

Equine Wounds and Bandaging

Horses seem to be attracted to wounds, especially on their legs. If you own one horse or several horses, you will likely encounter at least one wound at some point. Horse wounds can range from small to large and minor to serious. This article will discuss several types wounds that can occur on the legs that should be evaluated by a veterinarian as well as bandaging techniques.

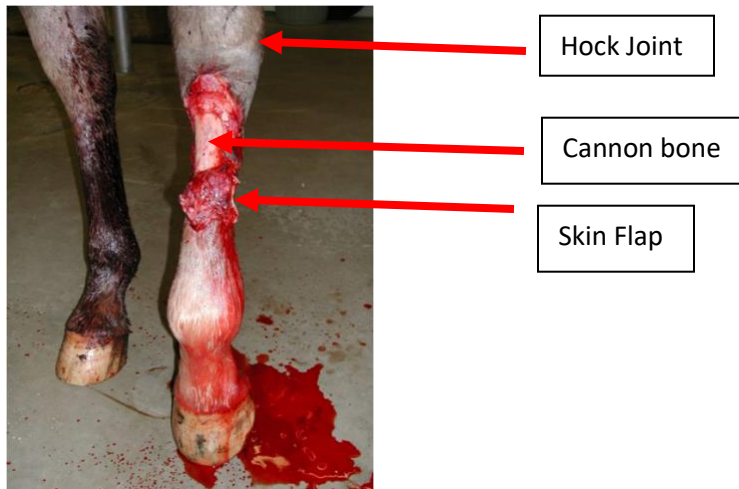
What can you, the owner/barn manager/trainer do when a wound is found? Call your veterinarian, remain calm and keep horse calm, assess the horse and perform a physical exam, assess wound(s), stop excess bleeding if present, clean wound(s), bandage the wound(s).

Heart rate (28-44 BPM)
Respiratory rate (12-16 BPM)
Temperature (99-101 F)

There are several different types of wounds that require treatment and likely veterinary attention. Those wounds include wounds with exposed bone, wounds over joints, wounds over tendons and tendon sheaths, and wounds with excess bleeding.

Wounds with Exposed Bone

The distal (lower) portion of all four limbs has minimal protection and coverage over the bone. There is usually just skin, tendons and ligaments. The outer layer of bone is called the periosteum and can easily be damaged with wounds that have exposed bone. With excess bone exposure or damage, the formation of a boney sequestrum can form or a potential bone infection can occur. A sequestrum is a dead piece of bone that usually requires surgical removal and/or long-term antibiotic therapy. Leg wounds that have exposed bone require prompt veterinary care.



Wounds Associated with Joints

Wounds over a joint or near a joint can be small puncture type wounds or a larger wound. Regardless of the size of the wound, if it is over or close to a joint, veterinary evaluation is important. Wounds with joint involvement often can have excess clear yellow to orange drainage from wound that may indicate joint fluid drainage. You may notice excess warmth and a painful swelling around wound and joint. Lameness is also typically present with joint involvement.



Small wound over the hock joint.



Wound with skin flap that is over the front leg carpal (knee) joint.

Wounds that communicate with and involve a joint require more involved treatment. If these wounds are not treated appropriately, they have a high likelihood of causing future lameness problems due to the development of arthritis that can happen after a joint infection. Ideal aggressive joint treatment usually involves surgery to flush/lavage the joint to remove any debris and bacteria, injectable antibiotic medication, anti-inflammatory medication, good bandaging of the wound and leg, rest and confinement to a clean dry stall or small pen.



Small wound over the hock joint as well as the tendon sheath



Wound over the fetlock joint

Wounds Over Tendons

The extensor tendons are located on the front of the legs and are commonly injured or lacerated along the cannon bones. If the tendon becomes lacerated in a wound, the leg will knuckle over on the fetlock and the horse will be unable to “flip” the foot forward without help. The leg will need to be stabilized and supported with a good bandage and a splint to keep the leg/joint from “knuckling” until the tendon heals and scars back together. This tendon heals very well without any residual lameness or problems.



The extensor tendon on this hind leg has been completely lacerated and the leg is “knuckled” over on the fetlock.

The flexor tendons are located on the back of the legs. When wounds and lacerations involve these tendons, they are considered a more serious injury compared to the extensor tendon injuries. When the tendon is completely or mostly lacerated, surgery is required to suture the tendon back together. There is usually prolonged healing, and they can be associated with chronic lameness problems.

Wounds that occur over the flexor tendons may be associated with a tendon sheath (a similar structure as a joint that contains synovial fluid). There are several tendon sheaths that are located around the flexor tendons located on the back of the legs. Wounds in areas where tendon sheaths are located usually require more aggressive treatment as was discussed above with joint involvement.



Deep wound on the back side of the pastern (between the hoof and the fetlock/ankle). The wound lacerated through the flexor tendons and is in the tendon sheath.



This wound is on the back side of the hock. There is a tendon sheath located here that contains synovial fluid.



