Bleeding and Soft Tissue Trauma

Objectives

1. Define key terms introduced in this chapter.
2. Explain the importance of recognizing and providing emergency medical care to patients with soft-tissue injuries to control bleeding, prevent or treat shock, and to prevent contamination of wounds.
3. Recognize the severity and type of external bleeding (slides 12-15).
4. Describe methods of controlling external bleeding (slides 16-26).
5. Describe the assessment-based approach to external bleeding, including emergency medical care (slides 27-32).

6. Explain why bleeding from the nose, ears, or mouth is of special concern and describe the appropriate care for bleeding from the nose, ears, or mouth (slide 34).
7. Recognize indications of the severity of internal bleeding and describe the assessment-based approach to internal bleeding, including medical care to maintain perfusion and treat for shock (slides 36-43).
8. Explain factors that may increase bleeding (slides 44-45).
9. Define hemorrhagic shock and describe the assessment-based approach to hemorrhagic shock, including emergency medical care (slides 46-57).
Objectives

10. List types of closed soft tissue injuries and describe the assessment-based approach to closed soft tissue injuries, including emergency medical care (slides 64-72).

11. List types of open soft tissue injuries and describe the assessment-based approach to open soft tissue injuries, including emergency medical care (slides 73-94).

12. Explain special considerations and appropriate care for chest injuries, abdominal injuries, impaled objects, amputations, and large neck injuries (slides 95-100).

13. Describe various types of dressings and bandages, including the purpose and methods of applying pressure dressings, and discuss general principles of dressing and bandaging (slides 101-109).

Multimedia Directory

Slide 26 Some Ways to Control Bleeding Video
Slide 54 Shock Video
Slide 88 Decubitus Ulcers Video

Topics

- External Bleeding
- Internal Bleeding
- Factors That May Increase Bleeding
- Hemorrhagic Shock
- Soft-Tissue Trauma
- Closed Soft-Tissue Injuries
- Open Soft-Tissue Injuries
- Dressings and Bandages
CASE STUDY

Dispatch

Respond to Riverside High School at 1434 River Street for a report of a stabbing. Police are on scene and report that patient is stabbed in abdomen and bleeding. The suspect is in custody.

EMS Unit 101

Time out 1645

Upon Arrival

- Scene is safe
- Young male with large penetrating wound to upper left quadrant of abdomen
- Profuse bleeding; no visible weapon near patient
How would you proceed to assess and care for this patient?

External Bleeding

Severity
• Several variables
  – Amount of loss
  – Rate of loss
  – Other injuries
  – Preexisting medical problems
  – Age
• Severity of bleeding dependent on patient’s size

Types of Bleeding

<table>
<thead>
<tr>
<th>ARTERIES</th>
<th>VEINS</th>
<th>CAPILLARIES</th>
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</thead>
<tbody>
<tr>
<td>Sputtering blood.</td>
<td>Steady, slow flow.</td>
<td>Slow, even flow.</td>
</tr>
<tr>
<td>Pulsating flow.</td>
<td>Dark red color.</td>
<td>Bright red color.</td>
</tr>
</tbody>
</table>
Methods of Controlling External Bleeding

Direct Pressure

• First method
• Technique covered
• Impaled objects

Methods of Controlling External Bleeding

Tourniquets
Tourniquets

• Next step after direct pressure
• Guidelines for placement

Methods of Controlling External Bleeding

Elevation

• After direct pressure and tourniquet
• Never use alone or with a fracture
Methods of Controlling External Bleeding

Splints

• May assist with control of bleeding
• Only if stable with no life threats

Topical Hemostatic Agents
Topical Hemostatic Agents

- Function
- Hemostatic dressings
- Hemostatic agents

Some Ways to Control Bleeding

Click here to view a video on the topic of ways to control bleeding.
Return to Directory

Assessment-Based Approach: External Bleeding

Scene Size-Up, Primary Assessment, and Rapid Secondary Assessment

Back to Objectives
Scene Size-up, Primary Assessment, and Rapid Secondary Assessment

- Standard Precautions
- Scene safety
- General impression
- Control significant bleeding
- ABCs
- Apply O₂
- Rapid secondary assessment
- Obtain vital signs

Assessment-Based Approach: External Bleeding

Emergency Medical Care

- Take Standard Precautions
- Apply direct pressure
- Apply tourniquet, if necessary
- Treat for shock
- Immobilize injured extremities
Assessment-Based Approach: External Bleeding

Reassessment

- Monitor bleeding
- Primary assessment
- Vital signs every five minutes, if unstable
- Serial vital signs

Bleeding from the Nose, Ears, or Mouth
Possible causes
- Epistaxis

Internal Bleeding

Severity
Factors on severity
• Sources
• Hematoma

Assessment-Based Approach: Internal Bleeding

Scene Size-Up and Primary Assessment

Scene Size-Up and Primary Assessment
Assessment-Based Approach: Internal Bleeding

Secondary Assessment

Signs and symptoms
- Internal bleeding
- Hemorrhagic shock

Emergency Medical Care and Reassessment
Emergency Medical Care

- Standard Precautions
- ABCs
- Administer O₂
- Control external bleeding
- Immediately transport
- Treat for shock
- Reassess

Factors That May Increase Bleeding

- Movement
- Low body temperature
- Medications
- Intravenous fluids
- Removal of dressings and bandages
Scene Size-Up and Primary Assessment

- Mechanism of injury
- Scene safety
- Mental status
- ABCs
- Administer O₂

Assessment-Based Approach: Hemorrhagic Shock

Secondary Assessment

- Rapid secondary assessment
- Signs and symptoms of shock
Assessment-Based Approach: Hemorrhagic Shock

Emergency Medical Care

- Standard Precautions
- ABCs
- Administer O₂
- External bleeding
- Supine position
- Splint injuries
- Treat for shock
- Transport

Bleeding Control/Shock Management

Click here to view a video with information about bleeding control and shock management.

