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Clinical profile of patients undergoing treatment for displaced tibial plateau fracture

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Abstract

Tibial plateau fractures represents approximately 1% of fractures in adults [1]. In men it tends to occur in younger age and as a result of high energy trauma. Elderly women has increasing incidence with advancement in age mainly during 6th and 7th decade which indicates fractures due to osteoporotic bone. This study carried out in Kodagu Institute of Medical Sciences on 50 consenting cases of closed displaced tibial plateau fractures. Patients were informed about the study in all respects and written informed consent will be obtained. The follow up period was 6 weeks, 3 months, 6 months, 4 1/2 months, 6 months, 9 months, 1 year and 2 years. In the present study on evaluation of the mode of injury we found that of the 50 cases in the study most patients were injured by Road traffic accident (41 patients, 82%). The type of schatzker's fracture we found that of the 50 cases in the study, most patients had a type V (20 patients, 40%).

Keywords: Clinical profile, displaced tibial plateau fracture, schatzker's fracture

Introduction

Tibial plateau fractures involve the articular surface of the proximal tibia. Has a diverse group of fractures that ranges from simple injuries with predictably excellent outcome after nonoperative treatment to complex fracture patterns that challenge even the most experienced surgeons.

There is controversy on type of imaging modalities to be used to assess the fracture pattern, degree of displacement and to assess soft tissue injuries around the knee.

Few fractures are associated with limb threatening complications such as compartment syndrome [1].

New methods have changed the surgical management of low energy tibial plateau fractures and high energy medial and bicondylar tibial plateau fractures.

Tibial plateau fractures represents approximately 1% of fractures in adults [1]. In men it tends to occur in younger age and as a result of high energy trauma. Elderly women has increasing incidence with advancement in age mainly during 6th and 7th decade which indicates fractures due to osteoporotic bone [2].

The aim of the surgical treatment of these fractures is to restore and preserve functional, pain free range of movements in the knee by accurate anatomical restoration of the articular surfaces of the tibial condyles.

Outcome depends on the force of the injury, mechanism of the injury, fracture pattern, associated injury to the surrounding soft tissues and type of surgical treatment opted. Currently there are different surgical treatment options available for treating these high energy tibial plateau fractures. However no single treatment method has proven to be uniformly successful. There is still a controversy in selecting the type of surgical treatment, with some recommending single incision and unilateral locked plate on the lateral side [2, 3] and others recommending two separate incision with dual medial and lateral plating [4]. Each of these methods are having their own advantages and complications [5, 6].

Methodology

This study carried out in Kodagu Institute of Medical Sciences on 50 consenting cases of closed displaced tibial plateau fractures. Patients were informed about the study in all respects

and written informed consent will be obtained. The follow up period was 6 weeks, 3 months, 6months, 41/2 months, 6 months, 9 months, 1 year and 2 years.

Method of Data Collection

- Evaluation of the pre-op X rays, CT SCAN and MRI Scan of knee by the orthopaedic team.
- Classifying the fracture based on SCHATZKER'S CLASSIFICATION for Tibial plateau fractures.
- PRE OP planning including the need for posteromedial plate in sagittal fracture configuration.
- Evaluation of the post-op clinical and functional outcome using the Lysholm Knee Scoring Scale and Tegner Activity Level Scale at 6 months and 1 year [8, 18].
- And at 2 years

Inclusion Criteria

1. Patients between 18 and 70 years of age.
2. All closed displaced tibial plateau fractures admitted and treated with 3.5mm lateral locking plate with or without posteromedial plate
3. All closed displaced tibial plateau fractures which are admitted in SDM Hospital and planned for treatment with 3.5mm lateral locking plate

Exclusion Criteria

1. Age below 18 and above 70 years.
2. Any associated fractures of distal femur
3. All closed displaced tibial plateau fracture which are treated with 4.5mm plate/non locking plate
4. Open fractures of tibial plateau
5. Neurovascular injury associated with any tibial plateau fractures

Results

Table 1: Age-wise Distribution of Study Participants

Age in Years	Frequency	Percent
18-30	07	14
31-40	14	28
41-50	15	30
51-60	10	20
60-70	04	08
Total	50	100

In the present study of evaluation of age distribution we found that of the 50 cases in the study most patients belonged to the category 41-50 years (15 patients, 38%).

Table 2: Gender-wise Distribution of Study Participants

Sex	Frequency	Percent
Male	42	84
Female	08	16
Total	50	100

In the present study on evaluation of the gender distribution we found that of the 50 cases in the study most patients were males (42 patients, 84%)

Table 3: Distribution of Study Participants according to Mode of Injury

Mode of Injury	Frequency	Percent
Fall (from height/ slip)	09	18
RTA	41	82
Total	50	100

In the present study on evaluation of the mode of injury we found that of the 50 cases in the study most patients were injured by Road traffic accident (41 patients, 82%).