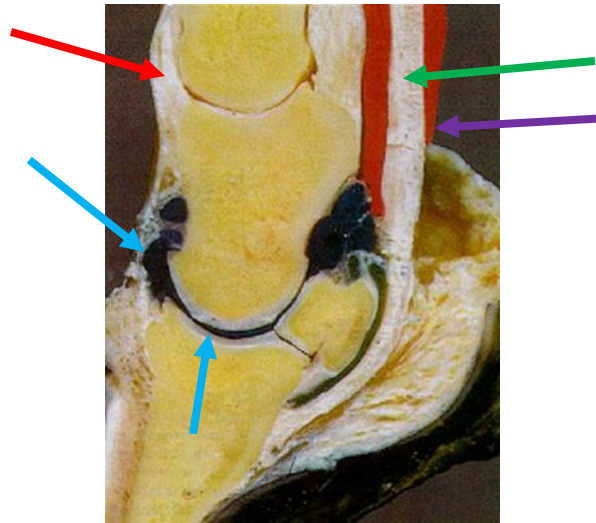
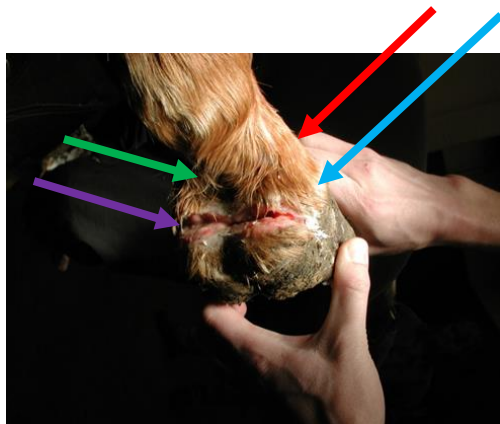
This wound is on the back side of the fetlock/ankle. There is a tendon sheath in this area as well as the fetlock joint.

Leg Wounds with Excess Bleeding

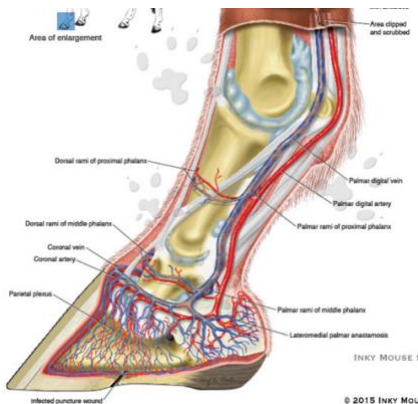
Heel bulb and pastern lacerations are commonly encountered in horses and they often are associated with excess bleeding. There is a large artery and vein located on both sides of the leg that are superficially located just under the skin. Wounds in this area may also involve the pastern or coffin joint, the flexor tendons and/or the tendon sheath. Wounds in this area require prompt veterinary evaluation. Because there is often excess bleeding, it is important to know how to properly and effectively bandage to stop active bleeding. Bandaging supplies and techniques will be outlined later in this article.



Heel bulb & pastern wounds

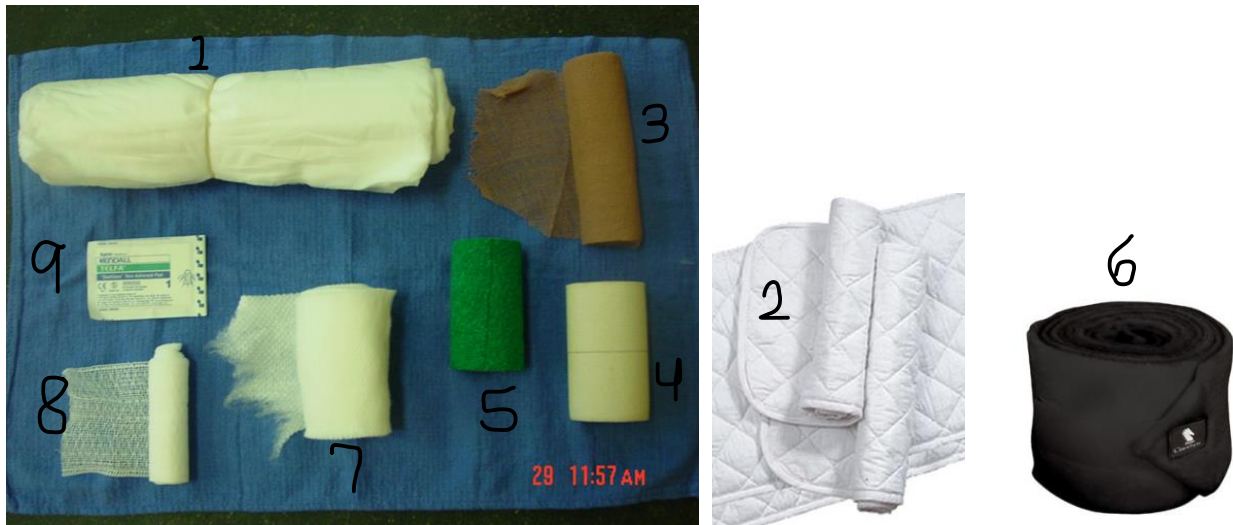


* The above photo on the left → the laceration location is close to all structures that are labeled on the above right photo.
 *Proximity to coffin joint (**Blue arrow**)
 *Proximity to pastern joint (**Red arrow**)
 *Proximity to deep digital flexor tendon (white structure) and tendon sheath (area in red around tendon (**Green arrow**))
 *(**Purple arrow**) → Location of the wound pictured above on the left.



