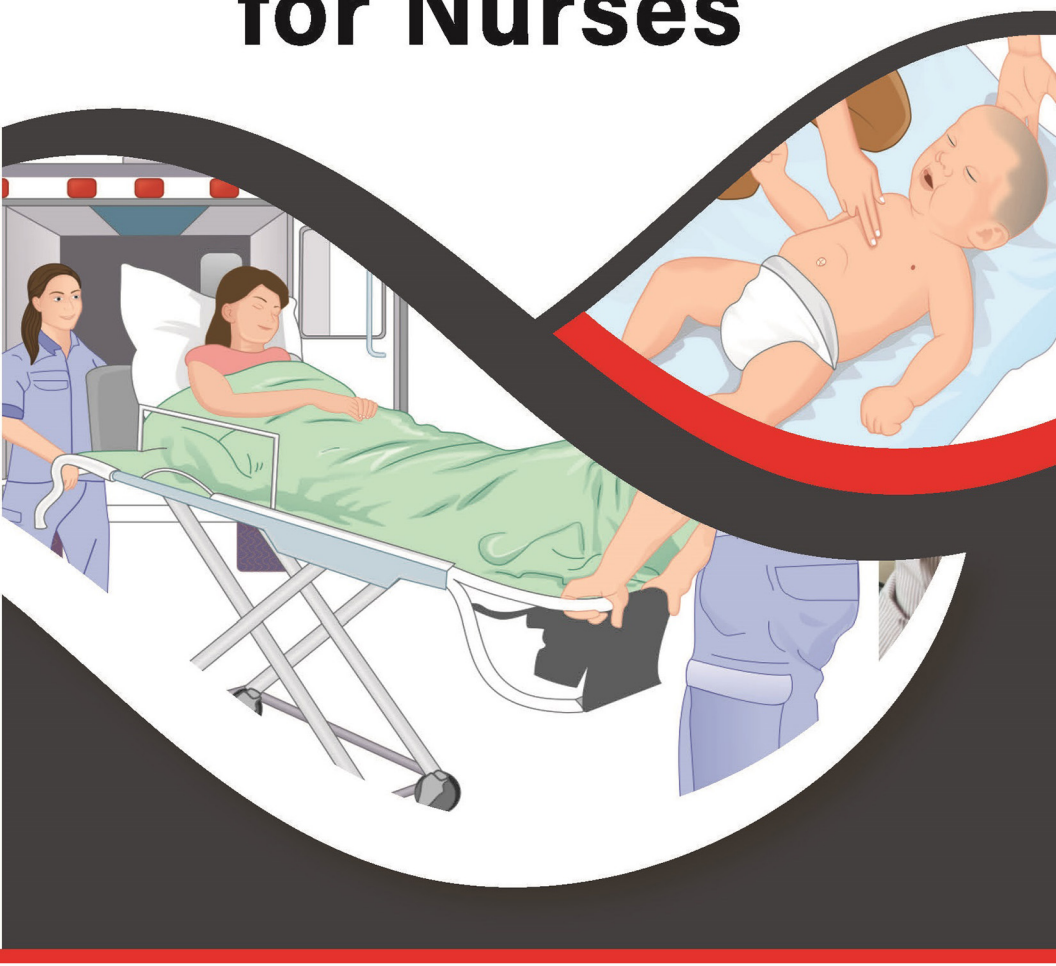
First Aid
for Nurses



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3rd Edition

JAYPEE

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INTRODUCTION

The skin is normally intact. A break or tear in the skin may occur following an accident. The result is a wound. The deeper the wound, the more likely it is to get infected as it cannot be properly cleaned. The appearance of the wound and its likelihood of infection depend on what causes the wound. Would can vary from minor wounds to severe wounds.

