

Seedy Toe: a case report ref Connie

Sarah Logie AWCF

Abstract

This case report covers the treatment of a significant seedy toe infection in the hoof wall of a front foot. The highland pony affected lived in the highlands of Scotland and the management challenges associated with saturated ground made finding a different form of treatment necessary. The traditional approach of debriding the area then keeping it clean and dry were an impossibility without permanent stabling. The basis of the treatment was that if the infection was removed and the foot then sealed so that no further bacteria could enter the area then it could grow down normally with minimal input from the owner. The addition of an antibacterial and antifungal medication under the filler improved the efficacy of the treatment by creating an inhospitable environment for pathogens. The treatment described in this case study is an effective and simple method for treating a common hoof condition.

Definitions

Type 1 seedy toe: structural - where an insult or weakness occurs in the hoof, through a fundamentally isolated mechanical cause.

Type 2 seedy toe: systemic and environmental - generally poor quality hooves with brittle outer layers of horn and/or signs of blackening around the nail holes or around the white line in general.

Case Report

Connie was a 14 year old highland pony, kept on a wet south facing hill in the highlands of Scotland. She was normally unshod over the winter and then fitted with a set of shoes on once work started in the spring. She had a toe-in conformation in front and due to this was prone to gravel runs up the outside of her feet particularly in very wet winters.

7th May 2015

Connie was presented for shoeing having been used for light hacking for about 6 weeks prior. It was reported that she was feeling her feet a bit particularly on stony tracks. When trimming her feet a large gravel run was cleaned out, evidence of seedy toe (crumbling white horn, with a cheesy smell) was noted. The area was debrided back to sound horn. The shoes were applied and the owner advised to keep the area clean and dry to prevent further infection.



Figure 1. Previously debrided gravel run – owner managed

2nd July 2015 (8 weeks) (Figure 1)

When the feet were trimmed on the second visit the infected area was shown to have extended significantly, destabilisation of the hoof capsule a risk. The affected foot was also noted to have grown more horn than the other three. The owner expressed concern about the difficulty of the management due to travel/work commitments and it was decided to try treating the area in such a way that they wouldn't have to do anything.

The area was fully debrided (Figure 2), cleaned with surgical spirit then prepared for filling using the Imprint® Granules.



Figure 2. Foot ready to fill with copper sulphate powder and imprint granules.

The product for chosen for the ease of removal and its lack of reaction with the copper sulphate. A bar shoe was fitted to help stabilise the hoof capsule.

The patching procedure was exactly as advised for a usual Imprint® repair but prior to application the wet plastic was dipped into copper sulphate powder. The plastic was applied to the resected area of foot, the copper sulphate created a medicated layer between the plastic and the foot. The plastic was continued in a thin layer under the shoe so that it created a seal on the ground surface. The shoe was tacked on with two nails and the foot set down whilst the plastic was still soft to ensure that the plastic wouldn't create sole pressure. The shoe was then nailed on. The plastic was cooled to harden it, then the foot clenched up and the patch sealed with glue (Figure 3).



Figure 3. Hoof repair complete.

The next two visits were scheduled at 4 week intervals, this was to prevent the excessive foot that was being grown creating a severe imbalance and to ensure that the treatment was working without risking further infection. The same treatment procedure was carried out at every visit. At the fourth visit in early October the bar shoe was replaced with an open heeled shoe.

The fifth visit in November and further visits showed the unequal growth between the front feet had become even, and that the procedure was working with no further signs of infection (Figure 4).



Figure 4. Prior to shoeing – patch secure.

Connie was kept shod in front all winter to enable continued treatment. By February, prior to the seventh shoeing, the only remains of the patch were the drill marks and the slightest of dents in the white line, which was stained blue by the copper (Figure 5 & 6).



Figure 5. Only drill marks remain.

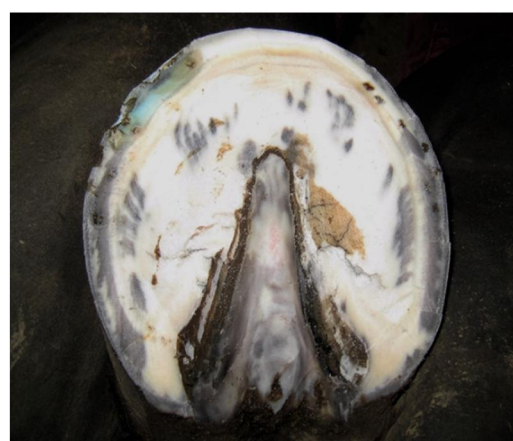


Figure 6. Horn stained blue.

By April there was no evidence left of any problem and the pony was now shod using copper nails as a preventative measure (Figure 7).



Figure 7. Restored hoof with no owner management required.

Discussion

The process of seedy toe is keratinolytic, a disintegration of keratin, and is characterised by the damage and the subsequent separation of the *stratum medium* from the *stratum internum*. The pioneer organisms are sulphur reducing bacteria which will cause destruction of the sulphur bonds between the keratin molecules (Kempson, 2006). These are followed by opportunistic keratinophilic species of fungus and bacteria which further digest the elements of the keratin which then leaves the wall weakened or absent depending on the severity of the condition (Moyer, 2003). These organisms have all been identified in soil.

It is generally recognised that seedy toe occurs in two forms: Type 1, structural or Type 2, systemic, this case falls into the Type 1 category (Logie, 2015). In this case it is probable that the gravel run created a structural weakness and the pathogens started their individual processes.

In this Type 1 case the basic principle was to remove the cause of the weakness, treat the infection, prevent further infection and allow time for the foot to re-grow. This was achieved with medicated filling. If removing the variable of owner management makes the outcome more consistent and therefore resolution occurs faster, then the author feels it is a good option. It is a relatively simple treatment but the importance of the initial debridement back to sound horn cannot be over emphasised. This treatment is not recommended for a Type 2 case as the underlying cause is far more complex.

References

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- Moyer, W., 2003. Hoof wall defects: chronic hoof wall separations and hoof wall cracks. *Veterinary Clinics of North America: Equine Practice* , 19(2), pp. 463-477.