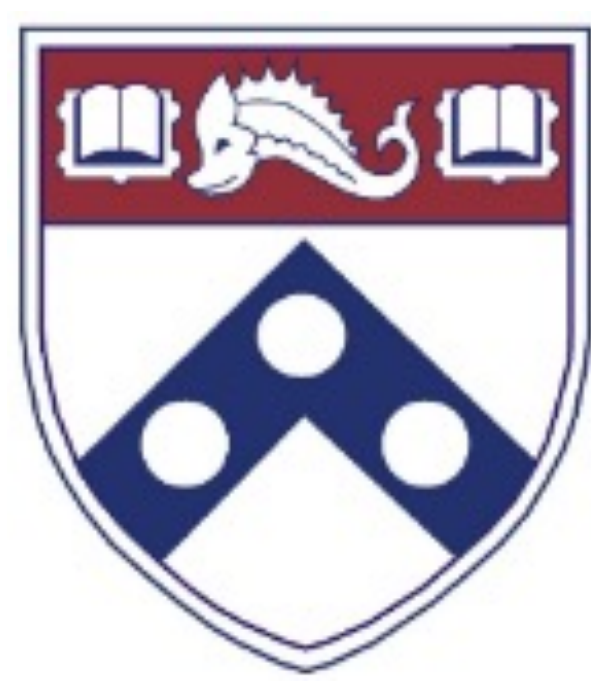
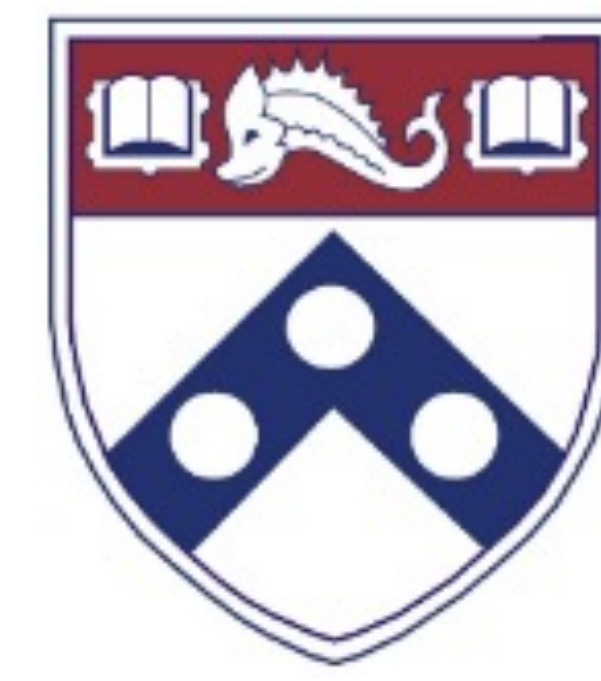




Utilizing Integra for Reconstruction of Facial Defects after Mohs Micrographic Surgery