Aims of the first aider when dealing with wounds are:

- To stop the bleeding.
- To prevent infection. Injury to the skin may be caused by the following:
  - A cut with a sharp instrument, e.g., knife, glass, stone, etc.
  - A blow with a blunt instrument, e.g., stick, stone, etc.
  - A broken bone whose sharp pierces the skin from inside, usually when open fracture occurs.
- The degree of injury to the skin ranges from an abrasion to a deep wound.

DEFINITION

A break/damage to the integrity of biological tissue, including skin, mucous membranes, and organ tissues.

TYPES OF WOUND

- Abrasions
- Incised wound
- Lacerated wound
- Punctured wound
- Contused wound
- Gunshot wounds
- Eye wounds
- Wound to the palm of the hand
- Bruises
- Infected wounds
- Penetrating chest wounds
- Abdominal wounds
- Crush injuries

Abrasions

An abrasion or graze or scrape are an injury to the superficial layer of the skin that results in disruption of the tissue continuity.

Signs of Abrasions (Fig. 3.1.1)

- Superficial scraping of the skin
- Slight bleeding
- Mild pain
- Redness or swelling may occur

First Aid Measures

- Wash the site with clean boiled water and soap.
- Remove any dirt or other foreign matter.
- Wash with antiseptic lotion and apply gentian violet (GV) paint.
- Apply clean gauze covered with cotton wool padding and bandage.
- Instruct patient to change the dressing once or twice a day.
- Instruct patient to be alert for signs of fever.

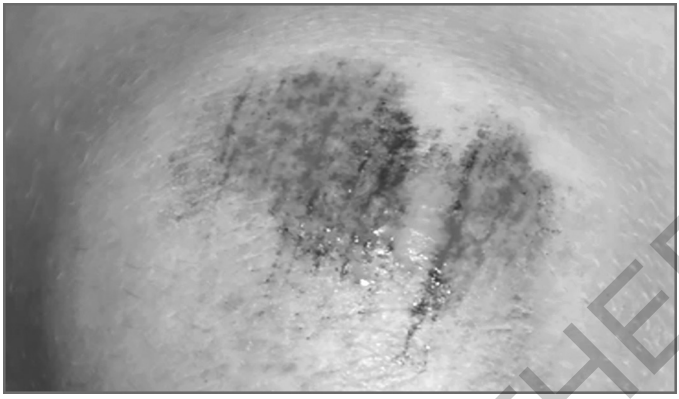

Fig. 3.1.1: Abrasions.

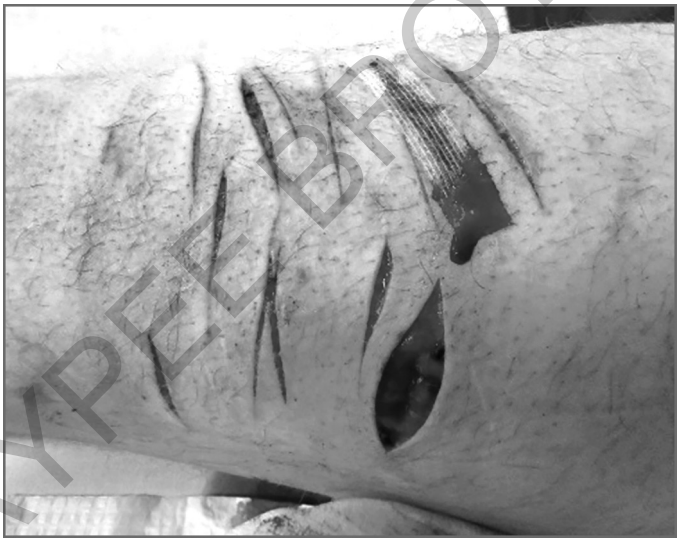

Fig. 3.1.2: Incised wound.

Incised Wound

An incised wound is caused by a sharp cutting instrument **(Fig. 3.1.2)**. Its edges are straight and it is usually accompanied by profuse bleeding, which helps to wash away any germs that might have

entered the wound. A deep incised wound may cut through tendons and or arteries.

