

Advanced Multi-Tissue Platform (MTP) Particulate Facilitates Complex Wound Healing in Patients With Limited Availability for Clinic Followup

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Abstract

INTRODUCTION: Chronic and complex wounds present a costly challenge. Close clinic follow-up is often required in these demanding cases, however adherence to frequent scheduling is difficult for select patient populations, including those working or with limited access to transportation. Often, reducing frequency of clinic follow-up compromises wound healing. However, here we have identified an advanced, affordable, non-human Multi-Tissue Platform (MTP)* that provides autonomy by enabling patients or caregiver application of advanced treatment independently at home. This unique, micronized MTP product is derived from porcine spleen and lung, and comprised of multiple growth factors, collagen, hyaluronic acid, and glycosaminoglycans. Providing a simple, cost-effective, reliable regimen that can be applied independently by patient or caregiver stimulates wound advancement in difficult-to-treat patient populations with limited availability for clinic follow-up.

METHOD: Two patients with complex surgical wounds, and one patient with chronic recurrent venous ulcer in the shadow of a large, bulky surgical flap were included. All wounds were stalled or deteriorating, and the patients were unavailable for the recommended follow-up of once to twice per week. All patients received the micronized MTP product, with instructions to apply the product directly to the wound, cover with absorbent secondary dressing, and secure in place. Wound care was applied every other day by patient or caregiver, with follow-up in clinic reduced to once every 3+ weeks.

RESULTS: All wounds improved significantly with independent application of the MTP particulate by patient or caregiver. Patients were satisfied with the autonomy provided to them, without compromising wound progress.

DISCUSSION: This innovative MTP product provides an advanced, cost-effective dressing that promotes wound healing in stalled or deteriorating complex wounds. Furthermore, the user-friendly application enables advanced dressing application independently by the patient or caregiver, promoting wound healing in the difficult-to-heal population of patients who are unable to present for frequent clinic follow-up.

*Xcellistem®, Regenerative Tissue Technologies

Wound Care Challenges

Chronic, complex, and non-healing wounds present a challenging clinical course. Wound care provided by a wound-certified team is invaluable. While there are no home-based alternatives that can replicate this level of care, there are various patient circumstances that necessitate a more home-based approach with less frequent clinic followup.

One of the most common factors that interferes with followup in the clinic is scheduling conflicts. Patients with typical working schedules often have difficulty taking the time off work to followup frequently in wound clinics. Many times, we see these patients experience slower healing, or in worse cases the wounds completely stall. This can interfere with patient motivation and put them at higher risk for wound chronicity.

Our team has cautiously trialed numerous patient-driven treatment plans as an alternative to more frequent wound care provided in the clinic. While nothing can replace certain provider-delivered therapies, such as sharp debridement, we have strived to develop alternative treatment plans that enable scheduling flexibility while still maintaining wound progress.

Case Reports

PATIENT 1

68 year-old male

SIGNIFICANT HISTORY:

- Type 2 Diabetes Mellitus
- Vitamin B12, D deficiencies
- Hyperlipidemia
- Obesity

WOUND HISTORY:

History of traumatic injury to right lower extremity complicated by necrotizing fasciitis, requiring gastrocnemius flap 2008. Presence of bulky flap that has been surgically debulked and debrided with split thickness skin graft placement. It is not possible to further debulk the flap. Patient with frequent wound recurrence despite daily compression. The aberrant anatomy surrounding the bulky flap creates inconsistent compression to the area. Various wound dressings trialed, including collagen matrix, antimicrobials, serial sharp debridement, low frequency ultrasound therapy, and 2-layer compression wraps. The wound did not begin to significant progress until XCellistem MTP was initiated. This enabled the patient to reduce clinic followup frequency while maintaining an advanced dressing that continues to promote wound healing.



Future Directions

Effective wound care must consider all aspects of patient needs, including availability for followup in the clinic. While frequent followup in clinic is often preferred, providing alternative treatment plans that enable patient autonomy and accommodate scheduling improves wound outcomes. There are many variables that can prevent clinic followup, including work schedules, transportation, and even staffing. Considering these aspects of patient care when developing wound treatment plans fosters a positive patient-provider relationship while achieving wound progress.

Advanced wound dressings that are affordable and easy to apply are critical to maintaining a healthy wound environment, promoting healing, and preventing wound chronicity for many patients. We have accomplished great success in patient-driven application of XCellistem MTP particulate. Further, combining this primary dressing with other advanced modalities, including antimicrobials, negative pressure, and compression has strengthened wound healing. Incorporating XCellistem MTP into patient-driven treatment plans continues to provide an excellent treatment plan in difficult-to-heal wounds.

Case Reports

PATIENT 2

51 year-old male

SIGNIFICANT HISTORY:

- History of Amelioblastoma
- Mandibulectomy 2009 with iliac crest bone graft and failed implants with mandibular defect
- Partial mandibulectomy with left fibular free flap March 2022, later with dehiscence and local advancement flap in April 2022
- On suppressive antibiotic therapy for presumed osteomyelitis of oral cavity

WOUND HISTORY:

Our wound care team began following delayed healing of fibular flap donor site April 2022. In addition to once to twice weekly sharp debridement, various wound dressings were trialed, including antimicrobial products, advanced collagen matrix dressings, two-layer compression, low-frequency ultrasound treatments, negative pressure wound therapy, and serial application of advanced skin substitutes. Despite these advanced modalities, the wound continued to stall. One obstacle to wound healing in this case was the patient's inability to follow-up in the clinic consistently or keep dressings intact between visits. Many times, the advanced dressings applied in clinic were not in place for the recommended time frame due to patient removing them at home. XCellistem MTP provided an affordable, easy to use primary dressing that could be serially applied at home by patient and caregivers with compression. This promoted wound healing while providing the patient with much needed autonomy.



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