Integrated Protocol for Management of Infected Nonunion of the Tibia

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INTRODUCTION:
Introduction: Deep infection is the worst prognostic factor in tibia fractures. The management of infected non-union of the tibia entails adequate debridement which would result in a dead space. Elimination of the dead space is necessary for staged reconstruction of bone and soft tissue.
The objective of this case series is to assess the efficacy of our integrated protocol for the management of infected non-union of the tibia.
METHODS:
Materials and Methods: This prospective study included 32 patients with infected non-union of the tibia with medullary contamination. They were managed according to an integrated protocol which includes three phases (debridement, management of dead space, and tissue reconstruction) by staged debridement and insertion of antibiotic-impregnated cement spacer with later distraction histogenesis using Ilizarov frame for bone and soft tissue reconstruction. The mean size of the defect after debridement was 6 cm (range 4-14.5 cm). The average follow-up period was 28 months (range 16-36 months).
RESULTS:
Results: Successful reconstruction with no recurrence of infection was achieved in 30 cases (94%) without the need for bone or soft tissue grafts. Below knee amputation was performed in two cases (6%); one due to intractable infection and the other due to intolerance to the procedure. The functional results were satisfactory in 27/30 cases (90%) and unsatisfactory in 3/30 cases (10%) due to residual leg length discrepancy, joint stiffness, and persistent pain.
DISCUSSION AND CONCLUSION:
Discussion: The proposed staged protocol is a valid option for successful bone and soft tissue reconstruction and elimination of the infection without the need for either bone grafting or soft tissue procedures.