Secondary intention healing after skin cancer excision of the nasal ala

Lyall Henderson

CASE

A man aged 70 years presented concerned about a lesion on his right nasal ala that had been present for 2 years and was bleeding intermittently. He had a risk factor of having worked outdoors but had no prior history of skin cancer. In addition to the nasal lesion, a skin check revealed two further basal cell carcinomas and one squamous cell carcinoma.

The nasal lesion was nodular and measured 1.2 × 1.2 cm (Figure 1). There was thick keratin on one aspect of the lesion, but the periphery showed dermoscopy features more suggestive of a basal cell carcinoma with branched serpentine vessels crossing a pale pink stroma (Figure 2). A punch biopsy was performed to confirm diagnosis, establish subtype and determine depth of invasion, which showed nodular basal cell carcinoma extending into deep dermis.

Various treatment options were discussed and the patient consented to surgical excision.

QUESTION 1

What are the repair options post-surgery in this instance?

QUESTION 2

What types of surgical wounds are best suited to healing by secondary intention?

ANSWER 1

The thick sebaceous skin of the lower third of the nose is largely immobile and so only the smallest wounds of the ala are amenable to primary 'side-to-side' closure. Possible options for repair include a bilobed or V-Y island advancement flap, a full thickness skin graft harvested from the glabella, medial cheek, or pre-auricular area, or healing by secondary intention.

The options of Mohs surgery for margin control and non-surgical treatment with radiotherapy are also worthy of consideration.

Additionally, consideration should be given to avoid tugging on the ala rim and creating asymmetry with the contralateral side, and to avoid pincushioning. Gross distortion of this area (such as from excessive surgical tension or from excising the deeper supportive tissues) can also affect the physiological functions of the nasal valve[1] and disrupt nasal airflow making breathing through the affected side difficult.

Figure 1. Basal cell carcinoma of the right nasal ala.

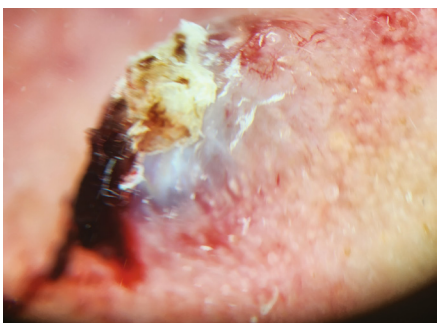

Figure 2. Dermoscopy showing basal cell carcinoma features.

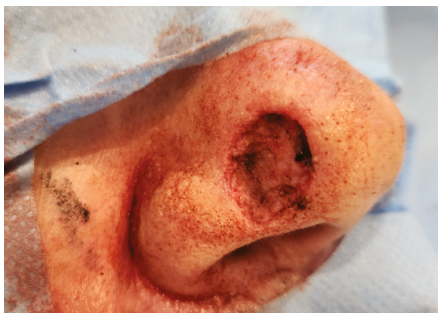

Figure 3. Wound-bed immediately post excision.

Figure 4. 6 weeks' post excision.

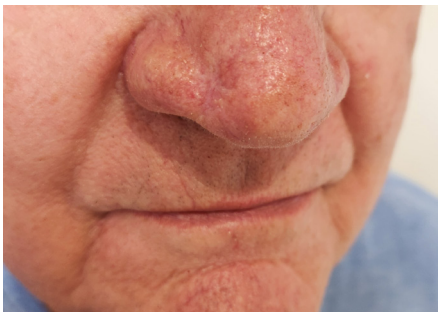

Figure 5. 12 months' post excision.

ANSWER 2

Frederic Mohs, the father of 'Mohs surgery', famously left most of his surgical wounds to repair by secondary intention.[2] Secondary intention is a useful option in the skin cancer doctor's toolkit, but it is better suited to some wound types and body areas than others.

Wounds on concave surfaces might produce imperceptible scars but results on convex surfaces can be variable and are more likely to deliver cosmetically inferior results.[3] On the nose, the ala shows superior results to the convex nasal tip.[4]

Wounds occurring on the concave surfaces of the nose, ear, eye (medial canthus), and temple (NEET) areas were described by Zitelli to offer functional and cosmetic outcomes superior to those offered by flap or graft repairs.[5]

Smaller diameter wounds, less than 1.5 or 1 cm, are also likely to produce better results, as are superficial over deeper wounds.[6]

CASE CONTINUED

Excision and the various repair and treatment options available were discussed and offered, including referral. The patient's spouse had previously undergone skin graft to her nose by a plastic surgeon and was unhappy with the result as the graft was a poor colour match. We discussed the range of realistic cosmetic outcomes from grafts, flaps, and secondary intention as well as the range of possible complications. The patient opted for repair by secondary intention (Figure 3 and Figure 4). Detailed written consent was explained and obtained.

