

WARNING GRAPHIC CONTENT

Complex Lower Limb Reconstruction





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Objectives

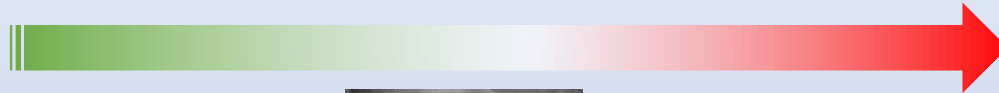
- **Open Fractures**
 - **~240/year (100% ↑ in 4 years!)**
- Mechanism / Patterns
- Treatment
 - The North Bristol Way
- Aftercare

Patterns of injury

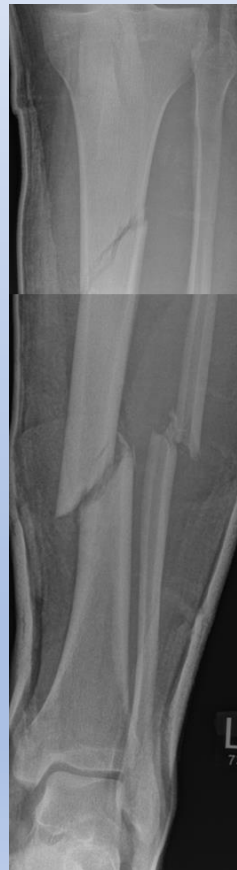
	Soft Tissue Injury		
	Simple	Complex	
Bony Injury	Simple		
	Complex		

Bony Injury

- Simple

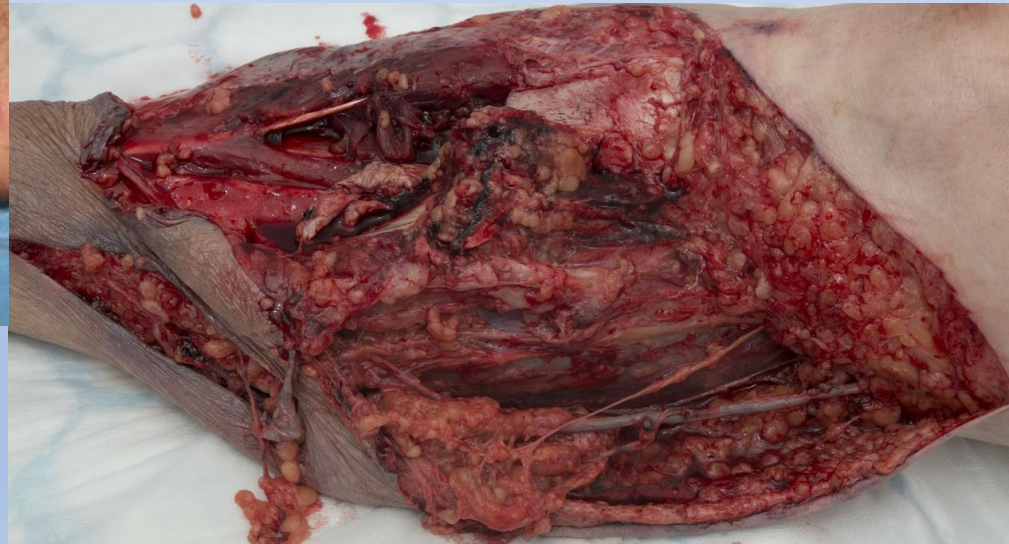


Complex



Soft Tissue Injury

- Simple  Complex



Treatment

- Initial / ED management
 - ATLS
- Surgical treatment
 - Single / multiple stage reconstruction
- Salvage options

Emergency Department

- Antibiotics – Flucloxacillin (Teic) / Gent +/- Metronidazole
- **Photograph**
- Dressing / splintage
- TRANSFER DIRECTLY TO SOUTHMEAD (All lower limbs)
 - Isolated upper limbs – consultant level referral if transfer needed
- CT Angiogram

Theatre

- 1st debridement on earliest available trauma list
 - Same day or next day – NOT OUT OF HOURS
 - Joint ortho-plastics debridement
 - Stabilisation with 3.5mm DCP or POP
 - VAC dressing
- Definitive surgery on dedicated list (x3 per week)
- Joint procedure

