CHAPTER 27

Soft-Tissue Injuries

Soft Tissue Anatomy & Physiology

Open and Closed Wounds
**Key Term**

**Closed Wound**

Internal injury with no open pathway from the outside to the injured site

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**Types of Closed Wounds**

- Contusion
- Hematoma
- Crush Injury

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**Closed Wound – Contusion**
Emergency Care of Closed Wounds

- Take appropriate BSI precautions.
- Manage airway; apply oxygen.
- If shock is suspected, treat it.
- Splint painful, swollen, or deformed extremities.
- Transport.

Key Term

Open Wound

An injury in which the skin is interrupted, or broken, exposing the tissue underneath

Types of Open Wounds

- Abrasions & Lacerations
- Avulsions
- Punctures
- Amputation
- Crush
Crush injuries may cause both open and closed wounds.

Emergency Care of Open Wounds

- Take BSI precautions.
- Manage airway; apply oxygen.
- Expose the wound.
- Control bleeding.

Continued...
Emergency Care of Open Wounds

- Bandage & prevent contamination.
- Keep patient calm, quiet.
- Treat for shock; transport; reevaluate.

Specific Injuries

- Amputations
- Neck Wounds
- Impaled Objects
- Chest Wounds
- Abdominal Wounds

Amputations

- Monitor airway; administer oxygen.
- Control bleeding.
- Do not complete partial amputations.
- Treat for shock.

Continued…
Amputations

- Wrap the amputated part in sterile dressing.
- Wrap part in plastic. Keep cool.
- Transport with patient if possible.

Open Neck Wound

- May cause air embolism.
- Cover with occlusive dressing.
- Do not compress both carotids at same time.

Cover wound with gloved hand.
Place occlusive dressing over wound.

Place dressing over occlusive dressing.

Bandage. Do not compress both carotids or restrict breathing.
Impaled Object

Do not remove object unless:
- Through the cheek
- Interferes with chest compression
- Interferes with transport (relative)

Emergency Care of an Impaled Object

- Manually stabilize object.
- Expose area.
- Control bleeding.
- Stabilize with bulky dressing.
- Bandage.
Impaled Object – Cheek

Impaled Object in the Eye

Signs of Chest Wounds

- Wound or trauma to the chest.
- Sucking sound.
- Patient may be short of breath or gasping for air.
Emergency Care of Chest Wounds

- Manage airway.
- Expose area.
- If open wound, apply occlusive dressing.
- Administer oxygen.
- Place in position of comfort (if no spine injury suspected).

Occlusive Dressing
Use bulky dressings and bandage to stabilize.

Closed Abdominal Wounds

- Monitor airway; administer oxygen.
- Be alert for vomiting.
- Flexing patient’s knees may reduce pain.
- Treat for shock.
- Transport.

Abdominal Evisceration (Open Abdominal Wounds)

- Monitor airway; administer oxygen.
- Do not touch or try to replace exposed organs.
- Cover exposed organs & wound with dressing moistened with sterile saline.

Continued...
Abdominal Evisceration (Open Abdominal Wounds)

- Treat for shock; maintain warmth.
- Transport.

Expose the wound.
Cover with sterile dressing.

Burns

Conditions That May Affect Burn Severity

- Source
- Depth
- Extent and regions burned
- Age of patient
- Preexisting medical conditions
Sources of Burns

- Thermal
- Chemical
- Electrical
- Light
- Radiation

Layers of the Skin

Superficial Burn
(1st Degree Burn)

- Reddened skin
- Pain at burn site
- Involves only epidermis
Partial-Thickness Burn
(2nd Degree Burn)
- Intense pain
- White to red skin
- Blisters
- Involves epidermis and dermis

Full-Thickness Burn
(3rd Degree Burn)
- Dry, leathery skin (white, dark brown, or charred)
- Loss of sensation (little pain)
- All dermal layers may be involved

Classifying Burns by Depth
Classifying Burns by Depth

- Full-Thickness
- Partial-Thickness
- Superficial

Body Surface Area

A burn equivalent to the size of the patient’s hand is equal to 1% body surface area (BSA).

Rule of Nines – Adult
Rule of Nines—Child and Infant

Burns with respiratory injury
- Full-thickness burns > 10% BSA
- Partial-thickness burns > 30% BSA
- Burns with painful, swollen, or deformed extremity

Determining Burn Severity: Critical Burns
- Moderate burns in young or elderly
- Burns to face, hands, or feet
- Burns to genitalia
- Burns encircling any body part (arm, chest, etc.)
Determining Burn Severity:
Moderate Burns
- Full-thickness burns 2-10% BSA
- Superficial burns > 50% BSA

Determining Burn Severity:
Minor Burns
- Full-thickness burns < 2% BSA
- Partial-thickness burns < 15% BSA

Burns in Infants and Children
- Greater surface area relative to total size
- Greater fluid and heat loss
- Higher risk for shock
- May be a result of abuse
**Burn Severity**

*Infants and Children*

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
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<tbody>
<tr>
<td>Critical</td>
<td>Any full-thickness burns&lt;br&gt;Partial thickness &gt;20% BSA or involving hands, feet, face, genitalia</td>
</tr>
<tr>
<td>Moderate</td>
<td>Partial-thickness, 10-20% BSA</td>
</tr>
<tr>
<td>Minor</td>
<td>Partial-thickness, &lt;10% BSA</td>
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**Emergency Care of Burns**

- Body substance isolation, protective gear.
- Stop the burning process with water or saline.
- Remove smoldering clothing and jewelry.
- Prevent further contamination.

**Emergency Care of Burns**

- Monitor the airway for closure.
- Cover burn area with dry, sterile dressing.
- Do not use ointments/lotions.
- Do not break blisters.
- Transport following local protocols.
Chemical Burns
- Protect yourself from exposure.
- Wear appropriate protective gear.
- Activate Hazmat team if necessary.

Emergency Care of Chemical Burns
- Brush dry powders off the skin before flushing.
- Flush with large amounts of water.
- Do not contaminate uninjured areas while flushing.
- Continue flushing during transport.

Electrical Burns
- Do not touch a patient who is in contact with an electrical source.
- Contact trained personnel for rescue.
Emergency Care of Electrical Burns

- Administer oxygen.
- Watch for cardiac or respiratory arrest.
- Internal injuries often more severe than external ones.
- Treat soft-tissue injuries.

Electrical burns may have entry and exit wounds.

Dressings and Bandages
Purpose
- Stop the bleeding
- Protect wound from further damage
- Prevent contamination and infection

Dressings
- Sterile, directly cover wound
- Gauze pads
- Universal (trauma dressing)
- Occlusive

Bandages
- Hold dressings in place
- Roller gauze
- Triangular bandage
- Tape, air splints
Bandaging & Dressing Technique

- Use BSI precautions.
- Expose area.
- Cover wound; control bleeding.
- Bandage securely.
- Reevaluate.
Review Questions

1. Distinguish between open and closed wounds
2. Describe the emergency care for:
   - Open chest wound
   - Impaled object
   - Amputation

3. List and differentiate between the 3 depths of burns.
4. Describe the emergency care for chemical, electrical burns.
5. What is the difference between a dressing and a bandage?

STREET SCENES

What is your general impression of the patient?

What priority would you assign to her?
What interventions are appropriate at this time?
Would you change the priority of transport of this patient based on what you now know? Why or why not?

Sample Documentation