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[O63] AB-CEMENTED INTERLOCKING IN INFECTED NON-UNIONS OF LOWER EXTREMITY: 5 YEARS FOLLOW-UP

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Aim: We performed this Institutional Review Board-approved study to evaluate the efficacy of antibiotic-impregnated cement nailing for management of this condition.

Method: The study included 41 patients with infected non-unions of femur (23) and tibia (18) treated from 01.2009 to 09.2014. 32 (78%) patients were male and 9 (22%) patients were female. Mean age was 41.8 (range 20-78) years old. Mean time from the injury to AB-cement nailing was 21.2 (range 6-91) months. Mean follow-up duration was 18 (8-36) month. 6/23 femoral and 9/18 tibial fractures were initially open. Other fractures were closed and infected non-union developed as complication of previous surgeries: IM-nailing, ORIF or Ilizarov external fixation. Sinuses were revealed in all patients, but have closed by the time of AB-cement nailing in 30 cases. Pre- and intraoperative cultures revealed *S.aureus* in 20, *S.epidermidis* in 8, *Klebsiella Pneumoniae* in 3, *Enterobacter cloacae* in 2, *Acinetobacter baumannii* in 1 and no grows in 7 cases. We used 9-12 mm nails* for femur and 8-10 mm for tibia with 2 mm cement thickness. Gentamicin-impregnated cement was mixed with thermostable antibiotic according to the predetermined sensitivity (vancomycin or daptomycin). Nails were coated using silicone tube with equal diameter for the entire length. After debridement and preparation of intramedullary cavity with reamers the locked IM-osteosynthesis was performed. In all cases nails were locked proximally and distally to improve bone stability. Patients additionally received intravenous antibiotics according to the sensitivity for two weeks. Full weight-bearing was allowed 3 months after surgery. Follow-up was performed in 6, 12, 24 and 52 weeks.

Results: One year after surgery, X-ray revealed bone union in 36 (87.8%) patients and all 41 (100%) patients were full weight-bearing. In 5 (12.1%) cases, X-ray has not reveal evident consolidation, but 3 of them achieved bone union after repeated surgery with autologous bone grafting. Open fistulas were found in 6 (14.6%) patients and required hardware removal and debridement.

Conclusions: AB-cement nailing achieved elimination of infection and fracture healing in the majority of patients. This method can be effectively used for maintaining patients' active life and mobility.

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