Intramedullary fibular fixation is a versatile tool in the operative management of fractures of the distal tibia and fibula

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Introduction/Purpose: Intramedullary fixation of the fibula has been proposed as a minimally invasive alternative to traditional plate fixation in fractures of around the ankle. Previous studies have demonstrated a low complication rate, particularly when both distal locking and trans-syndesmotic screws are used. More recently, they have been used to act as a lateral buttress to prevent valgus malunion in fractures of the distal tibia and fibula. After four years of using fibular intramedullary devices in our unit we set out to audit our practice.

Methods: We retrospectively searched our electronic operation database for operations in which fibular nails were used, from their first use in our unit in 2012 through to the end of 2016. Electronic operative and clinic notes were reviewed. We gathered basic demographic information and classified fractures according to the AO/OTA system, and studied pre- and post-operative radiographs for evidence of malunion.

Results: Eighteen cases were identified. Median age at surgery was 66 (Range 23 to 83 years). Seven patients smoked, one was diabetic. Fibular nails were used in six in AO type 44 and twelve in AO type 42 and 43 fractures. Five were open. Fibular nails were used alongside tibial IM nails, tibial bridging plates, percutaneous tibial fixation and a tibial circular frame and were chosen because of concerns about poor soft tissues or wounds over the lateral side. Twelve cases had syndesmotic fixation. Median follow-up was five months (range 0-48 months). One nail was removed to compress a tibial fracture. All fractures united with no progressive malunion. One prominent distal locking screw was removed and one superficial wound infection required oral antibiotics.

Conclusion: We have expanded the use of this device beyond the technique originally described. Its use has been demonstrated across a range of fractures about the distal tibia and fibula in a variety of different operations with excellent results. Minimally invasive fibular nailing is particularly useful in patients with poor soft tissues or where there is high risk of post-operative infection.

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