

SKIN AND SOFT TISSUE INJURY

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WHAT IS SKIN AND SOFT TISSUE INJURY?

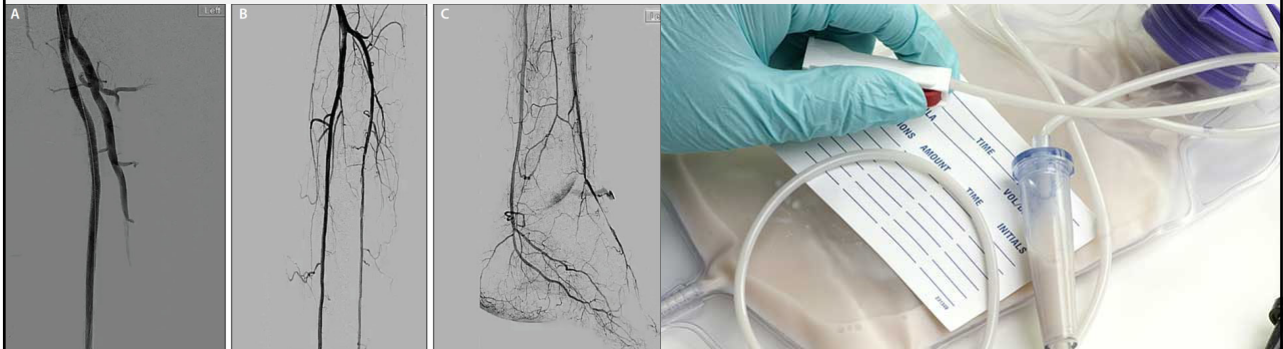
- Road rash
- Morel Lavallee
- Soft tissue defects
- Skin flaps

INITIAL THERAPY

- Clean it – irrigate – dilution is the solution to pollution
- Debride it – devitalized tissue is bacteria food
- Dress it – Moist gauze, astringent?
- Antibiotics?

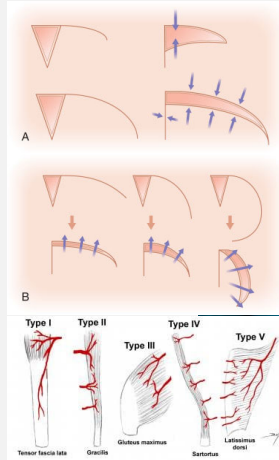
HEALING/COVERAGE CONSIDERATIONS

- Vascular studies
- Nutrition



COVERAGE

- Healing by secondary intention
- Dermal Substitutes
- Skin grafts
- Autologous skin cell suspension
- Local tissue rearrangement
- Free flaps



ROAD RASH



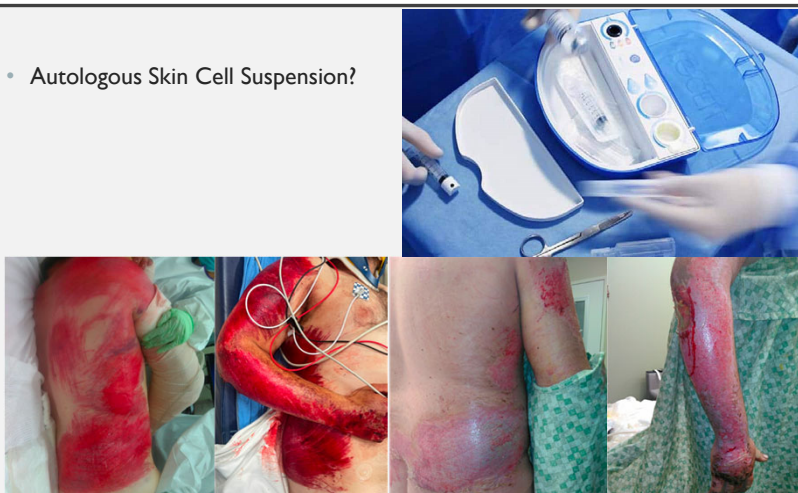
ROAD RASH

- Traditional therapy
 - Daily wound care in the hospital until:
 - Pain is controlled with home medications
 - Family, friends, or patient is able to do wound care independently
 - Dressings include
 - Xeroform dressing
 - Aquaphor adaptic
 - Non-adherent dressing

