

# Modified acne scar revision - Punch excision, punch-in-subcision with shoulder dermabrasion followed by dermal grafting

## Problem

Both crateriform and ice pick varieties cannot be revised satisfactorily by dermabrasion or laser ablation alone as they cannot reach the requisite depth for effective management.<sup>1,2</sup> Our proposed novel technique combines punch excision followed by punch-in-subcision, shouldering dermabrasion and dermal grafting for modifying acne scar revision.

## Solution

Surgical preparation was marked [Figure 1a]. Lignocaine (1%) was administered as local infiltration intradermally and subcutaneously. The recipient site involved scar removal using biopsy punches of the same size as scar tissue (1.0–2.5 mm) deep up to the subcutaneous fat, lifted up, cut and discarded [Figure 1b]. Already punched-out chambers were dilated with a 0.5 mm larger punch guard. The scar was pierced, punched-out with an injection needle 21G to 16G (bevel pointing up)/18G-1.5 inch Nokor needle (blade

pointing up)/myringotomy knife and advanced angularly ( $\approx 45^\circ$ – $30^\circ$  to skin surface) to a level below the scar. The needle/blade was then tilted horizontally (parallel to the skin surface) just below the deep dermal or dermal subcutaneous junction and moved back and forth through the scar until loss of resistance was felt. To and fro subcision via punch-in targets surrounding scarred tissue thus achieving a synergistic approach to both surrounding scars and specific punch-excised scars. A snapping sound indicates breaking of bands. The forward and backward piston-like movement was used to advance the needle through fibrous bands to release them. Overlying tissue was mobilised over the penetrated needle (punch-in-subcision) [Figure 1c]. Individual punched-out scar surfaces were moderately stretched. Using a pear-shaped diamond fraised end-piece and pencil-like vertical grip of the hand machine, the handpiece is gently rotated clockwise in small circles to lightly abrade the scarbase and firmly abraded edges. Similarly, the marked scars were individually



**Figure 1a:** Post acne scars (rolling type) at baseline.



**Figure 1b:** Intra-operative: Punch excision of individual recipient area scars.

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**Figure 1c:** Punch-in-subcision to target underlying fibrosis and upliftment of recipient area.



**Figure 1d:** Shoulder dermabrasion to abrade the base and edges.



**Figure 1e:** De-epidermisation of the donor site (retroauricular area).



**Figure 2a:** Harvesting dermal grafts from donor site (retroauricular area).



**Figure 2b:** Transfer of dermal graft to recipient area over an individual scar.

smoothened out. Dermabrasion mechanically smoothens edges and diminishes crateriform appearance, particularly effective in rolling scars (shoulder dermabrasion) [Figure 1d]. Donor site preparation involved surgical preparation of the post-auricular area and dermabraded (manual/electrical/combination) overlying skin surface till complete removal of epidermis and occurrence of pinpoint bleeding [Figure 1e]. Circular punch grafts (0.5 mm larger in diameter than excised scar) descended up to subcutaneous fat. It was gently lifted, the base was cut and then stored after removing fat that grafts contained only dermal tissue (dermal graft) [Figure 2a]. Dermal grafts were stored in sterile petri dishes containing moist (normal saline) gauze pieces. The donor site was either sutured with 3-0 proline or allowed to heal by secondary intention. It was dressed in antibiotic cream or framycetin/bactigras tulle and gauze pieces. Dermal grafts were individually transferred to suitable chambers, trimmed for a snug fit if required and haemostasis was achieved



**Figure 2:** (c) Recipient area after 7 days of treatment, (d) after 14 days and (e) after 1 month of treatment.

[Figure 2b]. Postoperative medications (antibiotics and anti-inflammatory drugs) were given for 8–10 days. Follow-up dressing included: (a) Recipient site: suture was removed after 7–10 days as needed and (b) Donor site: opened after 7 days, the suture was removed if sutured [Figure 2c]. Scars improved gradually by secondary intention through re-epithelialisation from wound margins [Figure 2d] and remarkable cosmetic improvement was noted after 1 month [Figure 2e and video].

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