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Introduction

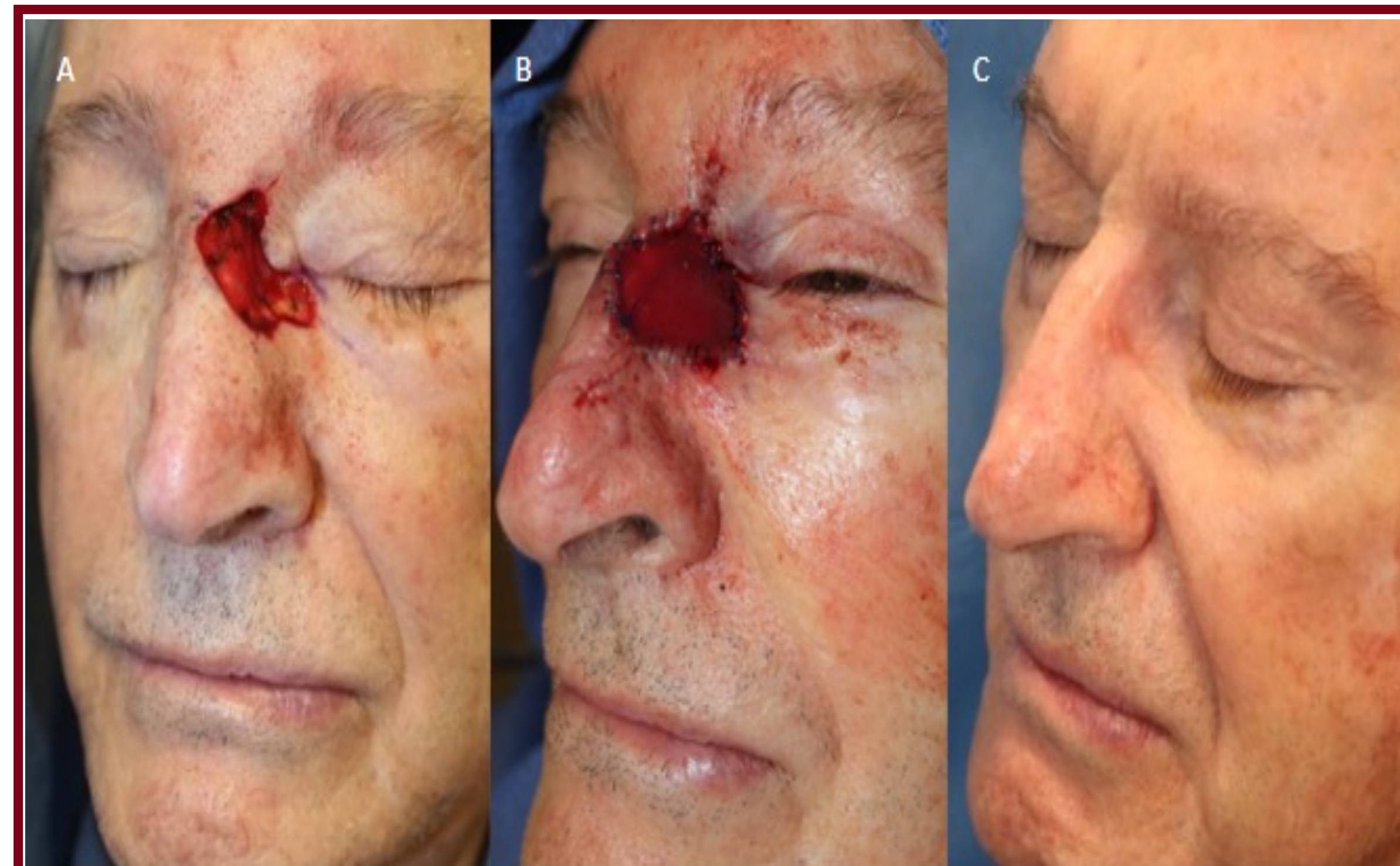
A high concentration of ultraviolet (UV) light exposure in the facial region contributes to the development of cutaneous malignancies. The upper face is referred to as the “sun terrace” because of the way in which the skin is angled toward the sun (1). Mohs micrographic surgery (MMS) is the gold standard surgical technique for excising non-melanoma skin cancers (NMSC) from the face, because of its ability to histologically clear margins and preserve healthy tissue (2). Unfortunately, obtaining clear margins with Mohs surgery can still cause substantial soft tissue defects and lead to significant functional, cosmetic, and psychological sequelae (3).

Traditional options for soft tissue reconstruction of the face include primary closure, skin grafts, locoregional flaps (LRFs), distant skin flaps, and free tissue transfer. The reconstructive ladder helps guide the decision-making process, primarily employing the simplest wound closure option first and then graduating to more complex procedures. Following primary closure, Integra Bilayer Wound Matrix (Integra®, Plainsboro, NJ) has more recently proven itself to be an addition to the reconstructive ladder due to its ease of application and ability to achieve satisfactory outcomes in both single and dual stage reconstruction of challenging areas on the face (4-7).

Objectives

- We aimed to evaluate outcomes of alloplastic facial reconstruction with Integra after Mohs surgery to better Integra’s place on the facial reconstruction ladder
- Secondly, we aimed to determine how facial defect size affected the success rate of Integra.

Figure 1: 81yo male with SCC following resection with a 10.7cm² left hemi-nasal defect (a), at time of Integra application (b), and at 4 weeks post-op (c)



Methods

- A retrospective chart review of all patients who underwent Mohs surgery with alloplastic facial reconstruction with Integra was conducted between 2012-2022
- Outcomes included avg time to Integra graft, average time to skin graft, recurrence and reoperation rate, and time to completed healing
- Technical success of Integra was defined as bridging patients to either secondary skin graft or secondary intent within 4 weeks, without additional coverage procedures.
- Completed healing was defined as the surgical wound being re-epithelialized, re-pigmented, and normalized to surrounding tissue.