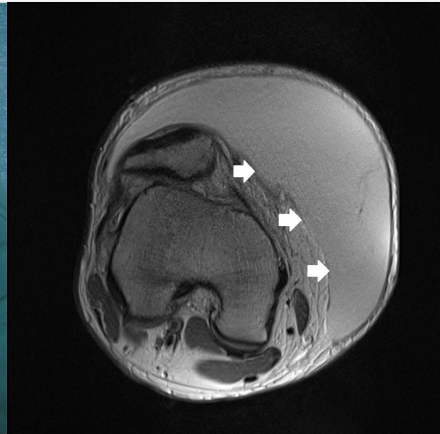
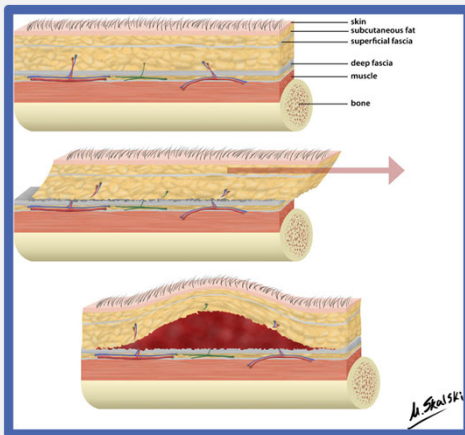


ROAD RASH

- Autologous Skin Cell Suspension?



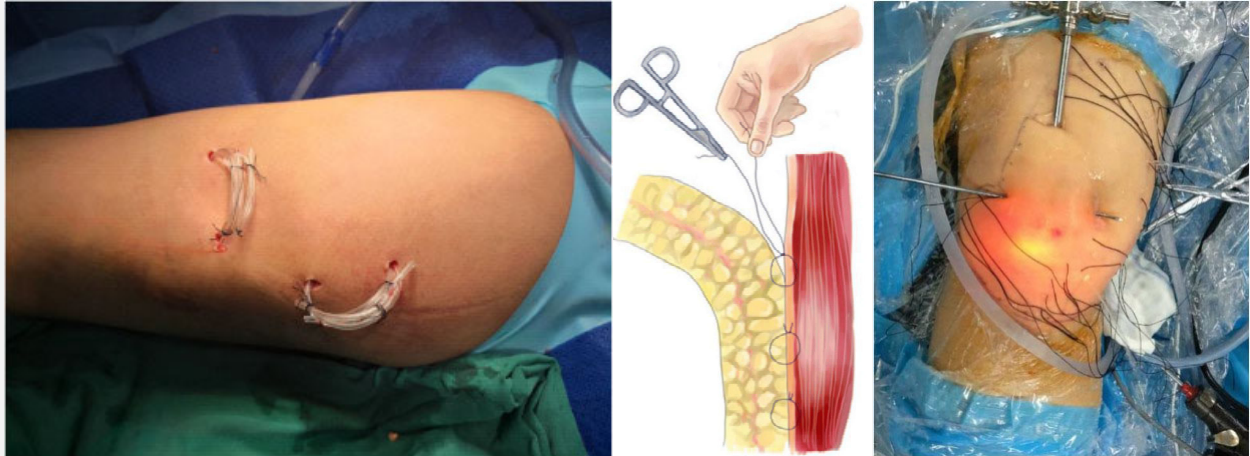
MOREL LAVELLE



MOREL LAVELLE

- Traditional therapy – no set protocol
 - If actively bleeding on imaging:
 - Interventional radiology
 - Debridement?
 - Soft tissue flap may die overlying, but may not
 - Concerns of blunt traumatic injury and bacterial seeding of hematoma

MOREL LAVELLE



MOREL LAVELLE

- Let it delineate
 - Risks:
 - Infection in hematoma – blunt trauma
 - Delaying the inevitable?
- Drain it
 - Risks:
 - Same – adding foreign body
- Excise the tissue and evacuate the hematoma
 - Risks:
 - 100% will have a wound

SOFT TISSUE DEFECTS

- Severity? Concomitant traumatic injury?

IO 1	Skin breakage from inside out (Fig 1.6-12)
IO 2	Skin breakage from outside in < 5 cm, contused edges (Fig 1.6-13)
IO 3	Skin breakage from outside in > 5 cm, increased contusion, devitalized edges (Fig 1.6-14)
IO 4	Considerable, full-thickness contusion, abrasion, extensive open degloving, skin loss (Fig 1.6-15)
IO 5	Extensive degloving (Fig 1.6-16)

Tab 1.6-4 AO soft-tissue classification: open skin lesions (IO).



