



A CASE REPORT OF ACL TIBIAL AVULSION FRACTURE FIXED WITH FIBRE WIRE THROUGH ASSISTED ARTHROSCOPIC SURGERY

Orthopaedics

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ABSTRACT

Tibial avulsion fracture at ACL insertion is rare condition, mostly associated with surrounding soft tissue injury, presenting as ligament injury case which need proper clinical and radiological evaluation for preoperative diagnosis and management[1,2]. Fixation with fibre wire through arthroscopic technique provides better outcome clinically as well as functionally with less postoperative complications and cosmetic wise the compliance is better as compared to open reduction and fixation with screw if provided postoperative rehabilitation is followed along with regular followup.

KEYWORDS

ACL tibial avulsion fracture, arthroscopy, fibre wire

INTRODUCTION

ACL avulsion fracture of tibia is most common tibial eminence fracture. Fixation of this fracture through assisted arthroscopic technique is challenging than open reduction and fixation^[3,4]. The patient compliance is better in arthroscopic technique. ACL avulsion fracture is associated with other ligaments injury and hence patients will present as ligament instability and requires MRI as mandatory investigation^[5,6,7]. Fixation of avulsion fracture with ligament repair or reconstruction is mandatory along with postoperative physiotherapy exercises for better clinical and functional outcome.

Case Report

A male patient aged 55 years presented with alleged history of slip and fall, sustained injury to his left knee and presented with complaints of pain and instability while walking since trauma. No history of any comorbidities. On examination there was local warmth, tenderness over the parapatellar region, range of movements at the knee joint was 0-70°, no extensor lag, anterior drawer, Lachman's was positive without distal neurovascular deficit. CT left knee suggested displaced fracture of anteromedian and posteromedian articular surface of proximal tibia. MRI of left knee shows Anterior Cruciate Ligament avulsion fracture without collateral and meniscal damage and diagnosis was confirmed as complete anterior cruciate ligament tear with displaced articular fracture of left proximal tibia. Patient was planned for arthroscopic repair of ACL avulsion fracture using fibre wire. Intraoperatively the ACL avulsion fracture was visualised through anterolateral port and arthroscopic repair was done using fibre wire. After the fixation, intraoperatively the ligament stability was checked and above knee POP was applied. Postoperatively the patient was on not allowed to bear weight on the left lower limb for 4 weeks and ankle physiotherapy was initiated. After 3 months follow-up patient was on full weight bearing without difficulty. After 1 year clinically the range of movements at operated knee was restored.

Preoperative Xray



Figure No1a : Sagittal view of CT left knee showing tibial avulsion fracture.

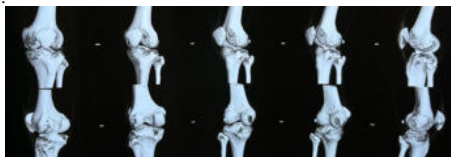


Figure No1b : 3D reconstruction of CT left knee shows tibial

avulsion fracture

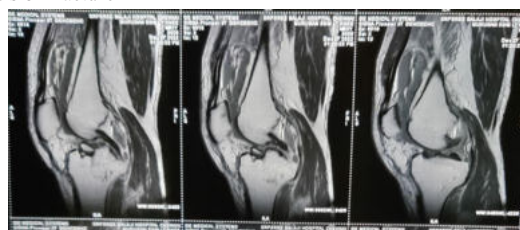


Figure No 2a : Sagittal view of MRI Left knee shows complete ACL tear

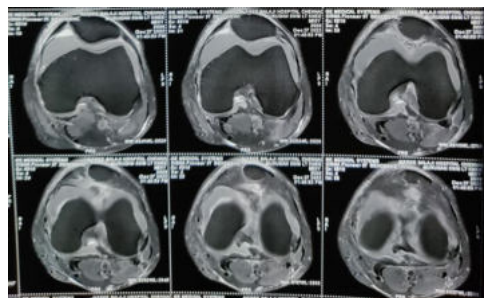


Figure No2b : Axial view of MRI left knee shows signal

Intraoperative Image



Figure No 3a : intraoperatively checking for ligament stability



Figure no 3b : post procedure ligament stability was satisfactory



Post op Xray

**Figure no 5:** Post-operative xray

DISCUSSION

Displaced ACL avulsion fracture is a rare modality accounting for 1% to 5%^[8,9]. This type of fractures leads to decreased knee range of motion. Arthroscopic fixation of tibial spine fracture with fibre wire provides better clinical outcome and better stability as compared to open reduction^[10]. Displaced tibial avulsion results in loss of extension and ligament instability. The goal of fixation is to restore the articular surface, rigid fixation, maintain the ligament stability and restore the length of ACL^[11,12]. In this case we used assisted arthroscopic technique for fixation of ACL avulsion fracture with endobutton and nylon fibre wire 2.0

Postoperatively long knee brace was applied and patient and full weight bearing was allowed at 6 weeks follow up after radiological and clinical confirmation of union at fracture site.

After 6 months of follow up patient was allowed to engage in sports activity. Suture fixation of the tibial avulsion fracture through assisted arthroscopic technique provides better stability and better union rate and cosmetic wise also patient compliance is better as compared to open reduction and fixation of ACL avulsion fractures^[13,14].

Patient consent declaration: The authors confirm that they have all obtained the necessary patient consent forms. The patient has consented to the form that his or her images and other clinical information may be published in the article. **Patient consent declaration:** The authors declare that they have all obtained the patient consent forms. All patients were informed that the final published pictures would be anonymous, and written consent was obtained from the patients for the use of their images.

No potential conflict of interest. Related source: null

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