

Primary Health Care Initiatives (PHCI) Project
Contract No. 278-C-00-99-00059-00
Abt. Associates Inc.

INITIAL MANAGEMENT OF COMMON EMERGENCIES

LEARNING OBJECTIVES

- Understand the critical elements in the initial management of common emergencies such as wounds, burns, bites, nosebleed, or sprains or fractures
- Describe the A,B,Cs of initial management of an emergency victim
- Understand how to stabilize an emergency patient for transfer to a referral center

TEACHING STRATEGIES

- Use case presentations to stimulate discussion, and to illustrate important points in the management of trauma
- Ask participants to present their own cases of emergency for discussion in small groups, then present the major points of management for each case
- Demonstrate and then have participants practice on each other – wound cleaning, dressings, splinting of various extremities

MATERIALS AND EQUIPMENT NEEDED

- Overhead projector and transparencies
- Whiteboard or Flipchart and markers
- Demonstration materials for splinting, dressings, etc.

LEARNING POINTS

- For ALL emergencies, initial assessment must be the A,B,C
 - Airway control with cervical spine protection
 - Breathing and respiration
 - Circulation and control of hemorrhage
- Vital Signs, history, examination, administrative matters done AFTER A,B,C assessment
- Wounds and lacerations
 - Apply a pressure pack to control bleeding. Take a piece of sterile gauze or other clean material and wad or fold it tightly. Press this pack over the bleeding area and continue to apply pressure until the bleeding stops. If the pack becomes blood soaked, leave it in place and put another on top of it.
 - In cases of severe bleeding, apply direct pressure to the wound, elevate the injured part above the heart, and apply pressure on the supplying artery.
 - For all wounds, check on tetanus immunization status. If more than 10 years since immunization, give tetanus toxoid (or adult bivalent dT). If wound very contaminated (high risk) give tetanus toxoid if more than 5 years since last immunization

- Open Wounds
 - Examine the wound and classify it as either **low risk** or **high risk** for complications
 - **High risk** wounds include: open fracture, bone or tendons exposed, human or other bites, deep punctures, grossly contaminated wound, or severe crushing
 - Never put alcohol, mercurochrome, or peroxide into an open wound. Povidone-iodine may be used around but not in wounds; the only exception is diluted povidone-iodine for high-risk wounds as described below
- High-Risk Wounds
 - Control bleeding.
 - Irrigate the wound
 - Leave the wound open, and pack and cover it with gauze soaked in povidone-iodine (e.g., Betadine®) diluted with 10 parts water.
 - Change the dressing every six hours; wash your hands or wear gloves before changing dressings when dealing with open wounds.
 - Transport patient to referral facility.
- Low-Risk Wounds
 - Control bleeding.
 - Irrigate the wound if deep enough to require it.
 - Apply bacitracin (antibiotic) ointment and a clean dry dressing. Clean the wound with drinking water and soap twice a day.
 - If the wound will require surgical repair, alert doctor
- Wound Irrigation
 - Use sterile water or normal saline for irrigation, and towel or basin to collect water
 - Squirting water from a large syringe with 14-16 G catheter is MUCH more effective than simply pouring water over wound
 - May need to gently scrub wound with sterile gauze to remove embedded material
 - Use enough irrigation to completely clean wound – often requires multiple fillings of syringe
- Burns
 - Grade of burns
 - First degree – mild redness (erythema) – sunburn
 - Second degree – blistering, sensation intact – hot water scalding, grease burns
 - Third degree – complete full thickness burn, no sensation – gasoline, prolonged exposure, electrical burn
 - Primary goal of treatment – suppress infection until skin regenerated by healing process
 - For all second or third degree burns, check on tetanus immunization status. If more than 10 years since immunization, give tetanus toxoid (or adult bivalent dT)
 - Small Second Degree Burns (Burns the size of five palms, which is about 5%, or less)

- o Gently clean the burn of loose blister fragments, and any foreign material, clean the burn with soapy water, and apply silver sulfadiazine or sulfamylon cream or bacitracin ointment twice a day
 - o (If you don't have silver sulfadiazine or bacitracin, canned non-mentholated shaving cream makes an acceptable substitute.)
 - o Leave complete blisters intact, unless they are where they are sure to rupture (e.g., the soles of the feet), or are very large and tightly filled with bloody fluid. In such cases, prep the blister with povidone-iodine, then drain by a small incision at the edge of the blister with a sterile scalpel blade or needle. Press the blister flat, in the hope that it will stick to the underlying skin and continue to serve as a burn dressing. Apply a dry dressing.
- Large Burns or third degree burns
 - o Treat the burnt area as described for small burns, above.
 - o Evaluate carefully for shock, and be prepared to give large amounts of fluid by mouth if tolerated. Use urine output to gauge adequacy of fluid replacement.
 - o Evaluate for airway burns and toxic inhalation.
 - o Transfer to referral center or burn center
- Bites – Animal and Insect
 - Initial evaluation should begin with A,B,C of resuscitation, and inspection for other trauma in addition to bite (trauma from fall or other injuries)
 - Clean wound thoroughly with irrigation and scrubbing to remove foreign material
 - Protect from further injury (splint, bandage, etc.)
 - Close wound with sutures only if clean, uncontaminated, and superficial – otherwise leave open if any doubt
 - Avoid closure of cat or human bites; can close some superficial dog bites
 - Give tetanus prophylaxis as mentioned above, if more than 10 years since last immunization (or more than 5 years if wound very contaminated)
 - Rabies prophylaxis should be started when biting animal is mammal, or any doubt as to status of biting animal
 - o Always give with bite of bat or other animal commonly known to be rabid
 - o Can be deferred when animal can be contained and observed for illness for 14 days.
 - Antibiotic prophylaxis (cloxacillin or cephalosporin) is indicated if bite is contaminated, or is a human or cat bite.
 - Refer patient to referral center if there is:
 - o Crush injury, tissue loss, extensive or deep lacerations
 - o Penetrating injury of head, chest, abdomen
 - o Significant loss of blood
 - o Significant contamination of wound
 - o Old or possibly infected wounds
 - o Human bite wound
 - o Unable to capture or identify biting animal or suspicion of rabies
 - Insect sting (commonly scorpion)
 - o Apply RICE (Rest, Ice, Compression, Elevation) and loose splint if possible for local pain and swelling

