



Patient Care Theory 2

UNIT 2, PART 7: Soft Tissue Injuries

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Learning objectives

- ❖ Identify the different soft tissue injuries
- ❖ Identify treatment principles for various soft tissue injuries
- ❖ Describe the treatment for all identified soft tissue injury types
- ❖ Identify the stages of wound healing

Soft Tissue Injuries

- ❖ As a general rule:
 - Can be extremely graphic
 - Rarely life-threatening
- ❖ Major concerns
 - Hemorrhage
 - infection

Soft Tissue Injuries

❖ Skin

- Largest organ in the body
- Commonly injured as a result of trauma
- Protects against infection
- Regulate temperature
- Contains nerves, glands, blood vessels

Soft Tissue Injuries

- ❖ “Wound” – an injury to the skin and its underlying tissues
 - Closed
 - Open
 - Single
 - Multiple

Soft Tissue Injuries

❖ Closed

- No external breaking of the skin
 - Contusion
 - Hematoma
 - Crush injury

Soft Tissue Injuries

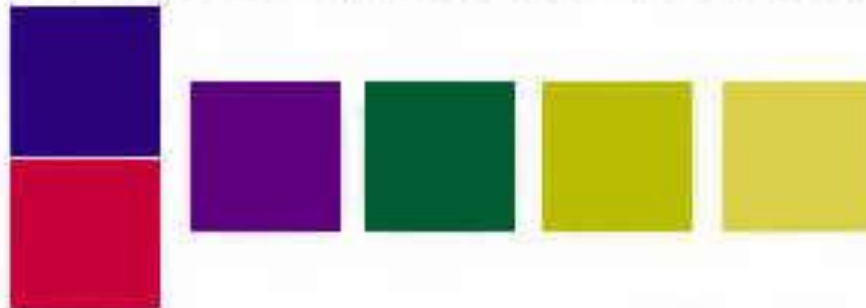
❖ Contusion

- Injury to cells and small blood vessels within the dermis
- Can cause discoloration (ecchymosis)
- Periorbital ecchymosis (racoon eyes)

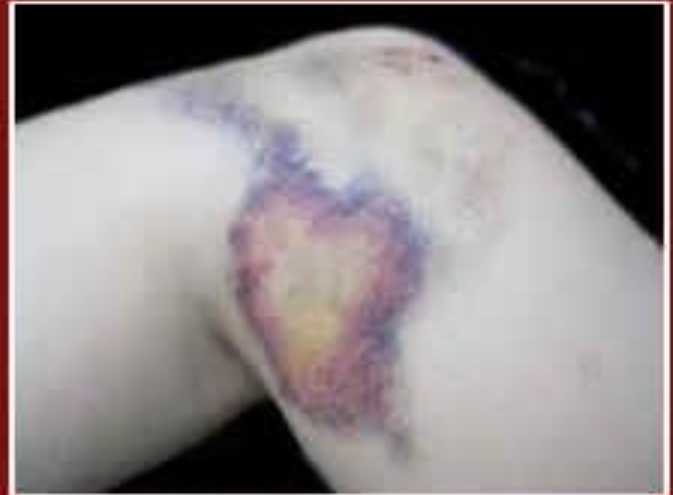


Stages of a bruise

hemoglobin → biliverdin → bilirubin



bruise → healing



Bruise Age By Color

Bruise Color	Bruise Age
Red (Swollen, Tender)	0 to 2 Days
Blue, Purple	2 to 5 Days
Green	5 to 7 Days
Yellow	7 to 10 Days
Brown	10 to 14 Days
No further evidence of Bruising	2 to 4 Weeks

Soft Tissue Injuries

❖ Hematoma

- Similar to contusion – involves a larger amount of skin damage and vessel damage
- Characterized by a large lump
- Ecchymosis common



Soft Tissue Injuries

❖ Crush Injury

- Can result in open or closed
- Severe external force is applied to the body and underlying tissues (fractures and or organ rupture may result)
- Pressure builds up in the fascial space

Soft Tissue Injuries

- ❖ Assessment – Closed soft tissue injuries
 - PPE
 - Scene safety
 - C-spine prn
 - ABCDE – interventions as required
 - Focused history and physical exam
 - RTS with high acuity/altered patient
 - Focused assessment with isolated injury
 - Include **pre and post** CSM with all extremity trauma
 - Vital signs

