

NAVICULAR DISEASES

If your horse is lame on and off with no apparent cause, your veterinarian may suspect navicular disease. The pain is caused by progressive degeneration of the navicular bone, a small bone inside the foot, and the tendon which passes over it. At first, the horse might be lame when warming up at the beginning of a ride but will work out of it. Or he will be lame after hard work but will return to normal after rest.

As the condition worsens, the horse will try to avoid the pain by landing toe first when moving causing a shuffling gait and stumbling. He will wear his toes more than his heels. At rest, the horse will stand with one or both front feet stretched forward. Navicular disease cannot be cured, but with veterinary treatment and corrective shoeing and trimming, the horse's discomfort can be kept to a minimum for many years. Eventually, the owner will have to consider euthanasia.

NAVICULAR HORSE DISEASE

Chronic inflammatory changes occurring in connection with the navicular bursa, affecting variously the bursa itself, the perforans tendon, or the navicular bone, and characterized by changes in the form of the hoof and persisting lameness.

This disease is commonly noticed in thoroughbreds or in horses of the lighter breeds, and is but seldom observed in heavy cart animals. Usually it is met within one or both fore-feet. Although of extremely rare occurrence, it has been noticed in the hind.

PATHOLOGY AND POINT OF COMMENCEMENT OF THE DISEASE

The exact position in which the diseased process starts has for a long time been a subject of discussion, and even now it is doubtful whether the point has been definitely settled. To mention but a few among many: The disease commences in the interior of the navicular bone and can also commence in the bursa.

Others, too, hold that the disease commences primarily in the tendon. Wedded to this view was the discoverer, Without, therefore, committing ourselves to an expression of opinion as to the precise starting-point of the affection, we shall describe the pathological changes occurring in navicular disease as noted in the bursa, the cartilage, the tendon, and the bone.

Changes in the Bursa

Upon the internal surface of the bursal membrane is first noticed a slight inflammatory hyperæmia, accompanied by more or less swelling and tumefaction, owing to its infiltration with inflammatory exudates. The portion covering the hyaline cartilage of the navicular bone has lost its peculiar pearl-blue shimmer, and become a dirty yellow.

Remembering that the bursal membrane is a synovia-secreting one, and bearing in mind what happens in ordinary synovitis and arthritis (with which, of course, this may be very closely compared), we shall first expect changes in the bursal contents. It is highly probable, though difficult of proof, that in the very early stages the chronic inflammatory stimulus has the

effect of increasing the flow of synovia. In every case, however, where it can with any certainty be said that navicular disease exists; it is too late to meet with this condition. The disease has then progressed until destruction of the secreting layer of the bursal membrane has been seriously interfered with, and in this case we find a distinct deficiency in the quantity of synovia in the bursa. In advanced cases it is even found that the bursa is absolutely dry.

Changes in the Cartilage.

Directly that portion of the bursal membrane covering the cartilage is the subject of inflammatory change, the cartilage itself, by reason of its low vitality, soon suffers.

Under a process, which we may term 'dry ulcerative,' the cartilage covering the ridge on the lower surface of the bone commences to become eroded, and in appearance has been likened, both by English and Continental writers, to a piece of wood that has been worm-eaten.

Changes in the Tendon.

The effect of these calcareous deposits on the under surface of the bone is to produce a certain amount of roughness. Seeing that with every movement of the foot the perforans tendon is called upon to glide over this surface, it is clear that a secondary effect must be that of inducing erosion and destruction of the tendon. The point at which this usually commences is at the bottom of the depression that accommodates the ridge on the bone. With erosion of the cartilage and of the tendon at points exactly opposite each other, we have two surfaces come together that are prone to readily unite, and fibrous tissue adhesions often take place between the bone and the tendon. In some measure this accounts for the torn and ragged appearance of the tendon. Adhesions take place, and, under some small strain, are broken down. This may happen more than once or twice, and with each breaking of the adhesion between the bone and tendon, fibres from the latter are lacerated and torn from their place.

Changes in the Bone.

The changes occurring in the bone are essentially those of a rarefactive osteitis. These changes are described by many writers, and, whether originating primarily in the bone or not, it seems certain that extensive changes may have occurred within the bone, with but little or nothing to be noted on its outer surface. It would seem that the first change is one of congestion of the vessels of the bone's cancellous tissue. With the cause, whatever it may be, in constant operation, the congestion persists until a low type of inflammation is set up, interfering, not only with the flow of synovia in the adjoining bursa, but with the nutrition of the bone itself. As the disease progresses, there is softening and enlarging of the cancellated tissue towards the centre of the bone. The cells break up, and absorption takes place. This goes on until a large portion of the interior of the bone is in a state of dry necrosis, with, in many cases, but slight signs of mischief on the exterior of the bone.

In other cases, however, the changes in the interior of the bone are accompanied by well-marked lesions on its gliding or postero-inferior surface, and by evidences of an osteoplastic periostitis along its edges.

That an osteoplastic periostitis has been in existence is witnessed by the appearance along the edges of the bone of numerous outgrowths of bone, termed osteophytes.