

EVALUATION OF RESULTS OF OPEN REDUCTION AND INTERNAL FIXATION OF POSTERIOR MALLEOLUS FRACTURES THROUGH POSTEROLATERAL APPROACH

Amin Abdelrazek Youssef, Elsayed Abdel-halim Abdullah, Mena Michael Musa, Mahmoud Saad Hassan Zaitoun
Department of Orthopaedic Surgery and Traumatology, Faculty of Medicine, Alexandria University

INTRODUCTION

Ankle fractures are one of the most common injuries treated by orthopedic surgeons with an increasing incidence in the elderly. Ankle fractures can be classified by Danis-weber or lauge-hansen or AO/OTA classification. Posterior malleolus fractures are always associated with other malleolar fractures (bimalleolar or trimalleolar). Isolated posterior malleolus fractures are uncommon. Posterior malleolus fractures can be treated conservatively or surgically according to stability of the ankle and displacement of the fragment. Fixation of posterior malleolus is very important for the stability of syndesmosis as the posterior inferior tibiofibular (PITFL) ligament is attached to it. Posterolateral approach helps in anatomical reduction of posterior malleolus and fixation of lateral malleolus in bimalleolar or trimalleolar ankle fractures through the same incision. Posterolateral approach has low incidence for skin or deep infection due to good soft tissue coverage. Anatomical reduction of posterior malleolus decrease ankle arthritis later on with better functional outcome.

AIM OF THE WORK

The aim of this study was to evaluate the functional and radiological outcomes of patients with surgically fixed posterior malleolus fracture through posterolateral approach of the ankle.

PATIENTS AND METHODS

We prospectively evaluated the results of open reduction and internal fixation of posterior malleolus fractures through posterolateral approach approach of 20 patients. The age of the patients ranged between 20- 60 years old. Patients were classified according to fracture type into three groups. Patients with trimalleolar fracture (12 patients resembling 60 %), patients with isolated posterior malleolar fracture (2 patients resembling 10%) and Patients with bimalleolar fracture (6 patients resembling 30 %). Patients with bimalleolar fractures are sub classified into patients with PM and LM fracture (5 patients resembling 25 %) patients with PM and MM

(1 patient resembling 5 %)
All patients were assessed after 6 months according to the Foot and Ankle Outcomes Questionnaire developed by the American Academy of Orthopaedic Surgeons (AAOS).

RESULTS

Distribution of the studied group according to standardized mean of foot and ankle core score

Patients were divided according to standardized mean of foot and ankle core score into two groups. Unsatisfactory group had 6 Patients with score or less than 90 from 100 (30%) and satisfactory group had 14 patients with score more than 90 from 100 (70%).

Table 1: Distribution of the studied cases according to standardized mean of foot and ankle core score

Standardized mean of foot and ankle core score	No.	%
Group I(unsatisfactory) (0 - ≤90)	6	30.0
Group II(satisfactory) (>90)	14	70.0
Min. – Max.	26.0 – 100.0	
Mean ± SD.	89.30 ± 15.91	
Median (IQR)	94.50 (88.0 – 95.0)	

Distribution of the studied group according to standardized mean of shoe comfort scale

Patients were divided according to standardized mean of shoe comfort scale into two groups. Unsatisfactory group had 10 Patients with score or less than 90 from 100 (30%) and satisfactory group had 10 patients with score more than 90 from 100 (70%).

Table 2: Distribution of the studied cases according to standardized mean of shoe comfort scale

Standardized mean of shoe comfort scale	No.	%
Group I (unsatisfactory) (0 - ≤90)	10	50.0
Group II (satisfactory) (>90)	10	50.0
Min. – Max.	0.0 – 100.0	
Mean ± SD.	73.25 ± 32.21	
Median (IQR)	90.0 (60.0 – 100.0)	

Distribution of the studied group according to post-operative complications

Patients were divided according to complications into two groups 18 patients had no postoperative complications (90%) and 2 patients had post-operative complications (10%)
One patient had post-operative infection (5%) underwent debridement and IV antibiotics was taken and became fine. and another one had post-operative infection and nonunion (5%) underwent several times of aggressive debridement and hardware removal which planned for ankle fusion later on.

Table 3: Distribution of the studied cases according to complications

Complications	No.	%
No	18	90.0
Yes	2	10.0
Infection	1	5.0
Nonunion + Infection	1	5.0

CONCLUSION

The use of posterolateral approach for open reduction and internal fixation of posterior malleolus fracture is not only successful alternative for the stability of the ankle and congruency, but also a safe procedure with good soft tissue coverage, low incidence of infection and secondary ankle osteoarthritis.