Long-Term Function Following Torsional Ankle Fracture

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Purpose: Few studies have examined long-term outcomes after ankle fracture, which are likely variable and dependent on the spectrum of injury, quality of reduction, and medical and psychosocial factors. We hypothesized that greater initial injury severity, including syndesmosis injury and/or dislocation, as well as patient factors would portend worse function and worse scores.

Methods: Functional outcomes were obtained for 166 patients after minimum 5-year follow-up using Foot Function Index (FFI) and Short Musculoskeletal Function Assessment (SMFA). Higher scores indicate worse outcomes. Patients were queried regarding pain, activity limitations, and employment. Radiographs were reviewed for posttraumatic arthrosis (PTA).

Results: 166 patients (52% male) with mean age 53 years and mean body mass index (BMI) 29 were included after 44B (n = 102) or 44C (n = 64) fractures; 20% were open. Isolated ankle injuries occurred in 128, while 12% had ipsi- and/or contralateral (18%) injuries. After mean 91 months, 45% reported unemployment or modified duty, 9% secondary to their ankle, while another 36% had limited or no employment for other reasons. 14% reported some daily ankle pain, with 3% taking prescription medication and 10% using non-prescription medication. PTA was noted in 63%, but was not associated with dislocation (73% vs 56%), open fracture (80% vs 61%), or a complication (88% vs 57%). Worse FFI scores were associated with age <55 years (3.7 vs 2.6, P = 0.02), BMI >30 (4.0 vs 2.9, P = 0.01), Weber C fracture (4.2 vs 3.1, P = 0.04), or complications (4.6 vs 3.3, P = 0.02). Worse SMFA Dysfunction scores were seen with women (33.1 vs 26.1, P = 0.04), age <55 years (32.3 vs 21.3, P = 0.006), BMI >30 (33.7 vs 25.7, P = 0.03), alcohol use (33.6 vs 26.5, P = 0.04), and recreational drugs (46.9 vs 29.5, P = 0.008). Worse SMFA Bother scores were associated with age <55 years (32.7 vs 17.4, P = 0.001), alcohol (33.9 vs 25.4, P = 0.03), and drug use (46.9 vs 29.1, P = 0.02).

Conclusion: After minimum 5-year follow-up a modest number of patients report functional limitations. Although 55% returned to full employment, 14% had daily pain, and worse outcomes were associated with younger age, obesity, and recreational drug use. More severe injuries with associated dislocations, open fracture, and/or Weber C fractures resulted in worse FFI scores, and along with the development of complications, negatively impacted FFI, but not the SMFA.

See pages 401 - 442 for financial disclosure information.