

POSTERIOR MALLEOLUS FRACTURES: Should I Fix Them? How?

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Anatomy

- PITFL (Volkman's)
- Triangular ligament with broad attachment
 - 2-3cm insertion



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Introduction

- Reduction of a large posterior malleolar fragment can stabilize the syndesmosis

Importance

- Better Healing: bone to bone
- Improved reductions
 - Up to 40% malreductions

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Mechanism

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Introduction

- Posterior malleolar fractures are common
 - Variable in size
 - Significance?

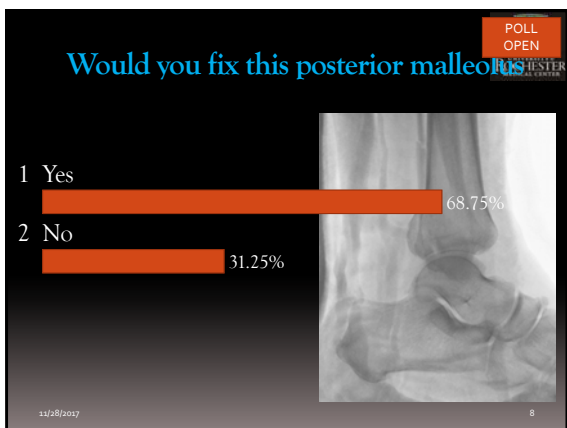
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Introduction

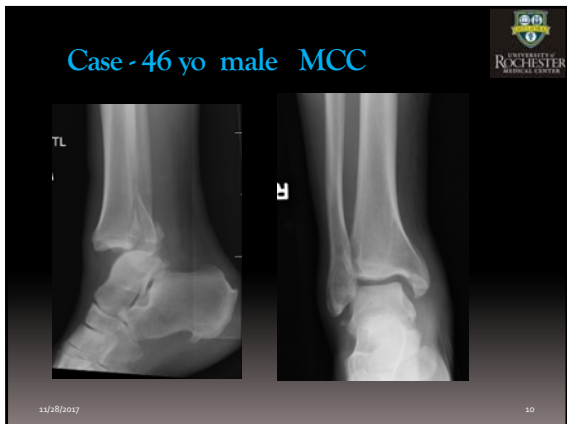
- Indications for surgical treatment
 - Size of fragment?
 - Stability?
 - Displacement?
 - Articular involvement?
 - 20-30%

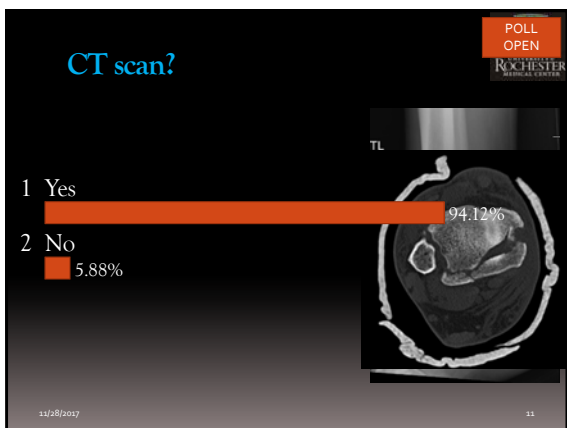
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- ### Introduction
- Little agreement on indications
 - Little agreement on method of fixation
 - Agreement on ~ 50% and less than 20%
 - Stability was the highest determining factor
 - 20-25% fragment → 44% ORIF
 - 72% TS -Open vs. 53% F&A
- Gardner et al. FAI 2011
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Role of CT

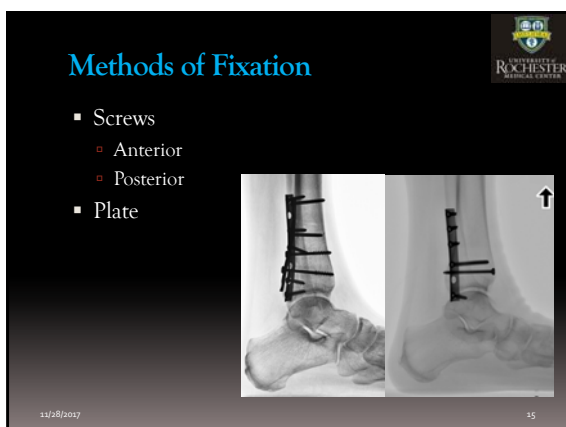
- Fracture patterns are often complex
- 72 patients with fx/dislocation
 - 35% had entrapped fragments or impaction
 - 7 % (5) had >3 fragments
 - 30 of 72 (42%) underwent posterior approach

