

The Use of a Bioresorbable Silver Matrix in Recalcitrant Surgical Wounds of Varying Etiologies

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BACKGROUND

Three male patients ages 49, 65, and 74, presented with recalcitrant surgical wounds of varying etiologies and severities. Patient A presented with a 154.8 cm³ dehiscenced surgical chest wall wound with sternal plating following bypass surgery 7 weeks prior. Patient B presented with an 8.2 cm³ recalcitrant surgical wound on his lower midline back following lumbar laminectomy 4 weeks prior. And patient C presented with a 31.1 cm³ non-healing surgical wound to his anterior chest wall following quintuple bypass surgery 3 weeks prior. In all cases, a bioresorbable silver matrix (Microfilm Matrix) was used to support reepithelialization and manage bioburden.

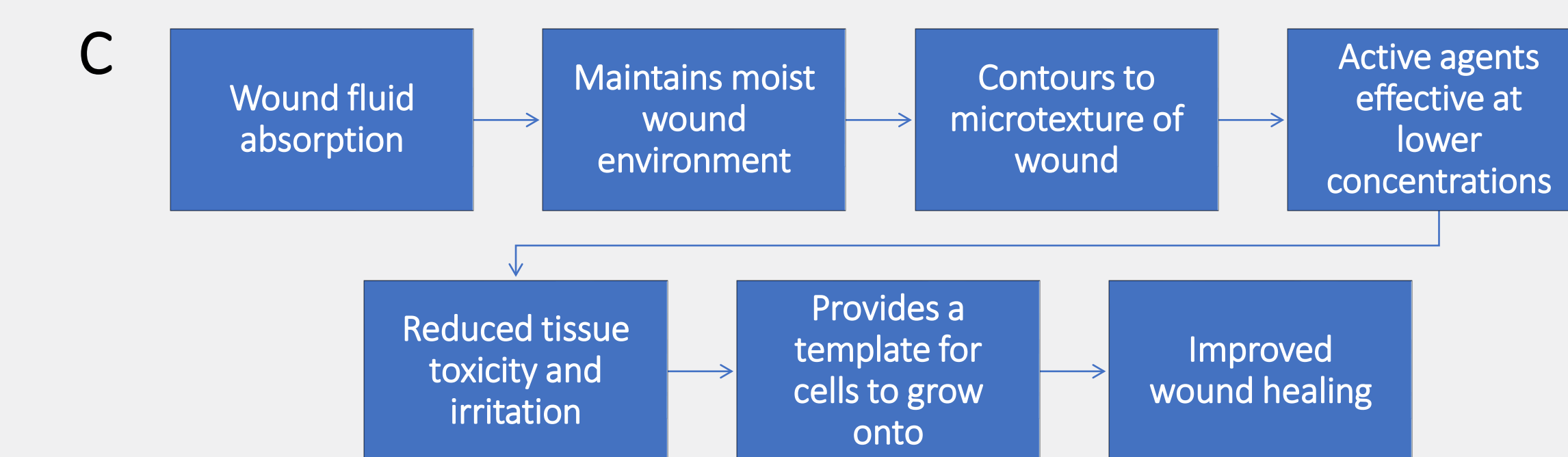
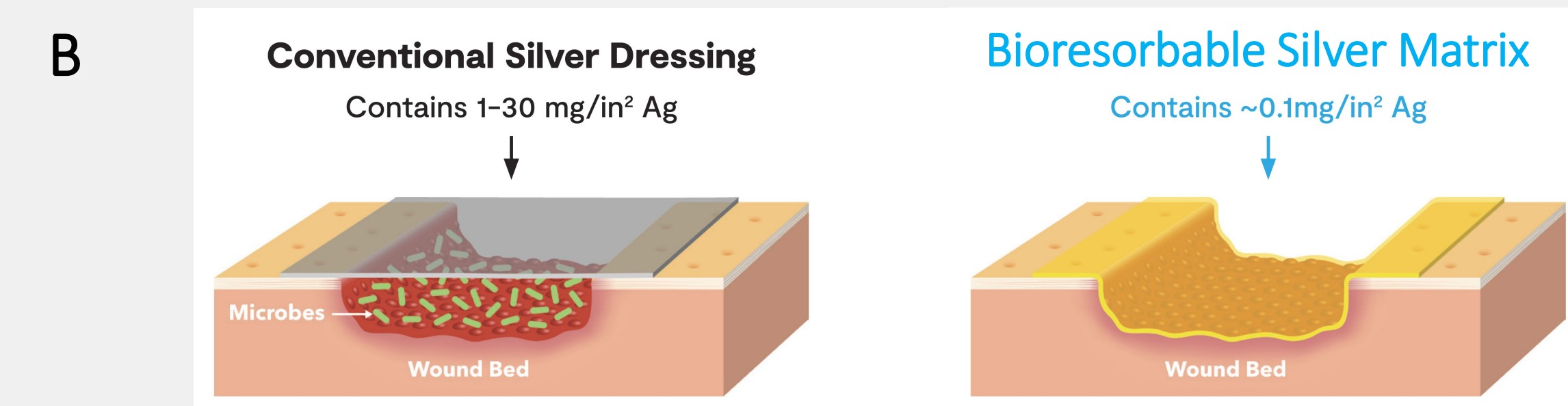
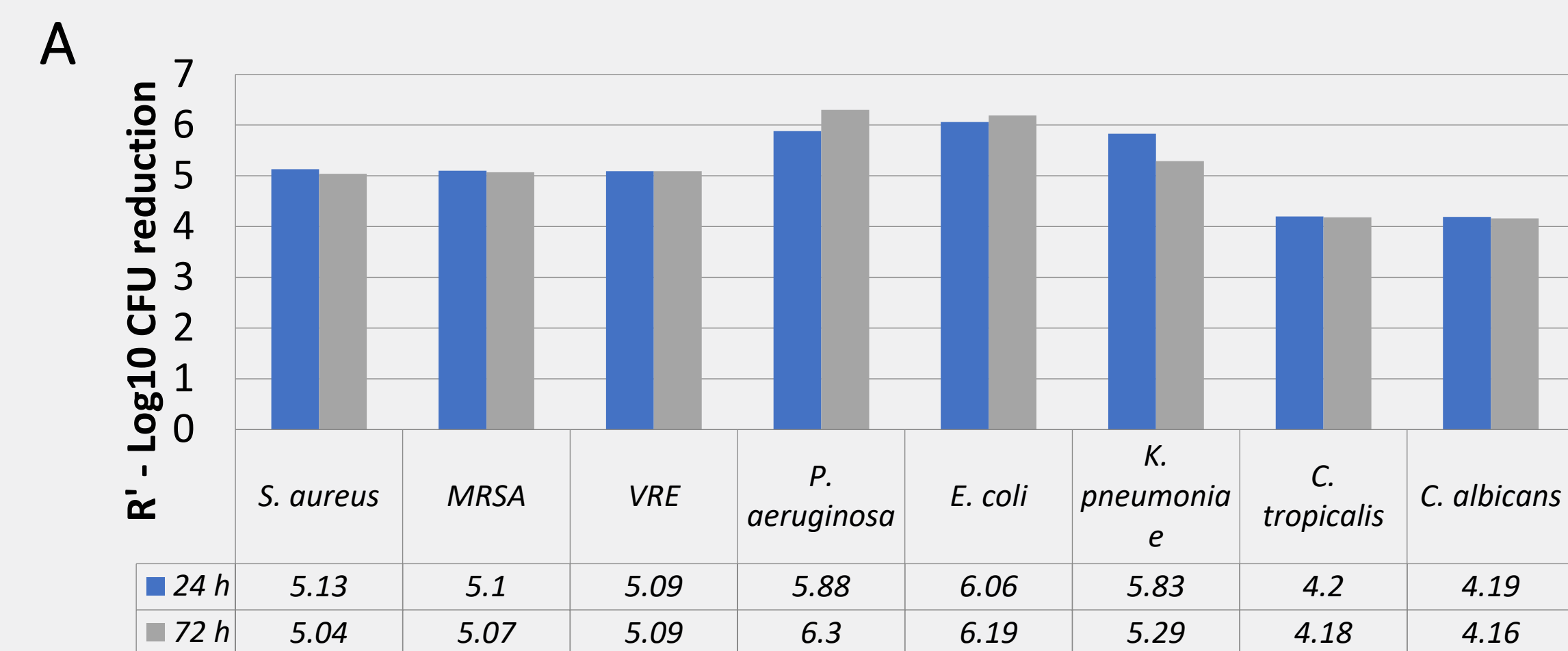


