Types of wound healing:-

1. Healing by 1st intention.

Is healing of a wound by minimal amount of granulation tissue formation (Small scar).

Example : healing of surgical wound.

1. Healing by 2nd intention.

Is healing of wound by formation of large amount of granulation tissue (Large scar is formed).

Example : healing of open wound.

1. Healing by third (3rd) intention.

When a part of sutured wound is opened and resutured again under Aseptic condition, healing of thin wound is called healing by 3rd intention.

1. Healing by mixed intention.

When a part of wound heals by 1st intention (sutured part) and the other part heals by 2nd intention (the opened part) is called healing by mixed intention.

1. Healing under scab.

This type of healing occur in case of abrasion wound, the transudate dry and form a scab usually fixed to the underlying tissue and healing undergo under the scab. When healing is complete the scab will fall spontaneously. This type of healing is important in healing of wounds in equine extremities.

Note: Special types of wounds :

Gun shot w.

Envenomed w.

Virulent w.

Factors Affect wound healing:

1. Hypoprotenemia

If serum protein concentration is below 2 gm/100 ml wound healing is inhibited, it decreases fibroplasia.

1. Anemia and blood loss.

Anemia alone doesn’t delay wound healing providing blood volume is normal.

Blood volume affect wound healing because wound healing depends on local microcirculation to furnish blood oxygen and other nutrients. Decreases blood volume inhibits wound healing.

1. O2

O2 is required for normal wound healing. Tissue oxygenation is necessary for revascularization.

1. Temperature.

Wound heals faster at environmental temperature of 30 °C. Low temperature decreases wound tensile strength. Vasoconstriction is responsible for decreased healing.

1. Uremia.

Delays wound healing by altering enzymatic system, biochemical pathways and cellular metabolism. Wound strength decreases in acute uremia.

1. Anti-inflammatory drugs.

1-Aspirin. Large doses decrease wound tensile strength but in pharmaceutical doses has no effect.

2-Steroids. In high doses delays wound healing by :

1. Decrease rate of protein synthesis.
2. Stabilize lysosomal membrane.
3. Inhibits normal inflammatory reaction.
4. Vitamins and minerals.
5. Vit. A. stimulates fibroblasts and accumulation of collagen.
6. Vit. E. like cortisone high doses significantly retard wound healing and collagen production.
7. Vit. C. its deficiency delay wound healing.

Vit. C is essential in formation of new connective tissue in wound healing. The enzymes critical to forming collagen cannot function without their co-factor (vit. C).

1. Zinc.

Zinc is needed within normal level, high doses stabilize lysosomal and cell membrane, high level can inhibit macrophages and thus decrease phagocytosis.

1. Radiation and cytotoxic drugs.

Exposure to high doses for long period of time significantly delays wound healing. (Prevent or stop fibroblast proliferation).

1. Dehydration and oedema.

Dehydration delays wound healing significantly but oedema has slight effect.

1. Infection.

Delays wound healing (acidic media at the wound created by microorganisms stop healing process, also bacteria release collagenase which destroys collagen fibers

1. Age.

Wounds tend to heal more slowly in old patients. Heals faster in young.

Complications of wound healing:

1. Bleeding.
2. Syncope : temporary unconsciousness due to cerebral anemia. ( insufficient blood flow to the brain (faint) ).
3. Shock.
4. Traumatic neuralgia or neuritis (post traumatic neuropathy) nerve pain after an injury during scar formation or post scar.
5. Damage to nerve T.
6. Traumatic emphysema (accumulation of gases or air subcutaneously due to puncture or penetrating wounds in respiratory system or gastrointestinal, air may come out from these structures or come from environment to inside)
7. Venous thrombosis and embolism.
8. Traumatic fever.
9. Cellulitis (sometimes with fever) : (bacterial infection involving the skin , specially affects the dermis and subcutaneous T.) painful, red swelling.
10. Erysipelas : acute febrile disease associated with edematous local inflammation of skin and subcutaneous T. caused by haemolytic streptococcus.
11. Septicemia and pyemia.
12. Gas gangrene.
13. Tetanus.
14. Adhesions.