The Use of Antimicrobial Gauze Packing in an Infected Coronary Artery Bypass Graft Surgical Incision

Cheryl L. Hutton, BSN, RN, CWOCN

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ABSTRACT

On September 6, 2003, a 43 year old male patient presented with an infected surgical site following a coronary artery bypass graft on August 22nd. The patient had a presenting medical history of Type II diabetes mellitus, essential hypertension, and acute renal failure secondary to volume depletion and dye studies. Blood and wound cultures were both positive for Methicillin-Resistant Staphylococcus Aureus (MRSA). He was started on a course of Vancomycin on gram IV q 12 hours.

The patient underwent a surgical wound debridement and application of a Vacuum Assisted Closure (V.A.C.®) dressing on September 10, 2003. Following the V.A.C. dressing application, the patient experienced intractable incisional discomfort despite the use of a Morphine Sulfate Patient-Controlled Analgesia (PCA). On September 11, 2003, the patient refused reapplication of the V.A.C. dressing, and q.i.d. dressing changes using KERLIX™ AMD™ antimicrobial gauze bandage roll packing were initiated. The patient required no further analgesia with the dressing changes. The wound initially required three KERLIX AMD rolls for packing.

By September 16, 2003, the wound had decreased in size by 50%, contained 100% red granulation tissue, and the decision was made to close the wound via bilateral pectoralis major myocutaneous advancement flap grafts. The patient underwent the sternal flap graft on September 19 and was discharged one week later. He returned to full time employment two months post-operatively. The use of the KERLIX AMD antimicrobial gauze packing proved to be a viable choice for this patient.

INTRODUCTION

Antibiotic-resistant bacteria pose a significant threat to patients undergoing surgery. A published series on infection cases reported that deaths linked to hospital infections represent the fourth leading cause of mortality among Americans.[1]

In a recently published study, the use of KERLIX AMD gauze, an antimicrobial dressing impregnated with polyhexamethylene biguanide (PHMB), was compared to regular, non-antimicrobial gauze in three types of wounds requiring packing: delayed surgical closures, pressure ulcers, and diabetic foot ulcers. Wounds treated with the antimicrobial gauze demonstrated a greater reduction in the total number of microorganisms, polymicrobial counts, and log colony counts (cfu/ml).[2]

On September 6, 2003, a 43 year old male patient presented with an infected surgical site following a coronary artery bypass graft. The patient had a presenting medical history of diabetes, hypertension, and renal failure. Blood and wound cultures were both positive for Methicillin-Resistant Staphylococcus Aureus (MRSA).

The patient underwent a surgical debridement and application of a Vacuum Assisted Closure (V.A.C.) dressing on September 10, 2003. Following the V.A.C. application, the patient verbalized intractable incisional discomfort. When the V.A.C. dressing was to be changed on September 11, the patient refused reapplication of the dressing, thus requiring an alternative dressing.

METHODOLOGY

On September 11, 2003, the patient's sternal wound measured 26 cm x 14 cm x 15 cm and the wound bed contained 100% yellow slough with 125 cc of purulent drainage collected by the V.A.C. dressing container during the previous 24 hour period. The decision was made to pack the wound q.i.d. with KERLIX AMD antimicrobial gauze bandage rolls moistened with 0.9% normal saline solution (NSS). During this baseline visit (9/11/03), the practitioners required three gauze rolls to complete the dressing change.

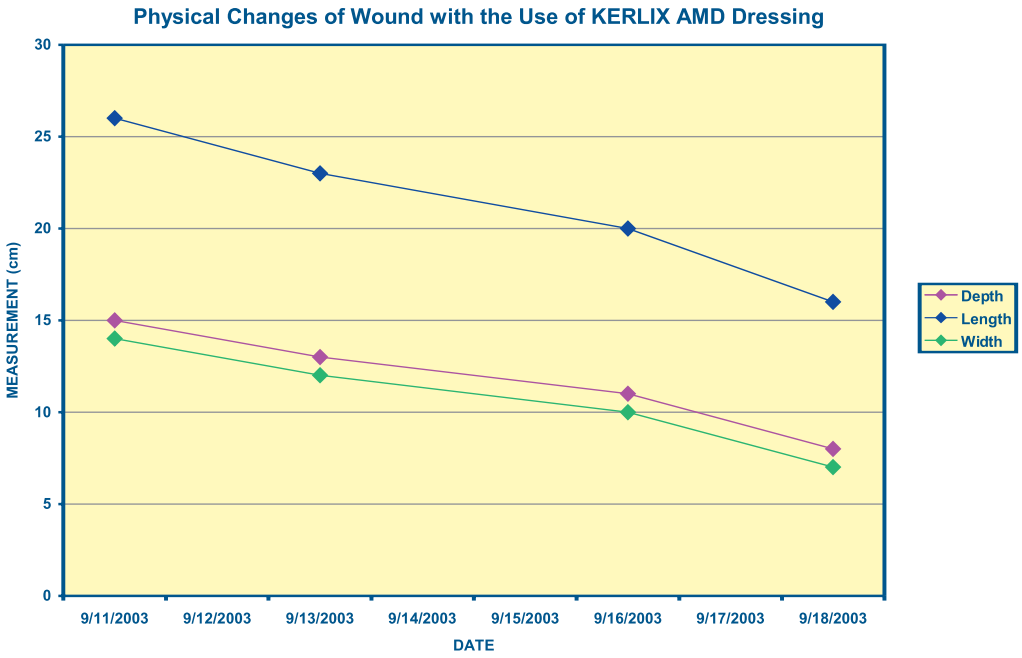
By September 13, 2003, the sternal wound measured 23 cm x 12 cm x 13 cm and the wound bed contained 50% red granulation tissue and 50% yellow slough. Although the amount was decreasing, wound drainage remained purulent and the q.i.d. dressing changes continued. Since the patient verbalized comfort during the dressing changes, analgesics were not required.

