

Clinical Advantage of a Bioresorbable Silver Matrix on a Radiation Breast Wound



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BACKGROUND

In January, a 65-year-old female patient presented with invasive lobular breast cancer and secondary ulceration of the right breast (ER/PR positive, HER-2 negative (FISH), Ki67 15%). In February, she was referred to wound care while undergoing palliative radiation. Her right breast wound measured 17.2 x 11.4 x 0.4 cm. She continued with conservative wound management with daily dressing changes. Dressing choices were limited related to daily radiation therapy. In March, after radiation therapy, the patient underwent a surgical debridement as it was decided that the patient was not a candidate for skin graft or rotational flap. As providers in wound care are aware, post-irradiated wounds and periwound tissue over a large surface area is notoriously difficult to treat and prone to infection.¹ Accordingly, this patient's wound was stalled for 3 months after debridement. This study evaluates the efficacy of a novel bioresorbable polyelectrolyte microfilm matrix (Matrix)* impregnated with ionic and metallic silver in jumpstarting the healing of a stalled radiation breast wound that was initially treated with palliative care.

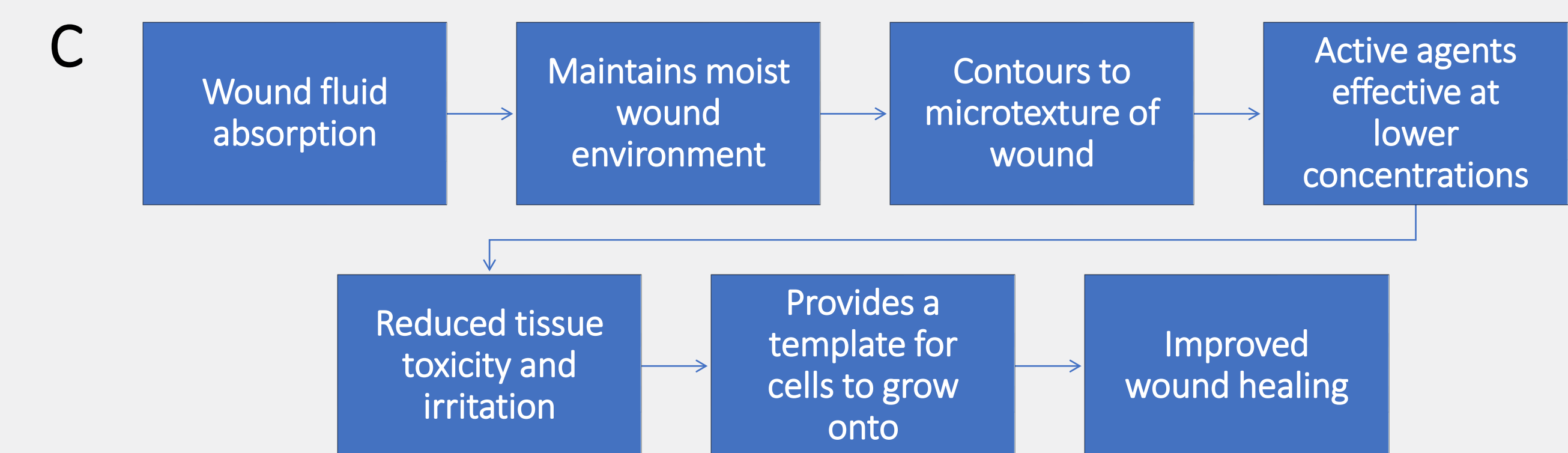
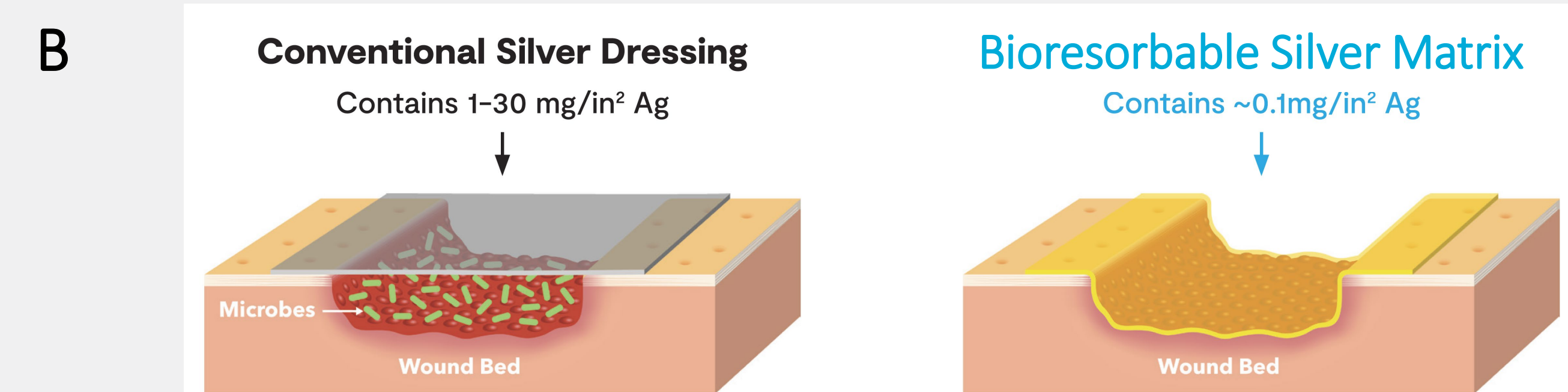
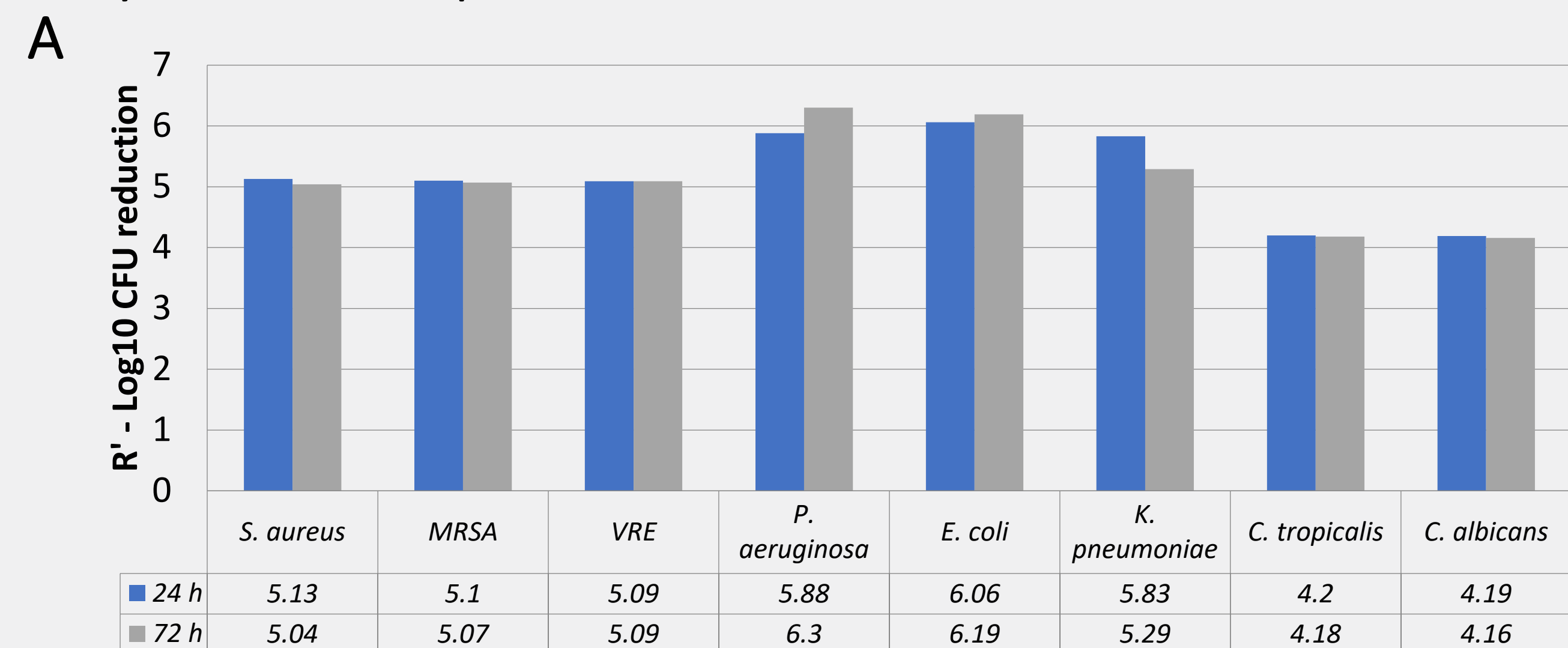


Figure 1: A) The Matrix provides a 4- to 6-log reduction in a variety of bacteria and yeast, including MRSA and VRE.^{2,3} B) Mechanism of action of a bioresorbable silver matrix. Unlike conventional silver dressings, the Matrix contours to the micro-texture of the wound bed allowing active ingredients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

METHODS

In July, the Matrix was applied as the contact layer weekly, for 5 weeks. Adjunct therapies included a non-adhering silicone dressing and an ABD pad. After week 6, the patient continued conservative wound management and daily dressing changes. She returned to the clinic in October and continued to receive Matrix treatment once a month.

