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"A Study of Six Month Follow Up Of Dual Plating in Proximal Tibia Fracture in Patients of Tertiary Care Hospital, Jamnagar"

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Abstract
Introduction: *There are two categories of proximal tibial fractures: articular and non articular. Intra-articular fractures of the proximal end of tibia being serious complex injuries are difficult to treat. Due to high frequency and complication rate, proximal tibial fractures result in very large amount of health care cost.*
Objectives: *To evaluate anatomical and functional outcome and impact of fixation related complications after fixation of proximal tibia fracture with dual plating.*
Material and Method: *This was a retrospective study based on the hospital records of 30 patients who had proximal tibia fractures treated with dual plating in orthopaedics department of government hospital affiliated with medical college. Detailed records of preoperative x rays, CT scans, postoperative x rays and clinical assessment data of 6 months follow up of each patients were recorded and assessed.*
Results: *In this study oxford knee score and hospital surgery knee rating scale were used for objective quantification of the outcome of proximal tibia fracture. In our study 50% patient had good outcome, 23% patient had excellent outcome and 23% patient had fair outcome and only 4 % patient had poor outcome. Infection rate was found to be more, as a result, there were 2 patients of infected non union.*
Conclusion: *In this study, as per outcome based on oxford knee score, treatment results were good and comparable with that of similar other studies.*
Key words: *Proximal tibial fracture, Oxford knee score, outcome, dual plating*

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I. INTRODUCTION

The knee joint is one of the strongest and most important weight bearing joint in the human body. It allows the lower leg to move relative to the thigh while supporting the body's weight.
Movements at the knee joint are essential for daily activities including walking, running, sitting and standing. Hence, proper management of these fractures plays a critical role in minimizing morbidity and disability resulting from post traumatic arthritis.
There are two categories of proximal tibial fractures: Articular and non articular.
Articular fractures are termed tibial plateau or tibial condylar fractures. Intra-articular fractures of the proximal end of tibia are serious complex injuries difficult to treat.
Proximal tibial fractures account for 1.2% of all fractures in adults[1].
Proximal tibia fractures are relatively common injury having bimodal age distribution.
While in young patients it occurs due to high energy trauma, in older osteoporotic patients it may follow relatively low velocity trauma.
Due to its frequency and high complication rate, proximal tibial fractures result in very large amount of health care cost.

OBJECTIVE: To evaluate anatomical and functional outcome and impact of fixation related complications after fixation of Proximal tibia fracture with dual plating.
To know feasibility of dual plating technique for treatment of Proximal tibia fracture
To know incidence rate of malunion, non union and infection in patients treated with dual plating.
To know which approach is better for surgery and to know ideal implants for fixation.

II. MATERIALS AND METHODS

TYPE OF STUDY : This is a retrospective study
DURATION OF STUDY : January 2019 to December 2020
Data was collected from the record section of the hospital's orthopaedics department.
Patients were called and examined to record outcomes at least after 6 months of dual plating.
Indoor and outdoor case records, preoperative x rays and CT scans, and postoperative x rays and clinical assessment data are assessed.
Preoperative x rays and CT scan are assessed for classifying fractures. Case records are assessed for treatment received by each patient, and for recording associated injury to soft tissue and other organs, if any.
Immediate postoperative x rays are assessed for adequacy of reduction and alignment.
Immediate complications were recorded from case records.
On final follow up examination, at least after 6 months of dual plating, bony union and maintenance of reduction and alignment are assessed using x rays, and functional outcome assessed using knee society score, and complications noted.

