

## 7 Summary

“The direct manometry in the Navicular bursa as a diagnostic aid for the differentiation of navicular syndrome”

This paper was designed to prove the value of the direct manometry in the navicular bursa. The objective was to use this technique as a further help in diagnosing navicular bursitis.

The proper technique for puncturing the navicular bursa was worked out in the first instance. The easiest method was the puncture from the palmar aspect of the foot. The needle is inserted approximately 5 mm above the coronary band between the heel bulbs and is directed forward towards a point located approximately 2 cm distal to the coronary band at the dorsal hoof wall. The tip of the needle lays within the navicular bursa when hard resistance is encountered. Radiography to control the position of the needle is obsolete, because the pressure measured gives a hint regarding the orientation of the needle.

To determine the physiological pressure in the navicular bursa eight clinical and radiological sound horses were examined during the main studies. Altogether the pressure was taken 11 times. There pressures up to 6 mmHg measured; further examinations revealed pressure values of more than 6 mm Hg, which could be considered to be pathological.

The pressure in the navicular bursa was taken in 25 patients with symptoms of navicular lameness after diagnostic anaesthesia and radiological examination. In 22 cases the pressure in the distal interphalangeal joint was taken additionally.

The evaluation of the pressure rates in the DIP joint based on the results from SCHÖTT (1989) and HÖPPNER (1993).

It was then attempted to connect the results of the pressure measurement in the navicular bursa with the duration and degree of lameness, the results of diagnostic anaesthesia and radiological findings. In addition pressure rates of the bursa were compared to those of the DIP joint.

Neither the duration or degree of lameness nor radiological results gave a hint to an affection of the navicular bursa.

The comparison of the results of diagnostic anaesthesia showed that patients with a positive response to anaesthesia of the pulvinus branch (n = 3) had an increased pressure in the navicular bursa. However, because of the few horses tested a general statement can not be drawn.

During simultaneous manometry both in the navicular bursa and the distal interphalangeal joint (n = 22) it became obvious that in most cases the intrasynovial pressure increased in only one of these structures. Seven out of 11 patients with an increased pressure in the DIP joint showed a normal pressure in the navicular bursa, five out of six horses with a suspicious pressure in the DIP joint five had an increased pressure in the bursa and three out of five patients with a normal pressure in the DIP joint had an increased pressure in the bursa.

These findings show, that in most cases of this study either the DIP joint or the navicular bursa is affected. Only in a few cases both structures were involved.

No complications were observed after direct manometry in the DIP joint. In two cases lameness increased the day after manometry of the navicular bursa. Soundness returned within 24 hours after application of a non-steroidal antiinflammatory drug.

All in all the direct manometry in the navicular bursa has proved to be a simple method with few complications to specify the cause of lameness and for diagnosis of navicular syndrome. After the diagnosis is confirmed a specific local treatment is possible. This lowers the risks of repeated puncture of the navicular bursa, such as infection or trauma of the deep digital flexor tendon.