

# Fractures of The Calcaneus

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## A Changing Paradigm ?

### Historically

- Contentious
  - Operative vs Non Operative
    - Elderly
    - Diabetics
    - Smoker
- **Operative**
  - Delayed surgery
  - Extensile lateral exposure



### Currently

- Contentious
  - Operative vs Non Operative
    - Elderly
    - Diabetics
    - Smoker
- **Operative**
  - Early surgery
  - Percutaneous, Limited open with Sinus Tarsi Approach



PUBMED search calcaneal fracture fixation sinus tarsi :  
1997-2012 59 hits  
2013-2017 65 hits

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## CASE # 1

- 18 YO MALE - FALL FROM 20 FT**  
ISOLATED CALCANEAL FRACTURE
- SIGNIFICANT SWELLING
  - CLOSED
  - NVI

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POLL OPEN

THE GREATEST IMMEDIATE RISK TO THIS PATIENT IS:

- 1 DVT/PE 3.33%
- 2 SKIN COMPROMISE 86.67%
- 3 TRAUMATIC ARTHRITIS 6.67%
- 4 COMPLICATIONS WITH EARLY SURGICAL INTERVENTION 3.33%



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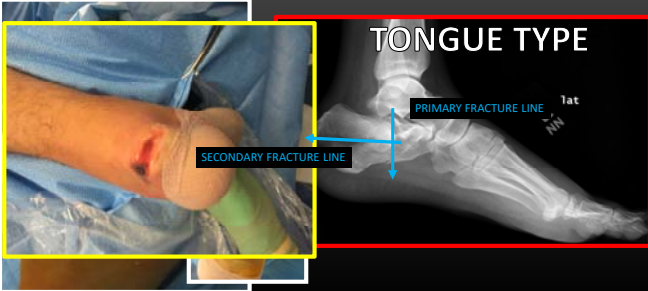
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SKIN COMPROMISE

TONGUE TYPE



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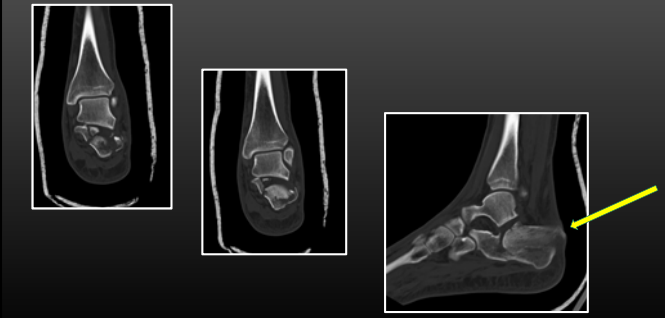
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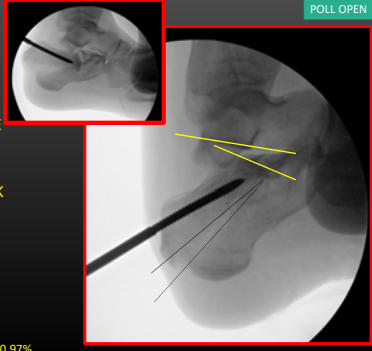
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**PERCUTANEOUS TECHNIQUE WAS ATTEMPTED, THE NEXT STEP SHOULD BE:**

POLL OPEN

- 1 ACCEPT THE REDUCTION AND MOVE ON  
0%
- 2 PROVISIONALLY FIX AND COME BACK FOR ORIF WHEN SWELLING ALLOWS  
19.35%
- 3 LIMITED INCISION ORIF VIA SINUS TARSI APPROACH  
9.68%
- 4 EITHER 2 OR 3 IS REASONABLE  
70.97%



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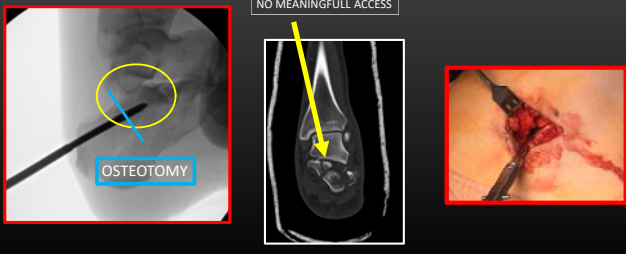
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**STA WAS PERFORMED**

