

Medi Quest BRS MULTI SPECIALITY HOSPITAL

Expertise Meets Care

A monthly News letter from BRS Hospital



TYPES OF WOUNDS AND THEIR MANAGEMENT

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BRS HOSPITAL

Price Rs. 5/- Only

April - 2021

Medi - 25

Quest -14

Yearly Subscription

Rs 50/- only

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INTRODUCTION-

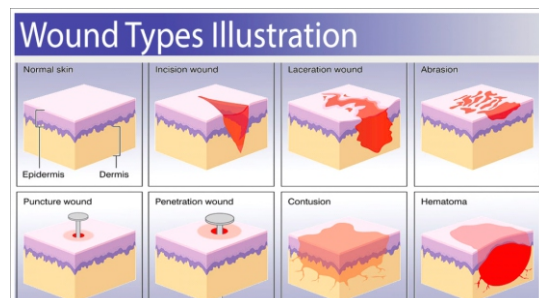
Physicians come across a variety of wounds in everyday practice and a working knowledge of the different types of wounds and their management is a necessity.

DEFINITION OF 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.

WOUND CLASSIFICATIONS BASED ON THE FOLLOWING FACTORS:

- Etiology
- Rank-Wakefield classification system
- Duration of the wound healing
- Integrity of the skin
- Wound depth
- Morphological characteristics
- Degree of contamination



1. According to the etiology

- Surgical wounds
- Penetrating wounds
- Blunt wounds
- Burn wounds

2. According to Rank-Wakefield classification system

Tidy	Untidy
Incised	Crushed or avulsed
Clean	Contaminated
Healthy tissues	Devitalised tissues
Seldom tissue loss	Often tissue loss

3. 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.

• **Chronic wounds:** Wounds that fail to heal in the anticipated time frame and often reoccur. Duration of the wound \Rightarrow > 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. Pressure ulcers, venous leg ulcers, and diabetic foot ulcers are examples



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4. According to the integrity of the skin

- Open wounds : Type of wounds in which the skin has been compromised and underlying tissues are exposed .
- Closed wounds: Wounds in which the skin has not been compromised, but trauma to underlying structures has occurred .

5. According to wound depth

- Superficial wounds : Only the epidermis is affected and heals within a few days eg. abrasions and blisters.
- Partial-thickness wounds : The epidermis and part of the dermis is affected
- 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.

6. According to morphological characteristics

- Bruises
- Hematoma .
- Crush wounds
- Abrasions.
- Lacerated wound
- Penetrated wound
- Perforating wound

7. According to degree of contamination

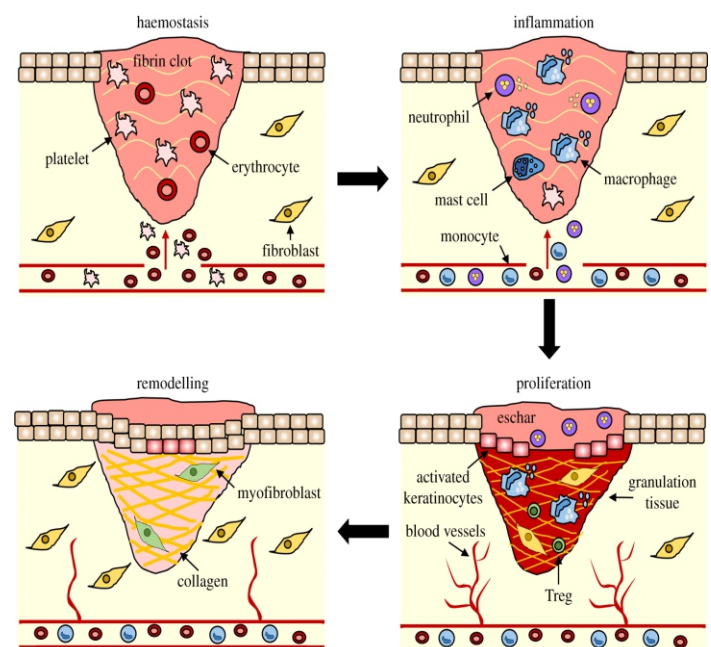
- Clean wounds
- Clean Contaminated wounds
- Contaminated wounds
- Dirty or Infected wounds

MECHANISM OF WOUND HEALING :

Definition :Wound healing, or wound repair, is the body's natural process of restoring normal function and structure after injury. The entire wound healing

process is a complex series of events that begins at the moment of injury and can continue for months to years .Three phases of wound healing include:

- **Inflammatory phase**
- **Proliferative phase**
- **Maturation and remodeling phase**



1. Inflammatory phase :

Immediate to 2-5 days , Aim: to stop bleeding and to prevent further injury Characterized by :-

- Clotting cascade
- haemostasis
- Platelets aggregation
- Vasoconstriction and vasodilatation
- increased polymorphonuclear neutrophils
- increased Macrophages

2. Proliferative phase :

After the inflammatory stage, the proliferative stage lasts about 3 weeks (or longer, depending on the severity of the wound) Aim: repair of wounded tissue Characterized by



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- Angiogenesis
- Fibroplasia and granulation tissue formation
- Epithelialization
- Wound contraction

3. Maturation and remodeling phase :

The maturation phase of tissue repair begins when the levels of collagen production and degradation equalize. The maturation phase can last for a year or longer, depending on the size of the wound and whether it was initially closed or left open.

TYPES OF WOUND HEALING :

- Healing by primary intention (Primary closure)
- Healing by secondary intention (Secondary closure)
- Healing by tertiary intention (Delayed primary closure)

1. Healing by primary intention (Primary closure) : occurs when a wound is created aseptically with minimal tissue damage. Healing takes place by the approximation of tissue edges with suture, staples, wound sealant etc

2. Healing by secondary intention (Secondary closure): Occurs in wounds that are already infected and are usually left open and allowed to heal by epithelialization and wound contraction. May be caused by infection, excessive trauma, tissue loss, or inability to re-approximate the tissue. It is a slow process

3. Healing by tertiary intention (Delayed primary closure) : Wounds that are heavily contaminated and are likely to develop an infection if closed primarily may be left open for 3-5 days, then be closed and allowed to heal, producing a wound with characteristics similar to primary closure.

Factors influencing healing of a wound

- Site of the wound
- Structures involved
- Mechanism of wounding
 - Incision
 - Crush
 - Crush avulsion
- Contamination (foreign bodies/bacteria)^a
- Loss of tissue
- Other local factors
 - Vascular insufficiency (arterial or venous)
 - Previous radiation
 - Pressure
- Systemic factors
 - Malnutrition or vitamin and mineral deficiencies
 - Disease (e.g. diabetes mellitus)
 - Medications (e.g. steroids)
 - Immune deficiencies (e.g. chemotherapy, acquired immunodeficiency syndrome [AIDS])
 - Smoking

^a In explosions, the contamination may consist of tissue such as bone from another individual.

Management of different types of wounds will be dealt with in consecutive journals.

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WE ARE PLEASED TO INFORM THAT THE HAEMODIALYSIS UNIT HAS BEEN COMMISSIONED AT BRS HOSPITAL ON 22 APRIL 2021

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Owned and Published by Dr. Madhusudhan 28, Cathedral Garden Road, Chennai - 34.

Printed by S. Baktha at Dhevi Suganth Printers 52, Jani Batcha Lane, Royapettah, Chennai -14.

Publication on : Final Week of Every Month Posted on 29.04.2021