Soft Tissue Injuries

❖ Closed soft tissue injuries – Signs and Symptoms

- Swelling
- Pain
- Discolouration
- CSM
- ROM
- Area affected large enough for hypoperfusion?
 - Femur, body cavities
- CLAPS DTICS
- DCAP-BLS

Soft Tissue Injuries

- ❖ Closed soft tissue injuries

- Treat for shock as indicated (BP <90 mmHg systolic)
 - 20cc/kg bolus NS if IV certifies
- Splint, elevate, ice

Soft Tissue Injuries

❖ Open Soft tissue Injuries

- Break in the protective surface of the skin
- High risk of infection
- 6 types
 - Abrasion
 - Laceration
 - Avulsion
 - Amputation
 - Penetration and puncture
 - Open crush injury

Soft Tissue Injuries - Open

❖ Abrasion

- Scraping, rubbing or shearing away of the epidermis
- Blood leakage common
- Well controlled with pressure



Soft Tissue Injuries - Open

❖ Laceration

- Linear or stellate (star-like) break in the skin – varying length
- Bleed more than other soft tissue injuries
venous and/or arterial



Soft Tissue Injuries - open

❖ Avulsion

- Skin is torn away from the body
- Can Cause ++bleeding
- NEVER remove an avulsion or flap of skin
 - degloving



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Soft Tissue Injuries - Open

❖ Amputation

- Disruption in the continuity of an extremity or body part (traumatic)
 - Complete or partial
- Bleeding may be severe or minimal depending on MOI
 - Partial amputations may bleed more than complete
- If possible bring amputated part with you
 - Remove any gross contaminants with sterile water/NS
 - Wrap in moistened gauze
 - Place in plastic container/bag (sterile if possible)
 - Place container/bag on ice pack if available (avoid allowing part to freeze)

Soft Tissue Injuries - open

❖ Penetration and Puncture

- An object is pushed or driven into the soft tissue of the body



Soft Tissue Injuries - Open

❖ Penetrating -Gunshot wounds



Soft Tissue Injuries - Open

❖ Crush Injury

- Usually result of blunt trauma or crushing forces
- May not appear serious at first, but may actually be fatal
- Pinned or trapped patients
 - once freed the patient may rapidly deteriorate



Soft Tissue Injuries - Open

❖ Assessment and Management

- PPE
- Scene safety
- ABCDE – many of these have underlying trauma
- Control any hemorrhage
- Dress wounds PRN
- Assess pre and post CSM on all extremity trauma
- Focused assessment of injury AFTER any life-threatening interventions have been made

Soft Tissue Injuries – Special Considerations

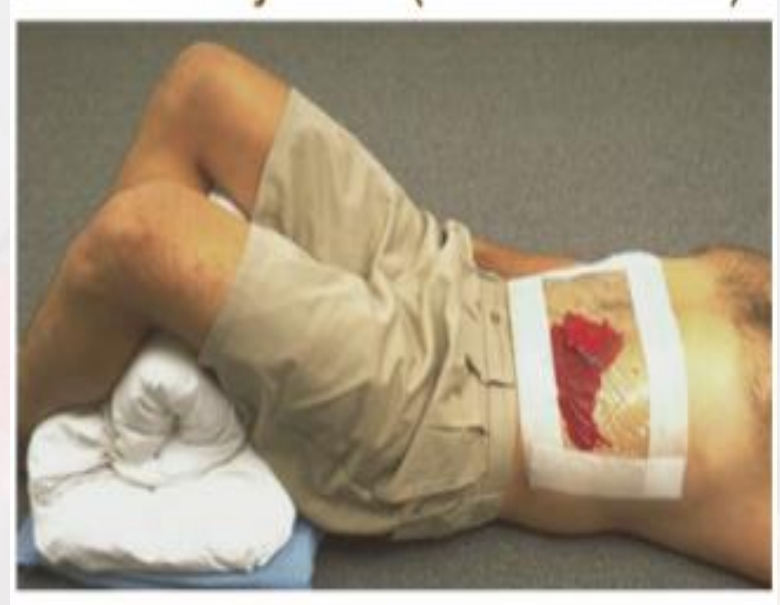
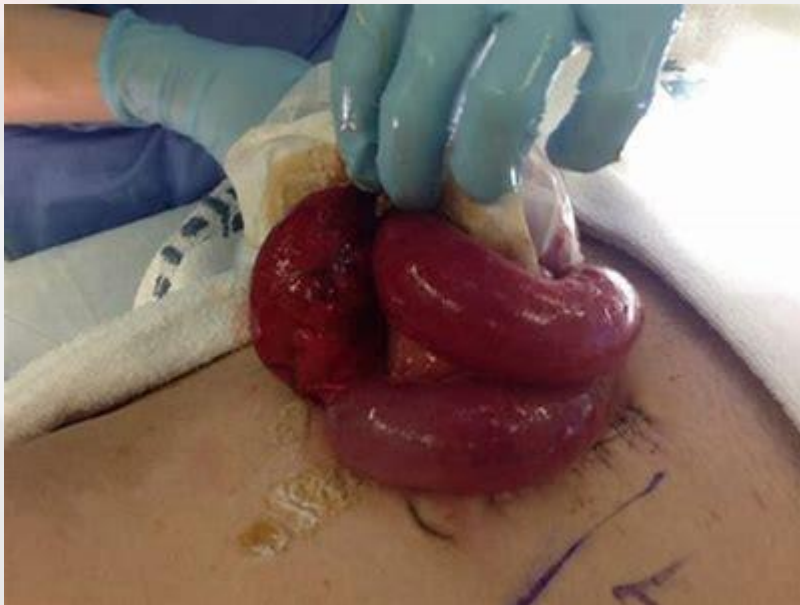
❖ Chest Injuries