NO MEANINGFULL ACCESS

OSTEOTOMY



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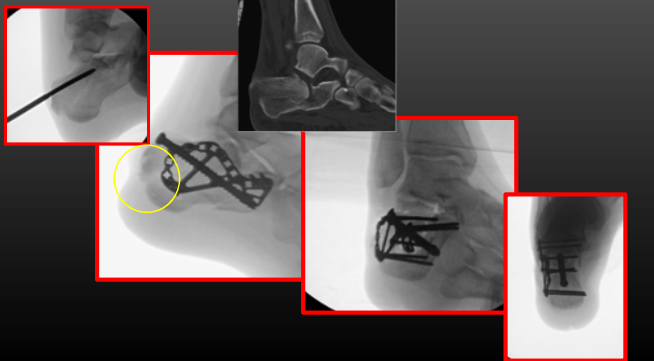
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# CASE #2

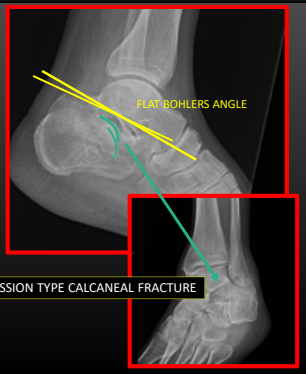
FALL FROM LADDER

65 YO MALE – RETIRED MILITARY

SMOKER

TYPE 2 DIABETIC

**VERY ACTIVE**



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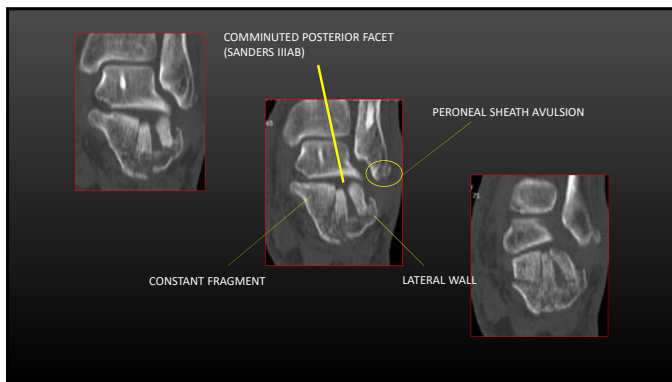
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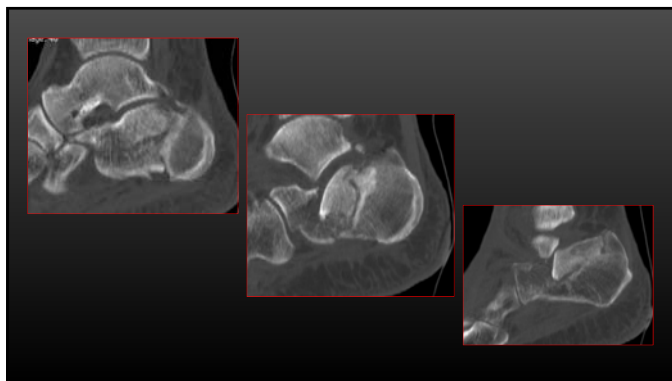
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PRESENTS TO OFFICE 3 WEEKS OUT FROM INJURY POLL OPEN

**TREATMENT SHOULD BE:**

- 1. NWB, REMOVABLE SPLINT WITH EARLY ROM 38.46%
- 2. PERCUTANEOUS REDUCTION AND FIXATION 15.38%
- 3. ORIF WITH EXTENSILE LATERAL EXPOSURE 23.08%
- 4. ORIF WITH LIMITED SINUS TARSI EXPOSURE 23.08%



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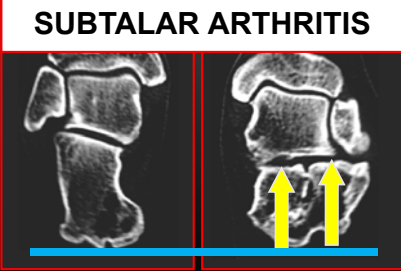
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1. NWB, REMOVABLE SPLINT WITH EARLY ROM

**SUBTALAR ARTHRITIS**



*COURTESY, RM, SANDERS*

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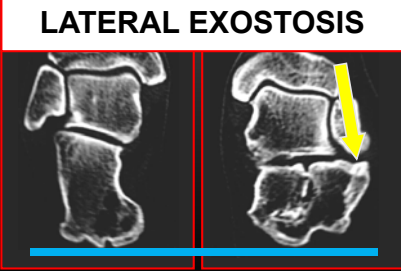
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1. NWB, REMOVABLE SPLINT WITH EARLY ROM

