WOUNDS, DRESSING, BANDAGE, FIXING, INJURY OF HANDS, LEGS

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WOUND CLASSIFICATION AND MANAGEMENT

WOUND is a ***circumscribed injury*** which is ***caused by an external force*** and it can ***involve any tissue or organ***. (surgical and traumatic/accidental).

INJURY is caused by ***external noxa*** that ***causes cellular and/or tissue trauma and dysfunction***.

- **External noxa**: mechanical, chemical, radiaton or combination

WOUND CLASSIFICATION by type of external noxa

I. Mechanical:

1. Abraded wound (vulnus abrasum)
2. Puncured wound (v. punctum)
3. Incised wound (v. scissum)
4. Cut wound (v. caesum)
5. Crush wound (v. contusum)
6. Torn wound (v. lacerum)
7. Bite wound (v. morsum)
8. Shot wound (v. sclopetarium)

II. Chemical:

1. Acid
2. Base

III. Wounds caused by radiation

IV. Wounds caused by thermal forces:

1. Burning
2. Freezing

V. Special

1. Abraded wound (v. abrasum)

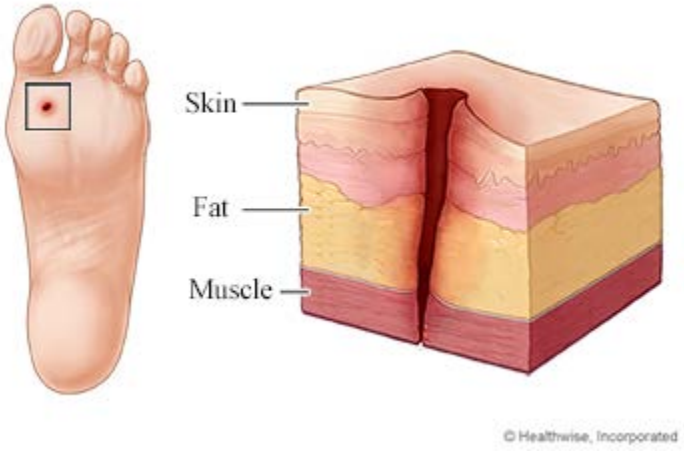
- Superficial part of the epidermal layer
- Blunt trauma
- Mild
- Good wound healing

2. Punctured wound

- Sharp-pointed object
- Seems negligible

BUT

- Risk of ***anaerobic infection***
- Injury of ***big vessels, parenchimal organs, nerves***
- In thorax - ***pneumothorax***
- always needed X-ray! –***foreign body***
- Wound healing process is bad



3. Incised wound

- Sharp object
- Wound edges – even and smooth
- wound corner – narrowing
- No strong destruction but check the wound base
- ***Best healing***
- eg. surgical wound

4. Cut wound

- Sharp object + blunt additional force
- ***More serious destruction***
- Foreign body - textile
- Edges – even or uneven, open edges
- ***Bad wound healing***

5. Crush wound

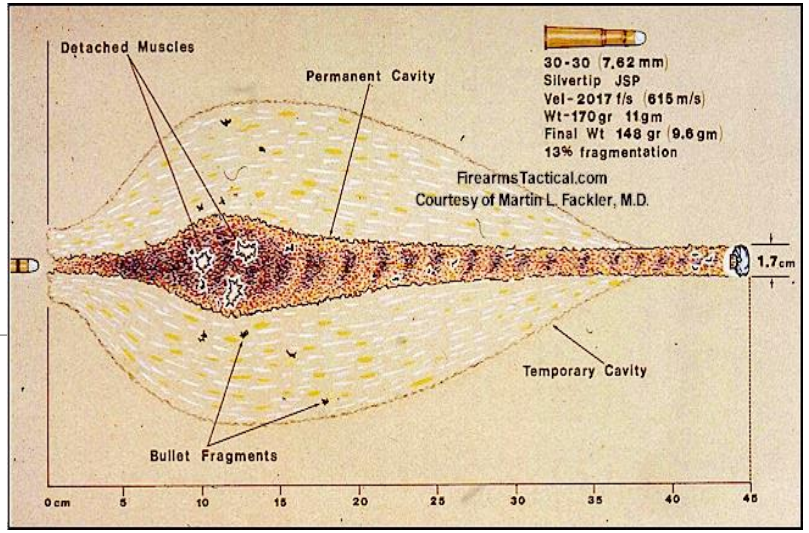
- Blunt force
- Pressure injury – ***connective tissue and fat damage***
- Edges – uneven and torn
- Bleeding not remarkable
- In the wound cavity:
  - blood and destructed tissue
  - oedema in surrounding
- ***Bad wound healing***

