

**CLINICAL CASE EVALUATION AND RESULTS OF SILVERLON STERNAL  
DRESSINGS IN CARDIAC SURGERY**

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**February 2007**

Silver is an antimicrobial agent whose benefits have long been known to surgeons and caregivers. The wide dissemination and progressing antimicrobial resistance to routine antibiotic therapy has prompted the need for further evaluation and management of systems which might allow reduction in the incidence and severity of wound infections. With these factors in mind, as well as the need to establish a wound care system which provides ease of use and is readily standardized, an evaluation of Silverlon® dressings in a *cardiac surgical practice* was undertaken.

It has been noted<sup>1</sup> that the national average infection rate for sternal CABG procedures from 1986 -1998 was 3.73%. In 2003, at one of the hospitals where a single group provided cardiac surgical care, the deep sternal infection rate was noted to be 2.4%. Annualized, this came to 250 cases and resulted in 6 infections. While better than average, it was felt that this could be improved with attention to wound dressings and, therefore, a clinical evaluation of the Silverlon® product was undertaken.

Importantly, the remainder of the care plan remained unchanged throughout this time. There were no additions or changes to the antibiotic regimen or prep that the patients received. Throughout this interval, patients on elective cases were pre-treated with Bactroban™ nasal ointment.

This evaluation was initially instituted by one of four practicing surgeons at the institution in mid-2004, however, shortly thereafter became the standard of care for both the sternal and leg wounds as well as radial artery harvest sites.

The subsequent sternal infection rate fell consistent with the standardized use of the product. The base infection rate in 2003 for deep sternal infection was 2.4%. In 2004, this was reduced to 2.15% (over 312 cases, saving at least 1 infection), and in 2005 fell to 1.43% (over 263 cases, saving 3 infections). The deep sternal infection rate fell again during the first six months of 2006 to 1.25% (annualized rate of 208 cases, a projected saving of 3 infections).

In summation, over three years, and 804 cases, a 48% reduction of infection was achieved. During this evaluation an estimated 7 infections were prevented, each of which are known to cost \$ 50,000 to \$ 100,000 to treat. This estimated savings of \$350,000 to \$ 700,000 can be contrasted to the estimated incremental \$ 80,150 cost of the dressings used. (2.5 dressings per procedure, \$25 average cost per dressing). Virtually all dressings remained in place for the first four days with the exception of observation of the wound at 48 and 72 hours and for moistening of the dressing on a b.i.d. basis. Following discharge it was at the discretion of the attending physician whether dressings remained in place or were discontinued.

Close questioning of the nurses involved in the care of these patients resulted in overwhelming endorsement of the product, based upon the accelerated wound maturation and reduced edema and erythema, when observed at the 48 and 72 hour intervals compared to previously treated patients. While the length of use of this dressing varied amongst caregivers, patient acceptance was extraordinary.

When challenged by the purchasing director, the reduced infection rate, the significant cost benefit to the hospital in preventing deep sternal infections, and the adamant consensus among all clinicians solidified the determination that the dressings be maintained as part of the overall care plan for the cardiac patients.

A handwritten signature in black ink, appearing to read "Brian Hummel". The signature is fluid and cursive, with the first name "Brian" and last name "Hummel" clearly distinguishable.

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BWH/sb

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