Signs of Incised Wound

- Bleeding.
- Wound has clear edge.
- Underlying tissue are evenly cut.
- The surface length is greater than depth.

First Aid Measures

Aim is to stop the bleeding as soon as possible:

- Remove clothing around the wound.
- Apply direct pressure to the wound to prevent excessive bleeding.
- Raise the injured area if possible.
- Apply clean gauze covered with cotton wool padding and bandage.
- If the present dressing is soiled with blood do not remove it, add fresh dressing over the top.
- Seek medical attention or take patient to nearby hospital if bleeding does not stop.

Lacerated Wound

A lacerated wound is caused by a blunt instrument. Its edges are ragged and bruising surrounds the wound **(Fig. 3.1.3)**. Usually lacerated wounds do not bleed much and any dirt, which may have entered the wound, is not thoroughly flushed out.

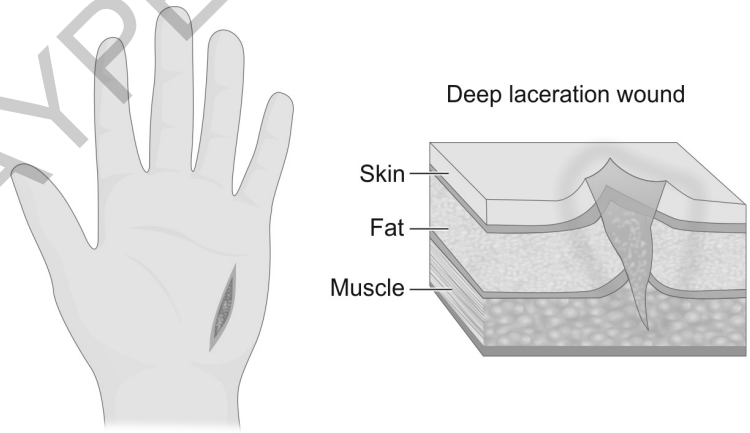

Fig. 3.1.3: Lacerated wound.

Signs of Lacerated Wound

- Pain (mild or severe depending upon the injury).
- Bruising
- Bleeding
- Swelling
- Skin discoloration of the affected area

First Aid Measures

Refer first aid measures of incised wound.

Punctured Wound

A punctured wound is caused by a stab from a knife, needle, nail, bullet, etc., and is often small and deep **(Fig. 3.1.4)**. There is usually little bleeding so that the germs and dirt introduced to the bottom of the wound by the stabbing instrument are not washed out. These wounds are likely to become easily infected and the risk of tetanus is high. Also, because of the depth of these wounds, injury to important structures may be caused.

Signs of Punctured Wounds

- Bleeding
- The appearance of the wound edges depends on type of wound.

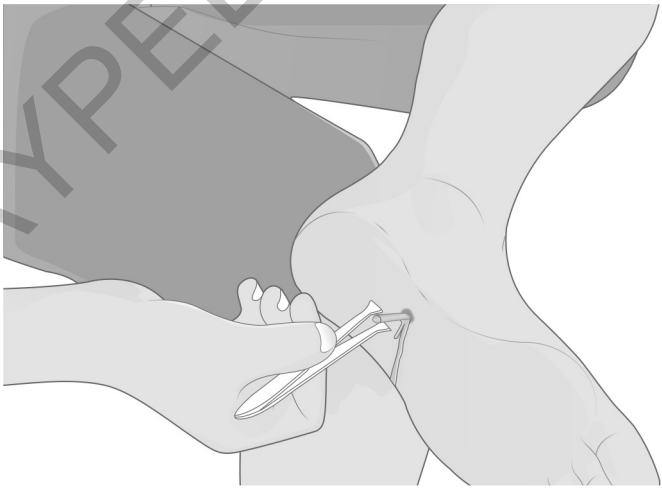

Fig. 3.1.4: Punctured wound.

- Signs of shock may be present depending on the severity of the wound and the amount of bleeding.

