A farrier in a red shirt is shown from the side, leaning over a horse's leg. He is using a metal rasp to work on the hoof. The horse's leg is white, and its dark brown tail hangs down. The farrier's shirt has the word "NATURALLY" visible on the sleeve. The background is a blurred outdoor setting.

Oh no! It's a...

Hoof Abscess

Does this sound familiar?

You have been working for weeks prepping your horse for a competition and everything is on track for one of those elusive ribbons. You can almost touch it...

But then, on the very day before the big event, your horse becomes suddenly and totally lame in one hoof, complete with heat, swelling and a bounding pulse.

Oh no! It's a hoof abscess.

Hoof abscesses are painful for horses and frustrating for horse owners, and it seems way too common...

by Andrew Bowe, Master Farrier
Images by Nicky Bowe,
Mayfield Barefoot Care Centre

What is a hoof abscess?

A hoof abscess is the body of pus that forms when invading bacteria breach the vascular 'live' tissue within a hoof and a local infection develops. Pain arises from the inward pressure generated by the gathering volume of pus. (See Photo 1)

All abscesses evolve. They begin when invading pathogens or foreign bodies are met by the body's defence mechanism in the form of white blood cells, and rapidly increase in size and pressure before being sealed off from living tissue by a thin membrane. They then begin to migrate along a path of least resistance, most commonly upwards along the laminar line where they are able to erupt at the structurally weak coronet band, thus expelling the detritus of infection. (See Photo 2)

Alternatively, an abscess may sometimes travel beneath the sole and erupt at the heel bulbs (see Photo 3) and can occasionally even be reabsorbed by the body without erupting.

The greater the pressure, the greater the pain, but the quicker the resolution via an eruption. Often the pain is greatest just prior to the expulsion of pus and subsides rapidly as the internal pressure dissipates after eruption.

Where do hoof abscesses come from?

Opportunistic bacteria are everywhere in a horse's environment and are simply waiting for an opportunity to break into a hoof. Invasion comes most commonly through the laminar line, which is the weakest part of the equine hoof - either through the open gate of a gross breakdown, such as a seedy toe cavity, laminar separation or a cracked bar, but bacteria can also 'wick' into an otherwise well connected hoof that is weakened and swollen by excess moisture. Bacteria can also be introduced via a sharp object penetrating the sole or by a horse shoe nail that accidentally passes too close to the corium. (See Photos 5a to 5f on Page 72).

Hoof abscesses may also arise from sole bruises or acute laminitic episodes (See Photo 6); scenarios which lead to the formation of necrotic tissue that the body needs to expel.



Photo 1: A hoof abscess is a body of pus.



Photo 2: Abscesses evolve and tend to migrate upwards.



Photo 3: Sometimes they erupt at the heel bulbs.



PHOTO 5A-F: Abscesses arising from various causes. A) Seedy toe, B) White line disease, C) Bar crack, D) Wet hoof, E) Puncture wound, F) Hot nail.

Abscess treatment

Treatment needs to focus on releasing and draining the body of pus.

Firstly though, the exact position of an abscess needs to be located. This requires a clean and dry hoof (all hoof, no dirt), which can be done effectively with a wire brush and warm soapy water with a good clean towel to dry it. Better still, nothing cleans the surface of a hoof like a good trim, which will show the presence of any black holes, damp spots or other obvious entry points. (See Photo 7)

Hoof testers are valuable at zeroing in on the site of pain if there is no obvious hoof breakage or if there appears to be more than one possible point of entry. (See Photo 8)

When the likely site of bacterial invasion is located, a small searching knife can then be used to excavate the external layers of hoof to hopefully expose the abscess, being very careful not to cut into vascular tissue.

An abscess will usually appear as a tiny glistening of moisture that quickly becomes a globule when opened further, then finally a trickle of pus (which can be red, brown, yellow or black, depending on its age). However, you will notice that an experienced operator will be careful not to put their face too close to the work bench because abscesses can spurt surprisingly high. (See Photo 9)

Immediately after an abscess has been lanced, it is advisable to flush it with peroxide through a syringe. This will help to further relieve pressure and at least partially sterilise the cavity. A poultice should then be applied to osmotically draw remaining bacteria and abscess detritus out of the opened cavity.

