Patient-Reported Outcomes in Lower Limb Post-traumatic Osteomyelitis

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Purpose: Our objective was to describe the demographics, treatment, and patient reported outcomes (PROs) of patients presenting with lower limb posttraumatic osteomyelitis (PTOM) with a minimum 5-year follow-up.

Methods: All consecutive patients presenting with a confirmed diagnosis of PTOM of the tibia or femur were included. Exclusions included patients <18 years, infected nonunion, and atraumatic osteomyelitis. Treatment was individualized according to patient need and surgeon preferences. PROs were assessed using the Lower Extremity Functional Score (LEFS) and EQ-5D-3L (EuroQol 5 Dimensions 3 Levels) index scores.

Results: 72 patients (59 male, average age 46 years, 46 tibia/26 femur) were included. Time from injury to presentation averaged 29 months. Treatment of PTOM included removal of metalwork in all cases where present. The reamer-irrigator-aspirator (RIA) was utilized in 31 cases, local antibiotics in 52, and soft-tissue reconstruction in 21. Patients received, on average, 13.8 days of IV and 38.5 days of oral antibiotics. Patients required on average 2.9 surgical procedures, and 2.3 readmissions. Recurrence occurred in 12 patients after an average of 31 months. Recurrence rates were significantly lower in those patients who were provided with local antibiotics (10% vs 33%; P = 0.01), in those where RIA was utilized (6% vs 24%; P = 0.04), and in patients not requiring soft-tissue reconstruction (33% vs 10%; P = 0.01). Amputations were performed in 9 cases at an average of 60 months following diagnosis. The use of RIA was associated with a lower amputation rate (3% vs 20%; P = 0.04). PROs were collected from 38/44 available patients at a mean time of 9.3 years following diagnosis. Average LEFS was 58.7, significantly lower than the age-matched healthy population. LEFS was significantly higher in those where RIA was utilised (68 vs 53; P = 0.02), and in those classified as Bach uncomplicated (uncomplicated 67 vs 52 complex; P = 0.02). The average EQ-5D-3L index score was 0.617, and the EQ-VAS (visual analog scale) 68.5. EQ-5D-3L scores were also significantly higher when RIA was utilized (0.78 vs 0.51; P = 0.04), although there was no difference in EQ-VAS scores. There were trends toward lower EQ-VAS scores with simpler bone lesions (Bach B1 vs B2 or B3), and in those with greater microbiological sensitivities (Bach A1 vs A2 or Ax).

Conclusion: Patients with PTOM experience persisting morbidity with PRO scores lower than the general population after a long follow-up. Outcomes may be improved when the RIA system and local antibiotics are utilized, and in those patients with less complicated disease according to the Bach classification.