Table 4: Type of Fracture of Study Participants according to Schatzker

Type	Frequency	Percent
Type II	10	20
Type III	01	02
Type IV	08	16
Type V	20	40
Type VI	11	22
Total	50	100

In the present study on evaluation of the type of Schatzker's fracture we found that of the 50 cases in the study most patients had a type V Schatzker fracture (20 patients, 40%)

Discussion

The mean age of patients in our study is years with lowest 18 years and highest 70 years. Barei D.P. *et al.* [7] in their study observed mean age of 44 years with the range from 21 to 88 years. Likewise other study by Weil Y.A *et al.* [8] showed the mean age of 43 years and range from 18 to 65 years. In our study, incidence of tibial plateau fracture was more among age group of 41 to 50 years.

In this study majority of the patients were males forming 84% (42) and females 16% (8). Weil Y.A *et al.* reported in his study, males 62.96% and females 37.03% and Barei D.P. found males 62.65% and females 37.45%. And he noted that incidence of these fracture in male was highest in 6th decade followed by 4th decade and in females 2/3 of fractures seen in 5th and 6th decade.

The commonest mode of injury in the present study is the RTA seen in 41 (82%), followed by fall 9(18%). Similar observations were noted by Weil Y.A *et al.* where motor vehicle accidents seen in 52% and falls in 35%. Barei D.P. in his study of 83 patients RTA accounted for 51.80% and fall 28.91%. Su E.P. *et al.* in their study of 38 patients with 39 tibial plateau fractures RTA accounted for 66.66% and fall 23.07% [9].

In this study left side 26(52%) is more injured than the right side 24 (48%).

In study conducted by Abolfazl Bagherifard *et al.*, out of 32 patients, right side 18(56%) and left sided 14(44%).

In this series we studied 50 cases of tibial plateau fractures according to Schatzker classification out of which most of tibial plateau fractures comes under type V according to Schatzker classification 20 (40%), type VI 11(22%), type IV 8(16%), type II 10 (20%), type III 1(2%), This can be attributed to high level injury at the time of incident.

In a study conducted by Abolfazl Bagherifard *et al.*, in his study, out of 32 patients, most common tibial plateau fractures according to Schatzker is type II 16 (50%), type IV and type VI 4(12%), type I and type V 3(9%), type III 2(6%) [10].

Conclusion

- The mode of injury we found that of the 50 cases in the study most patients were injured by road traffic accidents (41 patients, 82%).
- The side of injury we found that of the 50 cases in the study most patients had a left sided injury (26 patients, 52%)

References

1. Buchko GM, Johnson DH. Arthroscopy assisted operative management of tibial plateau fractures. Clin Orthop Relat Res, 1996, 29-36.
2. DeCoster TA, Nepola JV, el-Khoury GY. Cast brace treatment of proximal tibia fractures. A ten-year follow-up study. Clin Orthop Relat Res, 1988, 196-204.
3. Apley AG. Fractures of the lateral tibial condyle treated by skeletal traction and early mobilisation; a review of

sixty cases with special reference to the long-term results. J Bone Joint Surg Br. 1956; 38-B:699-708.

4. Bansal MR, Bhagat SB, Shukla DD. Bovine cancellous xenograft in the treatment of tibial plateau fractures in elderly patients. *Int Orthop* Mar 27, 2008.
5. Jensen DB, Rude C, Duus B *et al.* Tibial plateau fractures. A comparison of conservative and surgical treatment. *J Bone Joint Surg Br.* 1990; 72:49-52.
6. Lansinger O, Bergman B, Korner L *et al.* Tibial condylar fractures. A twenty-year follow-up. *J Bone Joint Surg Am.* 1986; 68:13-19.
7. Barei DP, Nork SE, Mills WJ *et al.* Functional outcomes of severe bicondylar tibial plateau fractures treated with dual incisions and medial and lateral plates. *J Bone Joint Surg Am.* 2006; 88:1713-1721.
8. Lee JA, Papadakis SA, Moon C *et al.* Tibial plateau fractures treated with the less invasive stabilisation system. *Int Orthop.* 2007; 31:415-418.
9. Simpson D, Keating JF. Outcome of tibial plateau fractures managed with calcium phosphate cement. *Injury.* 2004; 35:913-918.
10. Yu B, Han K, Ma H *et al.* Treatment of tibial plateau fractures with high strength injectable calcium sulphate. *Int Orthop* Aug 13, 2008.