

ORTHOFIX EXTERNAL FIXATION in Trauma and Orthopaedics

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nating organisms. Antibiotics are continued for 3 days and changed depending upon the results of bacterial culture (Wilkins and Patzakis 1991).

4. On arrival in theatre, with the wound covered, the limb should be cleaned of dirt with a large sterile gauze soaked in chlorhexidine solution (Fig. 26.4). A tourniquet should not be used unless there is uncontrolled haemorrhage. The dressings should be removed and the limb cleaned with an aqueous solution of betadine and towelled to exclude the unprepared skin and other surfaces.
5. The extent of contamination of the wound, periosteal stripping, and tissue ischaemia, should be assessed. All visible contaminants should be removed and 2–5 litres of saline used to irrigate the wound and remove blood and contaminants, which should be safely contained (Fig. 26.5). The management of compound wounds is not only associated with the risk of cross-infection to the patient, but also to the surgeon. These operations should therefore be performed by the experienced surgeon used to using universal precautions (Gerberding et al 1990, CDC 1987, CDC 1988). The wound edges should be excised, together with a thin layer of subcutaneous fat (Fig. 26.6). Sufficient fat should be excised, however, to remove the betadine-stained and hence, contaminated layer. The wound may need to be extended for access, so that both bone ends can be inspected and cleaned. Ingrained dirt should be nibbled from the dead bone ends. All small bone fragments devoid of periosteum are dead and should be discarded. Clean periosteum should be preserved at all costs. Segmental bone loss is best dealt with early by planned use of bone transport and bone grafting when necessary (Pennig 1991). The wound should then receive a final 2–5 litre lavage (Fig. 26.7). The wound is not closed but left open for repeat débridement 24–48 hours later. The periosteum should be laid in close proximity to the fractured ends of the bone.
6. Prior to the application of external fixation, the fracture must be reduced and can be held temporarily with bone holding forceps or skeletal traction to achieve anatomical alignment. K-wires and drill holes should be avoided at the fracture site as they produce bone swarf which is dead and can act as a nidus for infection. The best results are obtained by applying an in line fixator to a reduced fracture (Fig. 26.8).
7. Consultation with plastic surgeon colleagues allows planned early coverage of any soft tissue defects (Green 1994). A surgeon should aim to have a wound covered within five days of the fracture. Early bone grafting should be considered if clinical examination and fracture stiffness suggest

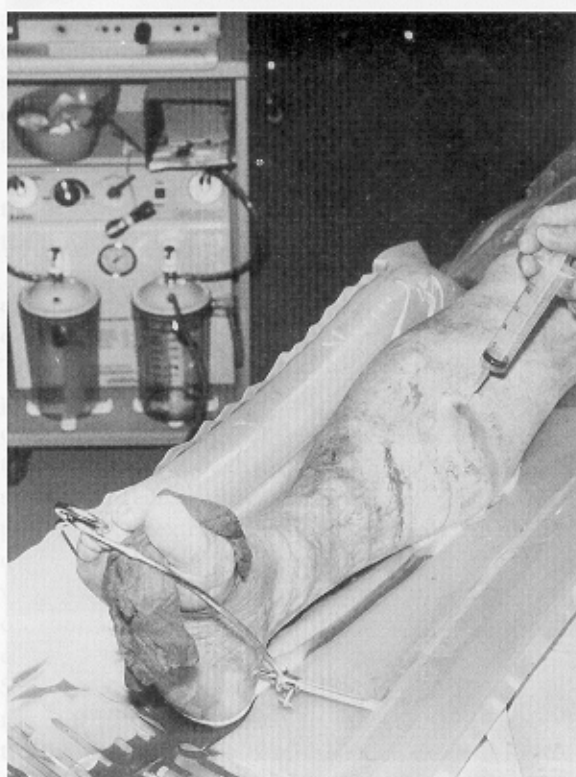


Fig. 26.5 Copious irrigation of the wound with buffered saline can be achieved using a syringe and broken off needle initially, followed by pulsed lavage when the first debridement has been performed.



Fig. 26.6 Excision of the wound edges back to healthy bleeding tissues.