



SNS COLLEGE OF ALLIED HEALTH SCIENCES
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DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE
TECHNOLOGY

COURSE NAME: Introduction to Surgery

TOPIC : Wound and its types



CASE STUDY



A 65 Years old patient, was admitted in the complaint of severe pain in the left leg. The patient has the co-morbidity of diabetes, hypertension of the past 5 years. And the patient has the history of CABG past 10 years ago. The patient was diagnosed with peripheral vascular disease. What type of wound is this patient have?





CASE STUDY



A 25 years old boy, was fell down while playing football and he got a bleeding in his right knee, after certain minutes the bleeding was arrested and patient had a basic first aid and dressing. What sort of wound he has?





CASE STUDY



A 68 years female patient was under coma because of RTA and was under coma and severe injury on head, the patient also has diabetes as past history, and because of profuse blood loss the patient had gangrene on her legs. What sort of wound she have?





WOUND



- A wound is a type of **physical trauma** whereby the integrity of the skin or of any tissue is compromised
- It is a separation or discontinuity of the skin, mucous membrane or tissue caused by physical, chemical or biological insult



ETIOLOGY

The etiology of wounds can be classified as follows:-

- Blunt injuries
- Penetrating injuries
- Surgical insult
- Burn injuries





INJURIES



BLUNT INJURIES

- RTA Falls
- Assault
- Sport injuries
- Bite injuries [animal or human]



PENETRATING INJURIES

- Stab wounds
- Gunshot wounds



SURGICAL WOUNDS - Wounds caused by a surgical procedure

BURN INJURIES

- Thermal burn
- Chemical burn
- Electrical burn
- Radiation burn
- Cold injury





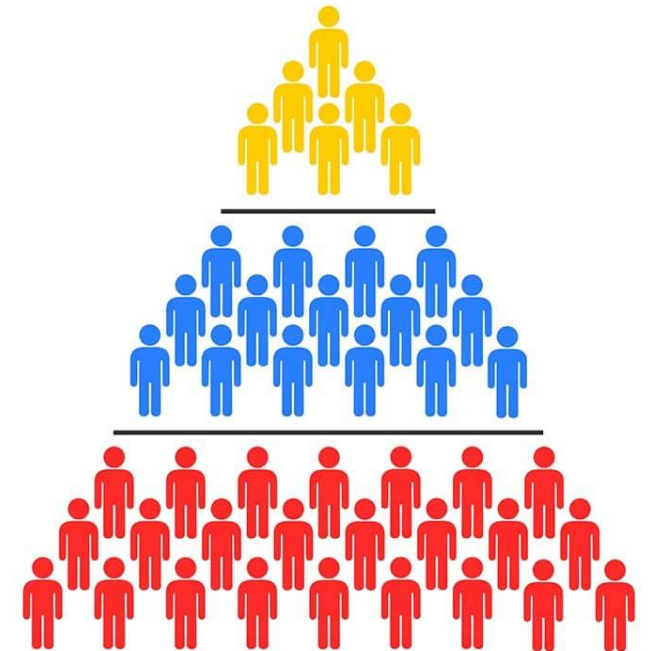
WOUND CLASSIFICATION



Aim:

Wound classification systems provide frameworks that:-

- Aid diagnosis and stratification
- Ensure uniformity of documentation
- Offer prognostic information
- Guide management





WOUND CLASSIFICATION



Wounds can be classified as follows:-

- According to the etiology
- According to Rank-Wakefield classification system
- According to the duration of the wound healing
- According to the integrity of the skin
- According to wound depth
- According to morphological characteristics
- According to degree of contamination
- According to severity



ACCORDING TO THE ETIOLOGY



- Surgical wounds - These are wounds caused by surgical procedure
- Penetrating wounds - Wounds caused by penetrating trauma
- Blunt wounds - Wounds caused by blunt trauma
- Burn wounds - Wounds caused by burn injuries





ACCORDING TO RANK-WAKEFIELD CLASSIFICATION SYSTEM



Tidy wounds

- These are wounds inflicted by **sharp instruments** and contain no devitalized tissue
- Such wounds can be closed primarily with the expectation of quite primary healing
- They are usually single with clean cut
- Associated fractures are uncommon in tidy wounds Examples: surgical incisions, cuts from glass and knife wounds