SOFT TISSUE DEFECTS

- 1. Take care of other traumatic injuries first
- 2. Clean up the wound at the initial operation and then have a wound care plan
 - Negative pressure wound therapy? Dermal substitute? Future soft tissue rearrangement?
- 3. Execute your plan when the other traumatic injuries are resolved
- 4. Obtain definitive wound closure

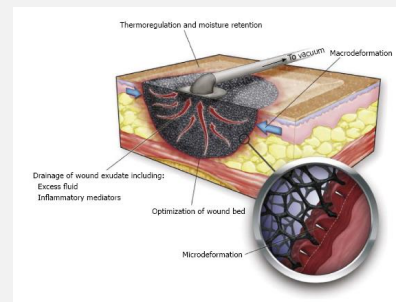
NEGATIVE PRESSURE WOUND THERAPY

- Porous sponge with plastic drape and applied negative pressure



NEGATIVE PRESSURE WOUND THERAPY

- Benefits
 - Promotes wound healing by:
 - Increasing blood flow
 - Removing healing inhibitors/effluent from the wound
 - Stimulating angiogenesis
 - Stimulating granulation tissue
 - Causing mechanical stress in the wound bed



NEGATIVE PRESSURE WOUND THERAPY

- Considerations
 - Sponge type? Black, Silver, White?



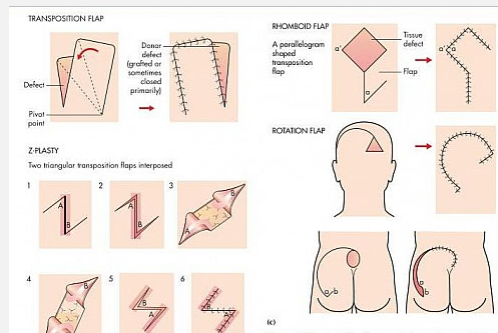
NEGATIVE PRESSURE WOUND THERAPY

- Considerations
 - Effluent?
 - High effluent wounds can lead to severe dehydration and sequelae from that
 - Often due to poor nutrition, lack of oncotic ability
 - Consider replacement of fluid output
 - Well granulated wound bed?
 - Do you even need a vac? Will the patient bleed to death?



TISSUE REARRANGEMENT

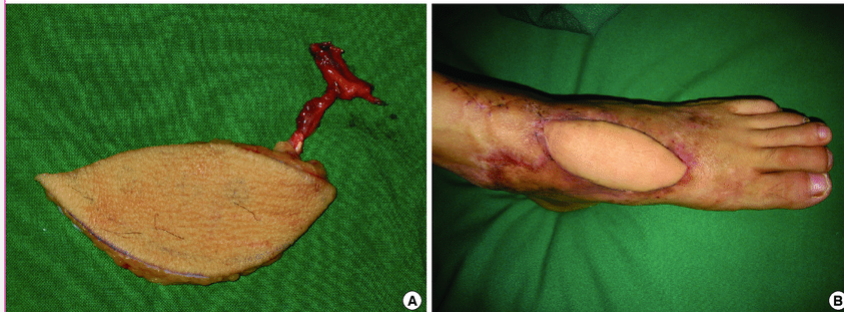
- Lots of different types – good to know they exist
- Differentiate from free flaps – does not alter main blood supply



TISSUE REARRANGEMENT

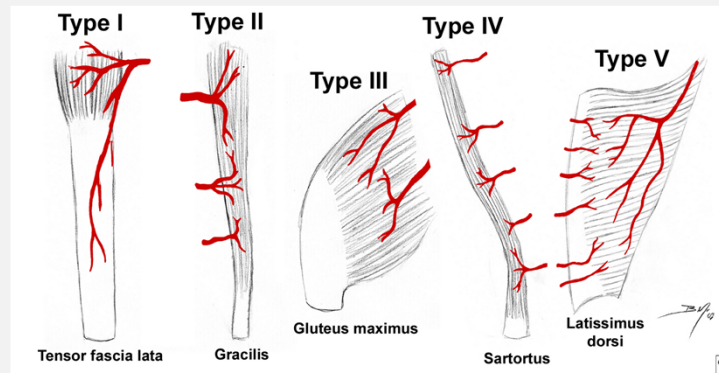
- Free flaps – what are they?

(A) Harvested free peroneal perforator flap including the main trunk of the peroneal vessels for lengthening the pedicle. (B) Postoperative photograph (2 months) showing a flap that had survived well without any complications.



TISSUE REARRANGEMENT

- Free flaps have vascular pedicles – Mathes and Nahai classification



IM/MOBILIZATION

- Immobilization is important for healing sometimes
 - Reduce mechanical shear
 - Extra layer of protection
 - Good reminder that there is something important under there
 - Grafts
 - Vacs
 - Big wounds



THANK YOU