

Names: _____

Chapter 22 – Bleeding Presentation Notes

Cognitive Objectives

- 5-1.1 List the structure and function of the circulatory system.
- 5-1.2 Differentiate between arterial, venous, and capillary bleeding.
- 5-1.3 State methods of emergency medical care of external bleeding.
- 5-1.4 Establish the relationship between body substance isolation and bleeding.
- 5-1.5 Establish the relationship between airway management and the trauma patient.
- 5-1.6 Establish the relationship between mechanism of injury and internal bleeding.
- 5-1.7 List the signs of internal bleeding.
- 5-1.8 List the steps in the emergency medical care of the patient with signs and symptoms of internal bleeding.

Affective Objectives

- 5-1.11 Explain the sense of urgency to transport patients who are bleeding and show signs of shock (hypoperfusion).

Psychomotor Objectives

- 5-1.12 Demonstrate direct pressure as a method of emergency medical care of external bleeding.
- 5-1.13 Demonstrate the use of diffuse pressure as a method of emergency medical care of external bleeding.
- 5-1.14 Demonstrate the use of pressure points and tourniquets as a method of emergency medical care of external bleeding.
- 5-1.15 Demonstrate the care of the patient exhibiting signs and symptoms of internal bleeding.

Cardiovascular System

Anatomy of the Cardiovascular System

•The _____ system is responsible for supplying and maintaining adequate blood supply flow.

•Consists of three parts:

—Heart (_____)

—Blood vessels (_____)

—Blood and body fluids (_____)

The Heart

Blood Vessels

- _____
- _____
- _____
- _____
- _____

Blood

•Contains:

- _____
- _____
- _____
- _____

Perfusion

•Circulation within _____ in adequate amounts to meet the cells' needs for _____, _____, and

•Some tissues and organs need a _____ supply of _____ while others can survive on very little when at rest.

- The heart _____ a _____ supply of blood.
- The brain and spinal cord can survive for _____ to _____ minutes without perfusion.
- The kidneys may survive _____ minutes.
- The skeletal muscles may last _____ hours.

External Bleeding

- _____ = _____
- Body cannot tolerate greater than _____ blood loss.
- Blood loss of _____ can be dangerous in adults; in children, loss of _____ - _____ mL is serious.

The Significance of Bleeding

- The body will not tolerate an acute blood loss of greater than _____ of the blood volume.
- In the typical adult, _____ is _____ liter or _____ pints.
- A 1-year-old infant typically has _____ mL. A loss of _____ mL is significant.

Conditions With Possible Serious Bleeding

- Significant _____ of _____
- Poor general _____ of patient
- Assessment reveals _____ of _____
- Significant amount of _____ noted
- Blood _____ is _____.
- You _____

Characteristics of Bleeding

- _____
—Blood is _____ and _____.
- _____
—Blood is _____ and does not _____, but _____.
- _____
—Blood _____ out and is _____ easily.

Blood Clotting

- Bleeding normally stops within _____ minutes.
- Some medications _____ with clotting.
- Some injuries will be _____ to _____.
- Patients with _____ lack _____ factors.

You are the provider

- You and your EMT-B partner are dispatched to a cabinet-making shop to a traumatic injury.
- You find a conscious, alert, oriented 27-year-old man bleeding heavily from his left arm.
- He states that he was working with a band saw when he slipped and ran into the blade.
- He is holding a red rag against the wound; it is bright red.
- What precautions must you take in the scene size-up?
- What type of bleeding is this?
- Should you start oxygen therapy?
- During the initial assessment, when do you control bleeding?
- How would you control the bleeding?

Scene Size-up

- Follow BSI precautions; bleeding is present.
- Thorough hand washing between patients and after runs is important.
- Look for hazards.
- Request law enforcement for violent incidents.

You are the provider continued

- Patient has patent airway; no signs of respiratory distress.
- You start oxygen therapy via nonrebreathing mask at 10–15 L/min. Lung sounds are equal bilaterally.
- You quickly dress with wound with a bulky dressing.
- Radial pulse is rapid and weak. Skin is pale, cool, and moist.
- What is your transport decision?
- What should you do with the dressing as it continues to saturate with blood?

