



International Journal of Orthopaedics Sciences

E-ISSN: 2395-1958
P-ISSN: 2706-6630
IJOS 2021; 7(1): 219-221
© 2021 IJOS
www.orthopaper.com
Received: 07-11-2020
Accepted: 09-12-2020

Dr. Dilip Gupta
Consultant, Department of
Orthopedics, District Hospital
Basti, Alinagar Marg, Murlijiot,
Basti, Uttar Pradesh, India

Dr. Narendra Kumar Kushwaha
Associate Professor, Department
of Orthopedics, King George's
Medical University, Shah Mina
Rd, Chowk, Lucknow,
Uttar Pradesh, India

Dr. Vijay Gupta
Consultant, Department of
Orthopedics, Siddhartha Ortho &
Neuro Care Center Railway
Godam Road Chapadiya,
Coloney, Khalilabad, Sant Kabir
Nagar, Uttar Pradesh, India

Corresponding Author:
Dr. Narendra Kumar Kushwaha
Associate Professor, Department
of Orthopedics, King George's
Medical University, Shah Mina
Rd, Chowk, Lucknow,
Uttar Pradesh, India

A prospective study of the patients, commonly elderly people of complex proximal femur fractures, in North India tertiary teaching hospital

Dr. Dilip Gupta, Dr. Narendra Kumar Kushwaha and Dr. Vijay Gupta

DOI: <https://doi.org/10.22271/ortho.2021.v7.i1d.2483>

Abstract

Background: The incidence of this type of fracture with age, due mainly to the increase in the number of falls associated to a larger osteoporosis prevalence. It is more commonly related with senior females, resident in the urban areas and institutionalized. Femur fractures are devastating injuries that most commonly affect the elders and young population also. In young and healthy individuals, the injury results from high energy trauma, whereas in the elder age group, most of the fractures are osteoporotic, resulting from a trivial fall.

Aim: To study of the patients, commonly elderly people of complex proximal femur fractures.

Material and Methods: In our study, we have studied 20 cases of adult patients with complex proximal femur fractures with comminution and osteoporosis. Clinical and demographic characteristic were studied such as mode of injury, side affected and associated injuries too.

Results: In our result section majority of the patients were in the age group of 41-60 years and 61-80 years i.e., 8 patients each (40% each). Most of the patients were male i.e., 12 (60%) and 8 (40%) were female. The most common mode of injury was road traffic accidents in 10 patients (50%) followed by fall from height in 7 (35%) patients. Both right and left side were equally affected.

Conclusion: Here we can conclude that as per recent studies so as in our study too complex proximal femur fractures were more common in old age and in females which could be attributed by underlying osteoporosis prevalent more in females. The intra-hospital mortality, until the end of one month, three months, six months, one year and two years. Other decisive factors in the mortality, such as walking ability capacity previous to the fracture, ASA index, anemia, hypalbuminemia, lymphopenia and the existence of CVA were found in some isolated studies.

Keywords: femur fractures, complex proximal femur fractures, old age, trivial fall, road traffic accidents

Introduction

Femur fractures are devastating injuries that most commonly affect the elders and young population also. With the increase of the life expectancy and consequently with the largest proportion of seniors in the population, mainly the so-called "big" seniors (those with more than 80 years), the importance of this type of fracture has been increasing in the last years [1]. In England and Wales, in the biennium 1997/1998, sixty six thousand seniors were hospitalized with a fracture of the femur, while in the United States it was considered that 350.000 fractures of the femur occurred annually, with a total cost of approximately 6 billion dollars a year, in medical care only. In young and healthy individuals, the injury results from high energy trauma, whereas in the elder age group, most of the fractures are osteoporotic, resulting from a trivial fall. These fractures have a tremendous impact on both the health care system and society in general. Proximal femur fractures comprise, fractures of intertrochanteric and subtrochanteric region. Subtrochanteric fractures are complicated by delayed or non-union [2]. The factors responsible for these complications in subtrochanteric fractures are high stress concentration, predominance of cortical bone and difficulties in getting biomechanically sound reduction because of comminution and intense concentration of deforming forces. In inter-trochanteric fractures, which usually occur in the elderly, stabilization of the fracture and restoring the patient to his or her preinjury functional activity at the earliest possible time is essential to prevent complications of recumbency [3].

The present study was aimed to study the complex proximal femur fractures mainly in elderly aged people.