The red structure is the artery. The blue structure is the vein. Both structures are superficial just under the skin and are often lacerated with wounds in the pastern and heel bulb, resulting in excess bleeding.

Bandage Supplies



- 1 = Leg cotton/sheet cotton (disposable)
- 2 = Quilted washable leg wrap
- 3 = Brown gauze
- 4 = Elastikon (sticky tape with minimal elasticity)
- 5 = Vet wrap (“sticks” to itself but not to the skin/hair; very elastic/ “stretchy”)
- 6 = Washable Polo-type wrap
- 7 = Cast padding (soft gauze roll)
- 8 = Kling gauze roll
- 9 = Telfa non-stick pad (to put directly on the wound)

Safe Topical Wound Products:

- *Triple antibiotic ointment (Neosporin)
- *Silver Sulfadiazine (Silvadene)
- *Vetericyn
- *Nitrofurazone Ointment

Non-Recommended Wound Products:

- *Wonder Dust
- *Wound-Kote
- *Scarlet Oil (use only under recommendation from a veterinarian)

Bandaging- Wounds

The goals when bandaging a leg that has a wound are (1) to keep the wound clean (2) to keep pressure around the wound and leg to minimize swelling and (3) to protect the wound and leg as healing is occurring. The goals for proper bandaging include (1) to apply a telfa pad or similar non-stick product directly over the wound to minimize the bandage sticking to the

healing wound (2) to apply even pressure with each bandage layer and product (3) to apply each bandage layer going the same direction (4) to avoid any wrinkles in each bandage layer and (5) to make sure there is adequate pressure around the wound and leg without the bandage being too tight.



Step #1: Use a telfa non-stick pad directly over the wound. You can apply wound ointment if needed (i.e. Neosporin, Silver Sulfadiazine Cream)



Step #2: Use cast padding or kling gauze wrapped around the leg over the telfa pad. Apply your wraps snug but not tight. Make sure there are no wrinkles in each layer wrapped.



Step #2A: Use Elastikon over the cast padding/kling gauze. Make sure to have about $\frac{1}{2}$ of the Elastikon width stuck to the leg/hair at the top of the bandage (red arrow) and at the bottom of the bandage to minimize slipping of the bandage. If the wound is small and there is no swelling in the leg, this may be all that is needed for the bandage. If the wound is larger and/or the leg has swelling, proceed with **step #3**.



Step #3: Use thick cotton wrap/ sheet cotton directly over the cast padding/kling gauze or after you have applied the Elastikon layer. The cotton wrap needs to be applied evenly, snug, wrapped the same direction as the prior layers, and without wrinkles.



Step #4: This bandage would be for a larger wound and/or a wound that has created swelling in the leg. Use brown gauze and pull fairly tight. Make sure to leave some cotton leg wrap exposed at the top and bottom to minimize constriction of the bandage (red arrows). Again, make sure there are no wrinkles, and the wraps are applied evenly and going the same direction as prior layers and the thick leg cotton layer.



Step #5: Use vet wrap over the brown gauze layer and stretch it about $\frac{1}{2}$ it's stretchability. The bandage should be fairly snug on the leg, but you should be able to put 1-2 fingers between the bandage (cotton wrap) and the leg. Make sure to leave some cotton wrap on top and bottom (Red Arrow).



Step #6: Use Elastikon on the top and bottom of the bandage to minimize slipping of the bandage and to keep dirt and debris from getting into the bandage from the top or bottom.

Bandaging- Excess bleeding

This bandage is applied to wounds that are actively bleeding and is referred to as a pressure bandage. The goals of this bandage are (1) wrap around the wound and leg with several layers of absorptive material (2) wrap around the wound and leg very tightly and (3) remove the bandage 12 hour or less after applying. This bandage is meant to stay in place for a short period to get bleeding to stop. You will be wrapping the wound and leg as tight as you can (tighter than you would for a normal wound bandage or support wrap bandage).

Supplies needed or that are helpful include an absorptive product (terry cloth or towel, roll cotton, sheet cotton, or diapers), vet wrap, brown gauze, and elastikon.



Step #1: Use a towel (or other absorptive product- diaper, 4x4 gauze, or thick cotton) directly over a wound that is bleeding. The goal is to use something that is absorptive directly over the wound. If you have a thick cotton wrap (upper right photo) you can apply this after the absorptive towel.



Step 2: Use brown gauze and wrap tightly over the towel, thick cotton wrap or other absorptive product. You will need to wrap as tight as possible.



Step 3: Use vet wrap and pull at tight as possible to achieve good compression over the wound and the leg. The vet wrap is applied over the brown gauze layer. Alternatively, the vet wrap can be applied directly over the towel or other absorptive product. If needed, you can wrap with elastikon over the vet wrap as an added compression layer. **Because this bandage is wrapped tightly is not meant to leave on for an extended period (<12 hours).**