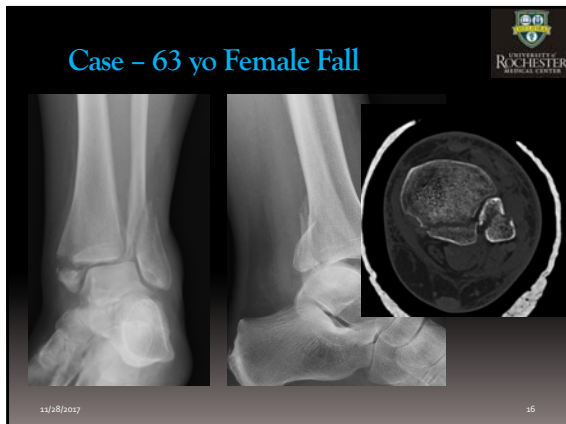
OTA Annual Meeting 2016

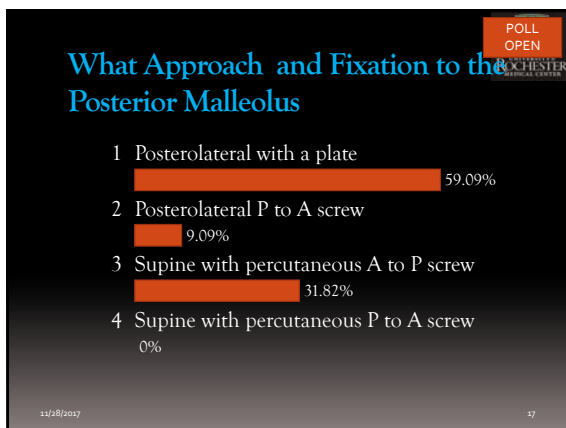
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Case 17 mo




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Posterior Malleolar Fractures

- Percutaneous
 - Anterior incision
 - Large clamp from anterior incision
- Within 1-5 days
- Smaller fragments



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Posterior Malleolar Fractures

Delayed Fixation > 1wk

Lose the ability to indirectly reduce

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Posterior Malleolar Fractures

Plate fixation

- Good for comminution
- Larger fragments

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Case – 33 yo F fell hiking



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What Approach and Fixation to the Posterior Malleolus


POLL OPEN

- 1 Posterolateral with a plate 94.44%
- 2 Posterolateral P to A screw 0%
- 3 Supine with percutaneous A to P screw 5.56%
- 4 Supine with percutaneous P to A screw 0%

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Ankle Fractures

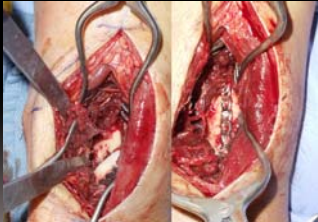
- Posterolateral approach
 - My preferred technique
 - Larger fragments
 - Prone
 - Also allows for ORIF medial malleolus
 - ORIF fibula through same approach



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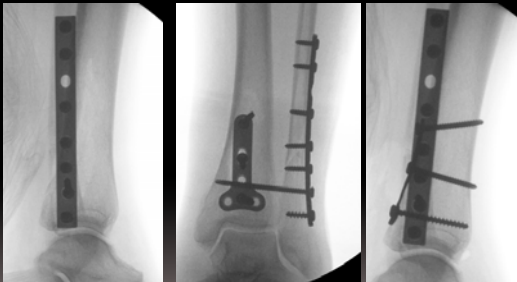
Ankle Fractures