RESULTS

A – Month 0 - 2



B - Month 3



C - Month 8



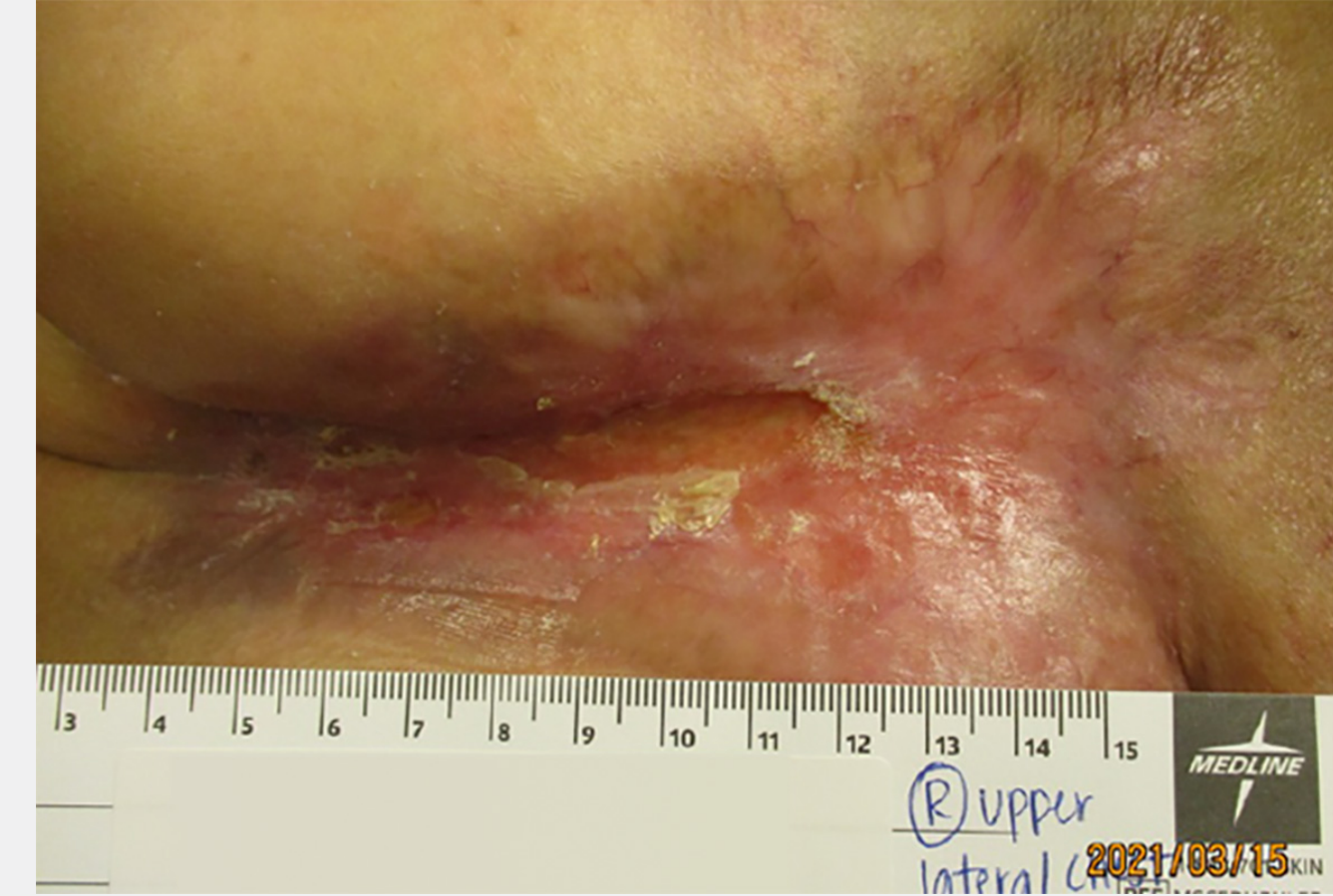
D - Month 10



E - Month 11



F - Month 13



G - Month 20



Figure 2. (A-F) After 5 weeks of application of Matrix treatment, the patient's wound had decreased in size significantly by 74%. Four months after Matrix application, the wound measured 4.2 x 3.4 x 0.1 cm—a 98% reduction in wound surface area. (G) Patient's wound at final follow-up visit. The matrix was well tolerated, and the wound did not become infected.