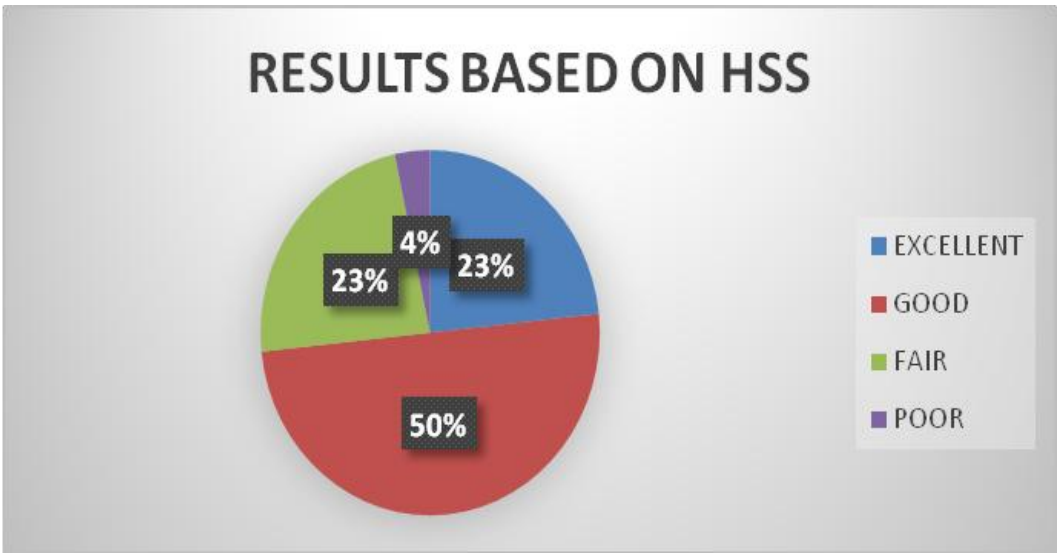
III. RESULT

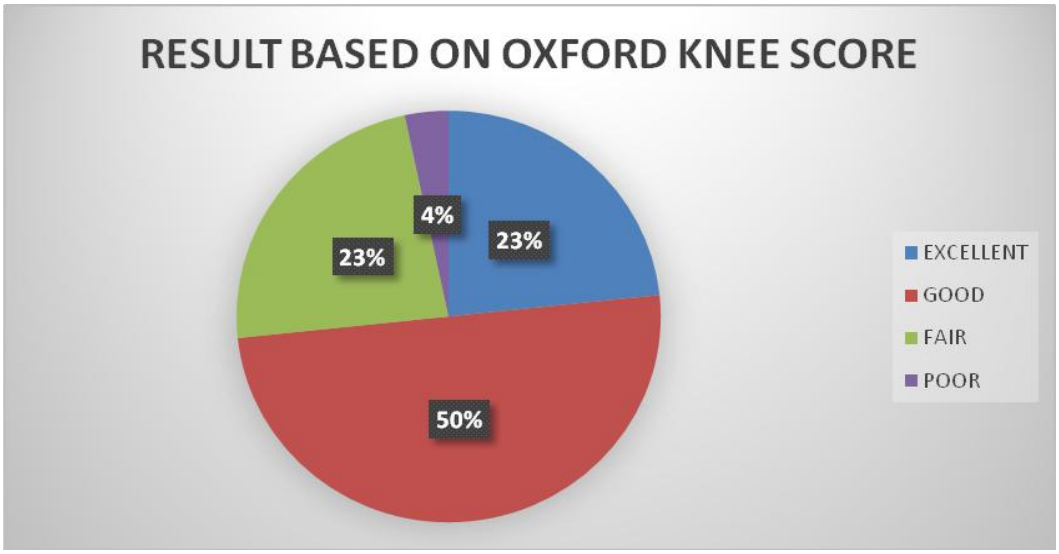
In our study we used oxford knee score and Hospital surgery knee rating scale for objective quantification of the outcome. This score depends on variable like range of motion, stability, alignment, fixed flexion deformity and it is used for condition affecting knee joint like osteoarthritis of knee and knee arthroplasty in hospital for special surgery knee rating scale maximum knee rating score is 100 and oxford knee total maximum score is 48. For our purpose of quantification of outcome of proximal tibia fracture this score provide excellent tool. In our study result outcome based on oxford knee score which is compare to other studies.

In our study 50% patient had good outcome , 23% patient had excellent outcome and 23% patient had fair outcome and only 4 % patient had poor outcome.