Figure 1: A) The Matrix provides a 4- to 6-log reduction in a variety of bacteria and yeast, including MRSA and VRE.^{1,2} B) Mechanism of action of a bioresorbable silver matrix. Unlike conventional silver dressings, the Matrix contours to the microtexture of the wound bed allowing active ingredients to be effective at low doses.³ C) The mechanism of action of the Matrix is designed to facilitate improved wound healing.³

RESULTS

Four weeks after treatment, patient A's wound closed by 91% with steady decrease until 100% reepithelialization at week 11, and patient B's wound closed by 68% with steady decrease until 100% reepithelialization at week 17. Patient C's wound was observed for increased granulation over hardware until week 3, and four weeks after hardware removal, his wound closed by 75% and with steady decrease to 100% reepithelialization at week 10. This patient also had tunneling that was resolved after 1 week of initial Microfilm Matrix treatment.



Figure 2. Healing progression of a dehiscenced surgical chest wall wound over 17 weeks.



Figure 4. Healing progression of a recalcitrant quintuple bypass surgical wound over 17 weeks.

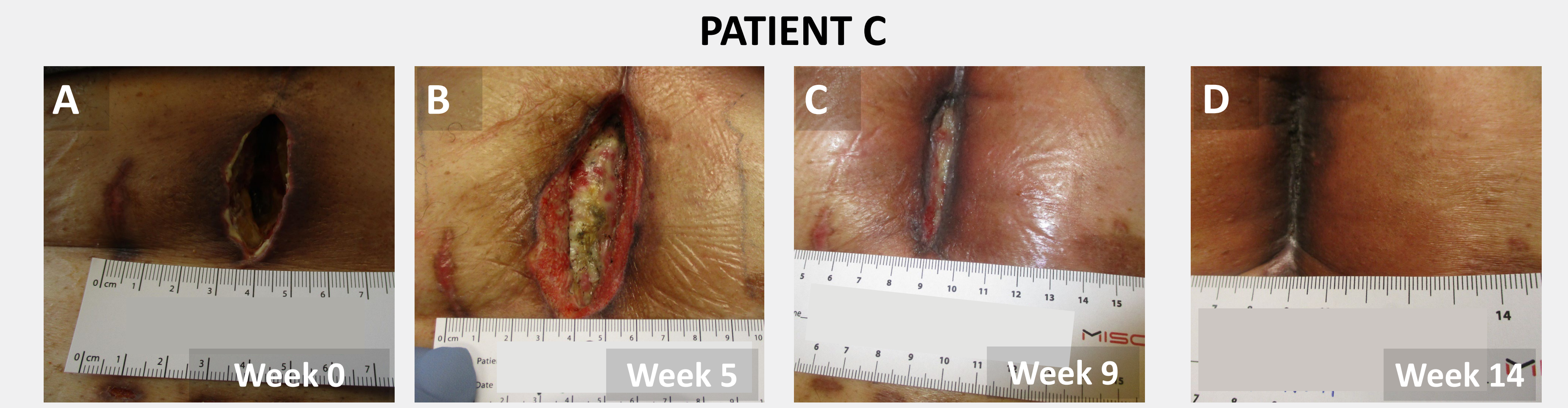


Figure 3. Healing progression of a recalcitrant lumbar laminectomy surgical wound over 14 weeks.

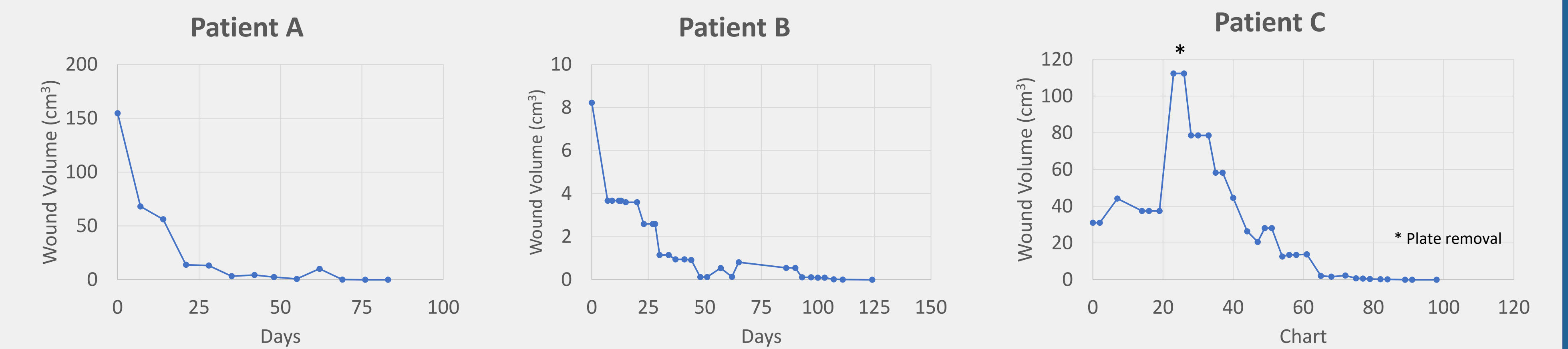


Figure 5. Graphical representation of healing trajectory of patients A, B and C.

METHODS

Patient A was treated with Microfilm Matrix once a week for 11 weeks as the primary dressing, followed by a non-adherent dressing and NPWT at 150 mm/Hg. Patient B was treated with enzymatic debridement, Microfilm Matrix and NPWT at 80 mm/Hg. He was also treated with broad spectrum systemic antibiotics and adjuvant hyperbaric oxygen therapy. Patient C was treated with Microfilm Matrix 2 to 3 times a week for 14 weeks, followed by a non-adherent dressing and NPWT at 125 mm/Hg. On week 3, his plate and screws were removed, and Microfilm Matrix and NPWT applications were continued.

CONCLUSIONS AND FUTURE DIRECTIONS

As an adjunct wound healing therapy, Microfilm Matrix was able to jump-start healing in recalcitrant wounds of varying etiologies and severities and shows promise in treating challenging postoperative surgical wounds.

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*Microlyte® Matrix (Imbed Biosciences, Inc, Middleton, WI, USA).



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