6. Torn wound

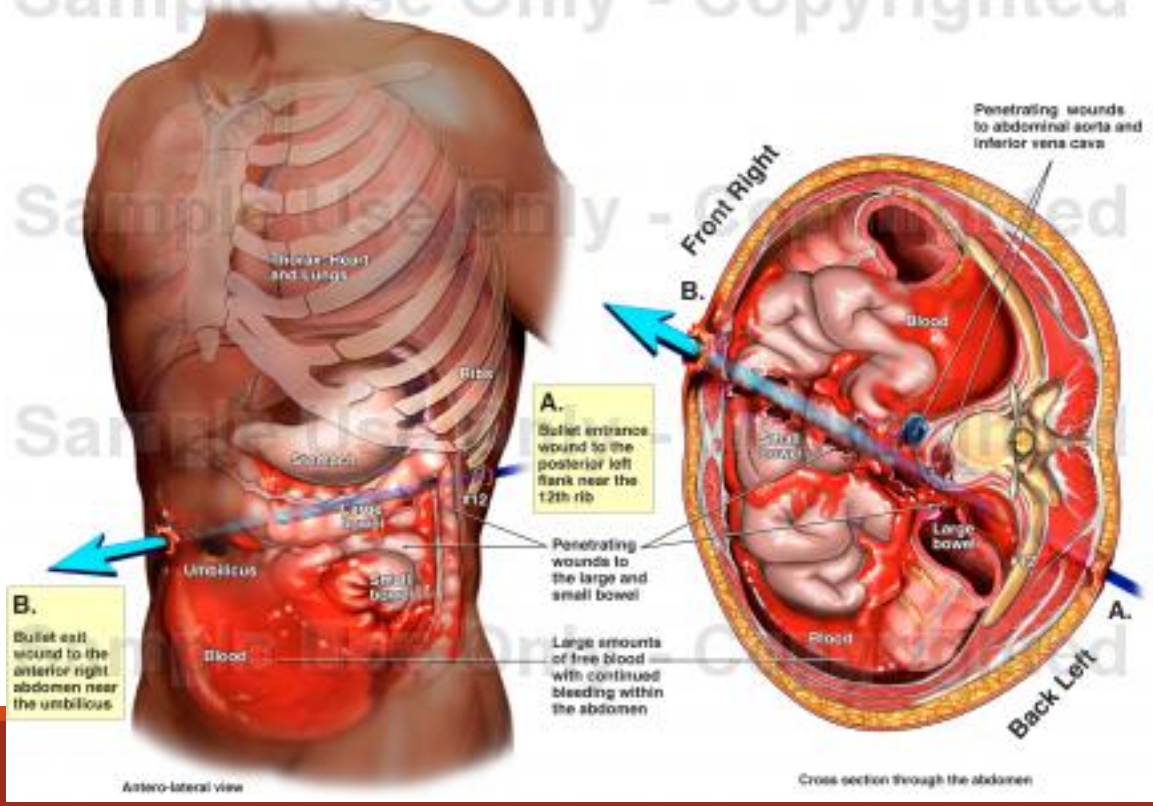
- Great tearing or pulling
- Incomplete or complete amputation
- Uneven wound edges, ragged wound wall
- ***Strong bleeding!***
- ***Foreign body! Contamination***
  - ***High risk of infection***
- Bad wound healing

7. Shot wound

- Close - burn injury
- ***Foreign materials*** (oil, metal, smut)
- Inlet smaller than outlet
  - used in forensic medicine



Gunshot Wound to the Abdomen



8. Bite wound

- Damage depends on ***teeth (type of animal)*** and ***bite force***
  - Ragged wound
  - Crushed tissue
  - Torn
  - Puncured
  - Bone fracture
- Often ***serious infection*** in wound
- ***Prevention of rabies***
- ***Tetanus prophylaxis***

Figure 6: Dog bite wounds of nose and upper lip in a lady of 60 years' age. Most of the upper lip hanging by a narrow pedicle of tissue.

