

10 OF THE WORST COMMON EQUINE AILMENTS

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PART 1

PUS-IN-THE-FOOT

There are some equine ailments that vets are called out to treat time after time. In this new series, veterinary specialists from the top British veterinary practice, Rosedale and Partners will explain the 10 commonest horse health problems, how they occur, how they are treated, how owners can care for affected horses and hopefully prevent their recurrence. Paula Williams kicks off the series with that ever present problem: pus-in-the-foot

Pus-in-the-foot is the most common cause of lameness in the horse. It's the term used to describe the presence of a pool of infected fluid under the sole.

The infection may develop as a result of a puncture wound - a nail prick or trauma by sharp object - or as a result of a crack in the white line, the site of the junction between the wall and the sole. The structure of the foot is shown in the diagrams opposite.

CLINICAL SIGNS

How do we recognise pus-in-the-foot? Infection in the foot results in inflammation and the production of pus, white blood cells which are produced by the body to fight the bacteria associated with infection.

The hoof wall is a rigid capsule, and so is unable to swell, pressure rises in the foot and this causes intense pain. The pain can be likened to a splinter or thorn under a fingernail. Initially only a slight lameness may be present, but as the infection progresses and more pus accumulates, the horse may be reluctant to bear weight on the foot when standing.

The affected foot is warm to the touch and the blood vessels supplying the foot, may have a 'bounding pulse' when felt at the back of the fetlock with the fingertips. The leg may also become swollen above the fetlock.

In rare cases the horse's behaviour may be affected - he may sweat profusely, refuse to eat, lie down more than usual and blow heavily.

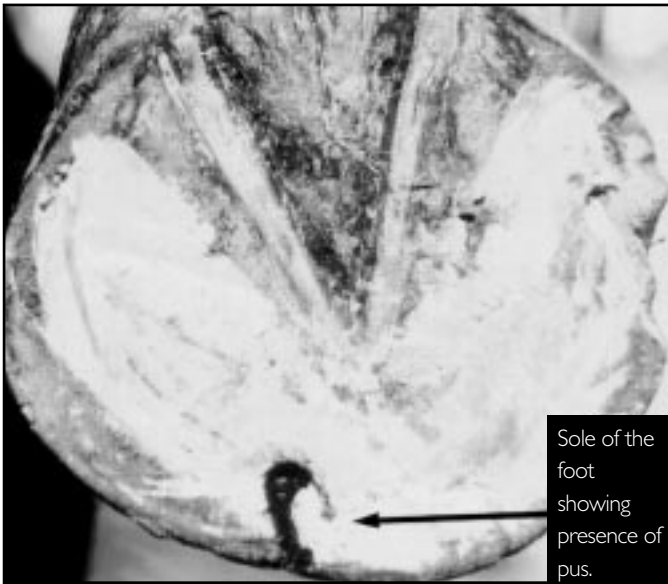
DIAGNOSIS

If you are suspicious that your horse may have a puncture wound in the foot, or has pus-in-the-foot, it is advisable to consult your veterinary surgeon.

The site of infection is usually identified by applying pressure using hoof testers to the sole - it is usually possible to identify a discrete area of pain, and this site is then explored using a hoof knife. A sterile probe may be inserted into the wound in order to assess the depth and direction of the tract. X-rays and further tests may be carried out if there are complications.

TREATMENT

The aims of treatment is to relieve pressure on the foot by establishing drainage, and to



Sole of the foot showing presence of pus.

eliminate infection. This involves removing some of the overlying sole; as a result black pus will often exude through the hole and there is often instant relief of pain. Sometimes pus is under such pressure it squirts across the stable and 'bubbles' out of the hole. It is important to ensure that the hole is large enough to allow sufficient drainage but not so large that the sensitive tissues are exposed. The drainage hole may be flushed with antiseptic solution such as iodine, dilute hydrogen peroxide or a special antibiotic metronidazole. Hydrogen peroxide creates an environment unsuitable for bacteria and metronidazole is particularly effective against anaerobic bacteria

which are often present in foot wounds.

