

Take It or Leave It? The Fate of the Antibiotic Cement Spacer

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Purpose: Our objective was to report the outcomes of antibiotic cement spacers in the treatment of bone defects from open fractures and nonunion.

Methods: This is a retrospective case series from 5 academic Level-I trauma centers. Patients were identified from a billing database after searching for CPT codes for implantation/removal/exchange of non-biodegradable antibiotic delivery device (11981, 11982 or 11983). Patients were included if they received an antibiotic spacer for the treatment of bone defects from open fractures or nonunion. Information pertaining to the injury and spacer was recorded.

Results: Overall, 180 patients were included. The average age at injury was 48 years (range, 16-87). The average follow up was 10.8 months (range, 0-66). In sum, 91 (51%) of the injuries were open, 87 (48%) closed, and 2 (1%) unknown. 154 (86%) were in the lower extremity and 26 (14%) were in the upper extremity. Indications for spacer placement included infection treatment or prevention (99, 55%), planned bone grafting-Masquelet (58, 32%), structural (17, 9%), and other (6, 3%). Overall, 119 (66%) of the antibiotic spacers were removed as planned. 38 (21%) were retained at final follow-up (average 14.4 months for retained spacers). Of these 15 (8%) were planned to be removed but were left in place and remained intact. 23 (13%) were planned to be retained and remained intact at final follow-up. None of the 38 retained antibiotic spacers broke. 23 (13%) of the spacers were classified as other, indicating the fate of the spacer was unknown or the limb required amputation. Of the 38 retained spacers, 29 healed around the spacer.

Conclusion: While most of the spacers were removed as planned, 38 (21%) were left in place and none broke. This leads us to conclude that when there is healing around an antibiotic spacer placed for bone defects, it may not need to be removed.