Amputation

- **What to Do:**
  - ***Recover the amputated part and whenever possible take it with the victim***
- **To care for the amputated body part:**
  - The amputated part ***does not necessarily need to be cleaned***
  - Wrap the ***amputated part*** with a ***dry sterile gauze or other clean cloth***
  - Put in a ***plastic bag or other waterproof container***
  - Keep the amputated part ***cool, but do not freeze***
    - Place the bag or container with the wrapped part on ***a bed of ice***

Basic First Aid for Wounds nursing

- **What to do:**
  - *Wear gloves (if possible) and expose wound*
  - 1. Control **bleeding**
  - 2. Keep **clean wounds*-dressing and bandage***
    - To prevent infection
    - Wash shallow wound gently with soap and water
    - Wash from the center out / Irrigate with water
  - 3**. Immobilise** injured part of body-fixing
    - to prevent movements which leads to pain, further damage of tissue, bleeding …

Control of bleeding

- **Capillary bleeding**- slow oozing of blood
  - open or closed - hematoma
- **Venous bleeding-** wider flow of blood***, not pulsatile***
- **Arterial bleeding-** ***pulsatile***

- **First aid:**
  - ***direct pressure*** (over a sterile dressing), with hand or bandage
  - if possible ***lift the arm***
  - *tourniquet?*

DO NOT remove the blood-soaked pad!

It will also remove the platelets closing the wound!

Bandaging - covers all 3 functions

Act of ***making effective bandage/ing*** has 3 parts

1. putting dressing
2. putting bandage
3. putting tape

1. Dressing

A dressing is anything designed to be in direct contact with the wound (something to cover the would directly), which makes it different from a bandage, which is primarily used to hold a dressing in place.

The purpose of a dressing is to:

- Control bleeding
- Prevent infection and contamination
- Absorb blood and fluid drainage

1. Dressing

Absorbent Pad

- This part is necessary to prevent infection and reduce “stickage”
- any absorbent material that is clean and lint free is fine

- Gauze

- Plasters-small wounds

2. Bandages

Bandage can be used to:

- Hold a dressing in place over an open wound
- Prevent or reduce swelling
- Provide support and stability for an extremity or joint-fixing

Beware of strangulation of the limb (put one or two fingers under the bandage)

2. Bandages

Gauze bandage (roller bandage) for all parts of body

Compression bandage (elastic) mostly for limbs

Triangular for limbs and head

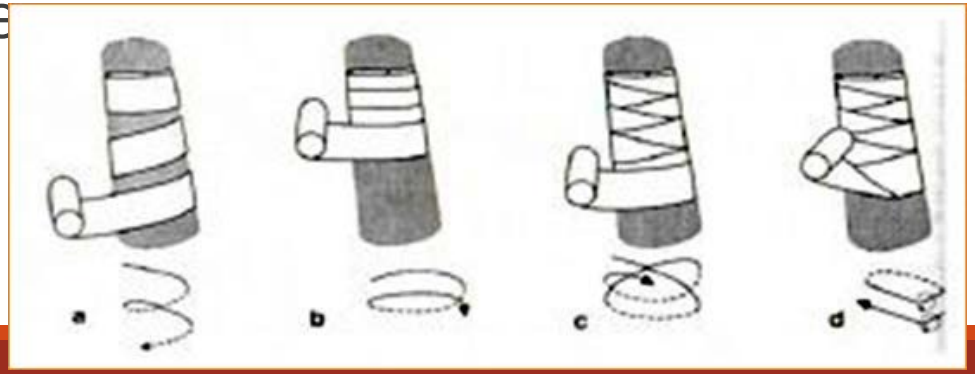
Tubular bandages-fingers

Bandaging

Bandages have three key uses: applying pressure to bleeding wounds; covering wounds and burns; and providing support and immobilization for broken bones, sprains, and strains. These includes gauze, triangular, Elastic, and tubular bandage.

