


**Open Fractures and Dislocations  
around the Foot and Ankle:  
Soft-Tissue Strategies**

16<sup>th</sup> Annual "Trauma 101"  
FRACTURE CARE FOR THE COMMUNITY ORTHOPEDIST AND ORTHOPAEDIC PA & NP  
Clearwater, FL May 11, 2018  
**Anthony Sorkin, M.D.**  
IUH Methodist Hospital Orthopedic Trauma Service

 Indiana University Health

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**Disclosures**

- Stryker Consultant
  - No pertinent conflict

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**Talking Points**

- When is salvage appropriate?
- Stabilize the soft-tissue
- Short-term wound management
- Coverage options



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### When is Salvage Appropriate?

- **Do not salvage:**
  - Foot is not perfused in a crush injury
  - Heel pad missing or not repairable
  - Unreconstructible soft-tissue injury
- **All other injuries *could* be salvaged**
  - Only one vessel run-off to foot
  - No sensation to plantar foot
  - Contaminated wound
  - Proximal peripheral nerve injury leading to no motor function in foot
  - Significant co-morbidities/smoking



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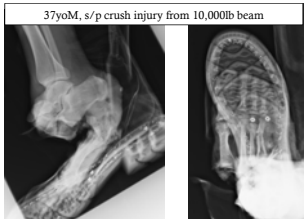
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### When is Salvage Appropriate?

37yoM, s/p crush injury from 10,000lb beam



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### When is Salvage Appropriate?



25yoM, s/p crush injury from a 15 ton crane



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### When is Salvage Appropriate?

- The heel pad

54yoM, s/p crush injury; heel pad repair and primary closure



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### Stabilize the Soft-tissue

- 'Damage Control Orthopedics' Concepts
  - Systemic Issues: Neurologic/Cardiopulmonary complications
    - Outcomes related to survivorship
  - Local Issues: Soft-tissue complications
    - Outcomes related to limb salvage



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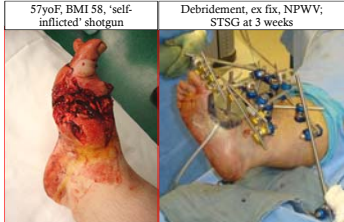
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### Stabilize the Soft-tissue

57yoF, BMI 58, 'self-inflicted' shotgun	Debridement, ex fix, NPWV, STSG at 3 weeks
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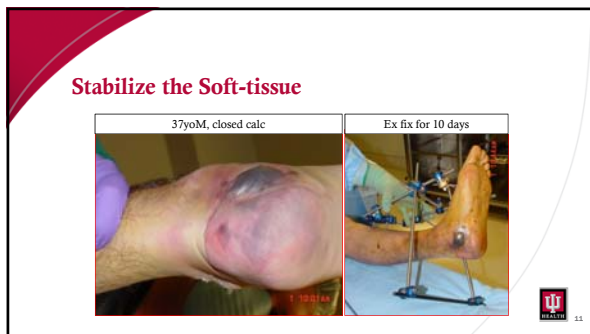
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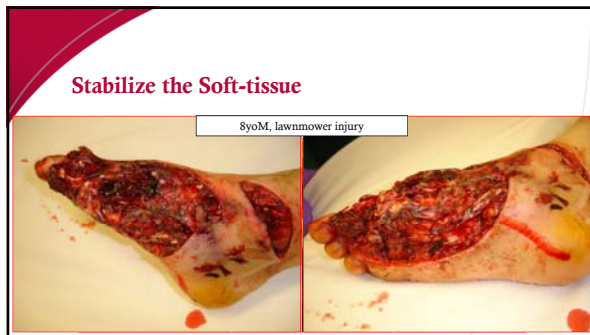
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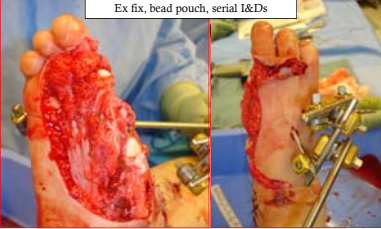
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### Stabilize the Soft-tissue

Ex fix, bead pouch, serial I&Ds



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### Short-term Wound Management

