Arthroscopic Assisted Management of Tibial Plateau fractures

(Schatzker Grade I, II, III)

Thesis

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Abstract

Minimally invasive surgical techniques have gained popularity over the recent years and try to prevent additional surgical trauma to the knee joint by using a minimally invasive approach. These surgical techniques fall in between the management of unstable tibial plateau fractures by plaster cast immobilization (higher risks of stiffness and deep venous thrombosis) and the traditional form of open reduction and internal fixation The combined arthroscopic and radioscopic surgical treatment, initially used in the 1970s as a diagnostic tool and later as a standardized method of treatment, minimizes the additional surgical trauma, reducing additional insult to the soft tissues, and encounters several advantages compared with other techniques.

Keyword

ARIF- MRI- CPM- ORIF-AP

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Contents

Abbreviations

Abbreviations

- AAOS…… ..The American Academy of Orthopaedic Surgeons
- ACL…….....Anterior Cruciate Ligament
- AP…… ,,..Anteroposterior
- ARIF…….....Arthroscopic Reduction and Internal Fixation
- BP……Bone plunger
- Ca-P…….Calcium phosphat
- CG……...cutting guide
- Cm^2…….….Cubic centimeter
- CPM……... Continuous passive motion
- DM……..… Diabetes Mellitus
- DVT…….... .Deep Venous Thrombosis
- et al…….….And colleagues
- Fig……...……....Figure
- Hb ……..Haemoglobin
- HTC…….……Hollow Trephine Cutter
- Lat. ……..….Lateral
- LCL…….....Lateral Collateral Ligament
- LFC…….....Lateral Femoral Condyle
- L M……..Lateral Meniscus
- LP…… Lateral Plateau
- MCL…….....Medial Collateral Ligament
- Med. ……....Medial
- MFC…….....Medial Femoral Condyle
- MM……..…Medial Meniscus
- mm……...Millimeter
- Mon……..….. month
- ORIF……....Open Reduction and Internal Fixation
- PCL……..…Posterior Cruciate Ligament
- PMMA……..... Polymethylmethacrylate
- Wk……....week
- o……..…..Degree
- #.....Fracture
- %..... Percent

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Introduction

INTRODUCTION

Like other intra-articular fractures, the tibial plateau fracture is challenging for orthopedic surgeons because of its severity and associated soft tissue injuries. Although tibial plateau fractures comprise only 1% of all fractures, the displaced fractures, and the associated injuries, can cause severe consequences if not properly treated.[1] Non-operative management has historically been the preferred treatment for such fractures.[2] However, to avoid prolonged immobilization and unstable reduction, surgical treatment is now the preferred treatment for displaced fractures. In any case, successful results depend on the quality of reduction, ligament stability, treatment of associated soft tissue injuries, and preservation of the soft tissue envelope. Additionally, good visualization of the articular surface with minimal dissection can help to achieve this goal[3,4]. Previous surgical methods achieved satisfactory results in only 70–80% of cases. Unfortunately, they also have a high incidence of complications including loss of reduction, pin tract infections, deep infection, and septic arthritis.[3] Surgical treatment has evolved, and arthroscopy assisted minimal invasive surgery is now the attractive option among available surgical treatments [1] .

The advantages of arthroscopic reduction and internal fixation for tibial plateau fractures are direct visualization of intra-articular fractures, accurate fracture reduction, reduced morbidity in comparison with arthrotomy, simplified diagnosis and treatment of