Photo courtesy: WestVETS

Wound Treatment

Part 3. Complicated Wounds

by Sarah Van Dyk, BVSc (Hons)

Finding your horse with a wound can be a stressful situation, but it is one which all horse owners will inevitably find themselves in at some stage.

In this last article of our wounds series, Dr Sarah van Dyk from WestVETS discusses the management of specific types of wounds and what happens when wounds are not healing normally.

Following on from the last edition on the general initial treatment of deep wounds, this month we will discuss some examples of specific types of wounds and how they can be managed to achieve the best outcome.

We will also touch on complications of wound healing and what can be done to manage these cases.

Casting the limb for immobilisation

As we discussed last month, primary closure of a wound (closing the wound with sutures or staples) is preferable to achieve the best cosmetic result and quickest return to function.

In some situations, primary closure may require the horse to have a general anaesthetic to adequately debride and clean the wound and achieve the best surgical result. Examples of these situations include large wounds of the distal limbs and heel bulb lacerations.

In addition to suturing the wound, casting is commonly used to immobilise the distal limb to promote granulation in wounds where movement would otherwise slow the healing process.

The limb is casted from below the knee or hock or just over the hoof and pastern depending where the wound is. For deep heel lacerations, a hoof or boot cast is commonly used as an adjunct to suturing, to help stabilise the wound and accelerate healing. Half limb casting to below the hock or knee is generally reserved for the hospital setting as the cast needs to be monitored very closely.

The most significant complication of limb casting is the development of pressure rubs from the cast which can be full thickness involving tendons and joints.

Depending on the situation, the cast is kept on for two to four weeks to achieve the best result.

Wounds of the head and eyelids

Head wounds in horses are common and primary repair is often possible due to the excellent blood supply to the skin of the head.

All head wounds should be examined for underlying skull fractures and an ocular examination should be performed to ensure there is no eye involvement.

Wounds involving the eyelids should always be repaired where possible as any loss of the eyelid margin can result in tears leaking from the eye and down the face. Any scars of the eyelids have the potential to redirect the eyelashes and hair into the eye which irritate the cornea and can cause chronic ulceration. Again, with these wounds, the eye should be examined to preclude any eye involvement.

Penetrating wounds into joints and tendon sheaths

As we also discussed last month, another consideration to make when assessing a wound is determining the involvement of a synovial structure such as a tendon sheath or joint. These are very serious injuries and it is best to consult a veterinarian in these cases.

A wound may appear small and the skin may even heal over quickly, however if there is contamination of a joint or tendon sheath, these invariably result in infection which can have terrible consequences in horses.

Infections in joints damage the articular cartilage and underlying bone resulting in osteoarthritis, and infections in tendon sheaths can damage the tendon itself and can result in adhesions forming between the tendon and tendon sheath. Both of these scenarios can lead to permanent lameness even once the infection has resolved. Occasionally, these infections are unresolvable necessitating euthanasia.

Wounds of this nature need to be treated urgently and aggressively, and usually involve general anaesthesia and surgery to closely inspect and flush the synovial structures involved. This is then followed up with aggressive systemic and regional antibiotic therapy and a lengthy recovery period.

The photo on the opposite page shows the procedure for checking for communication with a synovial structure.

Tendon lacerations

Horse wounds generally involve two types of tendons; flexor tendons that run down the back of the cannon bone, and extensor tendons that run down the front of the cannon bone. Injury to the extensor tendons generally carry a good prognosis for return to function as long as the synovial structures aren't involved, whereas flexor tendon injuries are much more serious and prognosis for return to function is guarded.

Heel injuries

These injuries are common and mostly occur by the horse catching its heel over fence wire and pulling back. Heel injuries have the potential to involve the coffin joint, distal digital sheath or navicular bursa, hence it is best have them examined by a veterinarian.

If one or more of these synovial structures is involved, treatment needs to be aggressive and prognosis for return to athletic function becomes less favourable. There is a lot of movement in this area therefore casting the foot in a boot cast is very useful for speeding the healing process and achieving a good cosmetic result.