Material and Methods

We have collected the data for this study in Department of Orthopedics, District Hospital Basti, Alinagar Marg, Murlijot, Basti, Uttar Pradesh and Department of Orthopedics, King George's Medical University, Shah Mina Rd, Chowk, Lucknow, Uttar Pradesh over a period of two years. During the study period, 20 cases of adult patients with complex proximal femur fractures with comminution and osteoporosis were selected according to inclusion criteria. The fractures were classified according to Boyd and Griffin's classification [4] and Seinsheimer's classification [5].

Inclusion Criteria

- Patients aged
- > 18yrs Patients with complex proximal femur fractures
- with comminution and osteoporosis Patients willing and fit for surgery

Exclusion Criteria

- Any displacement of the femoral neck fracture
- Type 2 and 3 open fractures
 - Inability to walk independently prior to injury
 - Medically unfit for surgery
 - Pathological fractures other than due to
 - Osteoporosis At the arrival of the patient with suspected proximal femur fracture, patients were resuscitated depending on their general condition. Fracture was stabilized using Thomas splint, alternatively with skin traction. Routine laboratory investigations were done including echocardiogram. X-rays of pelvis with both hips-AP view, hip with femur full length of involved side-AP and lateral views and Chest -PA view. In all the patients Proximal femoral locking compression plate-implant were used for surgical management.

Results

In our study majority of the patients were in the age group of 41- 60 years and 61-80 years i.e., 8 patients each (40% each) followed by in the age group of 21-40 and 81-100 years were 10% each. Most of the patients were male i.e., 12 (60%) and 8 (40%) were female with mean age being 60 years.

Table 1: Distribution of patients as per age and sex

Patient characteristics	No. of cases	Percentage
Age group (years)		
0-20	0	0
21-40	2	10
41-60	8	40
61-80	8	40
81-100	2	10
Sex		
Male	12	60
Female	8	40

The most common mode of injury was road traffic accidents in 10 patients (50%) followed by fall from height in 7 (35%) patients. Both right and left side were equally affected. Distal radial fractures was the commonest associated injury. Communitated subtrochantric fracture constituted 15 cases and subtrochanteric fracture with proximal femur extension in 5 cases. Table-1 and Figure-1

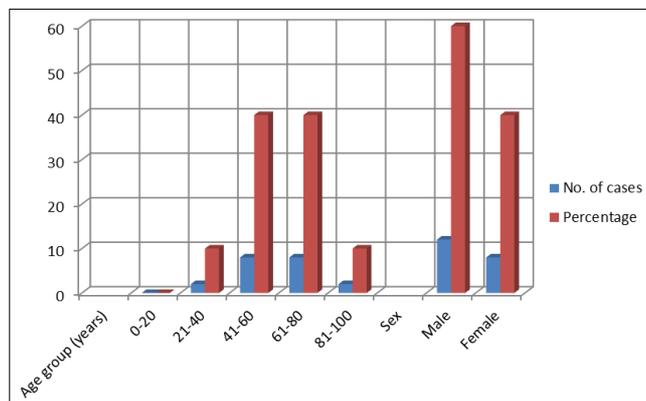


Fig 1: Patient distribution as per the Age and Gender

Table 2: Clinical characteristics of patients

Clinical characteristics	No. of cases	Percentage
Mode of injury		
Motor vehicle accident (RTA)	10	50
Fall from heigh	7	35
Slip and fall	3	15
Side affected		
Right	13	65
Left	7	35
Associated injuries		
Head injury	1	5
Tibial shaft fractures	1	5
Distal radius fractures	2	10

The majority of the patients were of Type IIIb 5 (25%); Type I was the least common type seen in only one patient

Table 3: Type of fractures

Type	No. of cases	Percentage
I	1	5
II a	2	10
II b	3	15
III a	3	15
III b	5	25
IV	3	15
V	3	15

Discussion

Hip fractures in young adults are often the result of high energy trauma, such as a motor vehicle accident or a fall from a height. In these instances, assessment must be made of possible associated head, neck, chest, and abdominal injuries. In contrast, 90% of hip fractures in the elderly result from a simple fall [6]. In our study the mean age at fracture was 60 years. The tendency to fall increases with age and is exacerbated by several factors, including poor vision, decreased muscle power, labile blood pressure, decreased reflexes, vascular disease, and coexisting musculoskeletal pathology. The age-related decline in muscle mass around the hip may help account for the increased incidence of hip fractures with aging. Although the muscles surrounding the hip can provide protection, contraction of these muscles during a fall may actually lead to increased rates of hip fracture. The mean age at fracture in our study was 60 years, which is lower compared to that quoted by authors in literature Parker *et al.* [7]. (71 years), Boldin *et al.* [8]. (73 years) and Pavelka *et al.* (67 years) [9]. In our study, there were 12 male patients and 8 female patients. This could be the fact that in old age groups females are more prone for the osteoporosis as compared to males these findings are similar

