

Use Of A Bioresorbable Silver Matrix and NPWT To Treat A Failed Full-thickness Skin Graft Site



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BACKGROUND

A 24-year-old female patient, who was in a severe motor vehicle accident one month prior, presented with a failed full-thickness skin graft over the right upper extremity. Her initial injuries included a C7 fracture, T5-T9 rib fractures, a right upper extremity fracture, right pneumothorax and degloving of the right upper extremity. Despite completing dressing changes at home, the proximal portion of the skin graft became infected, began to necrose, and became a chronic non-healing wound. After debridement, the patient's wound measured 164.64 cm³ and a bioresorbable silver matrix (Microfilm Matrix*) was used to manage bioburden and support epithelialization.

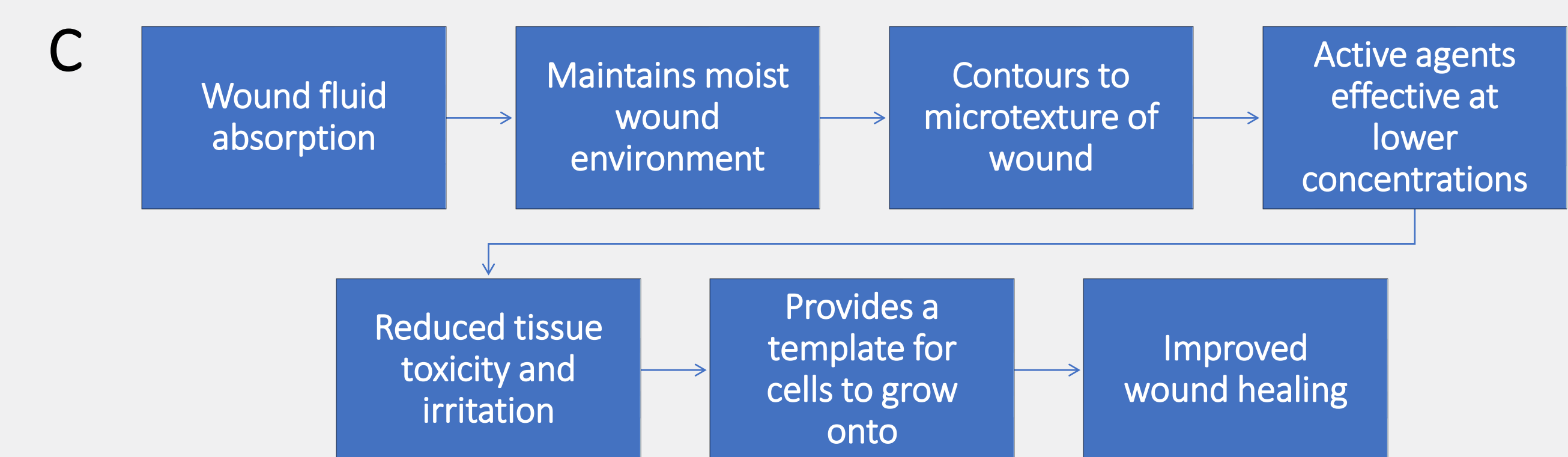
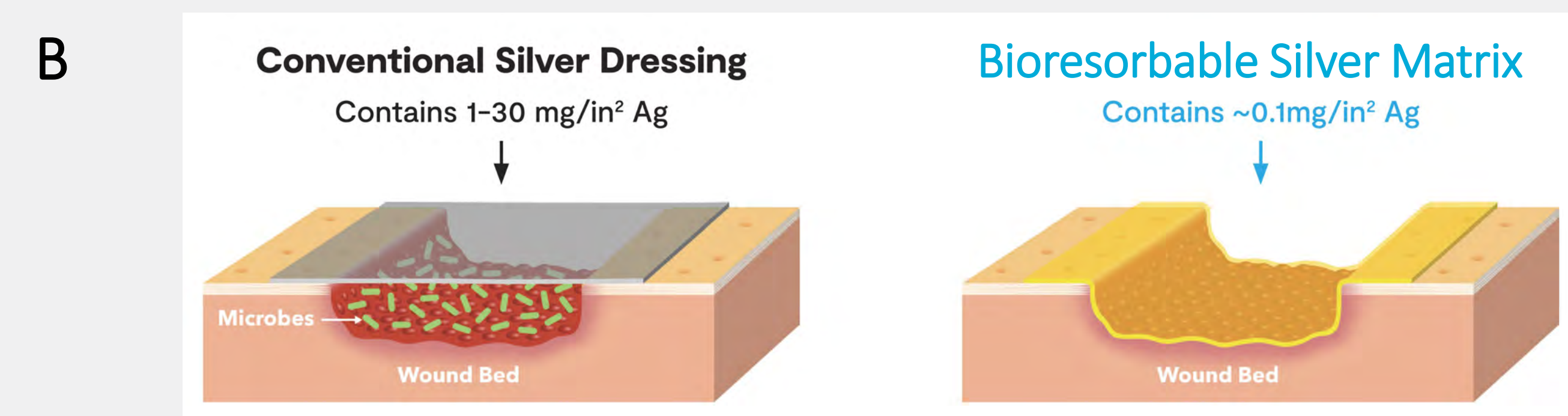