First Aid Measures

- Handle the injured part gently and as little as possible.
- Sit or lay the patient down and raise the wounded limb.
- Stop the bleeding.
- Treat for shock.
- If the wound is large and will require suturing, apply a dry dressing and transfer the patient to hospital after applying a firm bandage to control the bleeding. Put the arm in a sling or immobilize the leg.
- All punctured wounds of the chest and abdomen after first aid should be referred to the doctor.
- If the wound is small and one can deal with it. Proceed as follows:
  - Sit or lay the patient down.
  - Handle the injured part gently.
  - Clean the wound with soap and boiled water. Always clean away from the wound, not towards it. Remove foreign matter.
  - Stop the bleeding using direct pressure.
  - If the wound is small, apply antibiotic ointment and cover with a clean dry dressing.
  - If the edges of the wound need approximation, use adhesive plaster to bring them together. Apply a dry sterile dressing.

Note:
- Do not disturb the blood clots.
- Do not remove any glass unless it is easily wiped away, as its removal may open up a large blood vessel.

Gunshot Wound

Gunshot wound is caused when a missile strikes the body at high speed and can result in serious internal injury. There will be a wound, where a missile enters the body and often a much larger exit wound **(Fig. 3.1.5)**. Internal organs, tissues and blood vessels may be damaged during the missile passage through the body. In addition to external bleeding there may be internal bleeding.

First Aid Measures

- The initial action is to clean the wound.
- Apply the ointment and cover the wound with clean gauze.

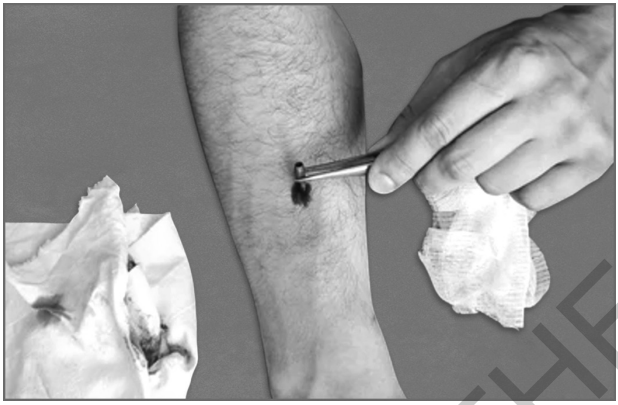

Fig. 3.1.5: Gunshot wound.

- Apply bandages
- Assess the wound for internal injuries
- Take the casualty to nearby hospital.

Eye Wounds

All eye injuries are potentially serious. Even superficial grazes can lead to scarring of the surface of the eye (cornea) on infection, with possible deterioration of eye sight and even permanent blindness. The eye can be cut or bruised by direct flows, broken spectacles, or sharp, clipped fragments of metallic materials, girt or glass, which fly into it.

Symptoms and Signs

- Partial or total loss of vision of the affected eye, even with no visible injury
- Painful, blood shot eye, possibly with a visible wound of eyeball or eyelid
- Loss of blood or clear fluid from the eye wound, possibly with flattening of the normal round contour of the eyeball as the contents leak.

First Aid Measures

Aims: Protect the eye by preventing movement and seek medical aid.

- Lay the casualty down on his/her back. Support his/her head and keep it as still as possible. Do not attempt to remove embedded foreign bodies.

- Ask the casualty to close his/her injured eye and gently cover it with an eye pad or a sterile dressing. Secure it with a bandage or adhesive plaster.
- Instruct the casualty to keep his/her sound eye still because movement will cause the injured eye to move. If necessary, bandage both eyes to prevent unnecessary movement. Reassure the casualty before blindfolding.
- Arrange transportation to hospital, maintaining the treatment position.

Wound to the Palm of Hand

Wounds in the palm can occur, when a person handles broken glass or sharp tools or falls on to sharp objects. Such wounds may bleed profusely and can be accompanied by fractures. If the wound is deep, the nerves and tendons in the hand may be damaged.

