

Distal Tibiofibular Joint Screw Fixation When Long Intramedullary Nail Insertion Is Inevitable: A Case Report

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INTRODUCTION:

It is not uncommon that in distal tibia fracture associated with injury to the syndesmosis, which disrupts the distal tibiofibular joint. Reduction of the syndesmosis and fixation across the distal tibia and fibula restore the anatomy and allow the syndesmosis to heal. However, in distal third tibia fracture, a long intramedullary nail is needed for fracture fixation with maximal stability. Hence, optimal position of distal syndesmotomic screw fixation which is 2cm to 5cm above ankle joint is always restricted.

MATERIALS AND METHODS:

We report our experience of a 42 years old man who sustained closed segmental fracture of right tibia with syndesmotomic joint disruption and ankle joint subluxation. A long titanium tibial interlocking nail was inserted with 2 proximal and 2 distal locking screws.

The stability of the syndesmosis is only achieved with fixation of 2 screws (4.5 mm and 5.0 titanium screws) with 4 cortices engaged. The most distal screw was fixed at the syndesmosis. At 6 weeks, the screws were removed and patient was allowed for full weight bearing after the fracture united.

RESULTS:

Post fixation, intraoperatively right ankle is stable with application of an external rotation stress under fluoroscopic examination. Radiologically, right ankle mortise view showed tibiofibular clear space 4mm and overlap 2mm. There is an equal medial and superior clear space.

He achieved full range of motion of the right ankle.

DISCUSSIONS:

Anatomical reduction of the syndesmosis is needed for the stability of the ankle and prevention of arthritis in ankle injury.

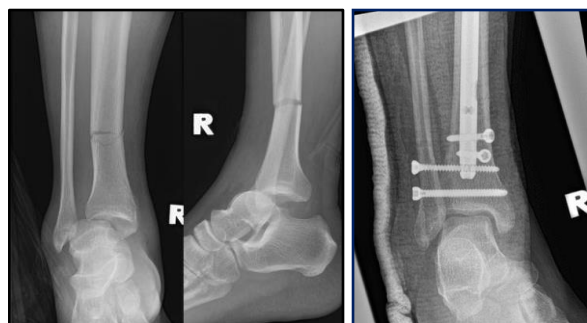


Figure 1: pre-operative right ankle X-Ray

Figure 2: post-operative right ankle X-Ray mortise view

The various techniques of fixation for syndesmosis injury are well described in the previous literatures. However, the concomitant injury to the tibial shaft remain technically challenging for syndesmosis fixation due to difficulty of screw placement.

In this case, the stability is only achieved through the placement of 2 screws in which one of the screw is at the syndesmosis itself. Even though the fixation does not affect the ankle mobility at present time, the long term sequela is still unknown.

CONCLUSION:

Concomitant tibial shaft fracture and syndesmosis injury is undoubtedly challenging. This case report highlights the possibility of optimal syndesmotomic screw placement through long interlocking nail distal hole and the fixation through syndesmosis when its use is inevitable.

REFERENCES:

1. R. Dattani, S. Patnaik, A. Katak, B. Srikanth, T. P. Selvan, Injuries to the tibiofibular syndesmosis; Bone & Joint Journal Apr 2008, 90-B (4) 405-410