- After extensive debridement, close what you can without tension
- Bead pouch for contaminated wounds
  - \* Vanc & Zosyn
- NPWV for remaining open wounds
- Add perc pins to further stabilize complex foot injuries
  - \* Midfoot abduction
  - \* Significantly displaced calc tuberosity fragment
- Minimize 'compression' pressure on the wound
  - \* Avoid tight dressings
  - \* Kick-stand for extreme hindfoot injuries

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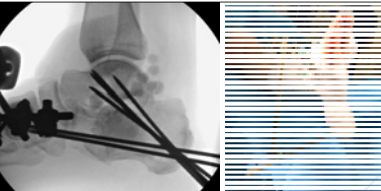
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### Short-term Wound Management

36yoF, s/p MVC; type III open calc



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### Short-term Wound Management

- Abx cement very useful for defects and dead space management

54yoF, s/p MVC; type III open pilon and talar neck fracture/dislocation	I&D, ex fix, reduction of dislocations; abx cement spacer in tibial metaphysis and posterior beads
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### Coverage Options

- Primary Closure
  - Staples? Vicryl? Nope

I&D, open reduction, ex fix for 6 weeks



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### Coverage Options

- Primary Closure

30yoF s/p MVC, isolated injury



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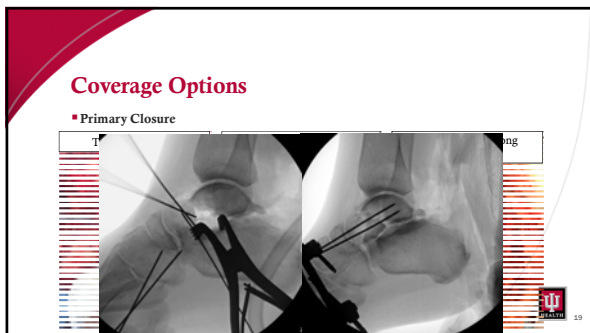
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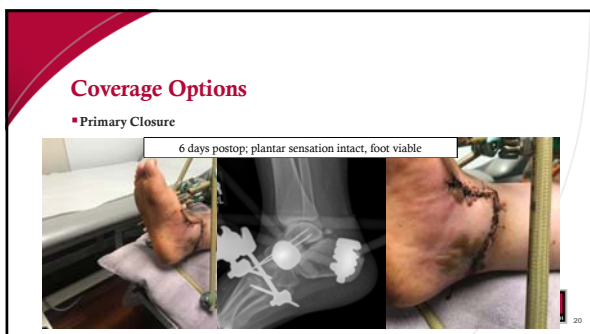
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**Coverage Options**

- Local Flap – Reverse Sural

43yoM, s/p ultralight accident; type 3A open pilon with bone loss

8 weeks spacer,



This slide shows a clinical case of a 43-year-old male with a type 3A open pilon fracture and bone loss. It includes two sets of X-rays: the left set shows the initial injury, and the right set shows the post-operative result with a spacer in place. A photograph on the right shows the surgical site with a reverse sural flap being inset. The text indicates an 8-week period with a spacer.

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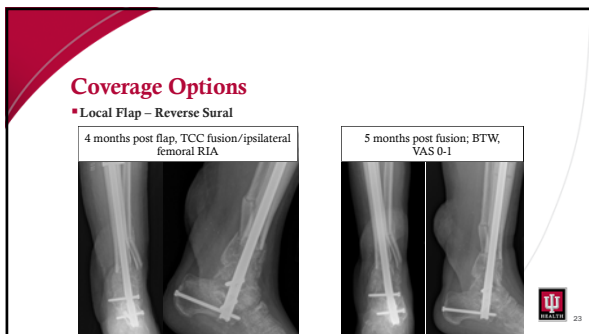
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**Coverage Options**

- Local Flap – Reverse Sural

4 months post flap, TCC fusion/ipsilateral femoral RIA

5 months post fusion; BTW, VAS 0-1



This slide shows the long-term results of the reverse sural flap procedure. It includes two sets of X-rays: the left set shows the patient 4 months post-operation with a TCC fusion and ipsilateral femoral RIA, and the right set shows the patient 5 months post-operation with a BTW and VAS 0-1. A small logo is visible in the bottom right corner.