- Penetrating chest trauma may lead to pneumo/hemothorax
- Apply occlusive dressing
- ACP – needle thoracostomy



Soft Tissue Injuries – Special Considerations

- ❖ Abdominal evisceration
 - Open injury of the abdominal cavity allows for the protrusion of abdominal organs
 - Cover with moist dressing then occlusive



Soft Tissue Injuries – Special Considerations

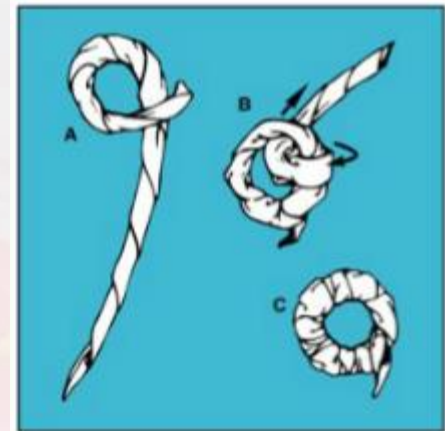
- ❖ Impaled objects

- Leave in place **UNLESS** it is interfering with the airway



Soft Tissue Injuries – Special Considerations

- ❖ Impaled object
 - Expose area around impalement
 - Stabilize and secure in place
 - A triangular “doughnut” can be used



Soft Tissue Injuries – Special Considerations

❖ Arterial Bleeding – control in the following order

- Pressure (digital pressure)
 - If this works you can apply dressings to maintain pressure at the site
- Tourniquet (extremities)
 - Second tourniquet may be applied/tried
- Hemostatic dressing if tourniquet inadequate
 - Apply to uncontrolled torso, groin, axillary injuries if pressure ineffective
 - DO NOT apply to ***open cranial wounds***
 - Maintain pressure with the use of pressure dressings

Soft Tissue Injuries – Special Considerations

- ❖ Uncontrollable bleeding
 - Hemostatic dressing/packing
 - If the wound is in any junction or extremity, it should be packed to help control the pressure and the bleed.
 - Do not insert fingers into the hollow spaces of the head/chest/abdomen
 - Trauma/pressure dressing
 - venous bleeds/non arterial bleeds

Soft Tissue Injuries – Special Considerations

- ❖ If eyes involved – cover both eyes to reduce the movement and risk further injury to affected eye



Soft Tissue Injuries – Special Considerations

❖ Bites

- Usually a combination of penetrating and crush injuries – also avulsion or stellate laceration as person tries to pull free
- Risk of various infections ++



Bandaging

❖ Head and Eyes



Bandaging

❖ Head and Ears



Bandaging

❖ Head and/or Cheeks



Bandaging

❖ Hands/wrists



Bandaging

❖ Shoulder



Bandaging

❖ Foot or ankle



Bandaging

- ❖ Arm sling – using triangular





QUESTIONS?