Clinical Images and Case Reports Journal

Case Report | Vol 4 Iss 11

Repair of a Large Defect of the Nose with a Dermal Regenerative Template after Mohs' Surgery Treatment for Skin Cancer

Venturi Michela*, Orlandi Catuscia, D'Acunto Carmine and Melandri Davide

Dermatology Unit and Burn Center, Azienda Unità Sanitaria Locale (AUSL) Romagna, Bufalini Hospital, Cesena, Italy

***Corresponding author:** Venturi Michela, Dermatology Unit and Burn Center, Azienda Unità Sanitaria Locale (AUSL) Romagna, Bufalini Hospital, Cesena, Italy. E-mail: michela.venturi@auslromagna.it

Received: October 14, 2022; **Accepted:** October 25, 2022; **Published:** November 20, 2022

Abstract

Invasive cutaneous squamous cell carcinoma (cSCC) is a common skin cancer in the white populations accounting for 20% of keratinocyte carcinomas. The first-line treatment for primary cSCC is surgical excision with postoperative margin assessment or microscopically controlled surgery. In the elderly with multi-morbidities the treatment should be carefully pondered, in order to gain oncologic safety with the minimal invasiveness and related complications. We faced a cSCC of the nose in 86-year-old man with an advanced approach, combining Mohs' surgery with a biologically engineered material (the double layer dermal regenerative matrix Integra®) and subsequent skin graft. This technique offers a novel valid surgical and reconstructive option, decreasing the duration of hospitalization and avoiding secondary morbidity and complications with otherwise excellent postoperative cosmetic and functional results and oncologic safety.

Keywords: Skin cancer; Dermal regenerative template; Mohs' surgery

Introduction

The treatment of skin cancers in the elderly in special sites is a common problem for Dermatologic surgeons, producing large cutaneous defects hard to repair. We herein describe a novel treatment method combining Mohs' surgery with a biologically engineered material, which represents a safe and rapid surgical and reconstructive option with oncologic radicality and good aesthetic results.

Case Presentation

A 86-year-old man presented in our Dermatology Unit with a nodular skin lesion on his nose, slowly growing over the past few years. He was otherwise healthy. He reported the appearance of a previous cutaneous lesion in the same region that was surgically removed 4 years before, with a histopathological picture compatible with a hydrocistoma.

Another lesion presented later on his nasal pyramid, from the root of the nose covering the dorsum up to the tip of the nose, that measured 4 cm as larger diameter. At the dermatological examination, it appeared nodular, elevated, pink with teleangiectasias, scaly surface and faded margins (Figure 1). We performed an incisional biopsy and the histopathological examination revealed a well differentiated, infiltrating cutaneous squamous cell carcinoma (cSCC). We recommended a TC scan of head and neck for staging and no nodal loco-regional metastatic lesion was found. We evaluated the therapeutic medical or surgical options for this wide skin cancer and we decided for the Mohs' surgery in order to gain oncological radicality and the maximum healthy skin sparing. The result was a wide area with osteocartilage exposure and spared periosteum and perichondrium on the nasal pyramid (Figure 2). Hence, for the reconstruction we chose to apply the dermal regenerative matrix Integra® (Figure 3A and B). Three weeks later, observing signs of neovascularisation, the silicone top layer was removed and a thin thickness autograft harvested from the internal portion of the left arm was applied. A week later (Figure 3C), the graft was perfectly attached. At the 2 and 5 year-follow-up visit, the patient was free from recurrence and the skin graft was eutrophic showing also a good aesthetic result (Figure 4A and B).

Figure 1: A pink, nodular, elevated skin lesion with teleangiectasias, scaly surface is observed on the nasal pyramid of the patient.

Figure 2: Surgical wound with MCS, a wide area with osteocartilage exposure and spared periosteum on the dorsum of the nose.

Figure 3 (A and B): Reconstruction with the dermal regenerative matrix; (**C):** at a one-week follow up, the thin thickness skin autograft was attached.