> *Care should be taken to avoid applying the products to the healing skin edges and they should be used as sparingly as possible.*

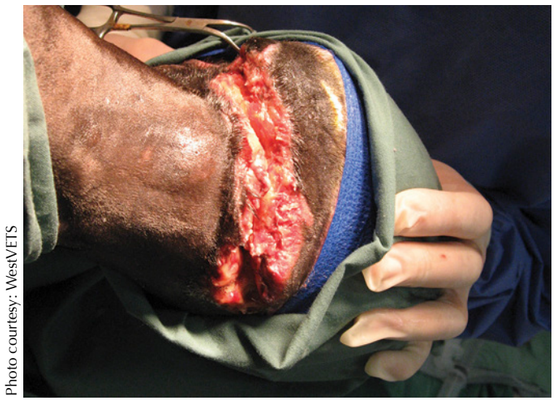


Photo courtesy: WestVETS

Above: A heel injury caused by a wire fence.

Coronary band wounds

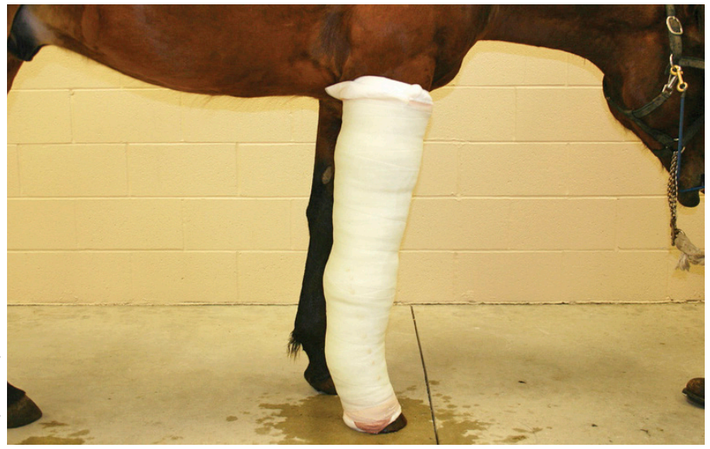
The coronary band tissue is important for normal hoof wall growth. Any damage to or loss of the coronary band can result in weak and deformed hoof wall growth.

Wounds to the coronary band are often puncture wounds which can contain wood splinters or similar material. This can complicate healing and these wounds should be investigated by a veterinarian to remove any foreign material.

Wounds to the axilla or chest

Wounds involving the skin in the armpit region often occur from the horse running into fence posts or a sharp branch. These particular wounds can act like a one way valve where air gets sucked under the skin when the limb is in a certain position, leading to air being trapped under the skin and subcutaneous emphysema developing. This usually resolves itself over time.

Another possible complication is penetration into the chest cavity. The chest cavity is under negative pressure so a penetrating wound can cause air to be sucked into the cavity, leading to difficulty breathing which is an emergency. Any wound that communicates with the chest cavity or the abdominal cavity also carries the risk of infection developing within those respective cavities which can be challenging to treat.



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Complications of wound healing

Proud flesh

Proud flesh is excessive granulation tissue which occurs when the edges of the wound cannot contract as the wound heals. It is seen most commonly in wounds of the distal limb largely because of the high amount of movement in this area.

Proud flesh can be minimised by limiting the movement with firm bandaging or casting. The best way to manage proud flesh is to have a veterinarian cut it off so the granulation tissue is flush with the skin edges, and the wound can continue to heal. There are various caustic agents used to erode the tissue, however, these products also damage the normal healing tissue so are best avoided if possible. Sometimes it may be necessary to use these products to control proud flesh; this should be conducted under the recommendation of a veterinarian.

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Care should be taken to avoid applying the products to the healing skin edges and they should be used as sparingly as possible. Such products include Lotagen, yellow lotion and copper sulphate. Corticosteroid creams can also be used but can slow wound healing.

Chronic non-healing wounds

In some cases, a wound may seem to take much longer than expected to heal. Infection, proud flesh or habronema should be considered in these situations.

Investigating these wounds may require x-rays to look at the underlying bone for infection or sequestration or x-rays and ultrasound to look for foreign material in the wound. These problems then need to be addressed before the wound is able to heal completely.

ABOUT THE AUTHOR: *Sarah Van Dyk BVSc (Hons) - Mixed Animal Veterinarian. Sarah worked at WestVETS as an afterhours nurse in her last year of studies at UQ. Upon graduation in 2009, Sarah worked in Armidale, New South Wales in mixed practice for some time before re-joining the team at WestVETS as a mixed animal veterinarian. Her special interests are small animal surgery, farm animal medicine and surgery, and equine medicine and reproduction. She also enjoys being attending veterinarian at endurance rides and other equestrian events. In her spare time, she enjoys snowsports, art, horseriding and long distance running.*