The use of antibiotic-impregnated fibrin sealant for the prevention of surgical site infection associated with spinal instrumentation.

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Publication Date: 2012

Abstract:

Purpose The purpose of this study was to determine if the use of antibiotic-impregnated fibrin sealant (AFS) was effective in preventing surgical site infections (SSI) associated with spinal instrumentation. Methods In a preliminary study, five pieces of vancomycin-impregnated fibrin sealant, five nuts that were not treated with the sealant, and five nuts that were treated with the sealant were subjected to agar diffusion testing. In a clinical study, the rates of deep SSI were compared between 188 patients who underwent procedures involving spinal instrumentation without AFS (group 1) and 196 patients who underwent procedures involving spinal instrumentation with AFS (group 2). Results All five pieces of vancomycin-impregnated fibrin sealant and the five nuts treated with the sealant exhibited antimicrobial efficacy, while the five untreated nuts did not exhibit antimicrobial efficacy in the agar diffusion test. In the clinical study, 11 (5.8 %) of the 188 patients in group 1 acquired a deep SSI, while none (0 %) of the 196 patients in group 2 acquired a deep SSI. Conclusion The present study demonstrated that the application of AFS to spinal instrumentation yielded good clinical outcomes in terms of the prevention of postoperative spinal infections. It is hoped that limiting AFS use to patients requiring spinal instrumentation and those with risk factors for SSI will reduce the overall costs while preventing SSIs. © Springer-Verlag 2012.