Symptoms and Signs

- Pain at the site of the wound
- Bleeding may be profuse
- Loss of sensation and movement in the fingers and hand, if the underlying nerves and tendons are severed.

First Aid Measures

Aims: Control bleeding and arrange immediate transportation to hospital without attempting to remove any embedded foreign bodies.

- To control bleeding, place a sterile dressing or gauze and a clean pad over the wound and apply direct pressure with fingers or thumbs or by casualty if able. If no dressing or pad is available, use an improvised dressing (e.g., a clean handkerchief, a freshly laundered towel, a piece of or a pad of clean paper handkerchief can be used. Improvised dressing should be covered and held in position using whatever materials are available at the time, e.g., a folded scarf).
- Elevate the injured arm above the level of the heart.
- Ask the casualty to maintain pressure by clenching his/her fist over the dressing or pad. If the casualty cannot do this tell to grasp fist of his/her injured hand with other hand.
- Bandage the fists firmly, using the loose ends of the dressing or a folded triangular bandage. Tie off firmly across the bent fingers to maintain pressure.

- Support the arm in an elevation sling and arrange removal to hospital.

Bruises

A bruise consists of internal bleeding, which seeps through the tissues and appears as a discoloration under the skin **(Fig. 3.1.6)**. A heavy fall on fleshy parts of the body, e.g., the buttocks, can result in considerable bruising. A bruise may follow blows, sprains or fractures.

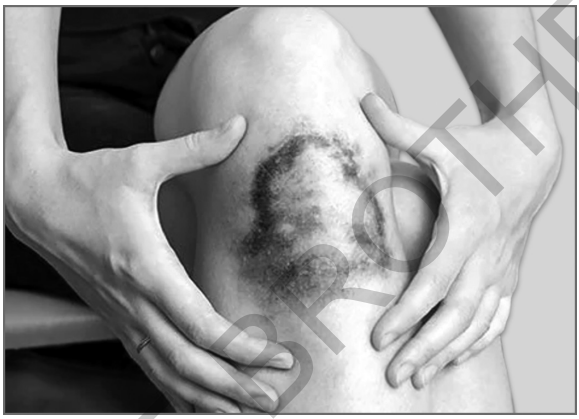

Fig. 3.1.6: Bruise.

Symptoms and Signs

- Pain and swelling in the affected area
- Bluish-purple discoloration at site of injury
- Pattern bruising, in which outlines of the casualty's clothing are seen in the bruise. This is a potentially dangerous sign as it may indicate damage to internal organs.

First Aid Measures

Aims: Slow down blood flow by cooling and gentle compression.

Treatment

- Raise and support the injured part in the position the casualty finds most comfortable.
- Apply a cold compress to the injured area to restrict bleeding and reduce swelling.
- If in doubt about the severity of the injury, seek medical aid.

Infected Wounds

All open wounds will be contaminated by germs, which either come from the cause of the injury, from the air or from the first aider's breath or fingers. Some particles of dirt may be carried away from the damaged tissue by bleeding. Any harmful germs, which remains are usually destroyed by the white cells in the blood, and wound then stays clean and healthy.

Normal first aid for wounds includes prevention of infection. However, any wound, which has not begun to heal properly after about 48 hours, may be infected because dirt, dead tissue, foreign bodies and/or bacteria may still be present. If infection develops, it can have serious consequences. It may enter in the blood system and subsequently spread to other parts of the body, permanently destroying tissue and occasionally leading to death.

Symptoms and Signs

- Increasing pain and soreness in the wound
- Increased surrounding parts with a feeling of heat
- Pus may ooze from the wound
- Fever, sweating, thirst, shivering and lethargy, if the infection is severe
- Swelling and tenderness in the glands, in the neck, armpits or groin
- Faint read trails may be seen on the surface of the inside of the arms or legs leading towards lymph glands

First Aid Measures

Aim is to seek medical aid.

