

Bandaging part 2

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TYPES OF BANDAGES

When applying bandages, appropriate materials of **adequate width** should be used to avoid a tourniquet effect.

Porous materials allow air to circulate and moisture to escape.



All bandages should be applied as smoothly as possible to avoid ridges and lumps that may cause irritation and skin necrosis.

Owners must be instructed on proper bandage care. Bandages should be evaluated frequently for signs of slippage or strike-through.



The surface of all bandages should be kept clean and dry.

Patients should be observed for

- a. discomfort,
- b. swelling,
- c. hypothermia,
- d. skin discoloration,
- e. dryness, or
- f. odor,

This may indicate that the area has been bandaged improperly.



Bandages applied too tightly impair circulation and damage soft tissue. Digits should be exposed when extremity bandages are applied to allow sensation and circulation to be monitored.

Loose bandages cause pressure sores or slippage. Patients should be restrained from **chewing at the bandage**, and **exercise** should be limited to short leash walks.

When the patient is outside, bandages should be covered with a plastic bag or other waterproof material to protect them from dirt and moisture. The waterproof material should be removed within 30 minutes to prevent excess accumulation of moisture under the bandage.



Type of bandages

1. Absorbent Bandages

Absorbent bandages are **indicated for** open contaminated and infected wounds. Absorbed debris is removed from the wound surface to allow better healing.

The contact layer is an absorbent material (gauze pads or Kerlix pads) followed by an absorbent intermediate layer (Kerlix rolls) to hold the pad in place.

The thickness of the intermediate absorbent wrap varies with the amount of expected drainage.

An elastic contouring wrap (Conform Stretch Bandages or Kling) is placed over the absorbent wrap to conform the bandage and apply slight pressure.

Adhesive tape is the final covering. The bandage should be changed daily or more often if strike-through occurs.

2. Adherent Bandages

The types of adherent bandages are

- a. wet-dry,
- b. wet-wet,
- c. dry-dry.

A. Wet- dry.

Wet-dry bandages are the most common type of adherent bandage used in veterinary medicine.

Wet-dry bandages assist debridement by liquefying coagulum and absorbing necrotic debris while leaving viable tissue intact. The principle of a wet saline bandage is that, as the sponges dry, wick action pulls debris and exudate into the sponge and away from the wound.



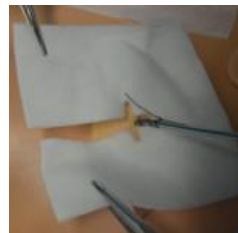
The advantages of wet-dry bandages are

- (1) Antimicrobials can be used in the wetting solution;
- (2) A physiologic environment can be maintained
- (3) Comfort is maintained
- (4) Exudate is removed.

Bacteria may flourish in a moist environment, and tissue maceration may occur. Topical antibiotics used in conjunction with a wet bandage should be in a water-soluble form and placed in the solution used to wet the sponges.

Place several layers of sterile gauze sponges over the wound and soak them with saline or a 0.05% to 0.7 % chlorhexidine solution. Cover the wet sponges with an absorbent bandage. Change the bandage daily or more often if strike-through occurs. To remove the primary layers of the bandage (dry gauze sponges), moisten the sponges with saline and lift them from the wound.

Removal of the primary bandage layer may cause bleeding or oozing. A nonadherent bandage generally is indicated after 3 to 5 days of wet-dry bandaging.



B. A wet-wet bandage is similar to a wet-dry bandage except that the contact layer is expected to remain wet and is not allowed to dry before bandage removal. The bandage can be kept moist between bandage changes by inserting a fenestrated drain between layers of gauze and injecting fluid into the bandage every 4 to 6 hours.

A wet-wet bandage is used to transport heat and enhance capillary movement of exudate from the wound. It creates a moist environment to help clean the wound but has little debriding capacity. This type of bandage is used on wounds with large amounts of viscous exudate and little debris or necrotic tissue.



The disadvantages of wet-wet bandages include increased management time, tissue maceration that promotes infection, and environmental contamination of the wound by bacteria if fluid reaches the bandage surface. After 3 to 5 days a healthy granulation bed should have formed, and the wet-wet bandage is replaced with a nonadherent bandage.



