

Not so glorious mud

The cold, wet winter brings with it plenty of frustrations for horse owners, such as two common seasonal skin conditions, mud fever and rain scald

The winter weather brings with it a cluster of season-specific skin disorders that can be a real nuisance to our horses. In this article we explain why we think two of these diseases develop, and what steps can be taken to minimise their impact.

Pastern and heel dermatitis ('mud fever')

This is one of the most common clinical syndromes that we see, both on the stud farm and in horses in training. It can be a complex condition involving several different causes, but whatever the position when the horse is affected enough to gain attention, this condition probably always starts in a similar way. It is associated with repetitive wetting of the distal limb, in conjunction with contamination and abrasion by mud, or more commonly nowadays the sand-based synthetic track surfaces on which most horses train. This explains the significant increase in the condition during the winter. Having said that, many racehorses can be affected through the summer months, simply by walking through grass which has a high early morning dew cover, then training on sand-based surfaces.

Horses with white limbs for some reason seem more predisposed to developing problems than horses with pigmented skin. There is a tendency for recurrence in affected horses because some of these horses have abnormally shaped heels where there are deep skin folds which develop when the leg is flexed (Fig 1). These make skin on skin abrasion more likely, which encourages bacterial infection.

How does it start?

Often the first sign of problems is reddening, mild crusting and scab formation in the crease lines of the folded heel (Fig 2). In order to see this clearly, once the limb is picked up pressure has to be applied to the toe in order to open out the heel so that these skin folds can be properly seen. This inflammation is produced by bacterial infection in the skin, often starting in the hair follicles. If left untreated these cracks become ulcers in the skin (Fig 3) which are very easily infected more deeply, and the condition can progress to a painful swollen leg.

This condition, which we often describe as 'mud fever', is really termed cellulitis, and occurs when infection tracks up the available space



Fig 1 This horse has a particularly deep heel-fold, produced because of a 'shunted-up' inner heel. Debris and exudate have accumulated in this heel cleft, predisposing it to the development of infection. This can be seen only when the heel-fold is fully opened out, and is easily missed when the leg is picked up in the normal manner

between the skin and the other structures of the leg, and in the lymphatic vessels. It can lead to profound lameness if left untreated.

Once the tissues have become infected, they become swollen, then this tends to occlude the

skin folds even more tightly as the leg is flexed (Fig 4). This makes cleaning and treatment of the leg much more difficult, so a vicious circle ensues as a result of limb swelling.

In other cases the infection does not progress



Fig 2 The early stage of 'cracked heels'. The distribution of crusting and serum exudation mirror the two folds of the heel which develop when the leg is normally flexed during exercise (arrows)



Fig 3 Here the lesions have become much more extensive and now cover the whole of the pastern. The leg has started to swell as a result of the infection, and this horse is rapidly heading towards painful 'mud fever'



Fig 4 Once the leg is markedly swollen, the folds of skin over the heels and beneath the ergot become even more tightly compressed, and this leads to a vicious circle of further infection, inflammation and swelling

to the deeper tissues but just spreads to form a coalescing mass of firmly adherent scabs and crusts, which result in topical soreness of the heel and can eventually result in lameness (Fig 3). In other horses the condition progresses to a long-term condition where the hair becomes matted in discharge, grease and crusting, and the limb becomes thickened. This is sometimes termed 'greasy heel', but all of these conditions share a common origin and are just stages along the continuum of the disease process.

Management

Unfortunately there is no 'one size fits all' approach to this condition, as there is so much variation in the shape of the horse's individual leg, the conditions of wetting and contamination, and the stage of progression of the disease. Some long-standing cases in which there has been significant chronic skin thickening and scarring present an almost incurable problem. Certain basic principles, however, can be followed – particularly in the early cases – which will be rewarding.

All dead skin, scabs and crusting exudates need to be debrided from the leg before any topical ointments or treatments are applied. This debridement needs to be done gently and can be done using creams especially made for the purpose, such as Dermisol (Pfizer).

This cream needs to be applied thickly. Once the cream is covering all the necrotic lesions, a piece of 'cling-film' can be very loosely wrapped over the top of it to maintain the debriding effect. It's important if cling film is used that a conventional stable bandage and pad are applied over the top of it, so that the horse

cannot chew and tighten the polythene wrap.

Once the scabs and crusts have softened they can be gently washed away with a suitable surgical scrub solution, provided by your veterinary surgeon and diluted appropriately.

If significant crusting remains after one 'soak', the debriding procedure can be repeated.

Once down to healthy skin, topical treatment with an antibiotic ointment recommended by your vet can commence. It's useful to keep the limb covered if possible for several days with twice daily bandage changes and a clean non-stick dressing, in order to keep dirt and contamination out of the infected areas.

Creams and ointments containing corticosteroids should be avoided as they delay skin healing.

Prevention

Avoiding chronic wetting of the distal pastern and fetlock is the most obvious advice – and also the advice which is most often impossible to follow. Once the skin is normal, prevention can be aided by the application of a light barrier cream prior to exercise or daily turn-out.

Petroleum jelly or Hydrous Wool Fat B.P. (lanolin) are both useful to this end but need to be applied very sparingly. Some equine practices make up special heel ointments to fill this niche, which are often very effective (e.g. NEH Grey Heel Ointment). Thick layers of barrier cream will pick up sand and soil particles, and result in physical abrasion of the skin interfaces, leading to further problems. If you can see the barrier cream in position then you have probably put too much on!

In conjunction with barrier creams, gentle washing of the distal limb when coming in from exercise or daily turn-out can be carried out, once the limb is already wet. This is best done using warm water and normal soap rather than strong detergents and shampoos.

