Dermatology Practical & Conceptual

Efficacy of Halo Split-Skin Grafts for Treating Non-Melanoma Skin Cancers in the Foot and Ankle: A Clinical Case Series

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Key words: Halo split graft, Split-skin graft, Foot, Ankle, Nonmelanoma skin cancer

Citation: Jimenez-Balcells C. Efficacy of Halo Split-Skin Grafts for Treating Non-Melanoma Skin Cancers in the Foot and Ankle: A Clinical Case Series. *Dermatol Pract Concept*. 2025;15(3):5512. DOI: https://doi.org/10.5826/dpc.1503a5512

Accepted: March 17, 2025; **Published:** July 2025

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

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Introduction

The halo split-skin graft (HSSG), introduced by Paul in 2010 [1,2], offers a novel approach for managing nonmelanoma skin cancer (NMSC) lesions, primarily in the lower limb [1-3]. HSSG involves harvesting grafts from a single site, reducing donor site morbidity and simplifying postoperative care [1-3]. While typically used on the leg, there is limited research on its application in more complex and anatomically constrained areas such as the foot and ankle. In this case series, HSSG's effectiveness in treating eight cases of NMSC on the foot and ankle is described, highlighting its adaptability and suitability for treating challenging anatomical locations without the need for specialised equipment or hospitalisation.

Case Presentations

Seven patients aged 65 to 85, four of whom female, presented with basal cell carcinoma (BCC) or squamous cell carcinoma (SCC) lesions on the foot and ankle, including one patient with lesions on both feet (Table 1). These cases were selected based on their unsuitability for primary or flap closure due to the risk of tension and wound dehiscence on fragile skin. Following lesion excision, partial thickness fragments of skin were harvested from the periphery of each excision site using a shave blade (Figure 1). For patients with multiple lesions, individual halo grafts were placed around each lesion in a cobblestone pattern to ensure full margin coverage and optimal healing without stitching (Figure 2). The grafts were secured with non-adherent dressings and closely monitored

Table 1. Demographic Characteristics of Seven Patients Treated with Halo-Split Skin Grafts.

Patient	Sex	Age	Location	Type of Skin Cancer	Defect Size (Lesion + Margins)	Comorbidities	Anticoagulation	Smoking	Previous Skin Cancers	Healing Time	Complications
1	M	74	R foot dorsum	BCC	2.5 cm	Multiple	No	No	NMSCs- mixed	3 weeks	No
2	M	70	R foot dorsum	SCC	2.5 cm	Multiple	No	No	No	4 weeks	No
3	F	85	L foot dorsum	SCC	2 cm	Multiple	No	No	No	4 weeks	No
4	F	84	L medial ankle	SCC	2.5 cm	Multiple	Aspirin	No	Melanoma	3 weeks	No
5	F	83	R lateral ankle	SCC	2.5 cm	Multiple	No	No	NMSCs- mixed	4 weeks	No
6	F	65	R foot dorsum	BCC	Multiple (5) 2.5 to 3 cm	OA	No	Yes	NMSCs- BCCs only	4 weeks	No
6	F	65	L foot dorsum	BCC	Multiple (3) 2.5 to 3 cm	OA	No	Yes	NMSCs- BCCs only	4 weeks	Postop bleeding 24 hours/ infection
7	M	72	R foot dorsum	BCC	Multiple (4) 2.5 to 3 cm	Multiple	Warfarin	No	NMSCs- mixed	6 weeks	Postop bleeding 24 hours

Abbreviations: BCC: basal cell carcinoma; F: female; L: left; OA: osteoarthritis; NMSC: nonmelanoma skin cancer; R: right.

