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Arthroscopic assisted percutaneous screw fixation of pylon fracture: Case report

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Abstract

We report a case of 24 year old female, with closed pylon tibial fracture ,treated with arthroscopic assisted percutaneous osteosynthesis. Surgical technique – Ankle arthroscopy with debridement, sequestrectomy fracture reposition and under fluoroscopic imaging , percutaneous screw fixation was done. For objective evaluation of the range of motion, and subjective satisfaction from the operation and pain score we used American ankle and foot score. Follow up was done at 3 and 6 months postoperatively and 1 month after screws removal. Excellent postoperative result, with no surgical complication was present.

Key words: pylon fracture, arthroscopic, fixation

Introduction

Split fracture of the distal tibia can be approached minimally invasive using stab incision for the application of reduction forceps and screw fixation. Depending on the fracture pattern small open approach can be used for the insertion of an antiglide plate. Arthroscopic assisted osteosynthesis is a choice of treatment for this type of fracture offering exact visualization, fracture reduction and fixation. Usually, the soft tissue injurie is minimal, so if we choose the optimal timing, good reduction and stable fixation can be achieved.

Material /Surgical technique

24 years old female patient came from other hospital with closed pylon fracture (AO 43B1) immobilized in cast (image1). Patient was operated in supine position, ankle arthroscopy, with standard portals, tournique and ankle distractor was used .We started with debridement and lavage of the ankle joint (image 3). After arthroscopically assisted fracture reduction, fixation with screws under fluoroscopic guidance was done. Non weight bearing was recommended due to 5 weeks and postoperative rehabilitation patient start with full weight bearing 12 week postoperatively. Follow up was up to 1 year. Screws were removed nine months after surgery.Evaluation of the clinical results , according the ankle and foot disabillity index, was done at third (image 4,5) and sixth month postoperatively and at one month after removal of the screws. (table 1, graphic 1)

Image 1 image 2

Image 3 -intraoperative arthroscopic view

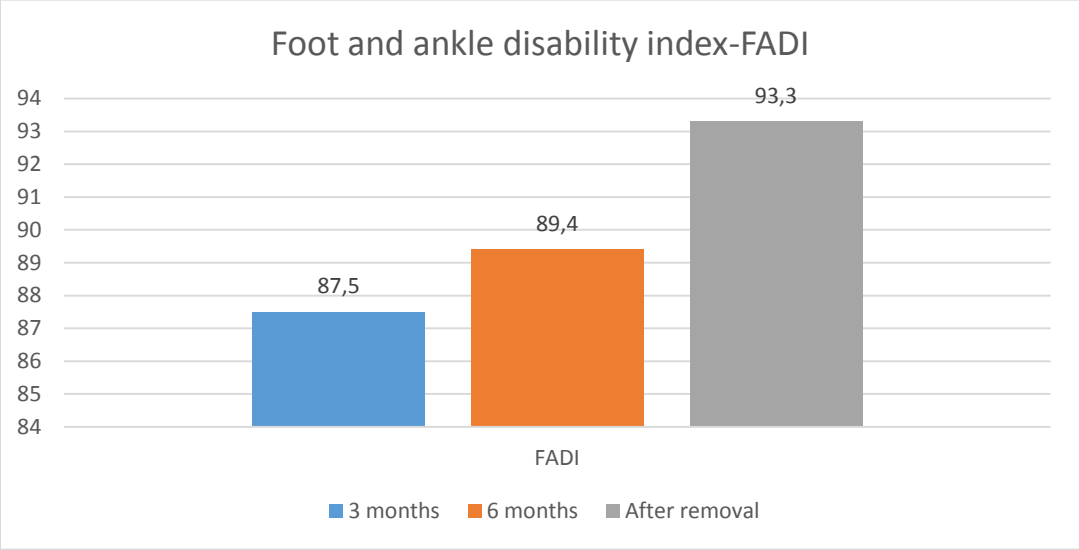
Image 4,5 - postoperative results

Results

Evaluation of clinical findings and surgical outcomes was done using Foot and ankle disability index (FADI). (table 1, graphic 1).

Period after surgery	3 months	6 months	After removal
FADI	87.5	89.4	93.3

Table 1.



Graphic 1

Image 6, 7 – postoperative clinical results at 3 months

After removal of the hardware patient was painless, no swelling, excellent range of motion and she was satisfied from the operation and final result.

Discussion

Pylon fracture are often characterized by articular impaction and comminution so optimal fracture reduction and type of fixation is still controversial. There is no a lot of relevant studies published in recent years. Franz Kralinger et all. reported case treated with arthroscopic assisted reposition and minimal invasive fixation of a pylon tibial fracture [1]. Minimally invasive technique under the fluoroscopic and arthroscopic guidance for case with tibial pylon fracture was presented by Oguz Poyanli et all [2].

In **conclusion**, according the surgical outcomes and clinical findings we can suggest that arthroscopic assisted osteosynthesis can be effective method for treatment of simple articicular fracture of the distal tibia.

References

1. Franz Kralinger M.D, Martin Lutz M.D, Markus Wambacher M.D, Vinzenz Smekal M.D, Karl Golser M.D. The Journal of Arthroscopic and related Surgery, 2003; Vol 19 (5): 45.

2. Oguz Poyanli MD, Irfan Esenkaya MD, Afsar T.Ozkut, MD,Mehmet Akif Akcal MD, Kaya Akan MD, Koray Unau MD. Minimal invasive reduction technique in split depression type tibial pilon fracture. The Journal of Foot and ankle Surgery 2012; Vol 51(2):254-257.