Animal Health
Interference

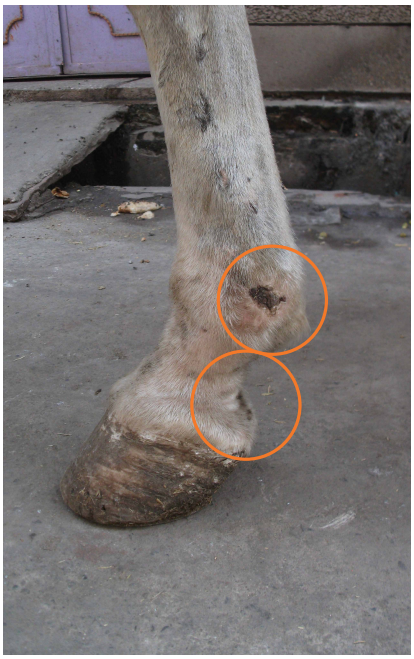
SEBWAT parameter

(Standardised Equine-Based Welfare Assessment Tool)

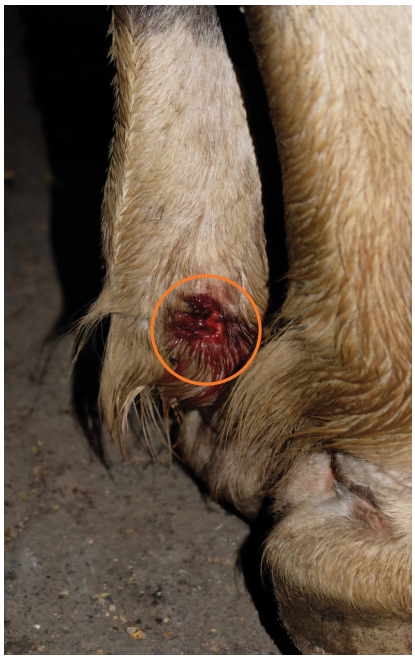
Interference
Gait

Welfare issue

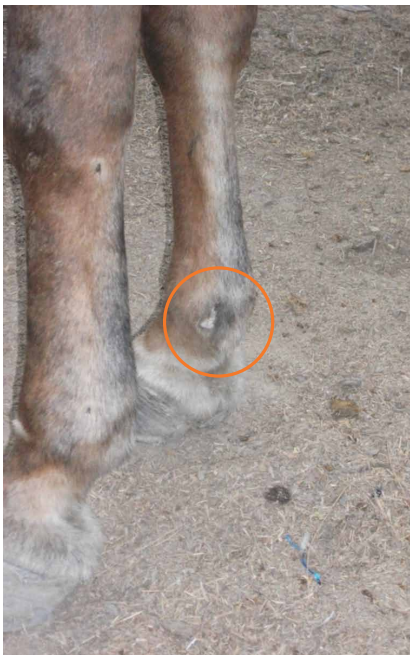
- The equid displays signs of interference injuries to any of the lower limbs.
- The severity of the injury can range from rubbed hair to a large and severe lesion. Even where the skin is not broken, interference injuries can cause bruising, pain and swelling, particularly to the fetlock joint. Over time, this can lead to degeneration of the joint and long term lameness.
- Brushing (interference) lesions are due to contact between the hoof and adjacent limb during motion. They are typically located on the inner sides of the fetlocks, on fore or hind limbs.
- Over-reaching lesions are due to contact between the toes of the hind hooves and the heels of the fore hooves. They are typically located on the heels of the fore limbs, and are not present on the hind limbs.
- *Note:* There are other types of interference between limbs, but only those from brushing and over-reaching are captured during SEBWAT due to being simple to recognise and assess.



Interference looks like repeatedly struck at same site over long time. Top: brushing interference lesion, bottom: over-reaching interference lesion.



Severe (brushing) interference lesion.



Mild (brushing) interference lesion.

Welfare significance

- Interference lesions are painful and uncomfortable to the animal during work, and can present as lacerations, bruising, swelling and bone or tendon damage. As interference injuries tend to occur repeatedly in the same location, over time they can lead to degeneration of the affected joint (usually the fetlock) and the development of osteoarthritis, leading to chronic pain and lameness.
- Like any lesion, interference lesions are a risk of local or systemic infection to the animal. Their location on the lower limbs means that they are close to the ground and therefore may be susceptible to infection due to increased contact with mud, soil, urine, faecal material etc. When soil contamination occurs there is a high risk of tetanus.
- Interference lesions indicate that the animal's gait may be compromised in some way, and it is experiencing difficulty working without collision between limbs.
- Collision between limbs increases the risk of tripping and falling during work. This is a particular concern for animals carrying heavy loads, as falls can result in serious injury, as well as fear and distress.