to Bostrom *et al.* [10] Kesemenli C *et al.* [11] in 2001 studied 27 patients with average age of 78 years. Amongst them 14 (51%) patients were females and 13 (49%) patients were males. Higher female preponderance was reported by Boldin *et al.* [8] and Pavelka *et al.* [9]. In our study, the common mode Patient characteristics No. of cases Percentage Age group (years) 0-20 21-40 41-60 61-80 81-100 Sex Male Female 0 2 8 8 2 12 8 0 10 40 40 10 60 40 of injury being high velocity (RTA) and fall from height accounting for 75% of the cases. Boldin *et al.* [8] and Pavelka *et al.* [9] states low energy trauma due to fall being the commonest mode fractures in elderly. Fractures of the proximal femur occur by one of the three mechanisms. In the elderly, these fractures are usually due to low energy trauma, typically a minor fall. Spiral fractures generally result perhaps with butterfly comminution. The second mechanism is that of the trivial trauma, with fracture through a defect in the proximal femur due to neoplasia. Most commonly metastatic carcinoma. Such pathological subtrochanteric fractures require assessment and management of the neoplastic process as well as of the fracture. The third mechanism is high-energy trauma, motor vehicle accident or fall from significant height. Comminution, soft tissue damage including possible open wound and presence of associated injuries are typical concerns [12]. From our study findings it can be concluded that the complex proximal femur fractures were more common in old age and in females which could be attributed by underlying osteoporosis prevalent more in females.

Conclusion

In our study complex proximal femur fractures were more common in old age and in females which could be attributed by underlying osteoporosis prevalent more in females. The intra-hospital mortality, until the end of one month, three months, six months, one year and two years. Other decisive factors in the mortality, such as walking ability capacity previous to the fracture, ASA index, anemia, hypalbuminemia, lymphopenia and the existence of CVA were found in some isolated studies.

References

1. Kaufer H. Mechanics of the Treatment of Hip Injuries. Clin Orthop 1980;146:53-61.
2. Balasubramanian N, Babu G, Prakasam S. Treatment of Non Unions of Subtrochanteric Fractures Using an Anatomical Proximal Femur Locked Compression Plate - A Prospective Study of 13 Patients. Journal of Orthopaedic Case Reports 2016;6(1):65-68.
3. Lorich DG, Geller DS, Nielson JH. Osteoporotic pertrochanteric hip fractures. Management and current controversies. J Bone Joint Surg 2004;86A:398-410.
4. Boyd HB, Griffin. Classification and treatment of trochanteric fractures. Arch surgery 1949;58:853-66.
5. Seinsheimer, Subtrochanteric fractures of the femur. J Bone Joint Surg Am 1978;60(3):300-6.
6. Carpintero P, Caeiro JR, Carpintero R, Morales A, Silva S, Mesa M. Complications of hip fractures: A review. World Journal of Orthopedics 2014;5(4):402-411.
7. Parker MJ, Dutta BK, Sivaji C, Pryor GA. Subtrochanteric fractures of the femur. Injury 1997;28(2):91-95.
8. Boldin C, Seibert FJ, Fankhauser F *et al.* The proximal femoral nail (PFN)-a minimal invasive treatment of unstable proximal femoral fractures. Acta Orthop Scand 2003;74(1):53-58.
9. Pavelka T, Kortus J, Linhart M. Osteosynthese of proximal femoral fractures using short proximal femoral nails. Acta Chir Orthop Traumatol Cech 2003;70(1):31-8.
10. Bostrom MPG, Simie PM, Lyden JP, Cornell CM, Thorngren KG, Tolo ET. Epidemiology of hip fractures. Bone 1996;18:57S-63S.
11. Kesemenli C, Subasi M, Arsian H. Treatment of Intertrochanteric fracture in elderly patients with leinbach type endoprosthesis. Ulus Trauma Derg 2001;7(4):254-257.
12. Kulkarni GS. Treatment of Trochanteric fractures of the hip by Modified Richard's Compressing and Collapsing screw. Indian Journal of Orthopaedics 1984;18(1):30-34.