

Managing Soft Tissues in Severe Lower Limb Trauma in an Aging Population

Tim Noblet; Phillipa Jackson; Patrick Foster, MBBS; Martin Taylor, MBBS;

Paul J. Harwood, MBBS; Jay Wiper

Limb Reconstruction Unit, Leeds Major Trauma Centre, Leeds, Yorkshire, UNITED KINGDOM

Purpose: With an aging population, the incidence of traumatic injuries in those aged over 65 years is increasing. As a result, strategies for dealing with these patients must be developed. At present the standard management of open tibial fractures in the UK is described by the BOAST4 guidelines (from the British Orthopaedic Association and British Association of Plastic & Aesthetic Surgeons). It is not clear to what extent these are appropriate for older patients. We describe our experience of managing elderly patients presenting with open tibial fractures to our major trauma center.

Methods: Patients were identified via prospectively collected national and departmental databases. These data were supplemented by review of the patient records and radiographs. Data collated included patient demographics, injury details, orthopaedic and plastic surgery operative details, and long-term outcomes.

Results: Between April 2013 and January 2016, 97 patients aged over 65 years were admitted with open fractures. 66 of these were open tibial fractures and these patients formed the study group. 19 patients required soft-tissue reconstruction for Gustilo and Anderson IIIB tibial fractures (age range, 67-95 years). In these patients there were 7 midshaft (AO 42), 1 proximal (AO 41), and 11 distal (AO 43) fractures. 13 patients were treated with internal fixation and 6 with circular frames. The median length of hospital stay was 33 days (range, 16-113), 50% longer than comparable patients under 65. 14 patients received locoregional flaps and 5 underwent free tissue transfer. Of the 5 patients treated with free tissue transfer, one required preoperative femoral angioplasty. There were no flap losses. Four patients had fasciocutaneous flaps, 3 tibialis anterior transposition, 2 an extensor digitorum brevis flap, 1 a hemisoleus flap, and 4 were skin grafted. All patients went on to unite and return to their premorbid weight-bearing status (4 using walking frames, 3 using sticks, and 12 walking independently).

Conclusion: Although the literature suggests a significantly higher complication rate in elderly patients with open fractures, we have demonstrated comparable rates of flap survival and bony union to those observed in younger patients. Challenges are presented in terms of patient physiology and these must be carefully managed pre- and postoperatively. These challenges are reflected in the significantly longer length of stay in comparably injured patients under the age of 65 years.