Return to Directory
Assessment-Based Approach: Hemorrhagic Shock

Remainder of the Assessment

Pneumatic Antishock Garment (PASG)

Remainder of the Assessment

Reassess
- Mental status
- Vital signs
Pneumatic Anti-shock Garment (PASG)

• Indications
• Contraindications
• Do not deflate

Hemophilia

• Congenital disease
• Prevents normal clotting mechanisms
• Transport immediately
Soft-Tissue Trauma

The Skin

THE SKIN

- Epidermis
- Dermis
- Subcutaneous fatty tissue
- Hair shaft
- Nerve fibers
- Sweat gland
- Sebaceous gland
- Nerve ending
- Hair root
- Pili
- Follicle
- Sweat pore
- Arrector pili muscle
- Deep fascia
- Fatty tissue
- Muscle
Closed Soft-Tissue Injuries

Contusions, Hematomas, and Crush Injuries

• Contusion
• Hematoma
• Crush injury
Assessment-Based Approach: Closed Soft-Tissue Injuries

Scene Size-Up and Primary Assessment

- Mechanism of injury
- Standard Precautions
- Scene safety
- General impression
- In-line stabilization of spine
- Mental status
- ABCs
- Treat for shock
- Administer O₂ if needed

Secondary Assessment
Secondary Assessment

• Check for evidence of trauma
• Vital signs
• History
• Signs and symptoms

Assessment-Based Approach: Closed Soft-Tissue Injuries

Emergency Medical Care

Emergency Medical Care and Reassessment

• Standard Precautions
• ABCs
• Treat for shock
• Splint suspected fractures
Abrasions

• Causes
• Presentation
• “Road rash”
• Infection
Lacerations

- Linear
- Stellate

Causes

Healing ability

Avulsions
Amputations

- Definition
- Severe bleeding
- Healing
- Causes

- Cause
- Potential for bleeding
Penetrations/Punctures

- Cause
- Severity
- Gunshots
- Stab wounds

- Bites
  - Complications
  - Severity
  - Emergency medical care
- Clamping injury
  - Cause
  - Complications
Crush Injuries

- Severity
- Presentation

Other Soft-Tissue Injuries
Decubitus Ulcers

Click here to view a video with information about decubitus ulcers.

Return to Directory

Assessment-Based Approach: Open Soft-Tissue Injuries

Scene Size-Up and Primary Assessment

• Scene safety
• Standard Precautions
• Spine stabilization
• ABCs
• Administer O₂
• Control major bleeding
Assessment-Based Approach: Open Soft-Tissue Injuries

Secondary Assessment

- Baseline vital signs
- History
- Signs and symptoms

Emergency Medical Care and Reassessment
Emergency Medical Care

- Standard Precautions
- ABCs
- Expose wound
- Control bleeding
- Prevent contamination
- Dress wound
- Keep patient calm
- Treat for shock
- Transport
- Reassessment

Assessment-Based Approach: Open Soft-Tissue Injuries

Special Considerations

Chest Injuries

- Occlusive dressing
- If no spine injury, position of comfort
Abdominal Injuries

- Evisceration
- Do not replace organs
- Cover organs
- Flex patient’s hips and knees if no spine injuries

Impaled Objects

- Only remove if obstructing air flow
- Manually secure
- Expose area
- Control bleeding
- Stabilize object

Amputations

1. Wrap completely in sterile dressings. Place in plastic bag and seal shut.
2. Place sealed bag in a cooler or other suitable container to keep it cool.
Large Open Neck Injuries

- Place gloved hand over wound
- Apply occlusive dressing
- Cover with regular dressing
- Apply pressure to control bleeding
- Apply pressure dressing
- Provide spine immobilization

Dressings and Bandages

Dressings

Back to Objectives
• Sterile
• Common types

Bandages

• Secure bandages
• Nonsterile
• Common types
Pressure Dressings

- Cover with sterile gauze
- Apply direct pressure
- Bandage firmly

General Principles of Dressing and Bandaging
• Use adaptability and creativity
• Remove jewelry
• Do not bandage too loosely
• Apply tourniquet if bleeding is not controlled with direct pressure

CASE STUDY

Follow-Up

Primary Assessment
• Patient unresponsive to verbal stimuli; grimaces with painful stimuli
• RR: 34; BVM started at 12 per minute
• No radial pulse present; carotid pulse: 120 bpm
Primary Assessment

- Pack wound with sterile dressings and tape in place
- Do not take spine precautions

Secondary Assessment

- Abdomen is rigid to palpation
- BP: 72/56 mmHg; P: 134; RR: 12; skin pale, cool, and clammy
- Rapid transport

Treatment and Reassessment

- Short transport
- Give report to trauma team
- Write report
- Decontaminate ambulance
- See on television that patient died in surgery
- Splenic artery was lacerated, causing patient to bleed to death
Critical Thinking Scenario

- 52-year-old male victim of a stabbing, reported as a domestic incident
- Upon arrival, police direct you inside where you find the patient in the kitchen moaning

Rapid assessment:
- Knife impaled in the right anterior chest two inches inferior to the clavicle midclavicular
- A large, gaping laceration to the left side of his neck with steady blood flow

Critical Thinking Scenario

Vital signs:
- Carotid pulse is 132 bpm but the radial pulse is absent
- RR: 46 per minute and severely shallow
- Skin is extremely pale, cool, and clammy

Critical Thinking Questions

1. What immediate emergency care would you provide for the patient?
2. How would you manage the wound to the neck?
3. What complications may be associated with the neck wound?
4. How would you manage the knife impaled in the chest?
Reinforce and Review

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