There are a number of commercial, ready-to-use poultices which seem to be quite effective, but traditional remedies, such as hot bran mash, grated potato or epsom salts, still work as effectively as they ever did. To hold a poultice on a hoof, nothing beats a disposable baby nappy which can be fortified by wrapping it in the omnipresent 'gaffer' tape. (See Photo 10).



ABOVE: Photo 6: Abscesses may also arise from sole bruises or an acute laminitic episode. BELOW: Photo 7: Nothing cleans the surface of a hoof like a good trim.





ABOVE: Photo 8: Hoof testers are valuable at zeroing in on the site of pain.

RIGHT: Photo 9: An abscess will usually appear as a tiny glistening of moisture that quickly becomes a globule when opened further, then finally a trickle of pus (which can be red, brown, yellow or black, depending on its age).

BELOW: Photo 10: A poultice should then be applied to osmotically draw remaining bacteria and abscess detritus out of the opened cavity.

BELOW RIGHT: Photo 11: If you don't have the facilities to keep an abscessed hoof out of mud, an Easycare Rx Therapy Boot is a practical solution.



When there is no longer any detritus being drawn from the cavity, iodine is a good healing agent to introduce into the scene of the crime. It has the double action of killing any remaining bacteria, as well as cauterising the delicate epidermal tissue that begins to cover the sensitive laminae, helping to form a tougher protective barrier.

Abscesses usually arise when seasonal conditions are at their wettest and it is vital to keep the cavity clean. Even though the primary infection has stopped, there is always the risk of a secondary infection. For this reason, it is best to keep the recovering patient in a dry area, if at all possible.

If you don't have the facilities to keep an abscessed hoof out of mud, an Easycare Rx Therapy Boot (see Photo 11) is a practical solution that has taken the place of the traditional, but cumbersome hospital plates. When correctly fitted and used in conjunction with nappies, Rx Boots form a particularly effective barrier. More information about these boots can be found at www.easycaredownunder.com.au.

To treat or not to treat?

If an abscess is left untreated, it will eventually follow the path of least resistance. For this reason, some people suggest that abscesses should not be routinely treated. Maybe if an abscess is localised and the point of entry has been exposed, and it is clearly travelling upwards towards the coronet band, it should be left to run its course.

The flipside to this argument is that, apart from the often excruciating pain of an abscess which should be dealt with for humane reasons if possible, there is a bacterial infection running rampant inside a hoof and complications can arise if it is not halted. If in doubt, cut it out.

Vet or hoof therapist?

Whether to get a vet or a hoof therapist to attend a hoof abscess is a question that has been asked forever and remains a grey area. By definition, a hoof therapist's job finishes as soon as the boundary to live tissue is crossed. Hoof abscesses are right on the boundary of dead and live tissue, but they are encapsulated by a thin membrane of epidermal tissue. Technically then, when a hoof therapist approaches an abscess through the epidermal layer, the great divide has not been crossed.



Opportunistic bacteria are everywhere in a horse's environment and are simply waiting for an opportunity to break into a hoof. Invasion comes most commonly through the laminar line, which is the weakest part of the equine hoof.

The advantage of getting a hoof therapist to attend an abscess is that they see horse hooves all day every day, and they get very efficient with handling hooves and hoof tools. An experienced hoof therapist can usually quickly identify a hoof abscess, locate it, drain it and rule out further problems. The author routinely attends to hoof abscesses and suggests for horse owners to first contact their hoof therapist (so long as he or she is experienced in such matters).

However, if the hoof therapist is inexperienced, or is unable to quickly locate a definitive abscess, or if there appears to be any systemic infection (swelling that is going up the leg), then ring your vet. Vets are experts at diagnostics and prescriptions, and also have the advantage of being able to sedate a horse that is unruly and unsafe due to the pain of an abscess.

All abscesses arising from puncture wounds should be considered potentially serious, as it is unknown what structures may be infected, and require veterinary intervention.



ABOVE: Photo 12. Cutting beyond the epidermis and violating sensitive structures can be significantly more harmful than the original abscess.

BELOW: Photo 13. Maintenance trimming - A quick touch up with a rasp every fortnight - helps to grow a tightly connected hoof that will inhibit bacterial invasion.