Over-reaching

- Over-reaching injuries can be deep, particularly if the animal is shod on the hind limbs. These injuries can bleed a lot as the skin in the fetlock area is delicate, and the lack of protective fat or muscle means that there is a risk that the underlying structures of the pastern (bone, tendon or arteries) can be damaged.
- It is also possible for the hoof wall or the coronary band to become damaged by over-reaching. As the hoof grows from the coronary band downwards, damage in this area can take several months to grow out; and can lead to slow or abnormal hoof wall growth which may cause long-term lameness[1]. (See the *Hoof shape and quality* section for more information on hoof abnormalities).
- Over-reaching injuries can be slow to heal as the pastern is a very mobile area and the wound can be pulled open as the animal moves. Affected animals should be rested with restricted movement until the wound has healed, as slow healing can lead to the development of granulation tissue (proud flesh).
- Proud flesh in the pastern area can resemble a tumour, particularly if it grows larger than the original injury, and can be difficult to manage[2].
- Equids prone to over-reaching are more likely to pull off their front shoes by stepping on the back of the shoe with the hind hooves. This can damage the hoof wall causing cracks, and increase the risk of falls.

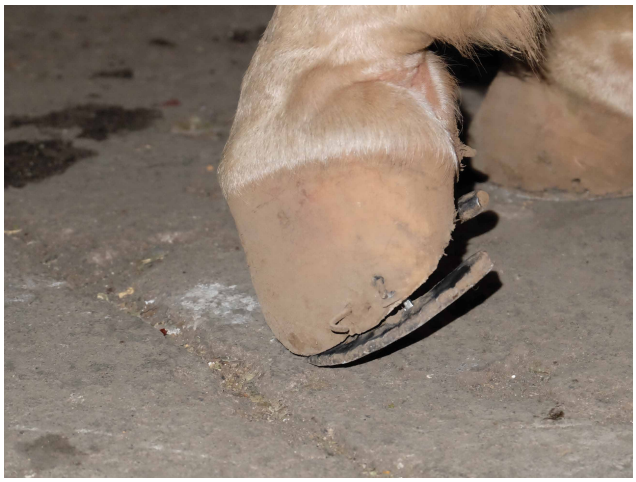
Speedy-cutting

- A speedy cut is similar to a brushing injury but the point of contact is higher on the limb, e.g. closer to the knee or hock, rather than on the fetlock area.
- As the name suggests, speedy cuts occur in equids working at speed (moving fast) and can be very serious, particularly if the horse is shod as the edge of the shoe acts like a knife against the soft tissue of the opposite leg. Speedy cuts can result in serious lacerations and tendon damage.

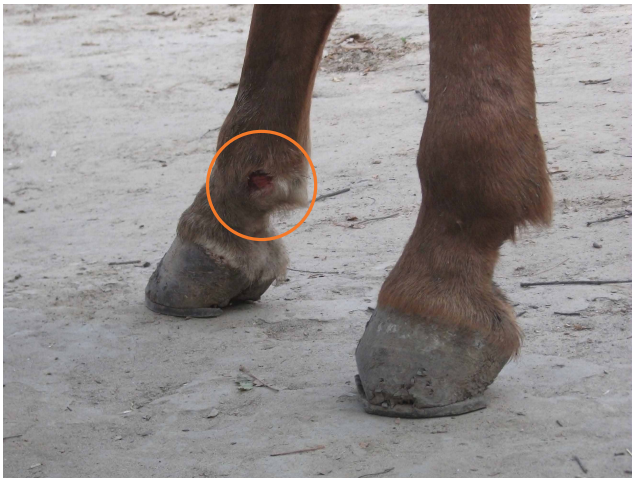
[1] Dabareiner quoted in Raia (2010)
[2] Cable (2001)

Possible causation

- Exhaustion and debility increase the risk of limb collision as animals are less able to move normally due to muscle weakness and fatigue. Exhaustion and debility can have many causes, including dehydration, pain, over-work, under-nutrition and disease.
- Working at speed, (e.g. pulling a cart) increases the risk of collision occurring between the limbs, and also increases the likelihood that collision will result in a lesion due to limbs moving with greater force at faster speeds[3]. Over-reaching and speedy-cutting are both often associated with fast work.
- Poor farriery is a major cause of interference lesions, particularly due to protruding nails on the inner surfaces of the hoof wall, loose shoes, offset or crooked shoes, shoes that are too wide for the hoof, poor quality shoes that break or crack easily, etc.
- The presence of shoes can increase risk of interference lesions due to the additional weight they add to the hoof, and sharp or abrasive materials used for shoes, making it more likely that collision with the hoof or shoe will result in an injury to the limb.
- Poor hoof shape has severe effects on an animal's motion, inhibiting the animal's ability to move freely and comfortably, making limb collision and interference lesions more likely.
- Overgrown fore hooves have a delayed break-over point, as it takes longer for them to be lifted from the ground than if they were the correct shape[4]. This increases the risk of over-reaching, as the hind limbs may strike the heels of the fore limbs before they break over.
- Factors that slow the movement of the fore hooves also make over-reaching more likely. These include deep or muddy ground, lameness in a forelimb (causing a shortened stride) or tiredness, leading to a lack of coordination.
- Poor conformation can predispose to interference during motion, for example, equids with narrow chests are more likely to suffer brushing injuries as their limbs are closer together and more likely to collide during motion[5]; and toe-out conformation causes limbs to move in an arc rather than in a straight lateral motion.



