

# Wound Management

Surgical wounds can be classified as follows:

- Clean
- Clean contaminated: a wound involving normal but colonized tissue
- Contaminated: a wound containing foreign or infected material
- Infected: a wound with pus present.
- Close clean wounds immediately to allow healing by primary intention
- Do not close contaminated and infected wounds, but leave them open to heal by secondary intention
- In treating clean contaminated wounds and clean wounds that are more than six hours old, manage with surgical toilet, leave open and then close 48 hours later. This is delayed primary closure.

## **Factors that affect wound healing and the potential for infection**

- Patient:
  - Age
  - Underlying illnesses or disease: consider anemia, diabetes or immunocompromised
  - Effect of the injury on healing (e.g. devascularization)
- Wound:
  - Organ or tissue injured
  - Extent of injury
  - Nature of injury (for example, a laceration will be a less complicated wound than a crush injury)
  - Contamination or infection
  - Time between injury and treatment (sooner is better)
- Local factors:
  - Haemostasis and debridement
  - Timing of closure

## **Wound: Primary repair**

- Primary closure requires that clean tissue is approximated without tension.
- Injudicious closure of a contaminated wound will promote infection and delay healing.
- Essential suturing techniques include:
- Interrupted simple

- Continuous simple
- Vertical mattress
- Horizontal mattress
- Intra-dermal.
- Staples are an expensive, but rapid, alternative to sutures for skin closure.
- The aim with all techniques is to approximate the wound edges without gaps or tension.
- The size of the suture “bite” and the interval between bites should be equal in length and proportional to the thickness of tissue being approximated.
- As suture is a foreign body, use the minimal size and amount of suture material required to close the wound
- Leave skin sutures in place for 5 days; leave the sutures in longer if healing is expected to be slow due to the blood supply of a particular location or the patient’s condition
- If appearance is important and suture marks unacceptable, as in the face, remove sutures as early as 3 days. In this case, re-enforce the wound with skin tapes.
- Close deep wounds in layers, using absorbable sutures for the deep layers.
- Place a latex drain in deep oozing wounds to prevent haematoma formation.

### **Wound: Delayed primary closure**

- Irrigate clean contaminated wounds; then pack them open with damp saline gauze.
- Close the wounds with sutures at 2 days.
- These sutures can be placed at the time of wound irrigation or at the time of wound closure

### **Wound: Secondary healing**

To promote healing by secondary intention, perform wound toilet and surgical debridement.

#### **1. Surgical wound toilet involves:**

- Cleaning the skin with antiseptics
- Irrigation of wounds with saline
- Surgical debridement of all dead tissue and foreign matter. Dead tissue does not bleed when cut.

#### **2. Wound debridement involves:**

- Gentle handling of tissues minimizes bleeding.

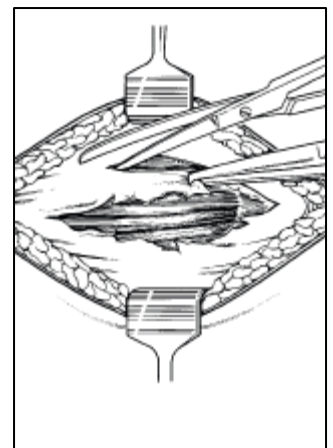


Figure 5.1

- Control residual bleeding with compression, ligation or cautery.
- Dead or devitalized muscle is dark in color, soft, easily damaged and does not contract when pinched.
- During debridement, excise only a very thin margin of skin from the wound edge (Figure 5.1).

1. Systematically perform wound toilet and surgical debridement, initially to the superficial layers of tissues and subsequently to the deeper layers (Figures 5.2, 5.3).
2. After scrubbing the skin with soap and irrigating the wound with saline, prep the skin with antiseptic.
3. Do not use antiseptics within the wound.
4. Debride the wound meticulously to remove any loose foreign material such as dirt, grass, wood, glass or clothing.
5. With a scalpel or dissecting scissors, remove all adherent foreign material along with a thin margin of underlying tissue and then irrigate the wound again.
6. Continue the cycle of surgical debridement and saline irrigation until the wound is completely clean.
7. Leave the wound open after debridement to allow healing by secondary intention.
8. Pack it lightly with damp saline gauze and cover the packed wound with a dry dressing.
9. Change the packing and dressing daily or more often if the outer dressing becomes damp with blood or other body fluids.
10. Large defects will require closure with flaps or skin grafts but may be initially managed with saline packing

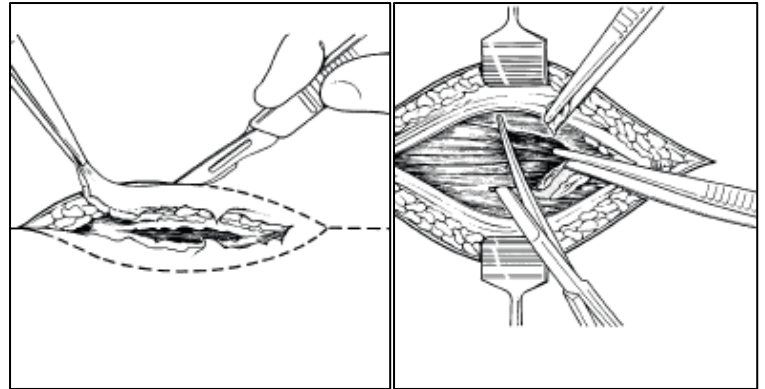


Figure 5.2      Figure 5.3