

A CROSS SECTIONAL STUDY OF CLINICO-DEMOGRAPHIC PROFILE OF PATIENTS WITH COMPLEX PROXIMAL FEMORAL FRACTURES

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Abstract

Background: Fractures of femoral bone is very commonly seen in geriatric age group but is also getting common in young population up-to some extent. Such kind of fractures are a result of road traffic accidents or any kind of trauma in young and healthy individuals but in geriatric age group, most of them are due to a trivial fall but aggravated by osteoporosis.

Aim: To study clinico-demographic profile of patients with complex proximal femoral fractures.

Material and Methods: In our study, 40 cases with complex proximal femoral fractures with osteoporosis & comminution were examined.

Results: Majority of the cases were in the age group of 41-60 years & 61-80 years i.e., 16 patients each (40% each). Most of the patients were male i.e., 24 (60%) and 16 (40%) were female. The commonest mode of injury was road traffic accidents in 20 patients (50%) followed by fall from height in 14 (35%) patients. Both sides were equally affected.

Conclusion: The complex proximal femoral fractures were more common in geriatric age and in case of females which could be attributed by underlying osteoporosis which is prevalent more in females.

Keywords: road traffic accident, geriatric age group, osteoporosis, proximal femoral fracture.

Introduction

Fractures of femoral bone is very commonly seen in geriatric age group but is also getting common in young population upto some extent^{1,2}. Such kind of fractures are a result of road traffic accidents or any kind of trauma in young and healthy individuals but in geriatric age group, most of them are due to a trivial fall but aggravated by osteoporosis. Such fractures have got enormous impact on both the health care system & the society³. Now when we talk about proximal femoral fracture, it comprises of fractures of both intertrochanteric & subtrochanteric regions. Delayed union or non-union are the well known complications of subtrochanteric variety.

For this, there is long list of factors responsible but to name a few we have, predominance of cortical bone, high stress concentration & difficulty in obtaining a biomechanically perfect reduction which is due to comminution & high concentration of deforming forces. Now when we talk about inter-trochanteric variety, it usually occurs in elderly^{4,5}. In such cases, early stabilization of fracture & restoration is extremely vital to prevent complications.⁶

Aims & objective: Our current research is aimed to study the clinico-demographic profile of patients with complex proximal femoral fractures

Material and Methods

Current study was conducted at a tertiary care centre for a period of 6 months. During this study duration, 40 patients with complex proximal femoral fracture with osteoporosis & comminution were considered for our study.

Inclusion Criteria: patient's age should be more than 18 years. They must be suffering from complex proximal femoral fracture with osteoporosis & comminution. Patients who are fit & willing for surgical intervention.

Exclusion Criteria: any displaced femoral neck fracture, type 2 & 3 open fracture, medically unfit for surgery & pathologies other than osteoporosis. The fractures were classified according to Boyd and Griffin's classification and Seinsheimer's classification.

Whenever the cases were arrived with suspected fracture of proximal femur, they were firstly resuscitated if required. Fractures were stabilized using Thomas splint along with skin traction. Routine laboratory investigations were done along with all relevant radiograms. While for surgical management, proximal femoral locking compression plate was used.

Results

Maximum cases were in the age group of 41 to 60 years & 61 to 80 years with male predominance (40%).

Table 1: age & gender wise Distribution

Age group	Number of cases	Percentage
0-20	0	0
21-40	4	10
41-60	16	40
61-80	16	40
81-100	4	10
Sex		
Male	24	60
Female	16	40

Maximum number of cases sustained trauma due to road traffic accidents i.e in 20 cases (50%) followed by fall from some height in 14 (35%) cases. Both sides were equally affected. The most common injury associated with this fracture was of distal radius. There were 30 cases of Comminuted sub-trochantric fracture rest of the 10 cases were subtrochantric fracture with proximal femoral extension.

Table 2: Clinical characteristics of patients

Clinical characteristics	No. of cases	Percentage
Mode of injury		
Motor vehicle accident (RTA)	20	50
Fall from height	14	35
Slip and fall	6	15
Side affected		
Right	26	65
Left	14	35
Associated injuries		
Head injury	2	5
Tibial shaft fractures	2	5
Distal radius fractures	4	10

When we studied the type of fracture in our study subjects, we found out that the most commonly sustained fracture was of Type IIIB i.e in 25% of the cases. Whereas Type I was the most infrequent type.

Table 3: Type of fractures

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

Discussion

In adult population, fractures in the hip joint area are extremely common and are mostly related to fall from a height or due to road traffic accident. Along with those fractures, the associated injuries must also be explored. But in geriatric age group, contrastly 90% of hip fractures are from a simple fall. Our study shows that as the age advances, there are higher chances of sustaining the hip fractures.

Many aggravating, contributing & exacerbating factors like deteriorating vision, decrease in muscle power, weak reflexes, blood pressure, vascular anomalies, any preexisting musculoskeletal condition etc. Also as the age advances, surrounding muscle mass of the hip reduces.

Generally these bulky muscles provide protection but during the violent trauma, these muscles contract and exacerbate the rates of hip fracture. The average age of fracture in our study was 60 years whereas it's on higher on other studies. Also our study proved that as the age advances, females are also having the fractures which are due to their more proneness to osteoporosis. Many previous studies support our findings^{7,8,9}. Previous studies also show that road traffic accident is the commonest reason for sustaining trauma^{10,11,12}.

Conclusion

When we go through all the previous studies, we found out that roughly, three mechanisms for the fractures are there. One by the low velocity trauma (minor fall) seen in geriatric age group. Spiral fractures are also not uncommon which may result in butterfly comminuted fracture. Secondly, fracture may occur at the site of neoplasia. Such cases require special attention apart from surgical intervention. And lastly the third mechanism is by high velocity trauma, i.e by road traffic accidents. From our study findings it can be concluded that the complex proximal femoral fractures were more common in geriatric age group and in females which could be due to underlying osteoporosis which is more prevalent in females.

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