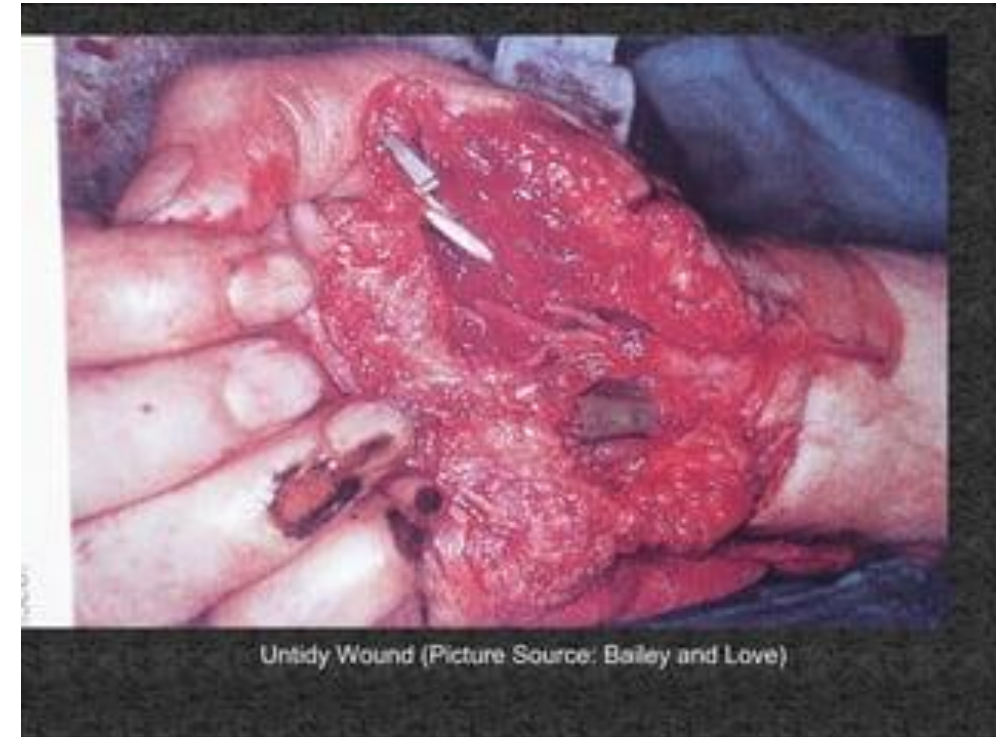


ACCORDING TO RANK-WAKEFIELD CLASSIFICATION SYSTEM



Untidy wound

- These are wounds resulting from crushing, tearing avulsion, vascular injury or burns, and contain devitalized tissue
- They are usually multiple and irregular
- Commonly associated with fractures
- Such wounds can not be closed primarily and therefore should be allowed to heal by second intention





ACCORDING TO THE DURATION OF THE WOUND HEALING



Acute wounds

- Acute wounds are wounds that usually heal in the anticipated time frame.
- **Duration of the wound: immediately to few weeks**
- Examples are wounds acquired as a result of trauma or an operative procedure



ACCORDING TO THE DURATION OF THE WOUND HEALING



Chronic wounds

- Wounds that fail to heal in the anticipated time frame and often reoccur
- **Duration of the wound: > 4 weeks to 3 months**
- Wounds occur as a result of an underlying condition such as extended pressure on the tissues, poor circulation, or even poor nutrition
- Examples: Pressure ulcers, venous leg ulcers, and diabetic foot ulcers



ACCORDING TO THE INTEGRITY OF THE SKIN



Open wounds

Type of wounds in which the skin has been compromised and **underlying tissues are exposed**



Open wounds can be classified into a number of different types, according to the object that caused the wound

Examples include incised wounds, laceration, punctured wounds etc.,



ACCORDING TO THE INTEGRITY OF THE SKIN



Closed Wound

- Wounds in which the skin has not been compromised, but **trauma to underlying structures has occurred**
- Closed wounds have fewer categories, but are just as dangerous as open wounds
- Examples of closed wounds are: Contusions (more commonly known as a bruise) caused by blunt force trauma that damages tissue under the skin
- Hematoma - (also called a blood tumor) - caused by damage to a blood vessel that in turn causes blood to collect under the skin





ACCORDING TO WOUND DEPTH



SUPERFICIAL WOUNDS

- Only the **epidermis is affected** and has to be replaced
- A truly superficial wound does not bleed and heals within a few days
- Examples include most abrasions and blisters