**LATERAL EXOSTOSIS**



*COURTESY, RM, SANDERS*

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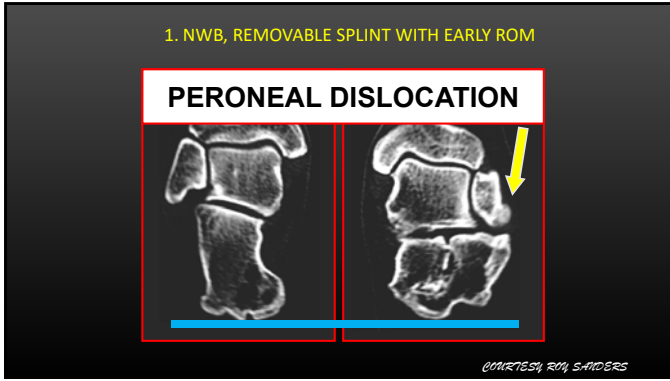
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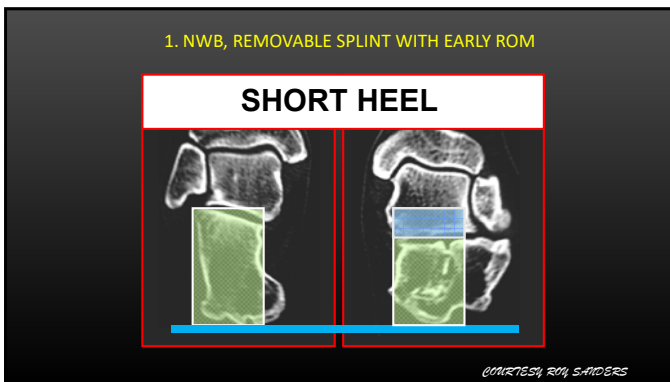
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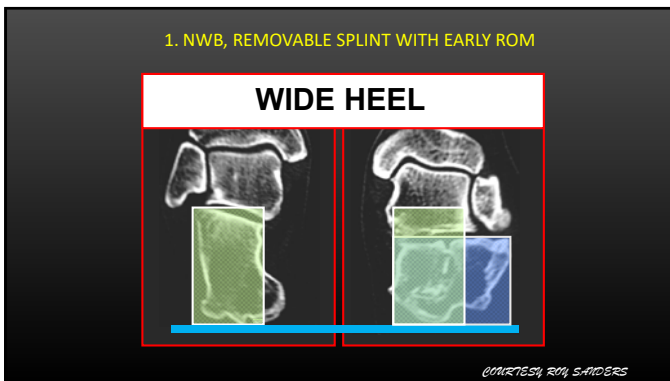
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**IN AN ACTIVE INDIVIDUAL THIS PUSHES ME TO FAVOR SURGERY**

**AT 3 WKS PERCUATANEOUS TECHNIQUES NOT FEASIBLE**

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A LIMITED SINUS TARSI APPROACH WAS SELECTED

POLL OPEN

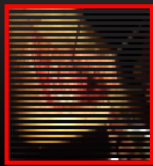
THE REDUCTION MANUEVERS AND SURGICAL GOALS ARE DIFFERENT THAN WITH AN EXTENSILE LATERAL.

1 TRUE

0%

2 FALSE

100%



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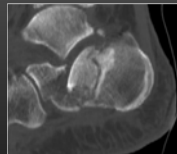
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**JOINT ELEVATION**