Excision was made with careful attention taken to maintain the integrity of the underlying greater alar cartilage so as not to disrupt the strength and architecture of the ala rim.

QUESTION 3

What are the benefits of a healing by secondary intention approach?

QUESTION 4

What important information should patients be aware of when considering healing by secondary intention?

QUESTION 5

What is an appropriate dressing for a surgical wound healing by planned secondary intention?

ANSWER 3

There are several benefits to opting for healing by secondary intention:

- The cosmetic result can be excellent, and sometimes better than that of primary closure, particularly when a complex closure method is the alternative.
- Revision surgery, such as in the case of a histologically reported positive margin, is easily completed without the need for removal of skin graft or flap.
- Disease recurrence may be more recognisable than when compared with skin graft or skin flap repairs.
- It may be possible to perform when referral for complex repair is inaccessible because of distance or waiting time. For instance when local referral services are overloaded, or in rural and regional areas.

ANSWER 4

Important information for patients considering healing by secondary intention:

- Healing is prolonged. Anticipate at least 6 weeks for the wound to close, although the last several weeks will require only a simple dressing.
- The process can be resource intensive, requiring frequent repeat dressings.
- Final results might not be evident until 12–18months.[3]
- Although cosmetic results are often good, they can be unpredictable and sometimes scar revision may be required.[6]
- Alar notching and airway narrowing are risks in this location.
- Although 'simpler' than complex repair alternatives, this is still advanced surgery, particularly when performed at a difficult site, and it is only recommended to be undertaken by a suitably experienced general practitioner or, alternatively, a referral should be made to a surgeon or surgical dermatologist.

ANSWER 5

A moist environment has been observed to accelerate re-epithelialisation,[5] hence wounds should remain covered until healed. Alginate dressing will assist to stop bleeding and is an ideal immediate postoperative dressing that does not adhere to the wound base. Alginate can be replaced with foam dressings ongoing after 3 days. Foam is preferable to gauze as it reduces pain of dressing change, improves patient satisfaction and reduces nursing

time.[4] Foam dressings can be cut to size and secured with tape and many patients can perform this by themselves at home. Dressings should be changed every 2 days, or if they become wet.

CASE CONTINUED

The pathology report showed extension into deep dermis with histological clearance of 1.7 mm from the deep margin and 3.6 mm from the peripheral margin. The patient returned for weekly dressing changes from weeks 1 to 3 but travelled interstate between weeks 3 and 6 and was unable to follow dressing recommendations through that time, instead allowing the wound to 'air dry'. He and his wife were content with the initial cosmetic result at week 6 (Figure 4) and very pleased with the result at 12 months (Figure 5).

Key points

- Best results are achieved for small defects on concave surfaces of the NEET areas.
- Initial healing takes at least 6 weeks, and final results may take over 12 months to mature.
- Dressings and a moist environment are used to optimise results.

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References

References are available online only.

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References

1. Ortins-Pina A, Teixeira AI, Sanches M, Gouveia AI, Filipe PL, Silva JM. Nasal ala reconstruction: Surgical conundrum. J Cutan Aesthet Surg 2017;10(1):55–58. doi: 10.4103/JCAS.JCAS_130_16.
2. Hanke CW, Mohs FE. MD–The first Mohs micrographic surgeon. Dermatol Surg 2002;28(12):1. doi: 10.1046/j.1524-4725.2002.28121.x.
3. van der Eerden PA, Lohuis PJFM, Hart AAM, Mulder WC, Vuyk H. Secondary intention healing after excision of nonmelanoma skin cancer of the head and neck: Statistical evaluation of prognostic values of wound characteristics and final cosmetic results. Plast Reconstr Surg 2008;122(6):1747–55. doi: 10.1097/PRS.0b013e31818a9aaa.
4. Wen G, Mao D, Zhu M, Hu J, Yao X, Zhang J. Secondary intention healing of nasal ala and tip defects: A simple and valuable treatment option. Clin Cosmet Investig Dermatol 2022;15(10): 2165–68. doi: 10.2147/CCID.S361662.
5. Zitelli JA. Secondary intention healing: An alternative to surgical repair. Clin Dermatol 1984;2(3):92–106. doi: 10.1016/0738-081X(84)90031-2.
6. Liu KY, Silvestri B, Marquez J, Huston TL. Secondary intention healing after Mohs surgical excision as an alternative to surgical repair: Evaluation of wound characteristics and esthetic outcomes. Ann Plast Surg 2020;85(Suppl 1):S28–32. doi: 10.1097/SAP.0000000000002330.