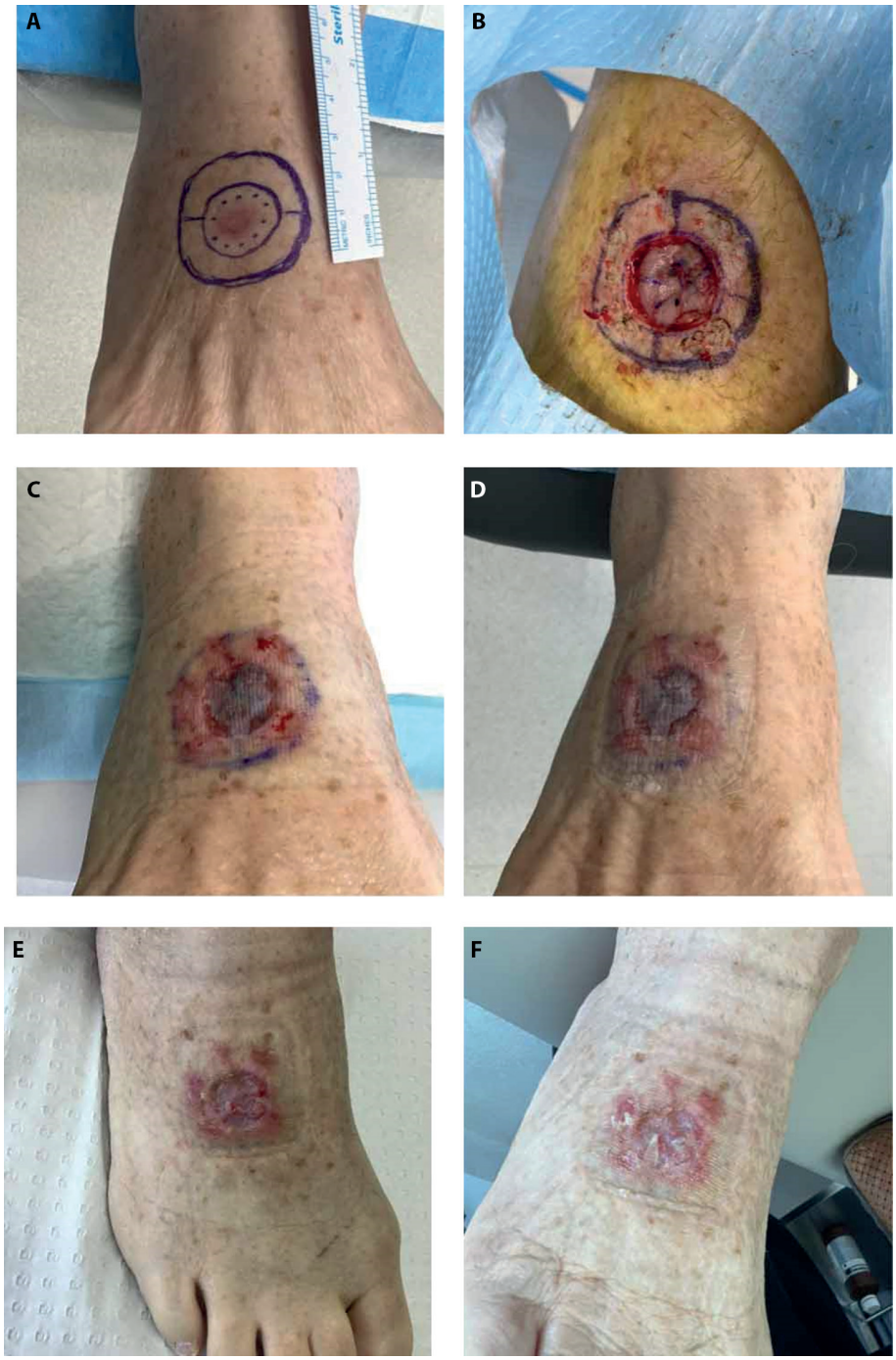

Figure 1. Right foot, single squamous cell carcinoma. (A) Surgical mark up. (B) Immediately post-surgery. (C) One week post-op. (D)Two weeks post-op. (E) Three weeks post-op. (F) Four weeks post-op.

over 5–6 weeks for adherence, vascularisation, and overall healing.

Patients were evaluated weekly for graft integration, pain, and mobility. Healing times varied from 3–6 weeks. Post-surgical complications were minimal, with only two cases of minor bleeding. Cosmetic outcomes were satisfactory for both parties involved, showing minimal scarring and pigmentation matching, and no instance of graft failure or infection was reported. Pain was mild to moderate, manageable with simple analgesia (paracetamol), and patients adhered to rest and elevation protocols for at least one week (two weeks were preferred and indicated by the author). This advice differs from the original paper by Paul, but it reflects the author's standard protocol for distal limb surgery. Any mobility limitation was temporary, with patients typically regaining full function within a few weeks.