- Dress wound with a prepared sterile dressing and secure with a bandage.
- Elevate the injured part and immobilize especially, if swollen.
- Seek medical aid.

Tetanus Infection (Lock Jaw)

Tetanus infection is particularly dangerous infection results from tetanus germs in a wound, which produce a toxic substance. This spreads into the body's nerves, causing severe muscular spasm, particularly in the jaw, hence the name 'lock jaw'. It is difficult condition to treat and if not treated at an early stage, can lead to

the death of the casualty. Every wound carries the risk of tetanus infection, but the disease is preventable by immunization. Everyone should be inoculated against tetanus regularly and should always ask a wounded casualty how recently inoculation was given. Any casualty with a wound who has never had an 'antitetanus' injection or whose last infection was more than 3 years ago, should be referred to medical advice.

Penetrating Chest Wounds

The rib cage protects not only the heart, lungs and major blood vessels in the chest cavity above the diaphragm, but also the liver and spleen below the diaphragm in the upper abdominal cavity. A wound to the front or back of the chest, which penetrates into the chest allows air to enter the space occupied by the lungs, this interfering with breathing. In these injuries, the lung on the affected side collapses, even if it is not punctured. Air in the chest cavity impairs the action of the sound lung and, sometimes, of the heart. The amount of oxygen reaching the bloodstream may be insufficient and asphyxia may result. A wound to the front or back of the lower chest may penetrate into the abdominal cavity and give rise to severe internal bleeding.

Symptoms and Signs

- Casualty may have pain in the chest and may have an acute sense of alarm
- Difficulty in breathing; breaths are shallow due to air in the chest cavity
- Blueness of the mouth, nail beds and skin (cyanosis) indicating the onset of significant asphyxia
- Bright red, frothy blood may be coughed up
- The sound of air being sucked into the chest may be heard when the casualty is breathing in
- Blood-stained liquid bubbling from the chest wound during breathing out
- Symptoms and signs of shock.

First Aid Measures

Aim is to ease breathing by immediately sealing the wound. Arrange immediate transportation to hospital.

Treatment

- Immediately seal open wound with palm or the casualty's if possible.
- Place the casualty in a half-sitting position with his/her head and shoulders supported; turn the body towards the injured side so the sound lung is upper most.
- Pressure the casualty.
- Gently cover the wounds with a sterile dressing as soon as possible.
- If possible, form an airtight seal by covering the dressing with a plastic sheet or metal foil. Secure and seal the edges of the dressing with layers of adhesive tape, strapping and/or bandage.
- Support the arm on the injured side in an elevation sling and make the casualty as comfortable as possible.
- Check breathing rate, pulse and level of responsiveness at 10-minute intervals. Look for evidence of internal bleeding.
- If the casualty becomes unconscious, open airway and check breathing. Complete CAB of resuscitation, if requires and place in the recovery position with his/her uninjured side upper most.
- Arrange urgent transportation to hospital. Transport as a stretcher case, maintaining the treatment position.
- If a foreign body is present give first aid as for foreign body.

Abdominal Wounds

Wounds of the abdominal wall may be caused by sharp instruments or by missiles. A deep wound of the abdominal wall is serious not only because of the external bleeding, but also because the underlying organs may have been punctured or lacerated, leading to severe internal bleeding and possible infection. Part of the intestine may also be protruding from the wound.

Symptoms and Signs

- General abdominal pain
- Bleeding and associated wounds (which may only be a small puncture) in the abdominal area
- Part of the intestine may be visible in or protruding from the wound
- Casualty may be vomiting
- Symptoms and signs of shock.

First Aid
for Nurses

Salient Features

- This is a comprehensive and concise textbook of first aid for nursing students.
- The contents are displayed in an organized manner.
- The contents are updated to reflect the latest advancement in healthcare and first aid techniques.
- It includes step-by-step instructions and procedures for assessing and managing various emergencies.
- The contents are easy to understand and illustrated with figures wherever necessary.
- Each chapter is presented with chapter outline and end with review questions.

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