- Posterolateral approach
 - Interval between Peroneals and FHL

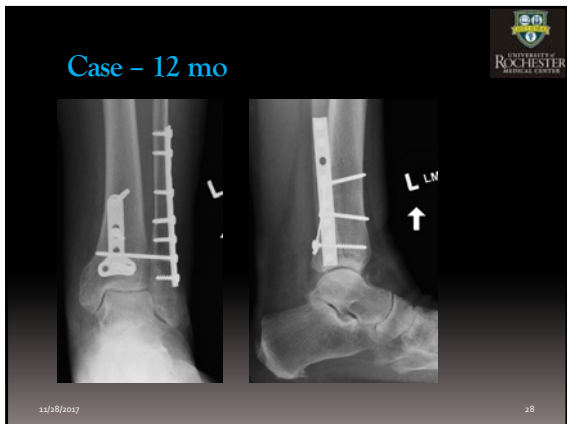


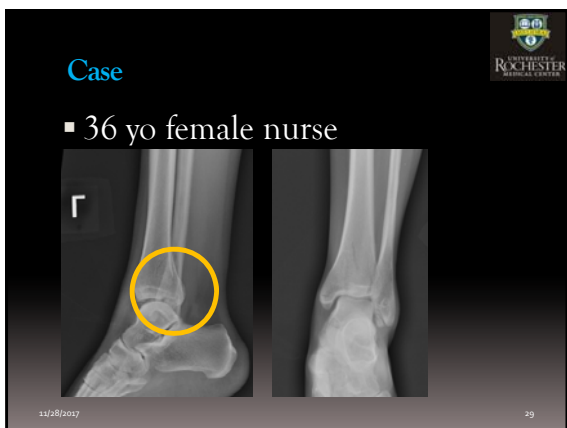
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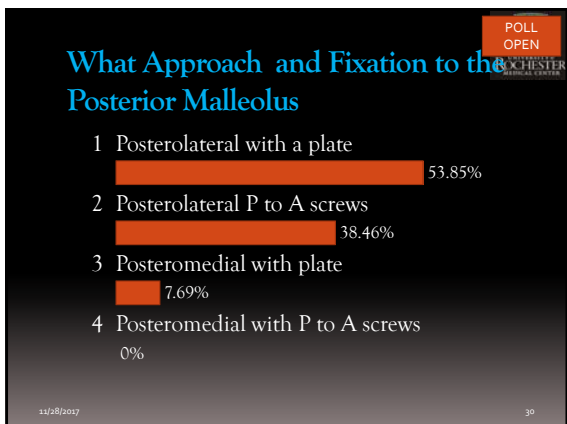
Case

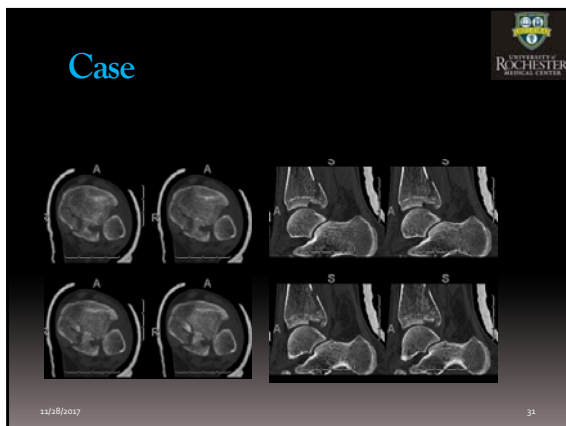


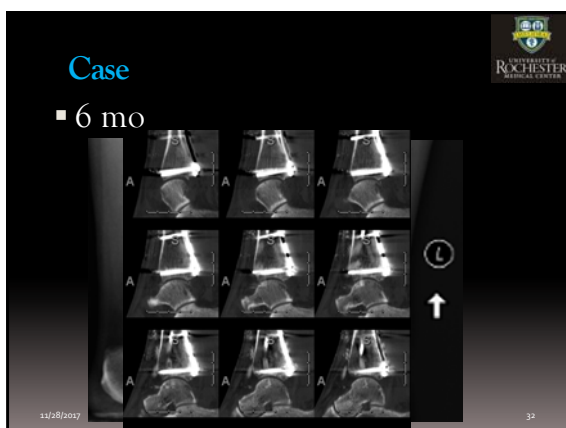
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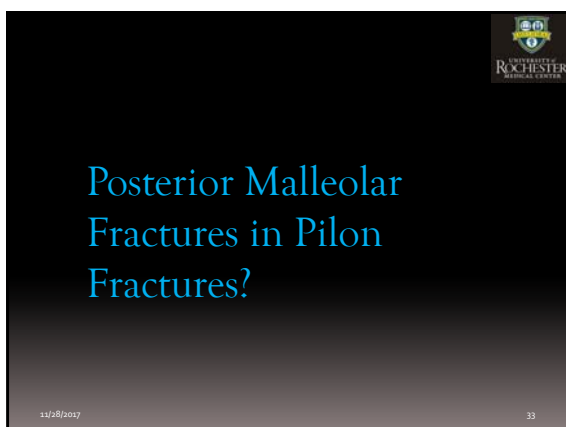













Technique

- Fixation of posterior fragments +/- fibula
- Application of external fixator
- Prone
- Posterolateral incision



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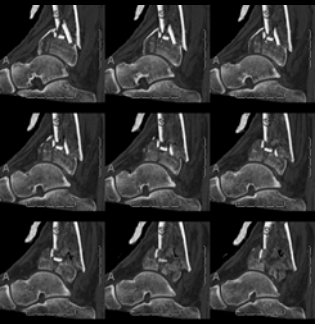
Case

- 46 yo male s/p MCC



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Case



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Summary

- Multiple factors play into determining ORIF
- Select best technique/incision for fixation on an individual basis
- Anatomic reduction for larger fragments
- Goal is to provide stability and articular reduction

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