Things not to do with hoof abscesses

- Don't delay treatment. The aim is to release an abscess before it gets too deep, so if you suspect an abscess, get onto your hoof therapist or vet immediately.
- Don't half do the treatment. Don't just rely on a poultice that is applied to the outside of the hoof or try to control an abscess with anti-inflammatories without actively draining the pool of pus. Granted, such medicating will remove some pressure and therefore reduce the lameness, but it will likely just prolong the journey of an abscess through a hoof capsule.
- It is important that the attending vet or hoof therapist doesn't cut too far when looking for a deep abscess. Cutting beyond the epidermis and violating sensitive structures can be significantly more harmful than the original abscess (See photo 12). In this regard, an irony worth considering is that the deeper an abscess is seated, the closer it already is to exiting the capsule. Again, deep infections should not necessarily be chased down.
- Don't make a drainage hole any larger than required. It is a balancing act; the hole needs only to just be big enough to facilitate drainage, but not too big and it is far better to drain an infection laterally rather than through the sole. A hoof will need to recover from any hole that gets opened up and exposes soft inner tissue.

Prevention?

If we think about how most bacteria enter a hoof, then the aim of abscess prevention is to grow the tightest possible laminar connection. This gives the author another chance to trot out the well-worn mantra of growing healthy hooves: a physiologically correct trim, adequate movement, dry environment and correct diet. Each of these parameters has relevance to abscess prevention.

Regular physiologically correct trimming with the outer walls and quarters passive to the ground is the secret. Of course nothing works as well as horse owners maintenance trimming their horses' hooves themselves – a quick touch up trim with a rasp – every couple of weeks. (See photo 13).

It is important to maintain the bars which are simply an extension of the hoof wall, and any cracks appearing at the end of the bars need to be trimmed out.

Traditional 'flat' trimming inevitably creates mechanical lever forces that lead to areas of separation along the laminar line, even if hooves are trimmed regularly. Equine hooves are not meant to be flat.

Worse still, neglected hooves that are simply waiting too long between visits from a pair of nippers are more likely to develop cracks that will grant bacteria open access into a hoof. Neglecting horses' hooves is the oldest form of false economy.

If there are any seedy toe cavities, be sure to treat them thoroughly and grow them out. Don't ignore seedy toe. If your hoof therapist says something along the lines of "she'll be right mate, it's only a bit of seedy toe, it will just grow out, we don't need to resect it", maybe it's time for a change of hoofcare personnel. Besides, a hoof abscess is not the worst potential outcome of neglected seedy toe.

Even in the worst environments, the best hooves belong to those horses that move the most. Constant movement has the effect of stimulating hoof growth and consolidating the structural integrity of hoof capsules. Do whatever you can to maximise your horse's movement. Maybe you can ride more often?

Horses have tough hooves and rarely get abscesses in dry environments. On the other hand, constant damp weakens a hoof capsule and the weakness is exacerbated by high humidity. If you live in a wet environment, consider making a dry night yard. A bed of loose pea sized river pebbles four inches deep is ideal.

With regard to diet, there is anecdotal evidence to suggest that MSM (methylsulfonylmethane; an effective source of organic sulfur) as a supplement fed in advance of and during the wet season will grow a hoof that is more resilient to bacterial invasion. It is cheap, safe and certainly worth a try.

How long?

Whilst prevention is always the best medicine, downtime due to an abscess can certainly be minimised by acting quickly and decisively. If managed correctly, most abscesses start to dissipate immediately upon the expression of pus and a horse that is 'broken leg' lame can be back under saddle within days.

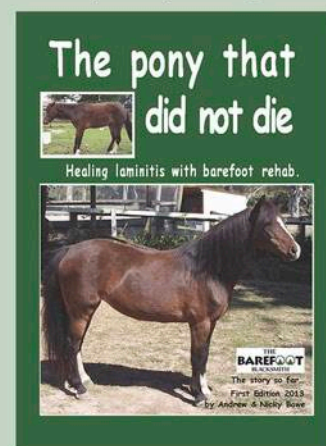
Maybe not in time for tomorrow's competition, but there is always next weekend...



THE BAREFOOT BLACKSMITH



Order online or over the phone, our friendly staff can assist you to select the right tool from our extensive, top quality range.



This new book by Andrew & Nicky Bowe will change the way you think about laminitis. A comprehensive, step by step action plan to combat laminitic episodes is included and supported by actual case studies that show how to solve a broad range of laminitic scenarios.

Available in hardcopy for purchase online or as an e-book. Visit the website for details.

Online Store
www.barehoofcare.com

admin@barehoofcare.com
03 5773 4306