RESULTS

Wound Size

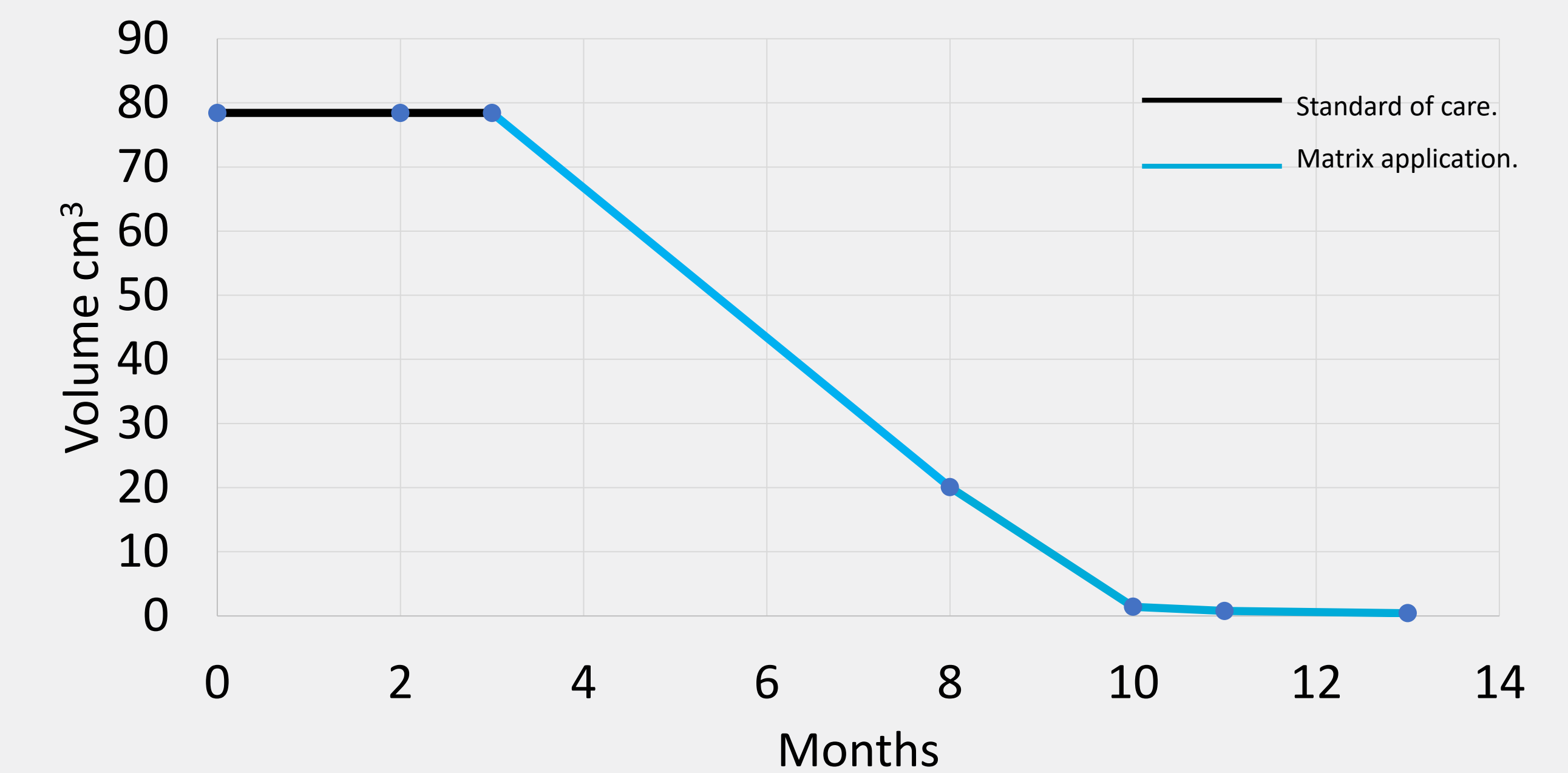


Figure 3: The healing trajectory of the wound over 13 months. Bright blue lines indicate period of Matrix application.

SUMMARY

The Matrix and non-adhering silicone dressing worked together to jumpstart the patient's wound-healing process and shows promise in treating difficult radiation chronic ulcers.

The patient reported less drainage, odor, and need for multiple dressing changes per day. (The patient never c/o pain post radiation, except from the radiated periwound tissue, not from the wound itself.) Importantly, the Matrix allowed the patient to have fewer visits to the wound clinic because she was able to care for the wound herself. This was very important to the patient because she was driving 2 hours a day for radiation for several weeks and was able to see a wound provider once a month after using the Matrix.

CONCLUSIONS AND FUTURE DIRECTIONS

As an adjunct wound healing therapy, the Matrix was able to expedite healing and shows promise in treating challenging radiation chronic ulcers.

REFERENCES

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