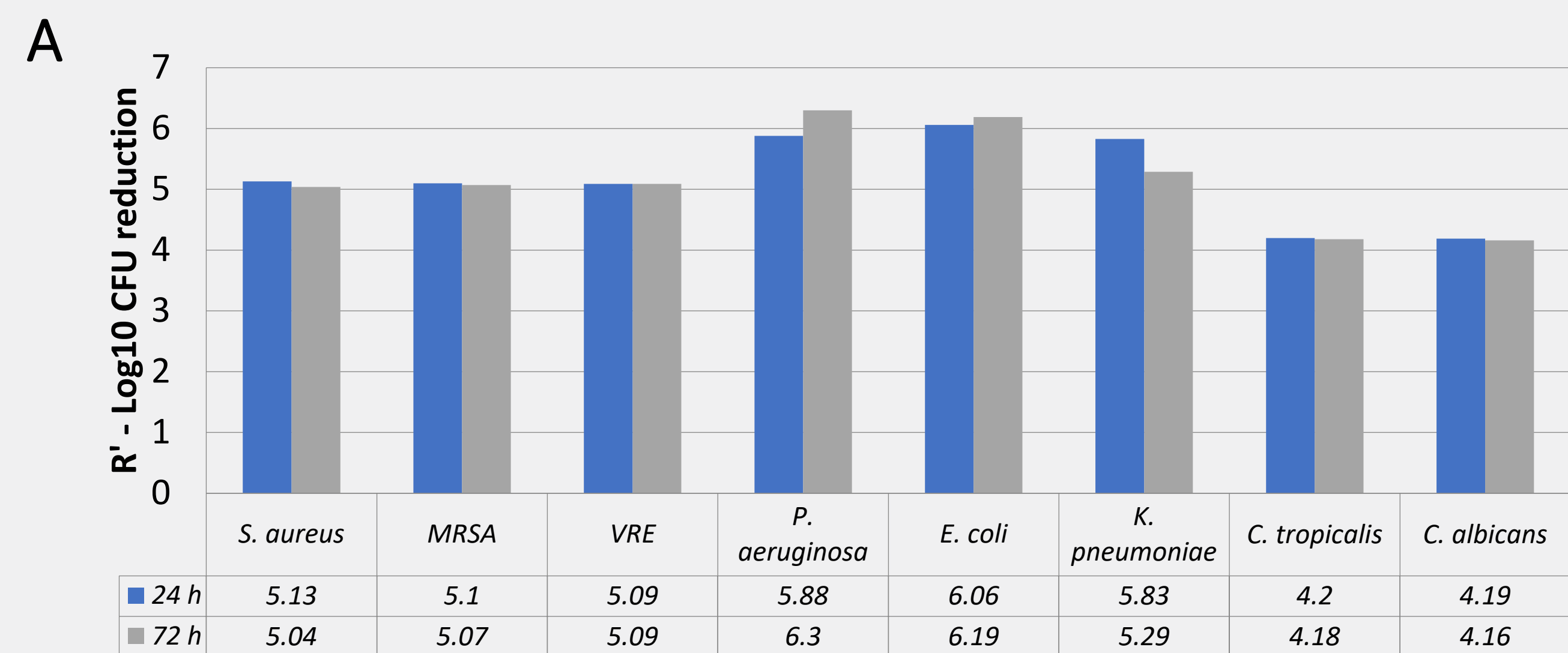


Figure 1: A) The Matrix provides a 4- to 6-log reduction in a variety of bacteria and yeast, including MRSA and VRE.^{2,3} B) Mechanism of action of a bioresorbable silver matrix. Unlike conventional silver dressings, the Matrix contours to the micro-texture of the wound bed allowing active ingredients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

METHODS

Two days after debridement, her wound was treated with Microfilm Matrix and NPWT at 125 mmHg continuous. Prior to debridement and Microfilm Matrix treatment, the wound was cleansed with normal saline and wrapped in 4x4 gauze and kerlix to accommodate drainage. Microfilm Matrix was then applied on days, 6, 13, 19 and 34. On day 14 NPWT was used alone, and on day 34, Microfilm Matrix was used alone. Once the wound had granulated to skin level, Vaseline gauze was used over the wound to provide a moist healing environment.