BASIC BANDAGING FORMS

- Each bandaging technique consists of various basic forms of bandaging.
- following **basic forms of bandaging** can be used to apply most types of bandages:
  - 1. circular bandaging
  - 2. spiral bandaging
  - 3. figure-of-eight bandaging
  - 4. reverse spiral bandage

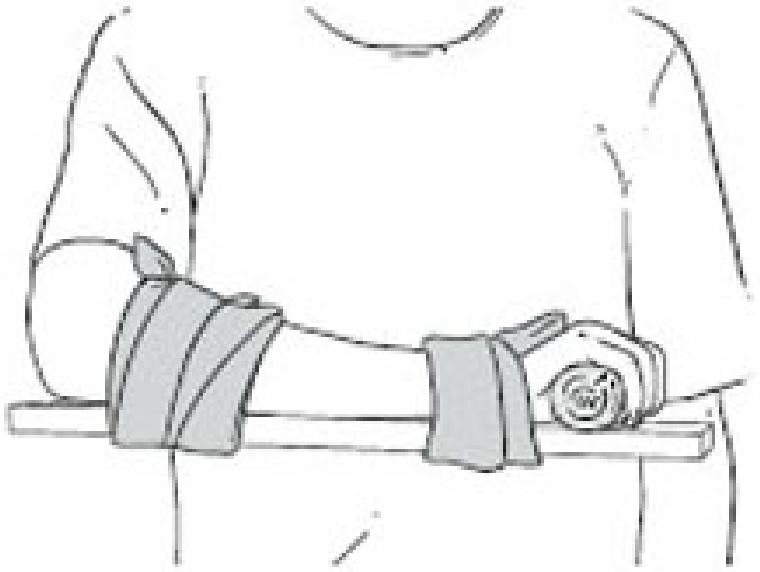


3. Tape

- Tape to secure the bandage
- Adhesive-plaster, clasp, elastic bandage

Fixing / immobilising of wound or other injury

- **Main target:**
  - to ***prevent movement*** at the site of injury
    - Movement could increase the pain, tissue damage, bleeding
  - To ***arrange comfortable transport to the hospital***



Injury of hands and legs

- **superficial** - as already mentioned
- **soft tissue injury**- ligaments and muscles traumatism is involved
- **dislocation**- displacement of a bone at a joint
- **fractures**- break or a crack in a bone
  - **open X closed**

What to do in FIRST AID:

- ***stop bleeding***, prevent ***infection***
- ***prevent movement*** at the site of injury and ***arrange comfortable transport to hospital***
- do not let the patient ***anything to eat or drink*** (if surgery will be needed)

Injury of hands and legs

What to Look for? - General signs and Symptoms:

- ***Tenderness*** to touch.
- ***Swelling***
- ***Deformities*** may occur when bones are broken, causing an ***abnormal shape***
- ***Open wounds*** break the skin
- Loss of movement/function

Injury of hands and legs

- **Additional signs and symptoms, anamnesis:**
  - The ***history of the injury*** can lead to suspect a fracture whenever a serious accident has happened (high speed injury, big force injury, fall from hight, injury during sports….)
  - The victim may have ***heard or felt the bone snap***

Soft tissue first aid-what to do?

- **R**-rest the injured part calm
- **I**- ice or cold compress
- **C**-compress the injury
- **E**- elevate the injured limb

Injury of hands and legs

- **Two categories of <u>fractures</u>:**
  - ***Closed fracture*** - the skin is intact
  - ***Open fracture***
    - the ***skin*** over the fracture has ***been damaged or broken*** and ***bone may be visible***
    - the bone may not always be visible in the wound !!!
    - ***high risk of infecton***