Initial Assessment

- Do not be distracted by bleeding.
- In some cases, significant bleeding may need to be controlled even before applying oxygen.
- General impression
 - Use AVPU. Note any bleeding.

Airway and Breathing

- Ensure _____ with adequate breathing.
- Check _____.
- Consider high-flow _____ via _____ mask with assisted ventilations.
- Consider _____.

Circulation

- _____ assess pulse _____ and _____.
- Determine skin _____, _____, and _____.
- _____ significant _____.
- Treat for _____.

Transport Decision

•Transport rapidly if:

—Patient has _____ or _____ problems

—Patient has _____

—Patient has signs and symptoms of _____

•Watch for _____, _____, _____

blood pressure, and _____.

You are the provider continued

•You apply additional dressings to the blood-soaked ones and continue to hold direct pressure.

•Provide rapid transport.

•In the ambulance:

—Respirations of 24 breaths/min

—Slightly dilated and sluggish pupils

—Pale, cool, clammy skin

—Patient states he is going to vomit.

•What do the patient's signs and symptoms suggest?

•Describe your continued care of the patient in the ambulance.

Focused History and Physical Exam

•Rapid physical exam versus focused physical exam

•Treat _____ - _____ injuries immediately.

•With significant trauma, look for _____ or other problems.

•Do not delay transport.

•Obtain _____.

— _____ changes may indicate bleeding inside the skull.

•Obtain _____ history.

Interventions

- With significant bleeding, provide _____ - _____ oxygen.
- _____.
- Using _____ to control bleeding usually works best.
- Treat _____ for _____.
- Provide _____.

Detailed Physical Exam

- Consider once _____ are corrected and focused history and physical exam has identified _____.
- Important in patients with _____.
- May be impractical

Ongoing Assessment

- _____ and _____.
- With severe bleeding, take _____ every _____ minutes.
- Communication and documentation
— _____, _____, and _____
amount of blood loss and how rapidly and during what time it occurred.
—Paperwork must reflect all _____ and _____ you provided.

Controlling External Bleeding

- Follow _____ precautions.
- Ensure patient has an open airway and adequate breathing.
- Provide _____ if necessary.
- There are several methods to control bleeding.

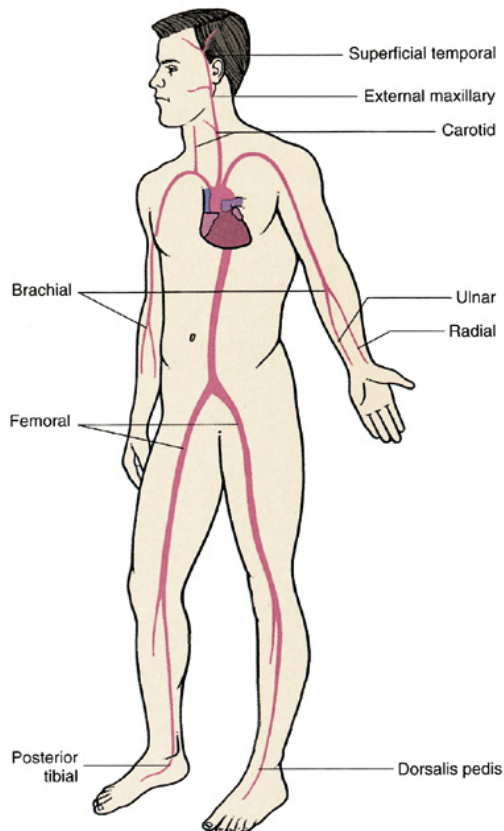
Direct Pressure and Elevation

- Direct pressure is the most common and _____ way to control bleeding.
- Apply pressure with _____ or _____.
- _____ a bleeding extremity often stops venous bleeding.
- Use both _____ and _____ whenever possible.
- Apply a _____.