Some veterinary surgeons will recommend poulticing the foot to encourage further drainage. A suitable poultice is Animalintex or gamgee soaked in Epsom salts solution (one tablespoon to one pint).

AFTER-CARE

Once the infection has resolved, the sensitive tissues need to harden and protective horn develop before the horse is sound, and this can take some days. During this time the horse should be kept stabled in a dry box and the foot protected from moisture and dirt. Bandaging the foot or using a poultice boot may be necessary. ▶

the STRUCTURE of the FOOT

It is important to look at the structure of the foot to understand the problems that infections may cause. The foot may be considered as a hard capsule surrounding many vital structures.

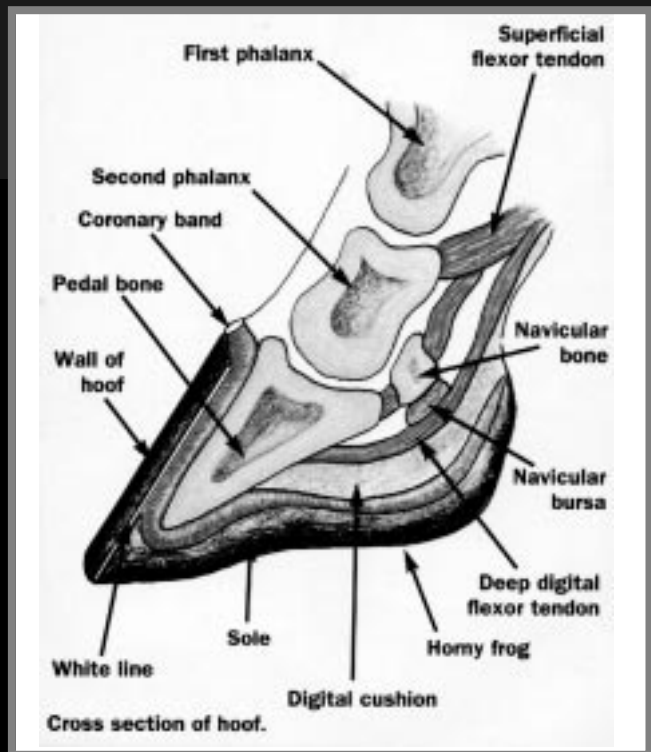
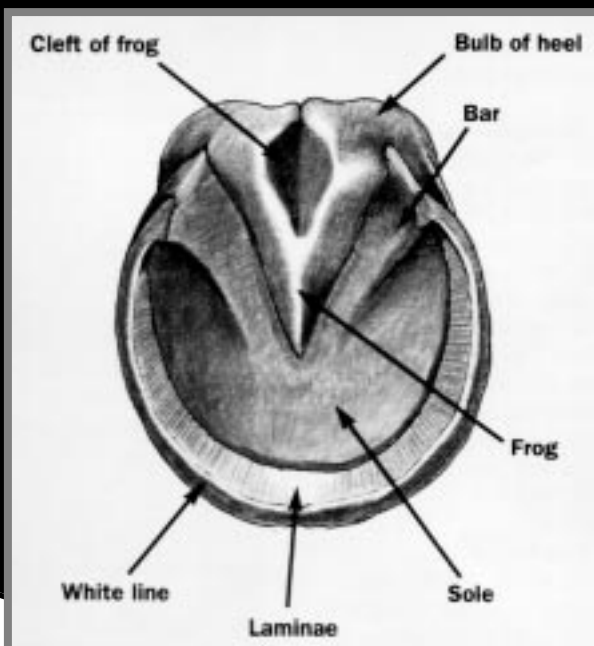
EXTERIOR OF THE FOOT

The hard capsule consists of three parts, all of which are made of horn, a substance similar to the human fingernail.

* **The wall.** This is the part of the hoof visible when the horse is standing

* **The sole.** This is the base of the foot, and in a healthy foot is slightly concave, like an upturned saucer

* **The frog.** This is the thick horny wedge shaped cushion on the sole of the foot. Its function is the subject of debate but is believed to be part of the shock absorber mechanism capable of absorbing concussion from the impact of the foot on the ground



INTERIOR OF THE FOOT

Within the foot there are many vital structures including several ligaments and tendons. There are three bones present:

- * The second phalanx (short pastern)
- * The third phalanx (pedal bone)
- * The navicular bone

There are cartilages attached to either side of the pedal bones, the lateral cartilages.