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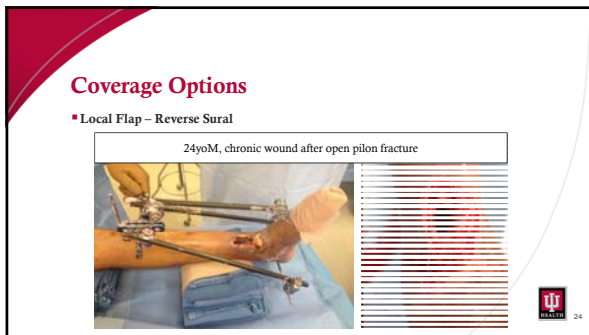
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**Coverage Options**

- Local Flap – Reverse Sural

24yoM, chronic wound after open pilon fracture



This slide shows a 24-year-old male with a chronic wound after an open pilon fracture. It includes a photograph of the patient's leg with a chronic wound and a diagram of the reverse sural flap procedure. A small logo is visible in the bottom right corner.

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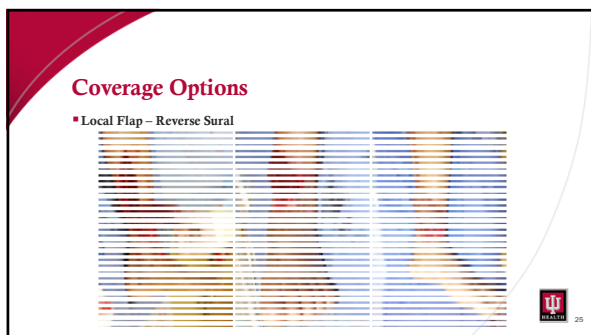
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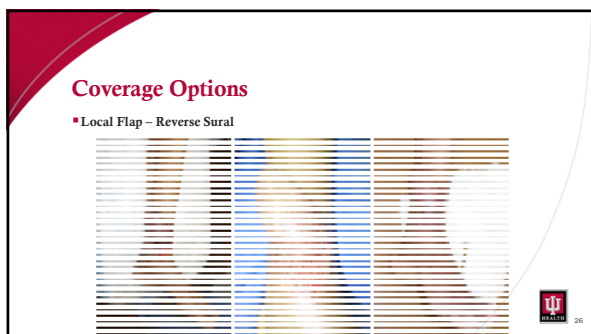
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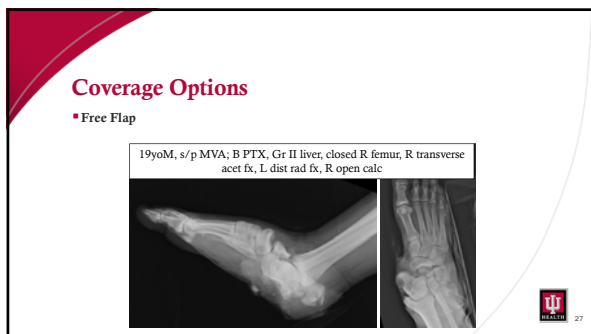
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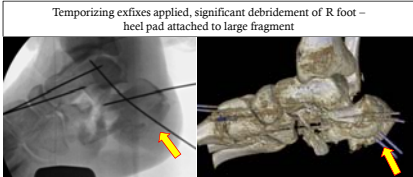
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**Coverage Options**

- Free Flap

Temporizing exfixes applied, significant debridement of R foot – heel pad attached to large fragment



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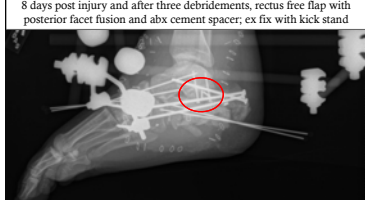
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**Coverage Options**

- Free Flap

8 days post injury and after three debridements, rectus free flap with posterior facet fusion and abx cement spacer; ex fix with kick stand



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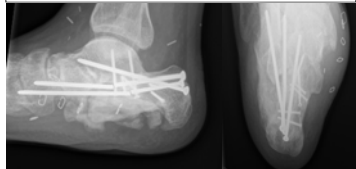
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**Coverage Options**

- Free Flap

2 years post injury; BTW (warehouse), no assistive device, no brace; VAS 1-3 (distal femoral crosslocks); PROMIS PF 46, PI 54



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