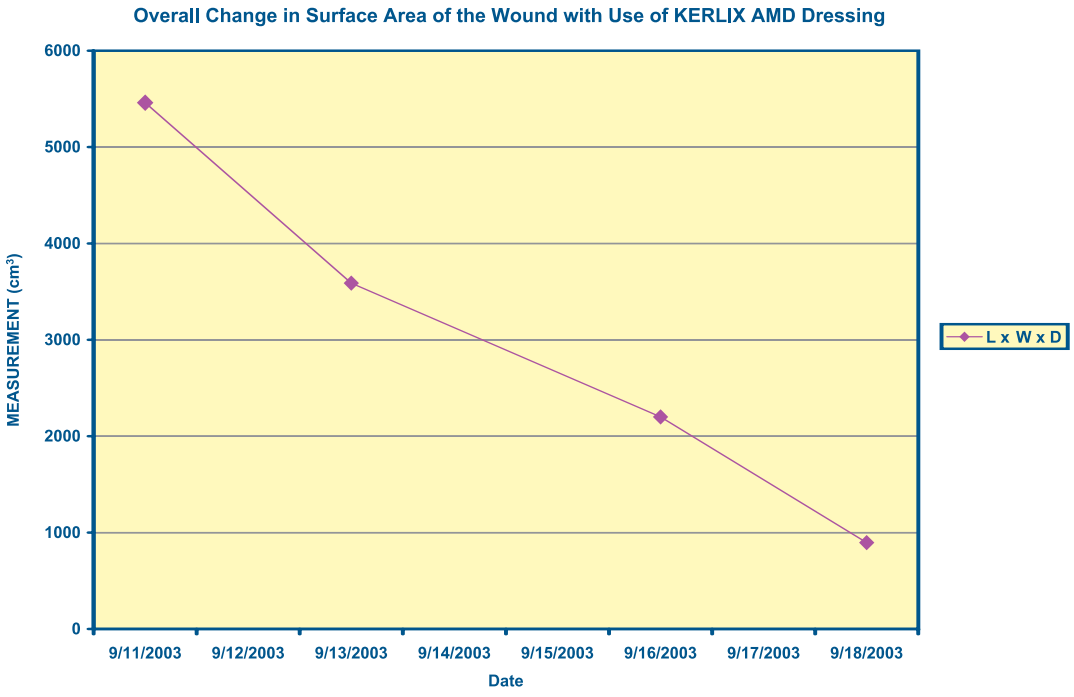
RESULTS

By September 16, 2003, the sternal wound measured 20 cm x 10 cm x 11 cm and the wound bed contained 100% red granulation tissue. The drainage was described as serous and there was no observable yellow slough present in the wound bed. Dressing changes continued to be described as "pain-free" by the patient. The decision was made to continue the KERLIX AMD dressing changes q.i.d. until the Plastic Surgery Service could perform wound closure via bilateral pectoralis major myocutaneous advancement flap grafts.

On September 18, 2003, the wound was measured preoperatively at 17 cm x 7 cm x 8 cm. The wound bed was 100% granulated and wound drainage was described as serous. Clinicians were able to pack the wound with 1 ½ bandage rolls. The pectoralis major myocutaneous advancement flap graft was performed successfully on that day.

The patient progressed well post-operatively and was discharged from the hospital on September 25 with the sternal flap incision healing without dehiscence or other complications. The patient was followed by home care for one month and was able to return to full time work by December 2003.





CONCLUSION

Following the initiation of KERLIX AMD gauze dressing, the patient's surgical wound decreased in size by approximately 50% and the wound bed changed from being 100% yellow slough to 100% red granulation tissue within seven days. Providing a clean, well granulated surgical wound to the Plastic Surgeon may have contributed to the success of the pectoralis major myocutaneous advancement flap graft.

The use of the KERLIX AMD antimicrobial gauze packing proved to be a viable choice for this patient.

REFERENCES

1. Berens MJ, "Infection epidemic carves deadly path." Chicago Tribune. July 21, 2002.

2. Motta G, Corbett L, Milne C."Impact of an antimicrobial gauze upon bacterial colonies in wounds that require packing." Ostomy/Wound Management 2004; 50 (8): 48-62.

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Cheryl Hutton is currently an employee of Tyco Healthcare Group LP. She was not employed by Tyco during this study.

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