RESULTS

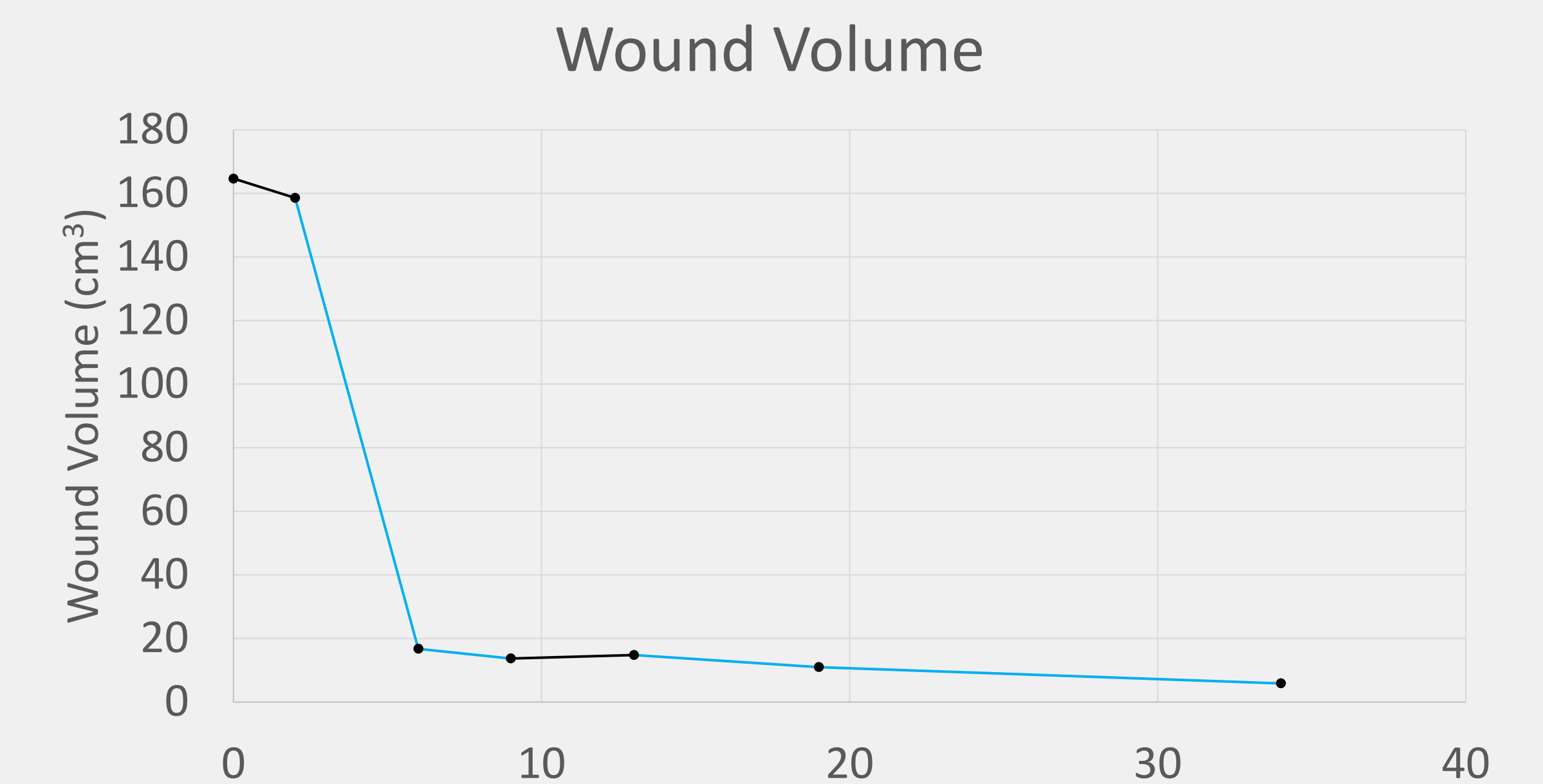


Figure 3: The healing trajectory of the wound over 5 weeks. Bright blue lines indicate period of Microfilm Matrix application.