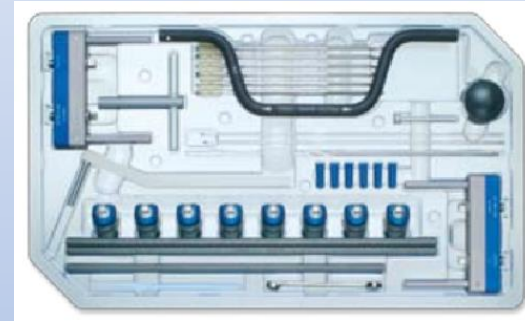
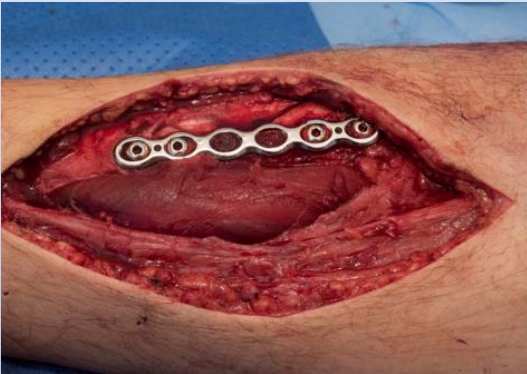
1st Operation

- Remove all dead tissue
 - Dirty Traumatic Wound → Clean Surgical Wound



1st Operation

- Stabilise the fracture



- Seal the wound



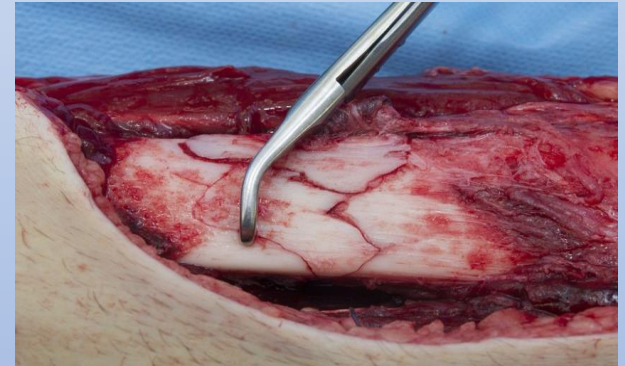
Definitive Reconstruction

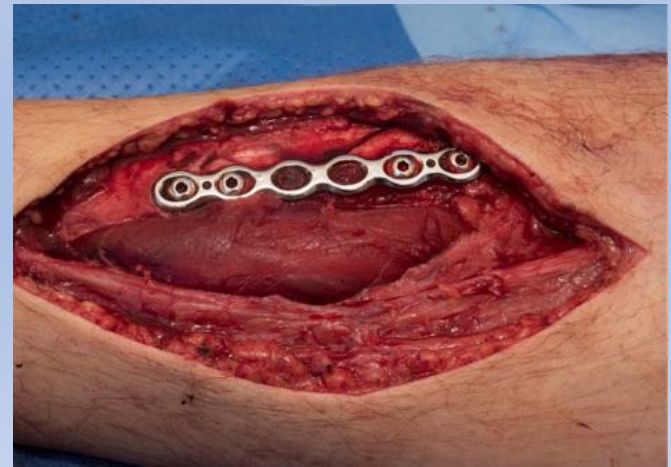
- Usually 2nd operation
 - Beware of highly contaminated injuries
- Joint procedure with ortho and plastics



Fix & Flap – **ALWAYS TOGETHER**

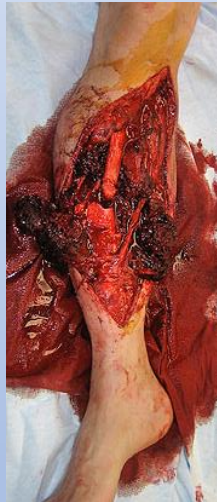
- Nail / plate fixation
- Delayed circular frames available
- Coverage with free flap
 - ALT / Gracilis / Scapula / MSAP
- Pedicled flaps in lower demand
 - Medial plantar flap





Amputation??

- Difficult decision
 - Patient / Family involvement
- Irreversible
- Early
 - Unsalvageable
- Late
 - Delayed rehab?