Most important of all, once the limb is clean it should be dried meticulously and the deep skin folds at the back of the heels patted dry with paper towel, with the heel extended to open them up fully. Putting the horse into the stable with soaking wet legs following washing will only encourage the development of further moisture-associated dermatitis as these are unlikely to dry out once embedded in deep bedding. Cases involving cellulitis, resulting in limb oedema, swelling and lameness, which we tend to regard as the typical 'mud fever', will require antibiotics and probably anti-inflammatory analgesic drugs from your vet.

Dermatophilosis ('rain scald')

Dermatophilosis, or 'rain scald', as its name suggests, is the result of marked wetting of the skin. It most commonly occurs along the dorsal surface of the horse, because this is obviously



Fig 5 The characteristic 'run-off' pattern of rain-fall on a horse's back. These inverted V-shapes, which always occur in the same sites, often give a clue as to the cause of the skin problem as the lesions will follow the same distribution

where the major impact of rainfall occurs in horses turned out without rugs. However, it can occur in any site on the body subjected to chronic wetting, such as the distal limb and the forehead. Dermatophilosis can be implicated in the cracked heel mud fever complex we've just described. The lesion distribution in rain scald often mimics closely the run-off pattern of a soaked horse. Water runs off a horse in a very characteristic way (Fig 5) and these inverted V-shapes of affected skin are often where the lesions of dermatophilus infection are visualised, as well as along the top of the back. >>



Fig 6 A severe case of dermatophilosis ('rain-scald') affecting the whole of the quarters of a horse that has been turned away without rugs. Despite the obvious marked skin changes, this horse was left with no scarring once the condition resolved

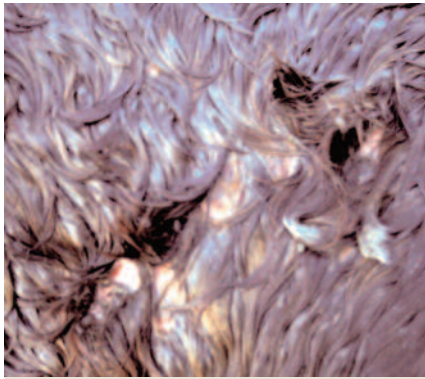


Fig 7 A close up of the typical appearance of dermatophilosis. When the hair is lifted, areas of greenish-yellow discharge and pink inflamed skin are visualised (courtesy of Derek Knottenbelt)

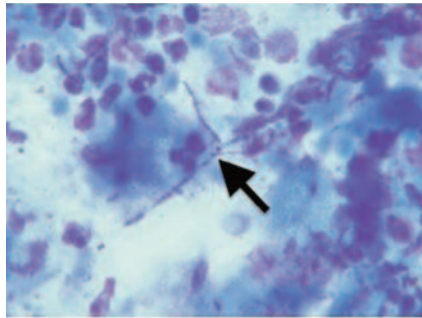


Fig 8 A photomicrograph of skin debris, at the centre of which is a branching filament of dermatophilosis congolensis. This has a very characteristic appearance and is the gold standard diagnostic confirmation for the disease (courtesy of Rosssdales)



Fig 9 The typical dermatophilus 'paintbrushes'. Because the infection tracks along the under-surface of the skin, unlike the situation with ringworm which invades only the dead surface layers, when the hairs are pulled out whole tufts of skin come away in one unit, giving this characteristic 'paintbrush' appearance

>> Clinical signs

Early on in the disease there may simply be mild tenderness to the skin and crust formation. The bacteria responsible, *Dermatophilus congolensis*, lives in the horse's coat as an opportunistic pathogen and is not found as a free-living agent in the environment.

The infection often starts in the hair follicles and this infection rapidly spreads and coalesces to produce an exudative sheet of serum and crust which gives the skin a typically 'cardboard-like' feel (Fig 6). Often if these crusts are gently lifted a greenish-yellow purulent accumulation can be seen underneath and the skin surface so exposed itself is usually bright red (Fig 7).

Diagnosis

The diagnosis can be made by the typical lesion distribution and the history of recent chronic wetting. However, it can be confirmed quite easily by the vet taking a small amount of the exudative material and examining it under a microscope suitably stained. The bacteria has a very characteristic appearance often described

as a branching railway line (Fig 8).

Because the infection splits off the surface layers of the skin, when hairs are pulled out they tend to pull out in clumps, to give the typical *Dermatophilus* 'paintbrush' (Fig 9).

Treatment and management

Mainstay of treatment is getting the horse in, out of the rain, to interrupt the cycle of chronic wetting. These horses are best stabled without rugs or blankets so that the skin can completely dry out. Wild horses such as Dartmoor ponies living out year round rarely develop 'rain scald', presumably because of the protective grease which eventually develops in the hair coat. This lanolin-like material provides very good waterproofing and if the coat of one of these ponies is parted, even after a heavy rainfall, the skin surface itself is often completely dry.

When we interfere with the natural coat by clipping and shampooing the coat, we remove this waterproofing layer and this probably predisposes horses to the development of rain

scald. Once these badly affected horses are brought under cover, the scabs and crusts will eventually slough as the new coat grows, but this can be aided by washing the skin once or twice with a chlorhexidine scrub solution which will help to kill all the bacteria. Severely affected horses may require a full course of antibiotics from the vet. Procaine penicillin is a relatively inexpensive drug which is effective against the *Dermatophilus* organism but would need to be given daily for at least five days. Lesions often occur on the belly and the front of the cannonbones in National Hunt horses where chronic wetting and mud spattering can produce dermatophilus infection, even in the absence of living out in the rain. Horses prone to this can have a topical barrier cream applied prior to exercise to reduce skin soaking and contamination.

With the end of winter these diseases become less of a problem, and the summer specialists of fly-bite hypersensitivity, sweat rash and other assorted delights take over. These we will cover in a later article.



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