- o If generalized symptoms develop (nausea, vomiting, abdominal pain, shock or fainting) transport to referral center
 - Snake bite
 - o Do NOT make cuts over fang marks – attempts to suck out poison through cuts are usually not effective
 - o Place compressive dressing over bite area, with loose splint, ice pack, and elevation (RICE)
 - o If tourniquet placed, it should NOT block arterial flow – check to be sure there is a pulse below bite area
 - o Transport to referral facility as soon as possible

- Nosebleed
 - Common causes and risk factors:
 - o Upper respiratory infections or allergic rhinitis
 - o Dryness of environment
 - o Use of antihistamines or decongestants
 - o Recurrent picking of the nose
 - o Bleeding disorders, leukemia
 - o Inhaled drug use (cocaine, solvents)
 - o Hypertension
 - o Old age – thinning of nasal mucous membranes, greater blood loss
 - Initial management
 - o Have patient seated with head tilted forward
 - o Clean out clots (this may begin increased bleeding temporarily)
 - o Pinch nose firmly directly over bleeding point (lower fleshy portion of nose) and hold for 10 minutes.
 - o Slowly release pressure on nose – if bleeding stopped, observe patient for another 30 minutes
 - o Counsel patient not to blow nose, pick at nose, and try not to sneeze!
 - o If bleeding recurs, repeat above process
 - If bleeding persists after 20 minutes of pressure on both nostrils, pack the nose with gauze.
 - o Roll up a small gauze pad (not a tissue or paper towel that will partially dissolve) and place it in the bleeding side of the nose to aid in direct pressure. It will also serve as a pressure dressing once pressure is released. To avoid infections, do not leave gauze pads in place for more than 1-2 days.
 - Offer patient education, including:
 - o avoidance of nose-picking or rubbing
 - o humidification of air when possible
 - o avoidance of antihistamines (drying)
 - o use of intranasal Vaseline 2 – 3 times daily in dry environments

- Strains, sprains, and fractures
 - Definitions:
 - o Sprain – injury to ligament around a joint
 - o Strain – injury to muscle or tendon (includes tendonitis)
 - o Fracture – partial or complete break of bone
 - Basic principles of treatment for sprains and strains
 - o Identify and modify overuse or traumatic movement

- o Use RICE
 - Rest of painful area or extremity
 - Ice pack or cold compress to area for first 2 days
 - Compression with elastic bandage of injury – to reduce swelling and pain
 - Elevation of injured extremity (when possible) – to reduce swelling and pain
- o After first 1-2 days, apply heat (warm water compress) to area – to increase circulation and improve healing
- o Anti-inflammatory medication (NSAID)
- Initial management of suspected fracture or severe sprain with significant swelling and pain
 - o Should be splinted for comfort and to decrease further injury
 - o Do not try to straighten a severe fracture UNLESS fracture is extremely angled, and the extremity is cold and blue (no circulation) or without feeling.
 - o Use padding over bony areas before splinting – to prevent pressure damage to skin
 - o Check circulation, mobility, and sensation of extremity at the end of splint (fingers or toes) after splinting to be sure that splint is not too tight
 - o If there is an open wound in area of fracture:
 - Control bleeding with direct pressure
 - Clean wound, irrigate with water or saline, and cover with sterile gauze before splinting
 - Give tetanus toxoid (or bivalent adult dT) if more than 5 years since last immunization
 - o After appropriate emergency care, patient should be transported to referral hospital and specialist for further evaluation and care

HEALTH EDUCATION AND PREVENTIVE ISSUES

- Encourage patients with injuries to come to Health Center for evaluation and treatment as soon as possible – rather than depend on home treatments
- Encourage community efforts to keep environment clean and safe – clean broken glass, trash from areas where children may play
- When a contaminated wound must be left open (not sutured) to decrease risk of infection, advise patient that healing will take longer (often several weeks) but resulting scar will be almost as small as if wound sutured, with less risk of infection
- Some bites (especially cat or human) are very susceptible to infection, and preventive antibiotics must be used
- Burns are also very susceptible to infection, but antibiotic ointments (silver sulfadiazine or sulfamylon) are very effective in preventing infection
- RICE should be used with any sprain or strain for at least first 24 hours

CRITICAL ELEMENTS FOR REFERRAL

- Any abnormality in the Airway, Breathing, Circulation, or level of consciousness
- Any high risk wound
- Any large second degree or any degree of third degree burn

- Any high risk bite (potential infection, deep or around a joint, possible rabies, etc.)
- Any snake bite with secondary swelling, pain, or generalized symptoms
- Any severe sprain or suspected fracture
- A nosebleed that does not stop with nasal pressure or simple packing
- Any emergency condition which requires further evaluation or treatment

CRITICAL ELEMENTS FOR EVALUATION OF COMPETENCE

- Review the A,B,C of initial evaluation
- Demonstrate correct evaluation of severity of a wound, correct irrigation technique, and dressing technique
- Able to distinguish between degrees of burn, and refer appropriately
- Demonstrate correct technique for nasal pressure for control of nosebleed
- Correct evaluation of severity of animal bites
- Use of RICE for insect or snake bites
- Demonstrate correct splinting technique for sprains or suspected fractures