

Fixing Sacral Fractures

Sacral fractures, often the result of motor vehicle trauma, are uncommon, can be difficult to assess radiographically, and may be accompanied by varying levels of damage to the spinal cord and nerve roots. Either nonoperative conservative management or surgical treatment may be considered based on the fracture configuration, stability, pain, and concurrent neurologic deficits. Fractures involving the sacroiliac joint and iliac wing are often treated by iliosacral lag screw fixation. This paper describes a composite surgical technique and its use in a case series of 6 small animals (5 dogs, 1 cat). Large fixation pins and polymethylmethacrylate (PMMA) bone cement were used to rigidly stabilize fractures in a buttress

configuration. The location of pins varied based on the fracture configuration; however, all were inserted through a dorsal approach to the sacrum. Intraoperative fluoroscopy was not needed for this technique. This strategy was used as an alternative for an abandoned or inadequate attempt at iliosacral lag screw fixation in 3 cases and as an alternate repair method in the other 3 cases. No intraoperative complications were noted besides difficulty in wound closure over the bulky implants. Limited clinical follow-up was provided in this small cohort, but no animals showed any clinical evidence of implant failure or fracture collapse in the short-term.

Commentary

Sacral fractures are challenging cases to manage. Diagnosis, which can be missed on conventional radiographs, often requires computed tomography to determine fracture orientation, displacement, and proximity to nearby neurovascular structures. There are no

robust guidelines for operative treatment, although more severe cases with neurologic involvement may be considered surgical. The approach described in this study is similar to pin and PMMA fixation to bridge vertebral fractures. This may offer a lower risk of penetrating the spinal canal or compression of nerve roots than when using a sacroiliac screw. Although bone healing was not confirmed in follow-up, postoperative clinical function was generally improved. It would be important to compare this technique and surgery in general to nonoperative treatment to improve overall guidelines for management of sacral fractures.

—Jason Bleedorn, DVM, DACVS

Source

Wilson L. Repair of sacral fractures using pins and polymethylmethacrylate (6 cases). *Aust Vet J.* 2015;93(9):311-318.

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