C. Dry-dry

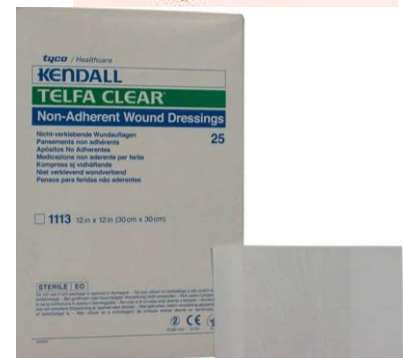
Dry-dry bandages are used on wounds with loose necrotic tissue and debris or a large amount of low-viscosity exudate. *Apply a dry, wide-mesh gauze to the wound, then an absorbent intermediate layer and tape. Leave the bandage in place until absorbed fluid and debris have dried in the intermediate layer.*

Dry-dry bandages are painful to remove, viable cells may be dislodged with necrotic debris, and tissue may desiccate.



3. Nonadherent Bandages

Wet-dry, wet-wet, and dry-dry bandages should be replaced with nonadherent bandages when drainage becomes serosanguineous and granulation tissue forms on the wound. The contact layer is a nonadherent pad (Release or Telfa) followed by an intermediate absorbent wrap (Kerlix rolls) to hold the pad in place.



The thickness of the intermediate absorbent wrap varies with the amount of drainage expected. *Place an elastic contouring wrap (Conform Stretch Bandages or Kling) over the absorbent wrap to conform the bandage and apply slight pressure. Place adhesive tape as the final covering. Change the bandage every 1 to 3 days or as needed.*



4. Occlusive Bandages

Occlusive bandages allow wound fluid and normal body moisture to accumulate and prevent external fluid contamination of the wound. Bandages become occlusive when the outer layer is waterproof adhesive tape, rubber, or plastic. Another type of occlusive bandage is a hydrocolloid material that serves as a nonadherent contact layer (Dermaheal or DuoDERM)



Occlusive dressings are beneficial in speeding the rate and quality of healing in comparison with dressings that allow wound desiccation. However, wound contraction is reduced when hydrocolloid dressings that adhere to the wound edges are used. Occlusive bandages are used to retain moisture over partial thickness wounds without necrosis or infection.

5. Tie-Over Bandages

The contact and absorbent layers of a bandage can be held in place with a tie-over bandage when the wound is in an area inaccessible to standard bandaging techniques (e.g., the hip, shoulder, or axilla).

Place several sutures (e.g., 2-0 or 0 nylon or polypropylene) in the skin surrounding the wound, tying them with a loose loop.

Apply an adherent or nonadherent contact layer and an intermediate bandage layer on the wound. Hold these layers in place by lacing sterile gauze or umbilical tape through the loose skin sutures.

As an alternative, staple long strands of suture 2 to 3 cm from the wound edges around the periphery of the wound, then tie or clamp these sutures over the bandage to hold it in place.

Cover the area with an outer bandage layer if possible



6. Stabilizing Bandages

Stabilizing bandages help immobilize fractures to minimize further tissue damage during transport for definitive fracture fixation.

These bandages are heavily padded and often are referred to as Robert Jones bandages (see p. *** for application technique).

After fracture fixation with splints, external fixators, or internal fixation, stabilizing bandages may be used to support injured tissues, reduce swelling, and treat open wounds.

The type of bandage applied to the wound is determined by the type of wound and the condition of the tissues.

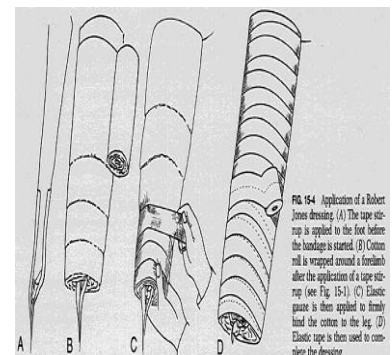
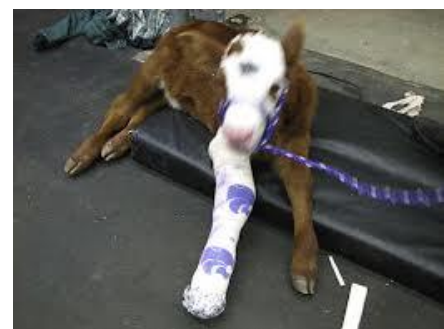