Results

- **132 patients** met inclusion criteria with a median age of **76 years**
- **144 lesions** were treated and **reconstructed same-day with Integra**
- **Basal Cell Carcinoma** was the most common malignancy (39%)
- Lesions most commonly involved the **nose (34%)** and **forehead (22%)**
- Mean **postoperative defect size** was **26.9cm²**
- **45.5%** (n=60) of defect sites underwent **single stage reconstruction**
- **54.5%** (n=72) underwent **dual-stage reconstruction with skin graft**

- **Average time to completed healing** was **169.5 ± 14.6 days**
- **Complication rate** was **12.8% (n=17)**
 - **12** underwent **debridement**, **3** received **new Integra graft**, and **7** received **new skin graft**
- **Average size for successful healing without complication: 26.6 cm²**

- **Nineteen sites (13.2%) underwent aesthetic procedures** with the majority occurring after dual-stage reconstruction (n=13)

Conclusions

- Integra is a reliable outpatient reconstructive option for facial Mohs defects potentially increasing the threshold for autologous tissue harvesting
- Integra successfully reconstructs large facial defects of 26.6cm² on average, with low complication and reoperation rates.

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Observed Outcomes

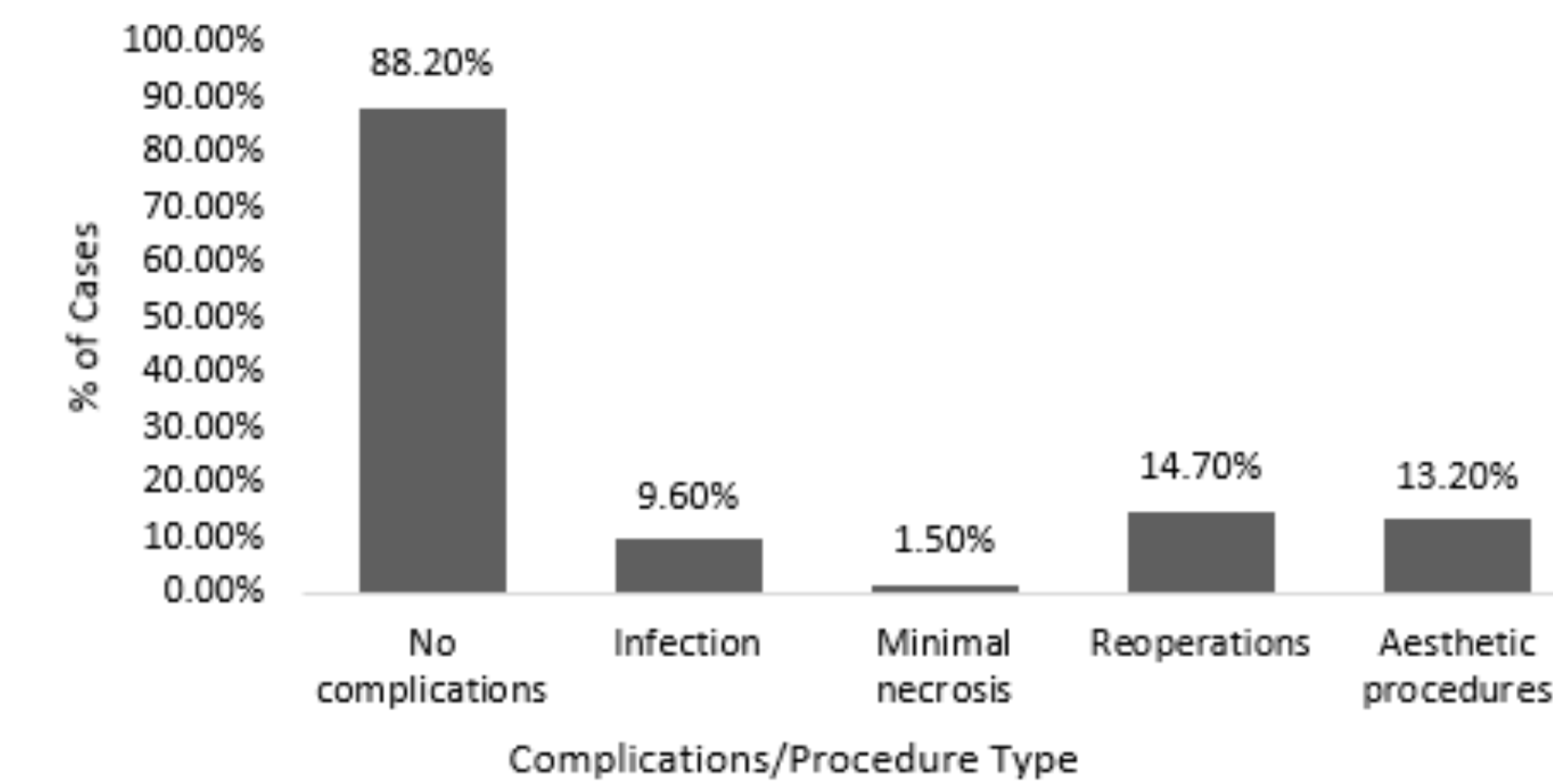


Figure 2: The observed outcomes in patients with both dual and single-stage reconstruction

