Comparison of Computer Assisted Minimal Invasive Osteosynthesis of axial distal Sesamoid Fractures in the Horse with 3.5mm - and 4.5mm cortex screws respectively: An experimental Study

Summary / Zusammenfassung
Objectives - To compare the precision gained with computer assisted screw implantation of two different sizes of screws into the distal sesamoid bone for the treatment of vertical, articular fractures.

Study Design - In vitro experimental study.
Sample Population – Two groups were used containing 8 cadaveric limbs each. In groups A a 3.5mm diameter cortex screw was inserted along the length of the distal sesamoid (navicular) bone with the help of computer assisted navigation. In group B the same technique was applied with 4.5mm screws.

Methods – Screws were inserted with computer assistance. In both groups the implantation time, predetermined screw length, inserted screw length, and fit of the screw were recorded. Additionally the potential penetration of the joint, tendon sheeth respectively were recorded.

Results- Postoperative evaluation revealed a better surgical outcome of screw insertion into intact distal sesamoid bones in the CAS-group compared to the KV-group. Radiography and computed tomography are valuable methods to evaluate the outcome of the surgery.

Conclusion-The CAS-technique offers a new method to insert a screw in lag fashion into the distal sesamoid bone.

Clinical Relevance- CAS technique can be used for treatment of navicular fractures in clinical cases.

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Funding Source(s) / Unterstützt durch
Stiftung Forschung für das Pferd

In Collaboration with / In Zusammenarbeit mit
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Duration of Project / Projektdauer
Aug 2003 to Jul 2004