

Are We Treating Seedy Toe?

The old adage goes, before you can treat it, you have to know what "it" is. For lack of a better explanation or description, we group most infections of the toe as "seedy toe." This conveniently included those pesky black holes at the very center of the toe. Over the past several years, I have come to notice an ever increasing incidence of this type of seedy toe.

These black holes are nearly always at the toe and at the connection of the white line to the sole. When advanced, these black holes will distort the white line and no amounts of trimming alleviate the distortion. Through research that included dissection, it became apparent that the black holes are not simply bacterial infection brought about by seedy toe, but something totally different.

In 2001, I began removing hoof capsules from cadaver limbs for the purpose of teaching students basic foot anatomy. On an average, I would see between 100 and 150 hooves a month. These specimens were from varying locations in United States and Great Britain, the most coming from the North East, South East, Mid West, North West, of the United States. Though the conditions of the animal which the hooves came from were not always known, foot quality was easily evaluated. A score was assigned to each. The scoring system used was based on a scale of 1 through 10, with 1 being the poorest and 10 being the healthiest. Seven structures were grades on this scale and an average calculated, with this number representing the health of the foot. This grading system has since become known as the "Spectrum of Usability" and is used extensively in our research. Measurements were also taken. The length of the caudal (back) aspect of the foot was taken, measuring from the widest part of the frog to the widest part of the foot. The widest part of the foot was defined by measuring from the junction of the sole to white line at each point medial and lateral to the center line. The location of the black hole was recorded, and the hoof capsules were then removed from their dermal layer. The more we preformed this procedure, the more we realized that this defect was showing up with greater frequency. Taking the number of cadavers we had observed to date, it became apparent that nearly 10 to 12 percent of the hooves worked on had evidence of the black hole seedy toe.

In live horses that I have examined showing this deformity, there was a higher incidence of increased sensitivity to the hoof test in the area adjacent to the deficit. A number of these same horses also showed low grade chronic lameness, often labeled as "undetermined."

The black hole was just the tip of the iceberg, (to be more correct, the base of the iceberg). Hoof capsule removal revealed that the black hole was actually the core base of what appeared to be a growth on the inner wall (interstium medium). This growth appeared to be extremely dense horn. The growth most frequently took conical shape and was of varying size. The location of its base was to the solar aspect of the foot, terminating at the junction of the sole to white line. The proximal end of this conical shape was proximal to the distal border of the dermal layer, and coffin bone. In some cases, it appeared that this excess growth was originating at the coronary band. In all cases observed, the distal border of the coffin bone and its corium modeled to accommodate the excess horn. No evidence of this increase in horn was present on the outer hoof wall.

The physical appearance of a small black dot is no reason for alarm, and does not warrant radiographs, in our opinion. Seedy Toe can be present and show no evidence of a HKH growth. This has occurred on many occasions, though it is quite possible that an HKH growth was present to a very small degree. A sizeable black hole (exceeding 6 mm in diameter) frequently presented a conical shaped rise in the sole, with the conical shape having its base originating at the junction of the white line and sole. This conical rise will run palmar to a point that is directly distal to the notch in the coffin bone. The white line junction to the sole must also show deformation, with this being a semi-circular deviation that terminates the conical rise in the sole. This deviation will almost always be semi-circular and is evidenced in the sole horn and not the white line. There is little palmar deviation of the white line simply because the HKH growth lies palmar to the white line.

What should you do if you suspect the horse you are working on has an HKH growth? Your actions depend on the current state of health of the horse, and the condition of its hooves, in general. If the horse is showing occasional lameness, or you consider the horse footy at times, then x-rays may be called for, if evidence of an HKH is present. Be certain to tell the attending veterinarian what you suspect; this will guide them in taking the correct x-ray views. I recommend the appropriate solar margin view, taken with a medium exposure. This can vary from vet to vet and machine to machine, so ask the attending veterinarian to bracket the exposure times.

The HKH growth appears to be progressive, and may eventually be categorized as degenerative in nature. If x-rays return a diagnosis of a possible HKH growth, then you must make every effort to maintain proper balance in the affected foot. We have found that maintaining balance and relieving known causes of stress, i.e. long toes, flare, high toe (often present), and under run heels will help to slow or stop the progression of the HKH growth. Until further research is completed, actual treatments for the HKH growth can not be defined. Like the keratoma that can be surgically removed, the HKH growth may progress to a state that would make it a good candidate for surgical removal. The key to success

would be in the follow up, and reason for this is somewhat obvious; if stress is the cause of the growth, and the stress is not eliminated following surgical removal, then a return of the HKH growth is likely.

I suggest that if you think you are dealing with a horse that has an HKH growth that you treat the area to reduce the incidence of infection, have a balanced trim applied removing any obvious causes of stress, and begin a rehabilitation routine to return weak structure. This can be achieved with the introduction of a carefully planned hoof care program and a responsible exercise routine.

