Posterolateral Approach to the tibia for posterior malleolar fractures: Evaluation of anatomic reduction by computed tomography and approach related complications.

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• No conflicts to disclose
• My disclosure is in the final AOFAS mobile app
• I have no potential conflicts with this presentation
Introduction

• Indications for fixing posterior malleolus in ankle fractures has evolved in the last few years.

• Recent biomechanical studies support acceptance that stability of the posterior inferior tibiofibular ligament is reestablished after surgical reduction and fixation.
Introduction

• Due the common posterolateral location of this fractures, the posterolateral approach provides excellent visualization and allows direct reduction and fixation.

• Allows for simultaneous reduction and fixation of the lateral malleolus.

• In current literature there is a low incidence of approach related complications.
Patients and Methods

• We prospectively studied all patients with diagnosis of posterior malleolar fracture in the context of ankle fracture treated at our institution between June 2012 and August 2012.

• Ankle fracture with posterior malleolar fracture with more than 15% involvement of the articular surface are all treated with direct reduction and fixation of the posterior malleolus through a posterolateral approach at our institution.
Patients and Methods

- We performed a complete preoperative and postoperative evaluation with x-rays and CT.

- Postoperative, three independent foot and ankle surgeons evaluated the anatomical reduction obtained with computed tomography.

- Clinical data was collected referring on complications and their management.
Results

- 35 Patients
  - 13 Male
  - 22 Female

- Timing before surgery: 4.9 days (Range 0-24)

- Mean Posterior Malleolar Size: 34% (Range 15-51)
Results

- Postoperative articular step-off (CT)
  - Less than 1mm: 26 cases (74.2%)
  - Between 1 mm and 2 mm: 8 cases (22.9%)
  - More than 2mm: 1 case (2.9%)
Results

• Complications:
  – Approach related: 3 cases
    • Deep wound infection: 2
    • Wound dehiscence: 1
    • All 3 patients required reoperation
  – Sural nerve paresthesias: 1 case

• Overall complication rate 11.4%
Conclusions

- In our study we achieved excellent anatomical reduction in most patients, using the posterolateral approach with a low incidence of complications and reoperations.

- In our opinion, computed tomography should be obtained before and after reduction and fixation of all posterior malleolar fractures.

- We propose that any posterior malleolar fracture with more than a 15% involvement of the articular surface should be addressed by a posterolateral approach for obtaining optimal reduction of the posterior syndesmosis.
Conclusions

- Further studies should correlate the long term functional outcome of this patients, with the quality of reduction and compare this results with indirect reduction obtained through other ankle approaches.