Very poor shoeing, causing risk of lesions to other limbs and hoof damage.



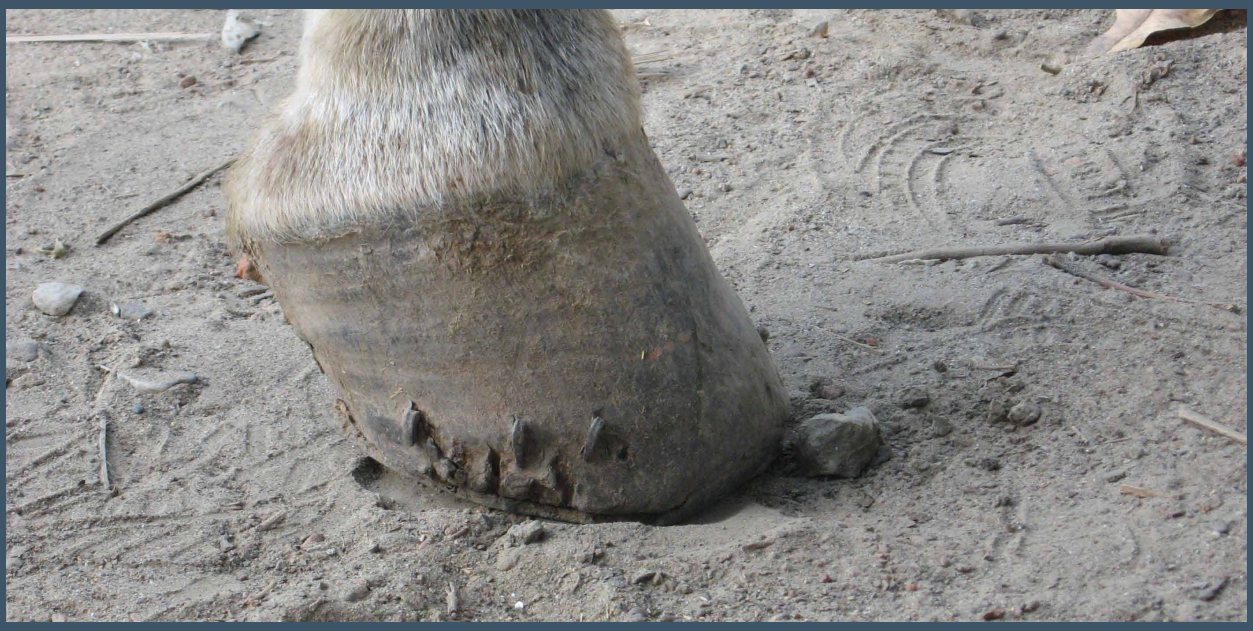
Very poor hoof shape and (brushing) interference lesion on the right limb.

[3] Thal, D.O. (2015)
[4,5] O'Grady (2003)

Means of resolution

- Any lesions should be cleaned and covered to reduce risk of infection. Treatment must be coupled with preventative measures, otherwise the lesion will continually recur as the animal strikes the same site again during work.
- Preventative measures can be taken to avoid repeated injury to the interference site. These include bandaging to protect the heels or fetlocks; 'doughnut' devices which inhibit close contact between the limbs; brushing boots or over-reaching boots if available in the context, or local alternatives. These measures are particularly important to promote in animals known to have conformation that predisposes to interference, as other means of resolution may not be successful in such cases.
- Maintaining correct hoof shape and balance is important to support free and comfortable limb motion during work. (See the *Hoof shape and quality* section for further information about other benefits of maintaining correct hoof shape.)
- Shoes should be avoided if not essential for the working conditions of the animal.
- If shod, nail clenches must be neatly turned down and flush against the hoof wall. Shoes must be the correct size for the specific hoof, and should not protrude beyond the hoof wall.
- Corrective farriery can help reduce interference problems by improving the hoof balance. Reducing toe length and squaring off the hind toes (known as 'rolling the toes') can improve 'break over' and reduce incidences of over-reaching, although care must be taken to ensure that too much toe is not removed or pain and lameness will result. It is important that owners are aware that corrective farriery is a long term process and will require multiple trims over many months to get a correct hoof shape, and requires a skilled farrier.
- Owners should be educated about the benefits of avoiding working animals in a state of exhaustion or debility and encouraged not to work at fast speeds whenever possible. (See *Apathy* section for further information on means of resolution for apathetic or debilitated animals.)
- Adequate rest and feed can prevent accidents and injury caused by exhaustion or lack of energy.

Refer to the Working Equid Veterinary Manual, Community Engagement work plans or strategies and the Handling Guidelines before conducting an intervention..



Clenches not flush with the hoof – risk of injury to adjacent limb when this is on medial aspect.

[7] Wilson (date unknown)
[8] Hayes (1992)
[9] A. Brown, personal communication.
[10] Brooke (2013)

References

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