffic accident (RTA) in 7 cases (21.21%), electrocution in only 1 case (3.03%).

Graph 1: Mode of Injury:

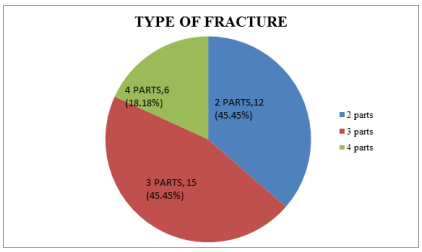


*RTA-Road Traffic Injury

Type of Fracture:

In this study 2 parts type of fracture was seen in 12 cases (36.36%), 3 parts type of fracture in 15 cases (45.45%), 4 parts type of fracture in 6 cases (18.18%).

Graph 2: Type of Fracture



Associated Injuries: Associated injuries were seen in 10 (30.30%) cases. Right distal radius fracture and facial injury were seen in 2 (6.06%) cases each and we had 1 case each of head injury, left acetabulum fracture, left clavicle fracture, left eye contusion, left fibula midshaft fracture, left supracondylar fracture

Table 6: Associated Injuries

Associated Injuries	Number of Patients	Percentage
Rt Distal Radius Fracture	2	6.06%
Facial Injury	2	6.06%
Head Injury	1	3.03%
Left Acetabulum Fracture	1	3.03%
Left Clavicle Fracture	1	3.03%
Left Eye Contusion	1	3.03%
Left Fibula Midshaft Fracture	1	3.03%
Left Supracondylar Fracture	1	3.03%
None	23	69.66%
Total	33	100.00%

DISCUSSION:

Age wise distribution:

In the study we had in the age group 51-60 years 18 cases 54.54%, in the age group 61-70 years,7 cases 21.21% in the age group 71- 80 years,4 cases 12.12% in the age group >80 years,4 cases 12.12%. **Akshat Vijay et al** [9] studied 48 patients were followed up for a mean duration of 11 months, 28 (58.33%) were female and 20 (41.67%) the average age of patients was 51.29 years, 21 years to 77 years**. Shivananda et al** [10] in their study of study proximal humerus fracture was common in age group of 41 to 60 years (63%)

Tandra Venkateshwara Rao et al [11] stated that most were elderly aged 18 (60%) were from age group of 58 - 77 years followed by 9 patients (30%) in 38 - 57 age group. **Francesco Muncibì et al** [12] on 41 cases of proximal humerus fracture that were displaced and were treated found that the mean age of fracture was of 65.5 years. **Hossam El Bigawi et al**[13] on 23 cases of proximal humerus fracture that were displaced and were treated with surgical treatment options found that the mean age of fracture was 26.4 years with the age group of the study subjects ranging from 14 years and 45 years.

Gender:

In the study we had 16 cases (48.48%) males and17 cases (51.51%) females. **Anil Kumar Gupta et al**[14] with males being the predominant gender that is involved (10 62.5%) of 16). **Tandra Venkateshwara Rao et al** [11] on 30 cases of proximal humerus fracture found that majority of the patients were males 60% and 40% were females. Male: Female sex ratio is 3:2

Mode of Injury:

The mode of injury in our study was RTA in 7 cases (21.21%), self-fall in 25 cases (75.75% %), electrocution in only 1 case (3.03%). **Shivananda et al** [10] in their study of study proximal humerus fracture was common in age group of 41 to 60 years (63%) and the commonest mode of injury was Road traffic accident (53.3%).

Type of Fracture:

In this study 2 parts type of fracture was seen in 12 cases (36.36%), 3 parts type of fracture in 15 cases (45.45%), 4 parts type of fracture in 6 cases (18.18%).

Shiva et al [15] 42 patients presented with proximal humerus fractures There were 11 three-part fractures and 15 two-part fractures. Out of these 11 three-part fractures four underwent k-wire fixation and 7 plate fixations. **Park MC et al** [16] There were 13 greater tuberosity (GT) and 9 surgical neck (SN) two-part fractures and 6 GT/SN three-part fractures.

CONCLUSION:

Proximal humerus fracture commonly occurs in people over the age of 50 due to osteoporotic bones. Incidence of PHF increasing as a result of increased rate of fall in elderly and road traffic accidents in middle aged population. It is noticeable that PHF cause significant morbidity among elderly people and this factor may become another source of dependency in elderly population.

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