

WHITE LINE DISEASE

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White Line Disease is a descriptive term rather than a universally accepted definition of a disease process. It is used to describe a progressive deterioration of the inner portion of the hoof wall. The white line described in White Line Disease refers to the distinct non-pigmented inner layer of the hoof wall. On the ground surface of the foot, it can be seen adjacent to the junction where the hoof wall joins the sole. White Line Disease may be found in one foot or all four and is found among all breeds of horse. It is thought that White Line Disease begins with a separation between the hoof wall and the sole which can occur in the toe area, the toe and quarter of the foot or the heel. This separation removes the protective mechanism of the hoof wall / sole junction and allows bacteria and fungi, pathogens readily found in the environment, to enter.

These organisms may also gain entry to the foot through cracks in the feet, nail holes or fissures in the white line. It is believed that the destructive effects of these pathogens that lead to the progressive deterioration of the inner hoof wall and the condition known as White Line Disease.

The term White Line Disease is also used to describe "seedy toe" in its early stages – a small circular powdery area located in the hoof wall at the center of the toe in many horses.

Causes

Factors contributing to a loss of integrity at the hoof wall / sole junction are excessive moisture, unbalanced feet, improper trimming, an acute hoof angle such as that seen with a long toe – underrun heel conformation (since it increases the sheer force on the anterior hoof wall), flexure deformities (contracted tendons), club feet and concurrent hoof problems such as hoof cracks, a previous gravel, chronic abscessation or direct trauma with subsequent bleeding. White Line Disease can also occur secondary to chronic laminitis where the lamina and associated hoof wall are compromised. It is not known whether the bacterial or fungal agents isolated from the affected area are causative or an incidental finding. The disease appears to be more prevalent in hot, humid areas of the United States, but can occur anywhere and the incidence of this problem appears to be increasing in all areas of the country. Poor hygiene is of questionable significance as the problem is seen frequently in well-managed stables.

Diagnosis

White Line Disease offers no threat to the soundness of an animal until damage is sufficient to allow mechanical loss of the attachment between the laminae and

the inside hoof wall resulting in displacement of the coffin bone in a downward direction (rotation). Only then does the horse begin to show discomfort. In the early stages of White Line Disease, the only noticeable change on the ground surface of the foot is a small powdery area located anywhere along the hoof wall / sole junction. This area may remain localized or it may progress to involve a larger area of the hoof wall. Other early warning signs of White Line Disease may be tender soles as seen with hoof testers, occasional heat, the soles becoming flat, a “dish” forming along one side of the hoof and a bulge on the opposite side directly above the affected area, slow hoof wall growth, poor consistency of hoof wall and a hollow sound noted when the outer hoof wall is tapped with a hammer. On the ground surface of the foot, the white line becomes wider, softer and has a chalky texture.

Treatment

Therapy of White Line Disease is directed at treating the affected area of the foot and supporting the foot with therapeutic shoeing if the hoof wall damage is extensive. Whatever the treatment selected, it must be combined with thorough debridement (removal) of damaged tissue before medication. Medication protocols vary and should be selected with the help of your veterinarian and farrier working as a team. Selection of the type of shoe applied depends on the extent of the damaged hoof wall. If the defect is small, the hoof is balanced and the foot is shod normally. If the resection is extensive, a full support shoe (heart bar or egg bar – heart bar combination) is used. The shoe allows any diseased areas of the hoof wall from the toe to the heels to be resected and treated while providing adequate support. The full support shoe supports the heel area and allows some weight bearing to be transferred from the hoof wall to the frog. Additional nail holes and/or a metal gooseneck (“clip”) may be necessary to attach the shoe.

The extent of the damage will determine the amount of time required to treat the disease, as the affected area has to grow out. For example, if the affected area extended up near the coronary band in the toe area, it would take approximately 10 months for the defect to completely grow out. However, it is not usually necessary for the horse to be out of work for this entire period of time. The amount of exercise permissible while treating White Line Disease is dependent on the severity of the damage.

Prevention

Prevention of this problem is difficult because the exact cause and / or causative agents remain unknown. Discussing the problem with your farrier and having him examine each foot when the horse is shod is extremely important. Any small abnormal area should be explored and treated. Proper trimming, balancing of the foot and correct shoeing are also vital to maintaining a healthy foot.