Pressure Points

- If bleeding continues, apply pressure on _____.
- Pressure points are located where a blood vessel _____ a bone.
- Be familiar with the location of _____.

Location of Pressure Points



Splints

- Splints can help control bleeding associated with a fracture.
- Air splints can be used to control bleeding of soft-tissue injuries.

Pneumatic Antishock Garment (PASG)

- Stabilizes fractures of the pelvis and proximal femurs
- Controls significant internal bleeding
- Controls massive soft-tissue bleeding of the lower extremities
- Refer to local protocol.

PASG Contraindications

- Pregnancy
- Pulmonary edema
- Acute heart failure
- Penetrating chest injuries
- Groin injuries
- Major head injuries
- Less than 30 minute transport time

Application of PASG

- Apply the garment so the top is below the lowest rib.
- Enclose both legs and the abdomen.
- Open the stopcocks.
- Inflate with the foot pump.
- Check patient's vital signs.

Applying a Tourniquet

- Fold a triangular bandage into 4" cravat.
- Wrap the bandage.
- Use a stick as a handle to twist and secure the stick.
- Write "TK" and time. Place on patient.

Tourniquet Precautions

- Place as close to injury as possible, but not over joint.
- Never use narrow material.
- Use wide padding under the tourniquet.
- Never cover a tourniquet with a bandage.
- Do not loosen the tourniquet once applied.

Bleeding from the Nose, Ears, and Mouth

•Causes:

- Skull fractures
- Facial injuries
- Sinusitis
- High blood pressure
- Coagulation disorders
- Digital trauma

Controlling a Nosebleed

- Follow BSI precautions.
- Help the patient sit and lean forward.
- Apply direct pressure by pinching the patient's nostrils.
 - Or place a piece of gauze bandage under the patient's upper lip and gum.
- Apply ice over the nose.
- Provide transport.

Bleeding from Skull Fractures

- Do not attempt to stop the blood flow.
- Loosely cover bleeding site with sterile gauze.
- If cerebrospinal fluid is present, a target (or halo) sign will be apparent.

Internal Bleeding

- Internal bleeding may not be readily apparent.
- Assess patient's:
 - Mechanism of injury
 - Nature of illness

Signs and Symptoms of Internal Bleeding

- Ecchymosis: Bruising
- Hematoma: Bleeding beneath the skin
- Hematemesis: Blood in vomit
- Melena: Black, tarry stool
- Hemoptysis: Coughing up blood
- Pain, tenderness, bruising, guarding, or swelling
- Broken ribs, bruises over the lower chest, or rigid, distended abdomen

Signs of Hypoperfusion

- Change in mental status
- Tachycardia
- Weakness
- Thirst
- Nausea or vomiting
- Cold, moist skin
- Shallow, rapid breathing
- Dull eyes
- Dilated pupils
- Weak, rapid pulse
- Decreased blood pressure
- Altered level of consciousness

Scene Size-up

- Be alert for hazards.

- Look for indications of nature of illness or mechanism of injury.
- Consider spinal stabilization.
- Consider ALS backup.

Initial Assessment

- Form general impression.
- Address life threats.
- Determine level of consciousness.
- Provide high-flow oxygen or assist ventilations with a BVM device.
- Assess pulse and skin.
- Treat for shock.
- Control bleeding.
- Assessment of ABCs and life threats will determine transport priority.

Focused History and Physical Exam

- Internal bleeding is found in both medical and trauma patients.
- Perform a rapid physical exam or focused physical exam depending on type of patient.
- Obtain vital signs, history.

Detailed Physical Exam

- Perform if:
 - Patient is unstable.
 - Problems persist.
 - Time permits.

Ongoing Assessment

- Reassess vital signs and interventions.
- Signs and symptoms of internal bleeding are often slow to present.
- Children will compensate well for blood loss, then crash quickly.

Emergency Medical Care

- Follow BSI precautions.

- Maintain airway and administer oxygen.
- Control external bleeding and care for any internal bleeding.
- Monitor and record vital signs.
- Elevate legs and keep patient warm.
- Transport immediately.