Figure 4: Clinical appearance at the (**A):** 2 year-follow-up visit and (**B):** 5 year-follow-up visit.

Discussion

Mostly primary cSCC (80%-90%) present on the head and neck. The first-line treatment for primary cSCC is surgical excision with postoperative margin assessment or microscopically controlled surgery (MCS) [1]. Conventional surgery requires safety margins between 4 and 6 mm for low- risk tumours and 6-10 mm for cSCC with high-risk features [1]. MCS offers a rate of R0 resection above 90% and lower recurrence rates (0%-4%) compared to conventional surgery (3.1%-8.0%), because it involves the examination of all lateral and deep margins; those positive are re-excised in stages until tumour clearance is documented [1]. This technique is a time-consuming and resource-intensive procedure, and requires clinician expertise, so it is usually reserved for high-risk tumours and/or in difficult anatomical sites [1]. In this setting, MCS gives the best chance for complete tumour resection with optimal anatomic and functional preservation [1]. In the present case, we evaluated the patient eligible for MCS, considering the patient age, the feasibility of surgical removal with clear margins and maximum skin sparing, the potential for the excision to heal and the likelihood of achieving cure.

We preferred avoiding moving the fields of cancerization present in the forehead and other areas of the patient's face that could be transposed with conventional local flaps. For this purpose, we proposed MCS and we combined this technique with a tissue-bioengineered solution.

The dermal regenerative template Integra® was already used in complex cases as a safe and viable alternative to traditional methods for wound closure because it offers a healthy wound bed, absent of necrotic tissue and infection [2,3]. Integra® is recommended particularly in elderly patients with multiple comorbidities, large and complex wounds associated with bone exposure, and for recurrent and aggressive neoplasms undergone previous surgical treatment requiring a close tumour surveillance [4]. Reconstruction with Integra® was reported as a simple and effective option following tumour resection to bone and tendons in sites as calvarium, digits and nose, in wounds that have undergone pre or post-operative radiotherapy, or combined with negative pressure dressing [2,5], with high successful rate of skin graft take, good function and aesthetic outcomes [3]. We report that we applied this combined technique to cover a surgical wound on the dorsum of the nose of our patient without complications and with good aesthetic results and oncologic clearance, as previously published in some series for difficult dorsal nasal defects [5].

Conclusion

In conclusion, cutaneous tumours leading to deep, complex and larger defects of the skin and soft tissues in the elderly with multi-morbidities are a great challenge for Dermatologic surgeons. MCS plus a biologically engineered material offer a valid surgical and reconstructive option, decreasing the duration of hospitalization and avoiding secondary morbidity and complications with otherwise excellent postoperative cosmetic and functional results and oncologic safety [5].

REFERENCES

1. Stratigos AJ, Garbe C, Dessinioti C, et al. European Interdisciplinary Guideline on Invasive Squamous Cell Carcinoma of the Skin: Part 2. Treatment. Eur J Cancer Oxf Engl 1990. 2020; 128: 83-102.
2. Chalmers RL, Smock E, Geh JLC. Experience of Integra® in Cancer Reconstructive Surgery. J Plast Reconstr Aesthetic Surg JPRAS. 2010; 63: 2081-2090.
3. Reynolds M, Kelly DA, Walker NJ, et al. Use of Integra in the Management of Complex Hand Wounds from Cancer Resection and Nonburn Trauma. Hand N Y N. 2018; 13: 74-79.
4. Magnoni C, De Santis G, Fraccalvieri M, et al. Integra in Scalp Reconstruction after Tumor Excision: Recommendations from a Multidisciplinary Advisory Board. J Craniofac Surg. 2019; 30: 2416-2420.
5. Moratin K, Koch PS, Benecke J, et al. Reconstruction of Nasal Defects with Dermal Skin Substitutes-A Retrospective Study of 36 Defects. J Cutan Med Surg. 2019; 23: 413-420.