Introduction

While Australia consistently holds the highest rates of non-melanoma skin cancer, the incidence in the United States rose by 77% between 1994 and 2014. This highlights the importance of finding techniques that effectively treat skin cancers as well as restore function and natural appearance to our body’s protective barrier.

Definitions:

Mohs Micrographic Surgery (MMS): Current first-line treatment for high-risk non-melanoma skin cancers. Consists of precise staged removal of the least amount of tissue necessary to eradicate the cancerous cells, followed by mapping of tissue borders after each stage of frozen sections.

Wound depth, location, and size as well as patient preferences are considered when choosing the appropriate closure technique.

Secondary Intention Healing (SIH) also known as ‘granulation’:

- Open wound healing upwards from the base, without the use of sutures or other closure techniques.
- A technique that has fallen out of favor with modern Mohs surgeons.

Other surgical closure options:

- Primary linear closure: edge-to-edge apposition of defect using sutures
- Flap: skin moved from an adjacent area to cover the defect
- Graft: skin taken from an area of the body and transplanted to the defect

Life expectancy, post-surgical facial function, and appearance are major concerns for patients undergoing MMS. One study found participants with visible facial scars were more self-conscious of their appearance, and 50% of participants would risk a 7% chance of death over having a facial scar.

This paper reviews the outcomes and satisfaction levels of patients who underwent SIH following MMS.

Methods

Fifteen patients presented with non-melanoma skin cancer(s) previously qualified for removal with MMS and deemed favorable for SIH by both patient and surgeon.

Post-Procedural Care:

- Pressure dressings consisting of mupirocin ointment, gauze, and skin tape were applied and kept on the cauterized wound for 24 hours.
- At home, patients removed the dressing twice a day, gently cleansed the site, then covered the wound with a topical emollient and new dressing.
- After two weeks, patients returned for wound debridement (if necessary) and assessment of the new tissue growth.

Favorable cutaneous scar outcomes were observed following MMS in patients whose wounds healed via SIH. Figures 1 - 4 serve as examples of the results.

Discussion

Evidence suggests scars phenotypes are dictated by balancing pro- and anti-inflammatory elements during tissue healing. Therefore, reducing inflammation and wound tension promotes favorable scar outcomes.

SIH does not require closing materials which is advantageous over other closure techniques because:

- Placing sutures increases inflammatory reactions and an increased risk for unpleasant scarring.
- SIH is a quicker procedure and more cost-effective for both patient and hospital.
- It spares more healthy tissue than alternative techniques.
- There is reduced skin tension which lessens post-surgical activity restrictions.
- SIH allows for easy future revisions if necessary.

Conclusions

Appropriately utilizing SIH when wounds are superficial, small, and relatively uncomplicated provides favorable scar formation outcomes, patient satisfaction, and increased quality of life. SIH is also procedurally time- and cost-effective which is important in patient-focused care.

We acknowledge there are defects that will necessitate primary intention healing in which scar treatment may be beneficial.

Future research potential:

- Elucidate the relationship of inflammatory marker ratios between suture placement and SIH.
- A case-control study to assess and standardize patient satisfaction using sutures versus SIH for defects of similar sizes, depths, and locations.