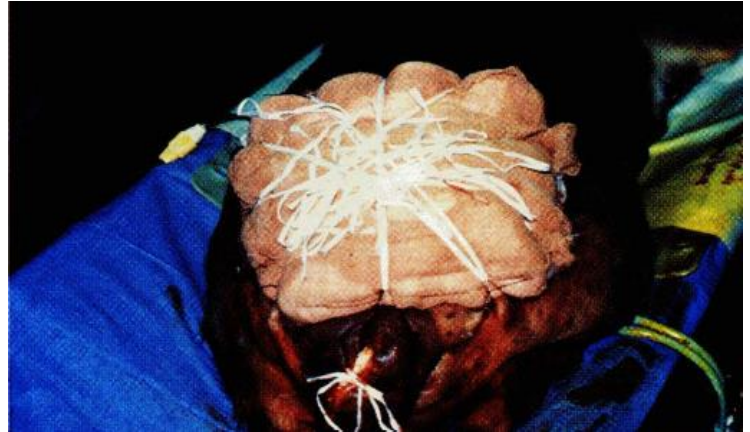
FIG. 15-4 Application of a Robert Jones bandage. (A) The tape strip is applied to the foot before the bandage is started. (B) Cotton roll is wrapped around a forelimb after the application of a tape strip (see Fig. 15-3). (C) Elastic gauze is then applied to firmly band the cotton to the leg. (D) Elastic tape is then used to complete the dressing.



7. Postoperative or Closed Wound Bandages

Bandages may be applied to areas without an open wound to absorb fluid from a drain or incision line, to support the incision, to compress dead space, to apply pressure, or to prevent trauma or contamination.

Apply several sutures or skin staples with loose loops around the periphery of wounds to create a tie-over bandage in areas inaccessible to standard bandaging techniques. Apply the primary and secondary bandage layers, then hold the tertiary layer in position by lacing umbilical tape or heavy suture through the loose skin sutures or staples.

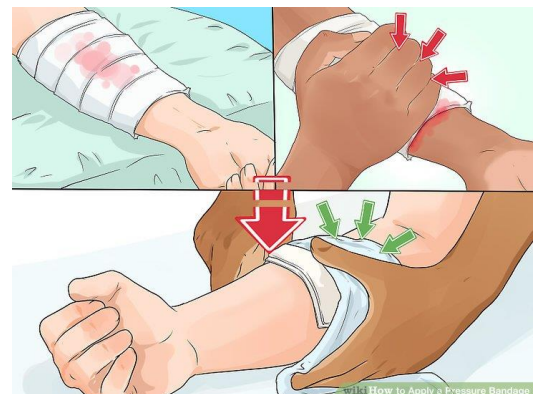


These bandages improve the patient's comfort by supporting wounds.

Place a nonadherent, absorbent dressing over the incision line and several layers of wide-mesh, absorbent gauze over drains. Determine the thickness of the intermediate layer based on the amount of drainage expected. Be sure to use adequate padding over the end of the drain to prevent strike-through. Assess the character and amount of drainage with each bandage change.

8. Pressure Bandages

Pressure bandages facilitate control of minor hemorrhage, edema, and excess granulation tissue. Direct application of a corticosteroid ointment to the wound may help control excess granulation tissue. The more convex the surface, the greater the pressure exerted by the dressing on the tissue.



Apply an absorbent, nonadherent contact layer over the area of hemorrhage or excess granulation tissue. Use a thick, absorbent intermediate layer and elastic adhesive tape for the outer bandage layer. Wrap the elastic tape carefully to avoid excess pressure, which can impair arterial, venous, and lymphatic circulation and cause tissue necrosis or nerve damage. Check for discomfort, swelling, hypothermia, dryness, or odor, which may indicate that the area has been bandaged too tightly. Remove the bandage within 24 to 48 hours if it was applied to control hemorrhage.

9. Pressure Relief Bandages

Bandages designed to prevent pressure over an area (usually a bony prominence) are used to treat or prevent pressure sores. Avoiding pressure encourages healing over bony prominences. Most pressure relief bandages use a doughnut-shaped bandage or pipe insulation

Pressure relief bandage applied over the greater trochanter in a dog. The bandage is made from a firmly rolled towel that is cut, taped, and applied over the bony prominence.



The bandage should be large and thick enough to prevent pressure over the bony prominence. The circular opening in the bandage is used to treat the wound without removing the bandage, and it also distributes pressure around rather than over the wound.

Create a doughnut-shaped bandage by rolling a towel or cloth into a tight cylinder, securely taping it to maintain the roll, and forming it into an appropriately sized circle. Center the doughnut-shaped bandage over the lesion or bony prominence and secure it to the skin with tape so that it does not slip.

These bandages may be difficult to maintain in position, and taping directly to the skin may cause skin irritation. Pipe insulation bandages usually are used to protect the olecranon.

Create bandages from foam rubber pipe insulation tubes by splitting the tube and cutting a hole where the bony prominence will lie. If necessary, use two or three thicknesses of pipe. Stack and tape the pieces of pipe together. When using the bandage over the olecranon, first pad the cranial surface of the radial-humeral joint with cast padding to prevent joint flexion and to keep the dog from lying in sternal recumbency. Then tape the cast padding and pipe insulation in place. Use a spica type bandage if necessary to hold the bandage in position.

