Decompression and lumbopelvic fixation for sacral fracture-dislocations with spino-pelvic dissociation.


Spino-pelvic dissociation with H-shaped sacral fractures is an uncommon, high-energy injury that is challenging to treat. Fracture alignment and stability, neurologic injury and recovery, and associated complications must be considered when determining the method of treatment. There is no accepted treatment algorithm for these injuries as there is a paucity of literature on the topic. As part of a larger, long-term lumbosacral injury assessment project (Bellabarba et al.), the authors present their radiographic and clinical outcomes in a series of patients with spino-pelvic dissociation treated surgically with open reduction, sacral decompression, and lumbopelvic fixation.

Improvement in neurologic status after both operative and nonoperative treatment in patients with this injury has been reported; however, the literature is composed predominantly of small case series. In the current study, all 19 patients had neurologic deficit affecting bowel and bladder function; at minimum one year follow-up, 83% had improvement in function and 56% regained normal bowel and bladder function. The 3 patients with incomplete cauda equina impairment regained normal function; seven of the 15 patients with complete lesions also regained full bowel and bladder function. Restoration of this function occurred in 86% of patients found to have intact sacral roots and in 46% of patients with at least one noncontiguous sacral root; this can be accounted for most likely by bilateral innervation. There was no association noted between continuity of sacral roots and recovery of bowel and bladder function regardless of lower extremity neurologic function. The six patients who improved to Gibbons type 1 postoperatively, with no neurologic deficit by definition, did not have disruption of sacral roots.

In general, the neurologic outcomes reported in this paper are consistent with nonoperative treatment (Phelan et al.). Therefore complications of operative and nonoperative treatment methods must be considered. Wound-related problems associated with surgical intervention through posterior approaches to the sacrum are high. In one series, Kellam et al. reported a combined incidence of impaired wound healing and subsequent infection as high as 25%. Additionally, the posterior skin and subcutaneous tissues are also often severely injured themselves, which further complicates the decision. However, operative stabilization allows the patient to be mobilized without external bracing, which can benefit overall patient health and recovery (Goldstein et al.).

By instituting a systematic method for reporting neurologic injury and recovery and utilizing a consistent treatment plan, the authors offer their results of operative treatment for an uncommon, complex problem with a history of complicated outcomes. As operative fixation techniques and wound management issues continue to improve, creating a safe, stable platform could allow for further improvements in neurologic outcomes and overall functional status to occur. Establishing a systematic approach to this complex problem is the first step toward these goals.

**Reviewed by Judith A. Siegel, M.D.**

*Department of Orthopaedic Surgery*

*Boston University School of Medicine*
References:


