

A case study demonstrating the effectiveness of casting material on a bull

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Patient

A nine month old, 730kg Simmental Bull presented to the University of Liverpool Farm Animal Practice at Leahurst with a closed, displaced, oblique, comminuted fracture of the left metacarpal III bone. The injury was confirmed on radiographs from the referring veterinary surgeon.

Methods

Surgery performed by: Dr Ellen Singer DVM, DVSC. DACVS, DECVS, MRCVS

Given this type of fracture and the patient's size, open reduction and stabilisation was required. The use of two plates, one dorsally and one laterally has been described in previous literature.¹

Unfortunately fissure lines on the lateral aspect of the bone ruled out the use of a full length lateral plate and screws. Two 4.5mm diameter lag screws were used to position the main bone fragments and a dorsal 4.5mm locking plate held in position with 7 x 4.5mm diameter screws was used to bridge the fracture. This alone would not be sufficient to resist the forces acting through the limb. A full limb cast (Delta-Cast® Conformable) was used to protect the plate by sharing the weight bearing load and resisting the bending forces at the fracture site.

Results

The casting material held up against significant strain. The patient used the cast as a lever to get from a sitting to standing position. A cast change was required 4 weeks post-surgery. This was to ensure healing of the surgical wound and allow a tighter fitting cast to be placed, as the initial limb swelling had reduced over time. At 12 weeks post-surgery the cast was removed. The caudal aspect of the cast was able to be preserved and incorporated into a bandage, acting as a splint. This was left in place for a further week to prevent injury to the ligaments and tendons of the lower limb, which had fatigued due to immobilisation.

The clinical outcome with this case has been excellent. The patient was able to ambulate on the cast 24 hours after surgery. He returned to unaided full weight bearing 14 weeks post-operatively. Post-operative radiographs were taken to monitor fracture healing and calcification at various stages through the recovery phase.

Conclusion

Overall, the outcome of this case was excellent. It is a rare opportunity to have such a compliant patient.

¹ Fubini and Ducharme (2004) Farm Animal Surgery, Elsevier, USA



Week four cast change under sedation



Surgical wound inspection, clean and dry



Cast reapplied