



Case Report

JMR 2023; 9(3):37-38

May- June

ISSN:2395-7565

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www.medicinarticle.com

Received:18-04-2023

Accepted:02-06-2023

DOI: 10.31254/jmr.2023.9301

Tibiofibular intussusception complicating fracture fixation of distal third both bone leg fracture

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Abstract

There is no concord about indications for Fibular osteosynthesis in the extra articular fracture of Distal Tibia. A case report demonstrates that the Fibular fracture fixation increases the rotational stability in patient with Distal Tibia Fracture with reduce risk of malunion.

Keywords: Distal Tibia Fracture, Fibular osteosynthesis, Extra articular fracture.

INTRODUCTION

There is no consensus about indications for Fibular osteosynthesis in the extra articular fracture of Distal Tibia [1]. Some surgeons claimed that fixation of Fibula will provide a stiffer construct and aids in achieving a more anatomical reduction of tibia, thereby it prevents the lower leg malalignment [2]. On contrary, other states that intact Fibula contributes little support to lower leg with no additional stability to synthesis of fractured Tibia and even it creates abnormal strain and complicates compression and fixation of Tibial fractures [3].

CASE REPORT

21 year Old male reported to ER after an alleged history RTA 2 wheeler vs 2 wheeler, following which he had closed injury to his left leg associated with pain and difficulty in weight bearing. No other significant injury and past histories. X ray lower limb was done as shown in figure 1.

Pre Operative Planning:

Routine GA investigations were done and planned for Left Tibia Intramedullary nailing. Conservative management for Fibula Fracture.

Intraoperative Management:

Patient was placed in supine position on OT table with leg hanging down. Closed reduction was attempted to reduce the Fibula fracture and checked under C-Arm. The fracture reduction was found to be satisfactory and closed Nailing was attempted. While nailing the Tibia, the distal end of the fibula fragment (which was planned to be managed conservatively) intussuscepted into the proximal fragment of tibia. This complicated the nailing as there is a mechanical obstruction preventing passage of guide wire. Manipulations were attempted to remove the entangled fibula distal fragment from the Tibia fracture ends but ended up in failure. Patient position was changed, the fracture limb was put in supine position to remove the entangled distal fibula fracture segment. The tibial fracture site was opened and the entangled distal fibula fragment was dislodged manually. The fibula fracture ends were now opened and fixed with a recon-plate. Following this, the fractured leg was put in hanging position and then the nailing of Tibia was made and fixed with appropriate screws

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Figure 1: X ray of lower limb which shows transverse fracture of both bone leg with posterolateral displacement



Figure 2: X ray of left ankle AP and lateral showing fracture in the distal one third of both bone leg (AO classification- O2 A3)



Figure 3: X ray of left leg AP and lateral with tibia IMI nail and distal one third fibula plate in situ

DISCUSSION

The controversy remains in the role of concomitant fibular fixation during treatment of closed extra-articular Distal Tibia Fracture. Bonneville et al [4] stated that fibular and tibial fractures should be considered as a single biomechanical and pathological entity, and established the value of double surgical synthesis as a addition to stability and an aid to tibial reduction. Kumar et al [5] stated that fibular plate fixation increased rotational stability in patients with distal tibia

fractures with ipsilateral fibula fracture and may reduce the risk of malunion with valgus deformity. Nevertheless, some studies have showed that fibular fixation may prevent tibial fracture reduction and render the fixation too rigid, which results in higher rates of delayed union and nonunion [6]. Kruppa et al [7] reported increased rates of nonunions associated with fibular open reduction and internal fixation in distal tibia fractures treated with Intramedullary Nailing.

CONCLUSION

Tibia nailing with or without fibula fixation remains the mainstay treatment for distal both bone leg fractures. The usual challenges that are encountered are very well described in the literature. One such rare complication is intrusception of distal fibula fragment into the proximal tibia fragment. A regular closed nailing of the tibia was converted to open nailing because of this complication

Pre operative planning with proper measurements and implant selection will help to avoid such intra-operative complications. Prior adequate X-rays and CT are to be taken to understand the fracture pattern better.

Conflicts of Interest

The authors declare no conflicts of interest.

Funding

None declared.

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