Surgical management of sacral non-union: Difficulties and possible solutions

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Abstract:

Introduction: Sacral nonunion is a rare complication of vertically unstable sacral fractures. Patients present either after failed conservative treatment or as an overlooked injury in a polytrauma patient. Patients and Methods: We report the surgical treatment of 7 patients with sacral non-union. All were men with age ranged from 20 to 52 years. Six patients presented late (from 16 to 32 weeks) after failed conservative treatment. One patient presented 28 weeks after failed iliosacral screws fixation. Shortening (from 10 to 44 mm), pain and inability to walk were the presenting symptoms. Neurological complications were associated in 4 patients; three as sacral root injury and one with lumbosacral trunk palsy. Preoperative clinical as well as radiological assessment protocol was applied in all seven patients. The fracture was Denis type II (transforaminal) in 6 patients (transalar) and Denis type I in one. Open reduction through midline dorsal exposure was applied in all cases. Excision of fibrous tissue and freshening of fracture surface was done. Bone resorption with significant bone gap was found in 6 patients, for which autogenous iliac bone graft was used to avoid sacral narrowing and sacral root compression across the transforaminal fracture. Additional bone allograft was needed in one case after failed first grafting. Posterior lumbopelvic fixation was done in 4 patients, posterior sacral plating (small LCP) in one, ilio-iliac plate in addition to iliosacral fixation in two. Anterior pelvic ring release and stabilization was done in 4 patients, while anterior symphyseal plate fixation implant was present in one. One patient had associated complicated urological procedures hindering anterior fixation.

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