Desmoplastic Melanoma: Complete Closure of Large Scalp Vertex Excision Without Reoperation

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Background

Melanomas of the head and neck can be particularly challenging to treat and definitively close considering the anatomic challenges and frequent need for adjuvant chemoradiation therapy. Large volume tissue loss and adjuvant therapies can cause significant morbidity and oftentimes require numerous surgeries including split thickness skin grafting and myocutaneous flap reconstruction. Desmoplastic melanoma is a rare subtype of melanoma characterized by scar-like growths with spindle-shaped cells making up approximately 4% of cutaneous melanoma cases. [i] Due to their atypical appearance, there is often a delay in diagnosis, further adding to the complex task of skin closure.[ii]

Case Presentation

75-year-old male

SIGNIFICANT HISTORY:

- **Desmoplastic Melanoma (scalp)**
- Numerous Squamous Cell & Basal Cell Carcinomas (head/face/neck) >14
- Bilateral Lung Transplant (pulmonary fibrosis) on chronic immunosuppression
- Hypertension
- CKD3
- Type 2 diabetes mellitus
- Pulmonary embolism (long term anticoagulation)
- Coronary artery disease
- Heart failure (AICD)

WOUND HISTORY:

The patient initially underwent a wide local excision of a desmoplastic melanoma of the scalp with application of a two-layer bioengineered skin substitute in 2024 followed by a full thickness skin graft. There was a large, local recurrence resulting in a re-excision and application of a two-layer bioengineered skin substitute 11 months following the index surgery. The scalp defect measured approximately 7x10 cm at the time of surgery. The wound failed to progress, had exposed calvarium and a wound specialist consultation was requested to assist with management and closure.

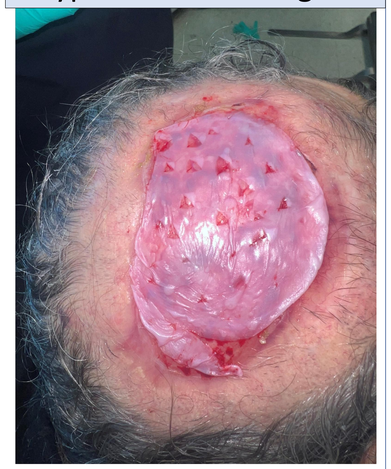
Wound at time of wound consultation

Debridement, collagen, advanced wound products

Wound contracting, increased granulation

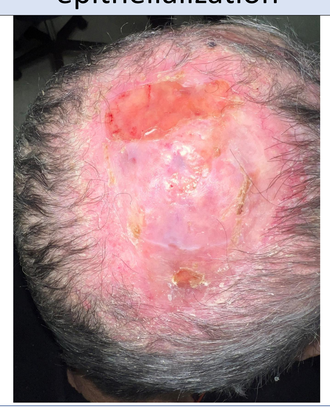
Wound bed preparation prior to application

Neonatal fibroblasts and type I bovine collagen



Continues to contract, epithelialization noted

Increased epithelialization



Treatment Course & Discussion

Initial treatment goal, in collaboration with our ENT colleagues, was to assist with granulation tissue coverage, particularly over exposed bone, in anticipation of future skin grafting. Numerous advanced wound care products and modalities were utilized including non-contact, low-frequency ultrasound therapy, serial sharp debridement, multi-tissue platform porcine powder, dehydrated human amnion/chorion membrane, various wound gels, non-adherent bandages and bandnet. Of note, the patient also underwent 20 sessions of external beam radiation therapy to the scalp during our course of treatment. The most noticeable improvement in wound coverage and epithelization was noted following extensive wound bed preparation and application of a bioengineered, bi-layered graft comprised of human neonatal foreskin fibroblasts, keratinocytes and bovine type I collagen. While the use of many advanced wound care products and techniques proved successful, equally important was the inter-departmental collaboration between our dermatology, ENT, oncology, radiation oncology, and primary care colleagues. Close communication, frequent follow-up, and flexible clinic scheduling allowed for timely wound care treatments and procedures while also undergoing daily radiation therapy resulting in complete wound closure and no further evidence of disease. At three month follow up, the wound has remained closed without requiring further grafting or flap surgery.

Wound resolution

Key Points

- **A multidisciplinary approach with clear communication is essential to coordinate complex treatment plans**
- **Patient "buy in" and strong support systems are critical to successful outcomes**
- **Always ensure excellent wound bed preparation prior to application of cellular and/or tissue-based products**

Acknowledgements

We would like to thank the invaluable members of the Miami VA Wound Team, Laurin Mejia, PA, CWS, Davis Cheung, RN, CWS, Theresa Hernandez, RN, CWOCN and Joe Meyers, RN for their unwavering compassion and expertise.

References

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