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Fibula Rod System

Key Publications

The Fibula Nail for Treatment of Ankle Fractures in Elderly and High Risk Patients

Publication Excerpt

"The fibula nail provides an alternative to standard plate fixation that uses a minimal approach and, therefore, decreases the incidence of wound infection and the need for further surgery to remove prominent metalwork while providing stable fixation."

Journal Abstract

Ankle fractures in the elderly are increasing in incidence, and comorbidities, including diabetes, steroid use, and osteoporosis, can make these injuries difficult to treat in this population. Prominent metal work, infection, and wound problems are common complications. The fibula nail provides an alternative to standard plate fixation that uses a minimal approach and, therefore, decreases the incidence of wound infection and the need for further surgery to remove prominent metalwork while providing stable fixation.

Reference

Appleton P, McQueen M, Court-Brown C. The fibula nail for treatment of ankle fractures in elderly and high risk patients. *Tech Foot Ankle Surg.* 2006;5(3):204-208.

The Treatment of Unstable Fractures of the Ankle Using the Acumed Fibular Nail: Development of a Technique

Publication Excerpt

"Nailing of the fibula using our current technique gives good radiological and functional outcomes with minimal complications, and should be considered in the management of patients with an unstable ankle fracture."

Journal Abstract

Techniques for fixation of fractures of the lateral malleolus have remained essentially unchanged since the 1960s, but are associated with complication rates of up to 30%. The fibular nail is an alternative method of fixation requiring a minimal incision and tissue dissection, and has the potential to reduce the incidence of complications.

The team reviewed the results of 105 patients with unstable fractures of the ankle that were fixed between 2002 and 2010 using the Acumed fibular nail. The mean age of the patients was 64.8 years (22 to 95), and 80 (76%) had significant systemic medical comorbidities. Various different configurations of locking screw were assessed over the study period as experience was gained with the device.

Nailing without the use of locking screws gave satisfactory stability in only 66% of cases (4 of 6). Initial locking screw constructs rendered between 91% (10 of 11) and 96% (23 of 24) of ankles stable. Overall, seven patients had loss of fixation of the fracture and there were five postoperative wound infections related to the distal fibula. This led to the development of the current technique with a screw across the syndesmosis in addition to a distal locking screw.

In 21 patients treated with this technique there have been no significant complications and only one superficial wound infection. Good fracture reduction was achieved in all of these patients. The mean physical component Short-Form 12, Olerud and Molander score, and American Academy of Orthopaedic Surgeons Foot and Ankle outcome scores at a mean of six years post-injury were 46 (28 to 61), 65 (35 to 100) and 83 (52 to 99), respectively. There have been no cases of fibular nonunion.

Nailing of the fibula using our current technique gives good radiological and functional outcomes with minimal complications, and should be considered in the management of patients with an unstable ankle fracture.

Reference

Bugler KE, Watson CD, Hardie AR, et al. The treatment of unstable fractures of the ankle using the Acumed fibular nail: development of a technique. *Bone Joint J.* 2012;94-B(8):1107-1112.

Fluoroscopy-Guided Reduction and Fibular Nail Fixation to Manage Unstable Ankle Fractures in Patients With Diabetes: A Retrospective Cohort Study

Publication Excerpt

"Fluoroscopy-guided reduction and fibular nail fixation of unstable ankle fractures in patients with diabetes was associated with a low incidence of wound and overall complications, while providing effective surgical fixation."

Journal Abstract

Aims

Patients with diabetes are at increased risk of wound complications after open reduction and internal fixation of unstable ankle fractures. A fibular nail avoids large surgical incisions and allows anatomical reduction of the mortise.

Patients and Methods

The team retrospectively reviewed the results of fluoroscopy-guided reduction and percutaneous fibular nail fixation for unstable Weber type B or C fractures in 24 adult patients with type 1 or type 2 diabetes. The re-operation rate for wound dehiscence or other indications such as amputation, mortality, and functional outcomes was determined.

Results

Two patients developed lateral side wound infection, one of whom underwent wound debridement. Three other patients required re-operation for removal of symptomatic hardware. No patient required a below-knee amputation. Six patients died during the study period for unrelated reasons. At a median follow-up of 12 months (7 to 38) the mean Short Form-36 Metal Component Score and Physical Component Score were 53.2 (95% confidence intervals (CI) 48.1 to 58.4) and 39.3 (95% CI 32.1 to 46.4), respectively. The mean Visual Analogue Score for pain was 3.1 (95% 1.4 to 4.9). The mean Ankle Osteoarthritis Scale total score was 32.9 (95% CI 16.0 to 49.7).

Conclusions

Fluoroscopy-guided reduction and fibular nail fixation of unstable ankle fractures in patients with diabetes was associated with a low incidence of wound and overall complications, while providing effective surgical fixation.

Reference

Ashman, BD, Kong C, Wing KJ, et al. Fluoroscopy-guided reduction and fibular nail fixation to manage unstable ankle fractures in patients with diabetes: a retrospective cohort study. *Bone Joint J*. 2016;98-B(9): 1197-1201. doi:10.1302/0301-620x.98b9.37140

Acumed Headquarters
5885 NE Cornelius Pass Road
Hillsboro, OR 97124
Office: +1.888.627.9957
Office: +1.503.627.9957
Fax: +1.503.520.9618
www.acumed.net

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