Chapter 26
Soft Tissue Injuries
Principles of Bandaging

Introduction
- Soft-tissue injuries are common.
- Do not become ______________________ by dramatic open wounds.
- Soft tissues of the body can be injured through a variety of mechanisms:
  - Blunt injury
  - Penetrating injury
  - Barotrauma
  - Burns

Functions of the Skin
- Protection of the body
  - Water tight
  - Not penetrable by bacteria
- Regulation of body temperature
  - Hot environment: ______________________ evaporates
  - Cold environment: vessels constrict
- Sensation

Anatomy and Physiology of the Skin
- In all instances, you must:
  - Control bleeding.
  - Prevent further ______________________ to decrease the risk of infection.
  - Protect wounds from further damage
- Skin varies in thickness.
  - Thinner in the very young and very old
– Thinner on the eyelids, lips, and ears than on the scalp, back, soles of feet

6  □  Anatomy and Physiology of the Skin
   ● Skin covers all the external surfaces of the body.
   ● Bodily openings are lined with mucous membranes.
   ● Skin serves many functions:
      – Barrier against infection
      – Helps maintain fluid balance
      – Helps body _________________ temperature
      – Sensory organ

7  □  Anatomy and Physiology of the Skin
   ● Any break in the skin may allow _________________ to enter
     and increases the potential for:
      – Infection
      – Fluid loss
      – Loss of temperature control

8  □  Layers of the Skin (1 of 2)
    Epidermis:
    ● ____________________ layer consists of dead cells being rubbed off and replaced
    ● Deeper part contains cells with pigmentation

9  □  Layers of the Skin (2 of 2)
    Dermis:
    ● ____________________ layer
    ● Contains special structures of the skin
      - sweat glands
      - hair follicles
      - blood vessels
      - specialized nerve endings
    Subcutaneous Tissue: mostly fat

10 □  Anatomy of the Skin

11 □  Soft-Tissue Injuries
○ Closed injuries
  – Soft-tissue damage ________________ the skin
○ Open injuries
  – Break in the surface of the skin
○ Burns
  – Soft tissue receives more energy than it can absorb

12 Pathophysiology of Closed and Open Injuries

○ Pathophysiology
  – Cessation of bleeding is the primary concern.
  – The next wound healing stage ________________.
  – A new layer of cells is then moved into the damaged area.
  – New blood vessels form.
  – Collagen provides stability to the damaged tissue and joins wound borders.

13 Closed Soft Tissue Injuries

14 Contusion

○ A bruise
○ Results from blunt force striking the body
○ Bleeding underneath the skin
○ Ecchymosis: ________________ discoloration

15 Hematoma

○ Pool of blood that has collected in the body
○ Occurs when a ________________ blood vessel bleeds rapidly

16 Crushing Injury

○ Occurs when a great amount of force is applied to the body for a long period of time
○ Crush syndrome: when a body is trapped for more than ________________ hours
○ Can lead to renal failure and death

17 Compartment Syndrome

○ Results from the swelling that occurs whenever tissues are injured.
○ Injured cells leak ________________ into the spaces between cells
○ Pressure compress the tissues
Pressure compress the tissues

- Hallmark sign is pain out of proportion for the injury

18  Open Soft Tissue Injuries

19  Abrasions
- Wound of the superficial layer of the skin
- Caused by _________________

20  Laceration and Incision
- Laceration: a jagged cut caused by a sharp object or a blunt force that tears the tissues
- Incision: a sharp _________________ cut

21  Avulsion
- Separation of various layers of soft tissues so that they become completely _________________ or hang by a flap

22  Amputation
- An injury in which part of the body is completely severed
- Can include extremities, _________________, scalp, ears, penis, nose, and lips

23  Penetrating Wound
- Results from a sharp pointed object
- Can damage structures _________________ within the body
- Can lead to infection

24  Gunshot Wounds
- Gunshot wounds have unique characteristics
- Normally produce _________________ entrance and large exit wounds due to cavitation

25  Crushing Open Wound
- May involve damaged internal organs or broken bones

26  Care for Soft Tissue Injuries
- Use proper BSI precautions.
- Administer oxygen if needed.
- Treatment priority is ABCs—including _________________
Treatment priority is ABCs
— including ______________________ bleeding.
• Treat/prevent shock

27 □ Care for Closed Injuries
RICES
• Rest—keep patient quiet and comfortable as possible.
• I______________________ slows bleeding.
• Compression over an injury slows bleeding.
• Elevation above the level of the heart reduces swelling.
• Splinting decreases bleeding and reduces pain.

