



NAVICULAR SYNDROME

Navicular syndrome is a chronic degenerative condition of the navicular bursa and navicular bone that primarily involves damage to the surface of the bone and the overlying deep digital flexor tendon (DDFT). Navicular syndrome can also be associated with inflammation of the navicular bursa (navicular bursitis) and bony growths forming at the edge of the bone (osteophyte formation). “Navicular disease” is a frequently misused term in association with forelimb lameness of the horses. The term caudal heel pain (or palmar foot pain) is often more appropriate in these situations. This is because the pain causing the lameness has been isolated to the back part of the foot, although the actual structures affected are unknown. In some individual cases a valid diagnosis of navicular syndrome can be made as the navicular bone and its closely associated structures have been identified as being affected. The term syndrome is used as it recognises that many different conditions and structures are involved in the problem; it is not a single disease with one cause.

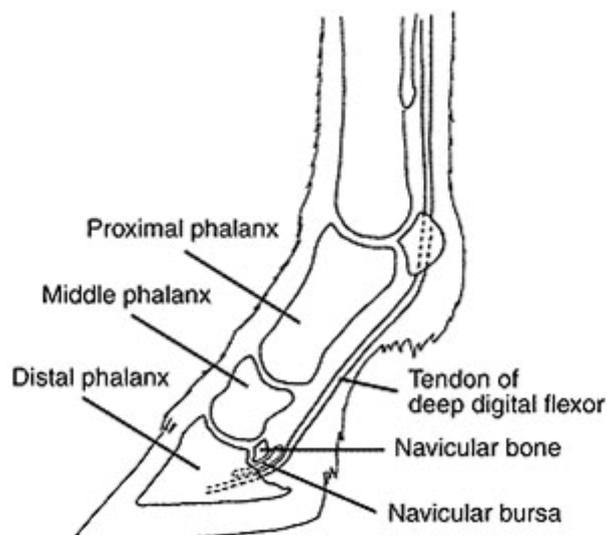


Fig 1: Diagram of the horse's foot showing the important structures at the back of the foot that can be involved in lameness.

Navicular syndrome as a cause of lameness in the horse has been traced back to as early as 1752. It is considered to be more often seen in the mature horse but any age can be affected by this condition. Quarter horses, Thoroughbreds, and Warmbloods are the more commonly affected breeds. The exact cause of this syndrome is not fully understood but appears to be multifactorial in nature. A hereditary link has been proposed but **poor hoof conformation is certainly a major risk factor**. An upright conformation with poor heel and frog support along with a history of inadequate or poor shoeing are commonly seen with this condition.

Horses with this syndrome often present with a short, choppy gait and may tend to wear their toes quickly. Lameness may appear intermittent and, due to the bilateral

nature of this condition, it may often be difficult to consistently pinpoint on which leg the horse is actually lame. Classically, horses with navicular syndrome are known to “point” the toe of the affected hoof to alleviate pain associated with pressure of the DDFT over the navicular bone. Lameness associated with navicular syndrome can often even be confused with shoulder problems. Lameness is usually most evident on the inside leg whilst the horse is being lunged on a tight circle.

Diagnosis of this condition usually involves nerve blocks following a thorough physical examination of the both forelimbs. The aim of the nerve block is to numb the source of pain by injection of local anaesthetic around the nerves that innervate certain parts of the lower limb. In the case of navicular syndrome, the nerve block used is the palmar digital nerve block (or sometimes the abaxial sesamoid nerve block if disease is more severe). As mentioned previously, this syndrome is often in both feet; therefore a common scenario is that after the apparently lame leg is nerve blocked, the horse will appear lame on the other leg. If the other leg becomes sound after it too is nerve blocked, a bilateral problem is confirmed.

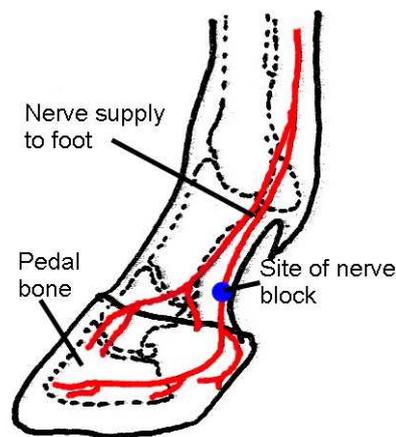


Fig 2: Diagram showing the nerve supply to one side of the foot and the position where local anaesthetic is placed to perform a palmar digital nerve block. There are two nerves innervating the foot, one on the outside and one on the inside of the leg, so local anaesthetic is injected on both sides.

The next step towards a diagnosis of navicular syndrome is to take radiographs of the feet. The resulting radiographs are studied carefully for any sign of abnormalities in the navicular bones. Changes in the navicular bone are particularly hard to interpret. Some horses may have what look like severe changes but have never been lame in their lives, and vice-versa. The radiographic changes one is looking for in the diagnosis of navicular syndrome involve a wide range of degenerative changes including osteophytes (new bone formation), bone remodelling, enlarged synovial fossae (channels) and changes in the bone consistency. The challenging part is that many of these changes may result from natural aging; therefore any findings must be interpreted in association with the lameness work-up.

The radiographs are also studied to evaluate ‘foot balance’ and whether or not the shoe is supporting the weight of foot properly. Commonly horses with foot problems

have long toes and not enough support at the heel. Foot imbalance places extra stress on the important structures at the back of the foot causing lameness.

Unfortunately navicular syndrome, similar to osteoarthritis, is not curable due to its chronic and degenerative nature. However, with appropriate therapy this condition is manageable and many horses continue to have an athletic career. Therapy is structured around corrective trimming and shoeing, often guided by the radiographs, to achieve appropriate hoof balance. As such, the farrier plays an extremely important role in managing navicular syndrome cases. A variety of shoes may be used, for example egg bar shoes or raised heel shoes, but the essential feature is the provision of adequate length of shoe underneath the heel to give good support. In a fair proportion of cases, horses will become sound soon after shoeing. Anti-inflammatories such as phenylbutazone ('bute') also play an important role in initially making the horse more comfortable. Horses usually follow a controlled exercise programme before returning to normal exercise after one or two further shoeings.