The deep digital flexor tendon passes over the back of the navicular bone and inserts onto the pedal bone. Between the navicular bone and the deep digital flexor is the navicular bursa, a fluid-filled sac which cushions movement of the tendon against the bone.

The third phalanx is supported within the foot by the sensitive laminae which have a very good blood supply. The division between the sensitive laminae and the horny wall is the white line which is visible from the base of the foot.

APPLYING a POULTICE



Using hoof testers to locate the source of pain.

*** Pedal bone**

Occasionally puncture wounds can result in infection of the pedal bone (septic pedal osteitis). The infected area of bone needs to be removed until healthy bone is reached. This treatment may be carried out under local anaesthetic, but sometimes it requires a general anaesthetic. Your horse may need to be referred to a specialist equine hospital for this to be done. If treated early, the prognosis can be reasonable.

*** Navicular bursa**

Puncture wounds in the frog region may penetrate the navicular bursa and deep digital flexor tendon. This is a very serious condition and requires surgical intervention and aggressive antibiotic therapy as soon as possible. Unfortunately if the damage is severe, the prognosis is very poor, and sometimes no treatment can save cases of this type.

*** Coffin joint**

If the coffin joint becomes infected this is another very serious condition requiring immediate treatment. The vet will take a sample of fluid from the joint to see how infected it is. The joint will need to be flushed with copious amounts of fluid under general anaesthesia and antibiotic therapy used. If there is not improvement after the initial treatment, the prognosis may be guarded.

*** Lateral cartilages**

Puncture wounds may result in infection of the cartilages in the foot - this is known as Quittor. The infected area may need to be cut out surgically by the vet. It is often difficult to remove the affected areas especially if the infection have been present for a while and the condition may recur. Again, this will probably be a job for specialist equine hospital.

Cut a piece of poultice large enough to cover the sole of the foot. This should be soaked in hand-hot water and then applied to the foot. A plastic bag should be put over the poultice and the foot bandaged, or a poultice boot applied. It is important to ensure that any bandaging applied to a foot does not put pressure on the coronary band. The poultice should be changed daily. Tubbing the foot is another method of cleaning the foot and encouraging the pus to drain. It involves standing the horse in a tub of warm water and Epsom salts, made up at one heaped tablespoon per pint of water.

Sometimes pus may track along the path of least resistance between the laminae up the white line and burst out at the coronary band. If this occurs, tubbing and poulticing the foot is recommended; flushing the hole will help in eliminating the infection. When this occurs the growth of the horn may be affected and a defect in the hoof wall may occur: this will grow out.

Once the pus has drained, even if the horse shows some residual lameness for several days, he should be getting better each day. If the lameness seems to be getting worse again following the initial treatment, you should ask your vet to re-examine the horse.

COMPLICATIONS

Deep puncture wounds may cause complications if certain vital structures within the foot are involved.

PREVENTION

To reduce the likelihood of pus-in-the-foot, pick the horse's feet out daily to ensure that they are in healthy condition and that any sharp objects are removed. If the horse is unshod, it must be trimmed regularly - horses with unshod feet which develop wall cracks are susceptible to pus-in-foot. It is advisable to have Animalintex and Epsom salts in your first aid box in order to treat pus-in-the-foot.



Despite the 'horror stories' described above, the prognosis for horses with pus-in-the-foot is generally favourable if the underlying vital structures are not involved. In many cases pus-in-the-foot develops without obvious entry wounds; until the shoe is removed and the foot explored, the site of entry often isn't clear. It should be emphasised that you should call your vet as soon as possible if you are suspicious of deep puncture wounds.



Cut a piece of poultice to fit the foot, pour boiling water over and allow to cool slightly.



Place soaked poultice over affected area.



Secure the poultice, then bandage on a plastic bag or poultice boot.



Tubbing the feet - only recommended for quiet horses!