

Hyalomatrix®

A regenerative matrix for complex lower extremity wounds with exposed bone or tendon



Corius™
Tissue Regeneration

Hyalomatrix® is an esterified hyaluronic acid matrix (eHAM) wound device that facilitates tissue regeneration through an ordered reconstruction of dermal tissue, thereby providing a foundation for split-thickness skin grafting (STSG). Hyalomatrix® comes in two forms. One form consists of two layers: a hyaluronic acid layer, and a silicone layer that controls water vapor loss and provides a protective barrier to the wound from external contaminants. Hyalomatrix also comes in the form of a hyaluronic acid layer without a silicone membrane allowing for flexibility in additional clinical scenarios like tunneling, undermining or excessive drainage.

Multiple studies demonstrate that eHAM can play a critical role in limb preservation for patients with complex traumatic or chronic wounds, or deep burns.^{1,2} Complex wounds with exposed bone or tendon are specifically in need of tissue regeneration solutions because immediately covering them with autologous skin, a gold standard for wound coverage, presents a risk of joint contracture or graft failure.^{2,3} A study published by Dr. Steven Kozusko, and Dr. Ram Velamuri and colleagues in *The Journal of Burn Care & Research* assessed the efficacy of Hyalomatrix® as a regenerative matrix to provide tissue regeneration prior to STSG procedures in complex lower extremity wounds with exposed bone or tendon.³

Study methods

Dr. Velamuri's team performed a retrospective case series assessing the use of Hyalomatrix® in fifteen cases of patients with complex lower extremity wounds with exposed bone or tendon.³ All patients had multiple pre-existing co-morbidities. The cases, all gathered from a single center, included lower extremity wound types such as foot ulcers, burns, and traumatic wounds.

Study results

The case series showed that in thirteen of the fifteen cases of complex lower extremity wounds with exposed bone or tendon, limb salvage was successful with the use of Hyalomatrix® and subsequent STSG. Among the thirteen successful cases, the mean time to STSG was 22.9 ± 7 days.

Case 1 example



Figure 1. Wound with exposed tibia (top left); application of Hyalomatrix® (top right); granulation tissue present after 36 days (bottom left); healed STSG after 36 weeks.

This case presents a patient with extensive burns involving the upper and lower extremities. The patient's lower extremity wounds included ten centimeters of exposed tibia bone. After undergoing multiple reconstructive procedures and escharotomy, the patient successfully underwent two separate applications of Hyalomatrix® over the exposed bone area. Healthy, exuberant granulation tissue was present over the exposed bone in two weeks after the first Hyalomatrix® application. The entire exposed bone was covered by granulation tissue after five weeks, with two applications of Hyalomatrix®. At six months, skin grafts were stable and the patient was ambulating with an orthotic shoe.

Case 2 example



Figure 2. Initial electrical injury (top left); exposed necrotic first metatarsal (top right); debridement of metatarsal (middle left); application of Hyalomatrix® (middle right); granulation tissue at day 34 (bottom left); healed STSG at 28 weeks (bottom right).

This case presents a patient with an electrical injury to the right foot, acute osteomyelitis, and an exposed necrotic first metatarsal revealed after initial debridements. Granulated tissue covering the exposed first metatarsal was noted after two applications of Hyalomatrix® over the surgically debrided wound. The patient underwent successful skin grafting in five weeks after the Hyalomatrix® applications, and the patient was ambulating with an orthotic shoe after six months.

Summary

Hyalomatrix® is an innovative wound care solution that can promote quality wound healing and limb preservation for many wound types, including complex wounds. The recently published case series described here demonstrates the potential of Hyalomatrix® as a regenerative matrix for complex lower extremity wounds with exposed bone or tendon. These results illustrate the feasibility of the use of Hyalomatrix® in patients who cannot undergo local tissue reconstruction options.

Hyalomatrix® Product Information

Hyalomatrix® is a bilayered, sterile, flexible and conformable hyaluronic acid wound device for advanced wound care. It comes in two forms. One form is comprised of a non-woven pad made entirely of HYAFF®, a benzyl ester of hyaluronic acid, and a semi-permeable silicone membrane which controls water vapor loss, provides a flexible covering for the wound surface, and adds increased tear strength to the device. Hyalomatrix also comes in the form of a hyaluronic acid layer without a silicone membrane allowing for flexibility in additional clinical scenarios like tunneling, undermining or excessive drainage. In both forms, the biodegradable matrix acts as a scaffold for cellular invasion and capillary growth. See packaging for more information.

Indications for Use

Hyalomatrix is indicated for the management of wounds including:

- Partial and full-thickness wounds
- Second-degree burns
- Pressure ulcers
- Venous ulcers
- Diabetic ulcers
- Chronic vascular ulcers
- Draining wounds
- Tunneled/undetermined wounds
- Trauma wounds (abrasions, lacerations, skin tears)
- Surgical wounds (donor sites/grafts, post-Mohs surgery, post-laser surgery, podiatric, wound dehiscence)

This device is intended for one time use.

Contraindications

Individuals with hypersensitivity to hyaluronan and/or its derivatives and silicone.

References

1. Aballay, Ariel, and Michel H. E. Hermans. "Neodermis Formation in Full Thickness Wounds Using an Esterified Hyaluronic Acid Matrix." *Journal of Burn Care & Research*, vol. 40, no. 5, 8 Apr. 2019, pp. 585–589, 10.1093/jbcr/irz057
2. Simman, Richard, and Michel H.E. Hermans. "Managing Wounds with Exposed Bone and Tendon with an Esterified Hyaluronic Acid Matrix (EHAM): A Literature Review and Personal Experience." *Journal of the American College of Clinical Wound Specialists*, vol. 9, no. 1–3, May 2018, pp. 1–9.
3. Kozusko, Steven D, et al. "Esterified Hyaluronic Acid Matrix in Lower Extremity Reconstruction With Exposed Tendon and Bone: A Retrospective Review." *Journal of Burn Care & Research*, Apr. 2020, pp. 1–7.