

## **TREATMENT OF OPEN FRACTURES**

What are open fractures? These are fractures that communicate with the outside through an open wound

Challenges of open fractures:

- Hemorrhage.
- Hypovolemic shock
- Wound Infection.
- Sequestrum.

### **Emergency Treatment:**

- a. Ensure adequate ventilation
  - Clear air passage way in conscious animal
  - Pass endotracheal tube in unconscious patient
- b. Control Hemorrhage
  - Apply bandage dressing.
- c. Treat shock
  - Administer intravenous fluid.
  - Administer corticosteroid
  - Administer antibiotics.
- d. Prevent Infection
  - Debride wound edges
  - Apply topical antibiotics
  - Apply bandage dressing
- e. Treat wound.

Point to remember:

Wound is considered contaminated in the first 6-8 hours of wounding.

Wound is said to be infected after 8 hours of wounding.

### **Treatment of open fracture in the first 6-8 hours**

- The management aim is to convert a dirty field to a clean field.
- This could be achieved through debridement of foreign materials and devitalized tissue.
- Wound should be protected from further contamination by applying sterile gauze.
- Traction should be applied on limb to prevent bone movement and allow for clipping of hair.
- Apply surgical scrub like iodine –povidone and drape the limb.
- Trim the edges of skin wound and enlarge if necessary.
- Irrigate wound with copious amount of Ringers solution and remove with suction.
- Remove bones that have lost periosteal attachment.
- Re-drape and prepare for aseptic surgery.
- Reduce the fracture appropriately and apply a suitable fixation device that will provide rigid, un-interrupted fixation.

### **Wound closure of open fractures in the first 6-8 hours**

- Early wound closure turns open fracture into closed fracture thus preventing secondary infection and osteomyelitis.
- Undermine skin edges to provide some relief of tension.
- Close fascia loosely to prevent trapping of fluids.
- Eliminate all dead spaces.
- Instill local antibiotics.

### **Contraindication to primary closure of wound**

- Wounds over 8-10 hours old
- Severe swelling
- Extensive skin necrosis
- Where adequate debridement is not feasible e.g. joint

### **Treatment after 8-10 hours**

- Do not close wound primarily at this phase as infection is likely to occur.
- Debride the wound and pack with sterile Vaseline gauze.
- Immobilize the limb with Robert Jones dressing or plaster cast. When a plaster cast is used, create a window on the cast around the wound.
- Administer systemic antibiotics and observe closely for signs of local or systemic infection.
- Bone plate is preferred as fixation device as it leaves the medullary blood supply intact.
- Use cortical graft where there is bone infection (sequestrum).
- Close wound in 6-7 days to allow for enough granulation.