

Introduction

Fractures of the distal end of the tibial plafond are also named Pilon fractures with incidence rate about 1% to 10% of tibial fractures.

The Ruedi and Allgower and (AO) / (OTA) are the two commonly classifications used to classify the pilon fractures. The current AO/OTA classification is the most descriptive system in the literature. Fractures of the distal end of the tibia as assigned the number 43.

Treatment of tibial plafond fractures is challenging due to the difficulty of achieving an anatomical reduction without complications. Reduction may be achieved by antero-medial or antero-lateral approaches with limitations of antero-medial approach due to poor visualization of antero-lateral fragment and poor soft tissue coverage leading to wound break down with implant exposure.

The antero-lateral anatomical locking distal tibial plate used in this study was designed according to the anatomical features of the anterolateral surface of the distal tibia of healthy adults with less metalwork irritation symptoms and the ability to fix associated fibular fractures through the same approach.

Aim of the Work

The aim of this study was to evaluate the results and complications of open reduction and internal fixation of distal tibia fractures using the antero-lateral plating.

Patients and Methods

This prospective study included 20 patients with distal tibia fractures admitted at EL-Hadra University Hospital from period august 2022 till July 2023. With Acute low energy trauma, Delayed high energy trauma, Type A 3 , type B 1,2,3 and type C 1,2 according to AO classification, Type C 0,1,2 according to Tscherne classification and Patients aged from 18 to 60 years old.

Patients were classified according to fracture type into three groups. Two patients (10.0%) had fracture type A3, six patients (30.0%) had fracture type C1 and twelve patients (60.0%) had fracture type C2
All patients were assessed after 6 months according to Olerud-Molander Ankle Score.

Results

Distribution of the studied group according to Olerud-Molander Ankle Score

After a follow up period of six months, Patients were divided into five groups according to Olerud-Molander ankle score. The very good group had score from 100 to 81 (8 patients resembling 40.0%), the good group had score from 80 to 61 (9 patients resembling 45.0%), the fair group had score from 60 to 41 (2 patients resembling 10.0%), the poor group had score from 40 to 21 (there was no patients in this group) and the very poor group had score from 20 to zero (one patient resembling 5.0%).

Table 1: Distribution of the studied cases according to Olerud-Molander Ankle Score

Olerud - Molander Ankle score	No.	%
Very poor (0 – 20)	1	5.0
Poor (21 – 40)	0	0.0
Fair (41 - 60)	2	10.0
Good (61 – 80)	9	45.0
Very good (81 – 100)	8	40.0
Min. – Max.	15.0 –100.0	
Mean ±SD.	76.50 ±20.46	
Median (IQR)	80.0 (70.0 –87.50)	

Distribution of the studied group according to post-operative complications

Patients were divided according to infection into three groups: the first group included patients who had no infection till the time of follow up and it included 18 patients resembling 90.0% of the studied sample, the second group had one patient with superficial infection, and the third group also had only one patient who developed a raw area as a sequel of wound complications which treated by debridement and serial vacuum seals and then daily dressing till improvement.

Table 2: Distribution of the studied cases according to complications

complications	No.	%
No	18	90.0
Raw area	1	5.0
Superficial	1	5.0

Conclusion

- Antero-lateral plating of distal tibial fractures through antero-lateral approach or combined approaches had proven good exposure, reduction and mechanically stable construct.
- Meticulous soft tissue handling is very important to reduce post-operative complications.
- There was a good soft tissue coverage over the anatomically designed antero-lateral plate. Even with soft tissue complications debridement and daily dressing were enough for soft tissue healing.