In our study, infection rate is more than E G Hassankhani study because in E G Hassankhani study they used minimal single incision approach so infection rate is less compare to our study also they used younger patient in his study so physiotherapy rehabilitation is good compare to our study. Compare to GT Prasad study, they included only 1 patient of open fracture ,while in our study there are 5 patient of open fracture so infection rate is more in open fracture so GT Prasad had less infection compare to our study.

Due to higher rate of infection ,there are 2 patient of infected non union in our study, while there are zero case of non union in GT Prasad study and E G Hassankhani study because very less infection present in their study.





IV. DISCUSSION

In our study 50% patient had good outcome , 23% patient had excellent outcome and 23% patient had fair outcome and only 4 % patient had poor outcome.

In study done by G T Prasad they used oxford knee society criteria for measuring outcome. In this study 80% patient had good to excellent result and 20% patient had fair outcome.

In study done by E G Hassankhani they used knee society score. In this study 95% patient had good to excellent outcome and only 5% patient had fair outcome.

In our study, infection rate is more than E G Hassankhani study because in E G Hassankhani study they used minimal single incision approach so infection rate is less compare to our study also they used younger patient in his study so physiotherapy rehabilitation is good compare to our study. Compare to GT Prasad study, they included only 1 patient of open fracture, while in our study there are 5 patient of open fracture so infection rate is more in open fracture so GT Prasad had less infection compare to our study.

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In GT Prasad study, all post operative patients started early knee mobilization from second day of surgery and injury surgery interval time is also less , while in our study knee mobilization started late due to open fracture, comminuted fracture patten, injury surgery interval time is more, also patient having morbid condition like old age, osteoporotic bone, so in our study knee stiffness complication seen more than GT Prasad study.

On comparing these result with other study, we can see that our result is good according to knee oxford score.

V. CONCLUSION

Dual plating in proximal tibia fracture provide stable fixation and good to excellent outcome 73% of the patient.

The aim of surgical treatment include precise reconstruction of the articular surface with elevation of the depressed bone fragment and stable fixation allowing early range of movement to achieve good result.

Range of movement is higher in patient with start early range of movement physiotherapy as soon as possible and no malalignment of knee. So preserving alignment of the knee and early range of movement important for better outcome.

Infection is the most common complication 33% after surgery but it recovered by antibiotic , only some patient required revision surgery in form of debridement(13%).

Non articular proximal tibia fracture (AO type 41A2) treated by dual plating give excellent range of movement compare to intra articular proximal tibia fracture (Schatzker classification five and six) treated by dual plating.

Dual incision approach is better than single incision approach because dual incision have better visualization of articular surface but more incidence of infection seen in dual incision approach compare to single incision approach.

The range of motion and knee score is not affected by the implant selection. Rather it is affected by quality of reduction and alignment.

Combination of one locking and one buttress plate fixation give better outcome.

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REFERENCES

[1]. Dawson J, Fitzpatrick R, Murray D, Carr A. Questionnaire on the perceptions of patients about total knee replacement. J Bone Joint Surg Br. 1998 Jan;80(1):63-9

[2]. Treatment of Complex Proximal Tibial Fractures (TypesV& VI of Schautzker Classification) by Double Plate Fixation with Single Anterior Incision. DOI: 10.4236/ojo.2013.34038 Author(s) Ebrahim GhayemHassankhani, Farzad OmidiKashani, GolnazGhayemHassankhani

[3]. Functional outcome of Schatzker type V and VI tibial plateau fractures treated with dual plates Indian J Orthop. 2013 Mar-Apr; 47(2): 188-194. doi: 10.4103/0019-5413.108915 PMCID: PMC3654470 G Thiruvengita Prasad, T Suresh Kumar, R. Krishna Kumar, Ganapathy K Murthy, and Nandkumar Sundaram

[4]. Treatment of Complicated Tibial Plateau Fractures With Dual Plating Via a 2-incision Technique Yong Zhang, MD; De-gang Fan, MD; Bao-an Ma, MD; Si-guo Sun, MD March 2012 - Volume 35. Issue 3: e359-e364 DOI: 10.3928/01477447-20120222-27

[5]. Court Brown CM, Caeser B. Epidemiology of adult fractures: a review. Injury 2006;37:691-697.