ACCORDING TO WOUND DEPTH



Partial-thickness wounds

- The **epidermis and part of the dermis** is affected
- A partial-thickness wound does bleed. If left uncovered, a blood clot will cover the wound and a scar will form
- The missing tissue will then be replaced, followed by regeneration of the epidermis
- A partial-thickness wound can take from several days to several weeks to heal, depending on the patient and the wound treatments chosen





ACCORDING TO WOUND DEPTH



Full-thickness wounds

- A full-thickness wound involves the epidermis and the dermis
- The underlying fatty tissue, bones, muscles, or tendons may also be damaged
- If full-thickness wounds cannot be sutured, the healing process will create new tissue to fill the wound, followed by regeneration of the epidermis
- The full-thickness wound takes longer time to heal than does a partial-thickness wound, sometimes as long as several months





ACCORDING TO MORPHOLOGICAL CHARACTERISTICS



Bruises/ contusion

- These are closed wounds Caused by blunt trauma that **damage the tissue under the skin** without breaking the skin
- Characterized by skin **discoloration due to bleeding into the tissues**
- Blows to the chest, abdomen, or head with a blunt instrument can cause contusions

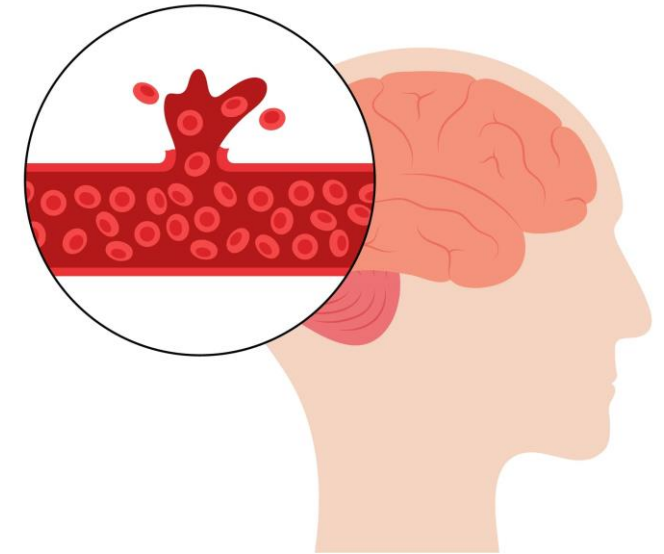


ACCORDING TO MORPHOLOGICAL CHARACTERISTICS



Hematoma

- These are also closed wounds caused by **damage to a blood vessel** that in turn causes blood to collect under the skin
- Initially this is fluid, but it will clot within minutes or hours later after few days the hematoma will again liquefy → increased risk of secondary infection → pus formation





ACCORDING TO MORPHOLOGICAL CHARACTERISTICS



Abrasion:

- An abrasion is a shearing injury of the skin which the **surface is rubbed off**
- Most are superficial and will heal by epithelization

Lacerated wound:

- Caused by **tearing of tissues**
- Wounds have irregular borders
- Loss of tissue is limited to skin

Perforating wound:

- Have two opening one of entrance and other of exit
- E.g. gunshot wounds





ACCORDING TO DEGREE OF CONTAMINATION



Clean wounds

- No break in aseptic technique
- Incision is made under sterile conditions
- No inflammation is encountered
- Primary closure
- No drain





ACCORDING TO DEGREE OF CONTAMINATION



Clean Contaminated wounds

- An incision through which the respiratory, alimentary or genitourinary tract is entered under controlled conditions but with no contamination encountered.

Contaminated Wounds

- Open, fresh or accidental wounds; operations with major breaks in sterile technique or gross spillage from the gastrointestinal tract; and incisions in which acute, non-purulent inflammation is encountered
- **Dirty or Infected wounds** - Old traumatic wounds with retained devitalized tissue and those that involve existing clinical infection





ACCORDING TO SEVERITY



Simple wounds

- The integrity of the skin is traumatized without loss or destruction of tissue and without the presence of a foreign body in the wound



Complex wounds

- Tissue is lost or destroyed by means of a crush, burn, or foreign body in the wound





ASSESSMENT



- Examples for blunt wound
- What is penetrating wound?
- What is Abrasion?
- Hematoma
- Superficial wounds means
- Tidy wounds?
- The surgical wounds are called as -----



THANK YOU



Reference:

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