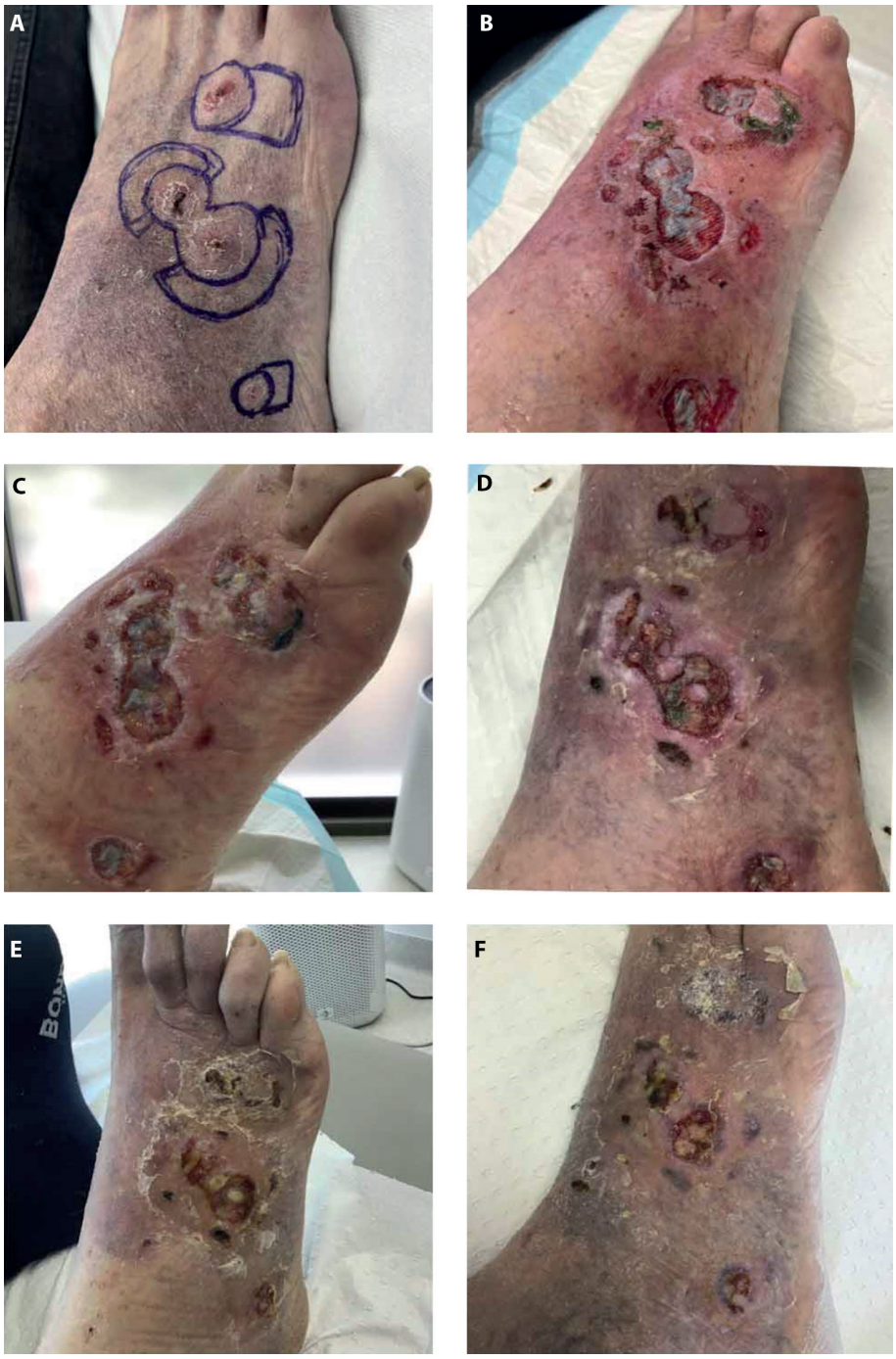

Figure 2. Right foot, multiple basal cell carcinomas. (A) Surgical mark up. (B) One week post-surgery. (C) Two weeks post-op. (D) Three weeks post-op. E) Four weeks post-op. (F) At five weeks post-op, nearly healed.

Conclusion

This case series demonstrates the benefits of HSSG in managing NMSC on the foot and ankle, areas often challenging due to limited tissue and high mobility. HSSG provides a streamlined alternative to traditional grafting techniques, eliminating the need for multiple surgical sites and advanced equipment. These findings suggest that HSSG is also a cost-effective [1,3] and adaptable option for treating complex cases in sensitive anatomical regions while achieving acceptable cosmetic and favorable functional outcomes. A larger, randomised study comparing HSSG with other techniques, such as pinch grafting and silver knife grafting, would further validate these benefits.

References

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