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Basic Study

Antibiotic-loaded phosphatidylcholine inhibits staphylococcal bone infection

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Abstract

AIM: To test antibiotic-loaded coating for efficacy in reducing bacterial biofilm and development of osteomyelitis in an orthopaedic model of implant infection.

METHODS: Phosphatidylcholine coatings loaded with 25% vancomycin were applied to washed and sterilized titanium wires 20 mm in length. A 10 mm segment was removed from rabbit radius (total = 9; 5 coated, 4 uncoated), and the segment was injected with 1×10^6 colony forming units of *Staphylococcus aureus* (UAMS-1 strain). Titanium wires were inserted through the intramedullary canal of the removed segment and into the proximal radial segment and the segment was placed back into the defect. After 7 days, limbs were removed, X-rayed, swabbed for tissue contamination. Wires were removed and processed to determine attached CFUs. Tissue was swabbed and streaked on agar plates to determine bacteriological score.

RESULTS: Antibiotic-loaded coatings resulted in significantly reduced biofilm

Match Overview

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