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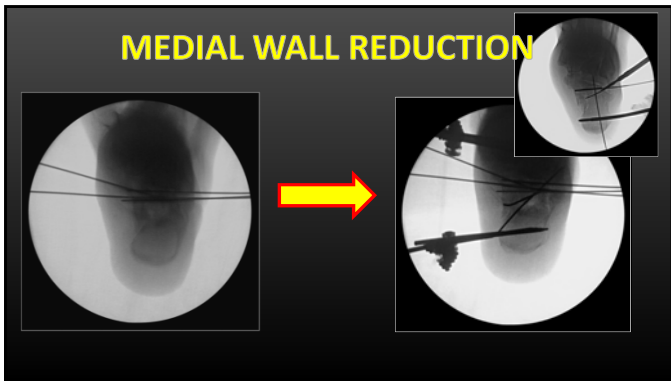
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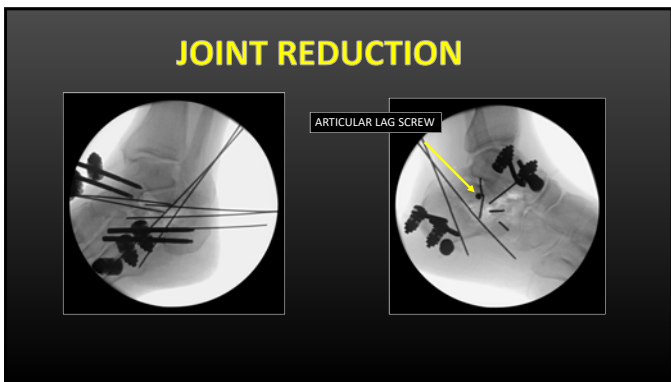
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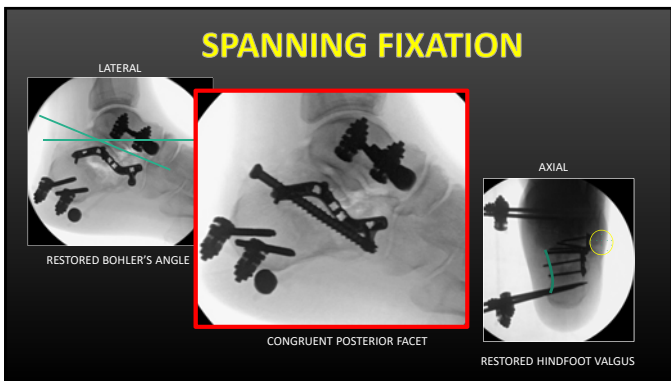
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POLL OPEN

COMPARING THE EXTENSILE LATERAL AND SINUS TARSI EXPOSURES THE TRUE STATEMENT BELOW IS:

- 1 RADIOGRAPHIC FRACTURE REDUCTION IS BETTER WITH THE EXTENSILE LATERAL EXPOSURE  
0%
- 2 THERE IS NO DIFFERENCE IN OUTCOMES BETWEEN SURGICAL TECHNIQUES  
5.56%
- 3 SINUS TARSI EXPOSURE HAS PROVIDED INFERIOR CLINICAL OUTCOMES  
5.56%
- 4 THE EXTENSILE LATERAL HAS A SIGNIFICANTLY HIGHER WOUND COMPLICATION RATE  
88.89%

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SIMILAR ANATOMICAL REDUCTION AND LOWER COMPLICATION RATES WITH THE SINUS TARSI APPROACH COMPARED WITH THE EXTENDED LATERAL APPROACH IN DISPLACED INTRA-ARTICULAR CALCANEAL FRACTURES

JOT 2017

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META-ANALYSIS OF TWO SURGICAL APPROACHES FOR CALCANEAL FRACTURES:  
SINUS TARSI VERSUS EXTENSILE LATERAL APPROACH

ANZ J Surg 2017

**SINUS TARSI:**  
LOWER OVERALL AND WOUND HEALING COMPLICATIONS

NO DIFFERENCE  
• ANATOMICAL REDUCTION  
• FUNCTIONAL SCORES

EXISTING EVIDENCE SUPPORTS STA TO BE A BETTER APPROACH FOR TREATING CALCANEAL FRACTURES

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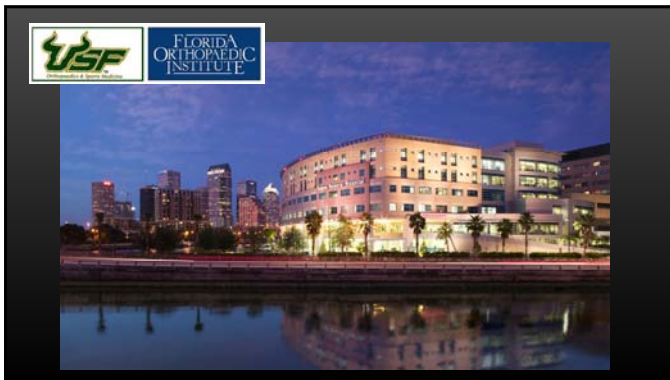
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