

5 Summary

Studies on the diagnostic value of bursography

In the literature overview the basis for further analysis was established by detailed illustration of the anatomy of the navicular region. Navicular disease was defined and stated that the present work exclusively applies to the illness of the flexor surface of the navicular bone and the deep digital flexor tendon according to HERTSCH et al. (1982). Etiology, pathogenesis, patho-morphological alterations of the navicular bone and their clinical significance have been dealt with.

During the analysis of diagnostic options, the bursography according to TURNER et ADAMS (1997) and TIETJE et al. (2000) has been described in detail.

In order to determine the appropriate puncture technique for applying the contrast material into the bursa navicularis as well as the suitable amount of contrast material to achieve optimal results of the bursography, 20 front legs were used, which were cut off the carpal joint of slaughtered horses in a pre-examination.

In the main examination, 109 front legs of slaughtered horses were used which had also been cut in the carpal joint and the freshly excised hoofs examined. As an X-ray unit a stationary fine focus x-ray unit was used, enabling a magnified display. The feet were x-rayed in three positions: 0° according to Oxspring, latero-medial and tangential in a 45° angle. Then an iodine containing contrast material was injected into the bursa navicularis using a palmar approach and monitoring the position of the injection cannula through the x-ray unit.

During the filling of the bursa with contrast media an appropriate amount was applied to enable a certain pressure built up. Loose holding of the syringe permitted unnecessary contrast media to drain off, so that eventually an amount of up to 2.5ml remained. This procedure has the advantage that after the injection the contrast media cannot impose pressure upon the injection canal, thus overlaying the x-ray depiction of the filled bursa.

Subsequently to the application of contrast media, x-rays according to Oxspring were taken in a latero-medial and tangential way, using an angle of 45° and 55°. The

findings realized were described and the flexor surfaces of the navicular bones patho-morphologically examined. Thereafter the x-ray findings without contrast media were compared to those supported by contrast media and the results patho-morphologically gained.

The bursography was considered of little diagnostic value as in not one case the tangential x-ray lead to a different result concerning the diagnosis of navicular disease in the front leg. The latero-medial picture of the bursa navicularis filled with contrast media did not yield reliable results. Only where the contrast media was depicted as sharply defined lines no false positive results were produced. However not with all navicular regions with adhesions between navicular bone and deep digital flexure tendon the contrast media was depicted accordingly. Hence no clear results could be attained.

The findings of TURNER et ADAMS (1997) as well as TIETJE et al. (2000), who regarded bursography as a valuable diagnostic tool, could therefore not be confirmed.