Aftercare

- ‘Flap Protocol’
- Full Weight Bearing ASAP
 - Significant articular fractures PWB
- Combined ortho-plastics clinic

Complex Cases

- Difficult injuries
 - Significant bone loss
 - Neuro-vascular damage
- Difficult patients
 - Not suitable for soft tissue cover
 - Not suitable for amputation

Case 1 – Run over by bus



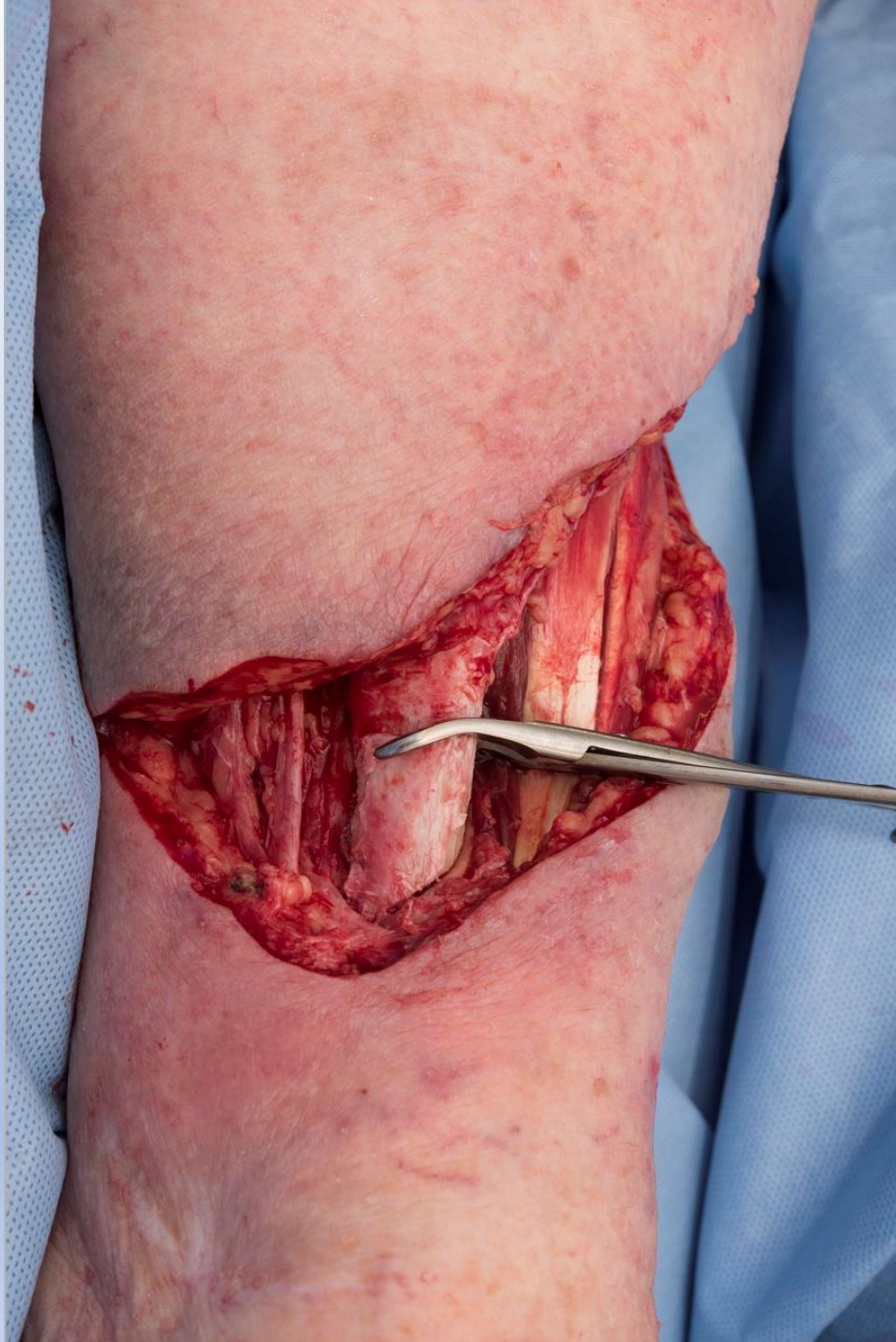
Simple bony injury, Complex soft tissue injury



Case 2 – Difficult patient

- 90yo female, previous open ankle # with chronic ulcer.
Low energy injury with open fracture through chronic venous ulceration
- Soft tissue reconstruction impossible





4.5cm tissue
defect with #
reduced

5cm bone resection



3 Months post op



Full WB, Awaiting
shoe raise

