Minimally invasive nailing with Targon Vet System with and without fluoroscopy: an ex-vivo cadaveric study in cats.

Summary / Zusammenfassung

Introduction

The Targon Vet System (TVS) is a novel interlocking nail (ILN) offering unique features. Its safety and efficacy in cats using an ILN in minimally invasive osteosynthesis (MIO) has not been evaluated. Therefore the purpose of this study was to compare the use of the TVS for different long bones in the cat with and without the use of fluoroscopy in a fracture gap model.

Materials and Methods

Sixteen humeri, tibiae and femora from 8 feline cadavers were used and a 10 mm gap fracture was created. Fracture fixation was performed using the TVS applied with MIO by one experienced surgeon.

The side to be repaired under fluoroscopic guidance was randomly selected. Surgical outcome, complications and damage of neurovascular structures were evaluated using radiographs and dissection. Differences were statistically compared between the bones and between the groups with and without fluoroscopy.

Results

In total 48 fractures were repaired leading to 12 intraoperative complications (25%) mainly in the humerus (44% complications). Neurovascular structures were only damaged repairing humeral fractures (42%). The use of fluoroscopy did not lead to significant differences.

Discussion

We conclude that the TVS can be applied with MIO technique to the femur and tibia of the cat safely without fluoroscopy. Even though a learning curve has to be expected and guidelines need to be respected to decrease complications. The use in the humerus is not considered safe based on our findings.

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