RESULTS

After just four days of Microfilm Matrix and NPWT treatment, the patient's wound decreased by an astonishing 90%. At week 4, her wound was 96% healed and 100% healed by week 5.

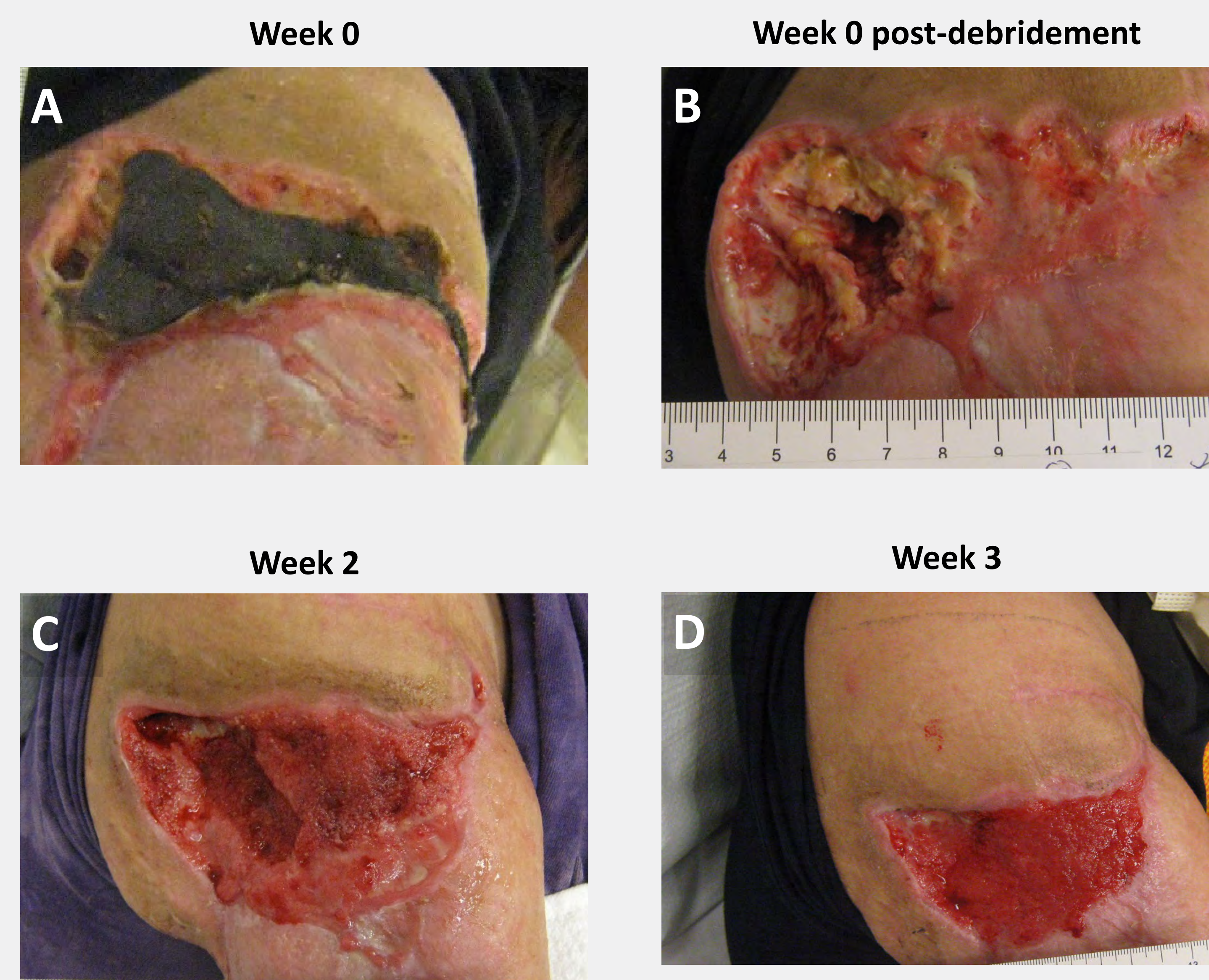


Figure 2. Healing progression over 3 weeks. Final healed picture is not available.

DISCUSSION

As an adjunct wound healing therapy, Microfilm Matrix was able to decontaminate a deep tunneling wound without need for additional OR debridement, IV antibiotics or an additional skin graft surgery. The patient healed quickly which decreased the risk of infection. Once the infection was treated topically and the drainage decreased, the patient reported less pain and started physical therapy to increase the range of motion in the right arm. Overall, this was an amazing outcome that provided the patient an opportunity to quickly and independently return to her activities of daily living.

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