AESTHETIC REVISION PROCEDURES

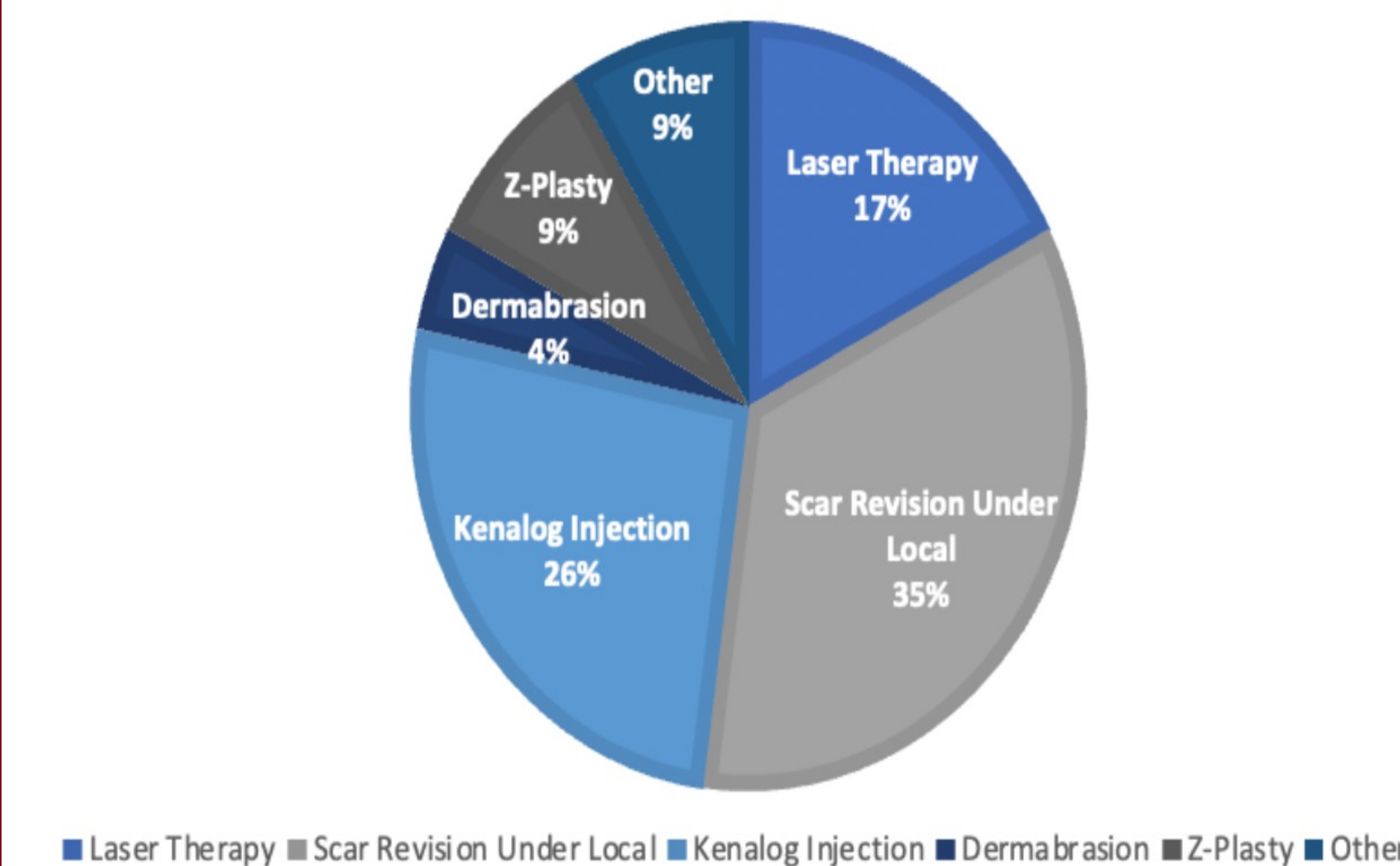


Figure 3: Aesthetic procedures underwent by nineteen patients who sought cosmetic improvement