Open fracture

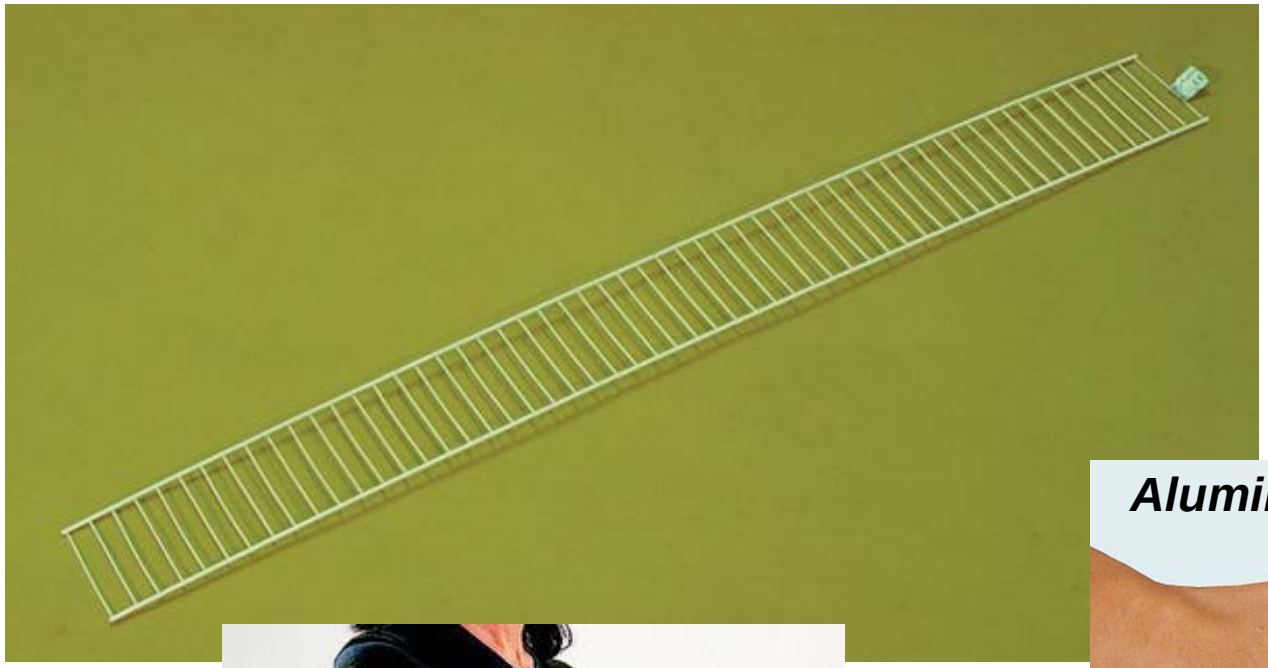
Closed fracture

Dislocation

Injury of hands and legs – first aid

- **Open fracture**
  - cover the wound by ***sterile dressing***
  - ***DO NOT remove any bone fragments or foreign bodies*** from the wound
- ***Immobilisation of broken limb***
  - 2 joints (upper and lower to the injury) must be immobilised
- ***Every 15 minutes*** check immobilised limb ***perfusion*** (temperature, colour)
- ***Raise the limb***

Kramer splint

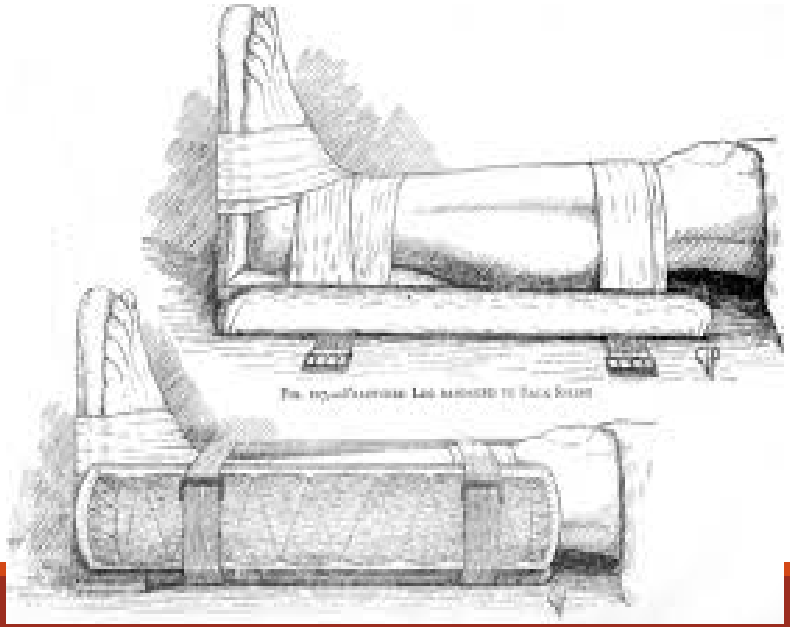


Aluminium finger splint

Vacuum splint

Fixing

- use ***2 joints*** /upper and lower to the injury/
- use other not injured part of the body /other leg, or chest for upper extremity/



Thank you ☺