28 □ Care for Open Injuries (1 of 2)
• Apply dry, ______________________ dressing over entire wound.
• Maintain pressure and secure dressing with a roller bandage.

29 □ Care for Open Injuries (2 of 2)
• Leave original dressing in ______________________ if bleeding continues.
• Apply a second dressing on top of first and secure.
• Splint the extremity.
• Apply tourniquet if bleeding continues

30 □ Abdominal Wounds
• An open wound in the abdomen may expose organs.
• An organ protruding through the abdomen is called an ______________________.

31 □ Abdominal Wound Management
• Do not touch exposed organs.
• Cover organs with a ______________________ sterile dressing.
• Transport immediately.

32 □ Impaled Objects (1 of 3)
• Do not attempt to move or ______________________ the object unless:
  – Impaled in cheek or mouth causing airway obstruction
  – Object in chest that interferes with CPR
• Objects may require shortening to accommodate transport
33 □ Impaled Objects (2 of 3)
● Do not attempt to move or remove object.

34 □ Impaled Objects (3 of 3)
● Control bleeding and stabilize object.
● Tape a ____________________ item over object to prevent movement.
● Transport to hospital carefully.

35 □ Amputations
● Immobilize a partial amputation with bulky dressings and a splint.
● Wrap a complete amputation in a dry sterile dressing and place in a plastic bag.
● Put the bag in a cool container filled with ____________________.
● Transport severed part with patient.

36 □ Neck Injuries (1 of 2)
● An open neck injury can be life ____________________.
● Air can get into the veins and cause an air embolism.

37 □ Neck Injuries (2 of 2)
● Cover the wound with an ____________________ dressing.
● Apply manual pressure.
● Secure a pressure dressing loosely over the neck and firmly through the opposite axilla.

38 □ Animal Bites
● Small-animal bites
  -- A small animal’s mouth is heavily contaminated with virulent ____________________ a.
  -- Bites should be evaluated by a physician.
● A major concern is the spread of rabies.
  -- Acute, potentially fatal viral infection of the central nervous system

39 □ Human Bites
● Human bites
  -- The human mouth contains an exceptionally wide range of bacteria and viruses.
–Regard any human bite that has penetrated the skin as a very ________________ injury.
–Can result in a serious, spreading infection

40 Principles of Bandaging

Dressings and Bandages

● Functions
  – Stop bleeding
  – ________________ wound
  – Prevent contamination

● Dressings
  – Universal dressings
  – 4 X 4 gauze pads
  – Adhesive type dressings
  – Occlusive dressings

41 Bandaging

Bandages:

● Purpose
  – to hold a dressing in place
  – applies or continues pressure to wound
  – should not interfere with circulation

42 Bandaging

Types of Bandages

● Self adherent
● Gauze rolls
● ________________ bandages (cravats)
● Adhesive tape
● Air splint

43 Bandaging

● Adhesive tape holds small dressings in place and helps to secure larger dressings.
● Do not use elastic ________________ to secure dressings.
● If a wound continues to bleed despite the use of direct pressure,
quickly proceed to the use of a tourniquet.

44 **Applying a Pressure Bandage**

1. Cover wound with a bulky sterile dressing.
2. Apply hand pressure over wound until bleeding stops
3. Apply firm ________________ bandage (Kerlix)
4. Check for bleeding and circulation
5. Apply additional dressings and bandages as needed (do not remove soaked ones)
6. Communicate with patient.

45 **Principles of Bandaging (1 of 2)**

There are no hard fast rules for bandaging wounds as long as the following conditions are met:

* Bleeding is controlled
* The dressing is opened carefully and handled in a aseptic (sterile) technique
* Dressings and bandages are snugged but does not affect the ________________ supply to affected parts.

46 **Principles of Bandaging (2 of 2)**

* The bandage is securely tied so that it will not move.
* No loose ends that could get caught while moving the patient.
* The bandages must be checked and ________________ for bleeding or impeding of circulation.