

Letters to the Editor

bypass and will pull on the patch and perhaps on the AV valves, possibly making them leak. There is usually some atrial septum available, but if not, I would put the hole and snare as far lateral as possible, which should make the pull on the rest of the repair negligible.

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WILL LOCAL USE OF ANTIBIOTICS BE ESSENTIAL?

To the Editor:

We appreciate the study by Schimmer and colleagues¹ on gentamicin-collagen sponge use for heart surgery. They demonstrated a reduction of wound complication after surgery by gentamicin-collagen sponge use.

We agree with Schimmer and colleagues¹ and strongly recommend applying antibiotics directly to the surgical site. Our previous study was on the prevention of surgical site infection by antibiotic spraying.² We used not only gentamicin but also cefazolin. In our study, the incidence of deep surgical site infection was 0.50% in 2612 patients. We chose gentamicin and cefazolin because they cover the most likely contaminants, such as *Staphylococcus aureus* and *Pseudomonas aeruginosa*. In the study by Schimmer and colleagues,¹ *S aureus* cases were low despite the use of only gentamicin.

Local use of antibiotics is not accepted by guidelines for prevention of

surgical site infection³ because there is no strong evidence. The references of the guidelines did not report better results than Schimmer and colleagues.¹

In reality, many surgeons apply antibiotics by local spraying or subcutaneous injection. We think local use of antibiotics is an essential method for postoperative reduction of wound complications.

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<http://dx.doi.org/10.1016/j.jtcvs.2012.05.079>

Reply to the Editor:

We appreciate the kind comments¹ on our publication “Gentamicin-Collagen Sponge Reduces Sternal Wound Complications After Heart Surgery: A Controlled, Prospectively Randomized, Double-Blind Study”² regarding our results of the routine prophylactic retrosternal use of a gentamicin-collagen sponge in patients undergoing cardiac surgery. Our answers to the 3 points included in the letter to the Editor are as follows:

1. The most likely contaminants of deep sternal wound infections (mediastinitis) in our study were coagulase-negative staphylococci (68.4%), gram-negative bacteria (10.5%), *Propionibacterium acnes* (10.5%), and *Staphylococcus aureus* (5.3%).² This microbial

spectrum is similar to that in the Swedish study by Friberg and colleagues,³ in which coagulase-negative staphylococci formed the largest group of pathogens. The number of *S aureus* cases accounted for 2.4% (1 case) in the presented study, 21.7% in a Swedish study, and 37.3% in a US study.⁴ In our study and the Swedish study, there were no patients with methicillin-resistant *S aureus*. By contrast, methicillin-resistant *S aureus* infection was identified in 10.2% of the microbial isolates (27.3% of the *S aureus* cases) in the US study. The extent to which the dissimilar microbial spectra and possible antibiotic resistance influence the results cannot be clarified.

2. The guidelines for prevention of surgical site infections investigating intraoperative gentamicin implant before wound closure involve 2 randomized controlled trials.^{3,5,6} Figure 1 shows that the 2 studies were combined in a meta-analysis, and that a statistically significant difference was found favoring the gentamicin implant (odds ratio, 0.49; 95% confidence interval, 0.34-0.68; $I^2 = 0\%$).⁶

Engelmann and colleagues⁷ summarized these 2 studies in 2007 by observing that a slight reduction in infection was seen, but the population was too small to draw a definitive conclusion. Although the use of topical antibiotics is controversial, and they are not used by most cardiac surgeons, the existing studies demonstrate a reduction in the wound infection rate. More study is warranted before topical antibiotics can be recommended as a standard prophylaxis.⁷ Our study is a randomized controlled trial and therefore fulfils this demand and is a contribution toward more evidence in the prevention of surgical site infection.