

THE MANAGEMENT OF THE "SKELETONISED" NOSE

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The "skeletonised" nose is one in which the underlying bony and cartilaginous scaffolding of the nose is covered only by thin skin and scar tissue (Fig. 1). The nostrils become distorted to produce a "snarl", the atrophic tissues may break down repeatedly and late malignant degeneration is a well-recognised complication.

Destruction of the nasal scaffold due to cancer or trauma may call for a complete reconstruction with skin, bone and cartilage. Methods of rebuilding the missing distal tip and lateral alar tissues have been well described by Millard (1976). Other useful techniques include full thickness skin and composite grafts, dermal overgrafting and small local flaps.

This paper presents some examples of the "skeletonised" nose in which excision, dermal overgrafting, local flaps and repeated dermabrasion provided an acceptable solution to a very difficult clinical problem.



FIG. 1. The skeletonised nose is one in which the normal base scaffolding is covered by thin cicatricial skin without a subcutaneous fatty layer.

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Case No. 1. A 49-year-old Caucasian woman was treated by radiotherapy at the age of 15 for acne of the face. The atrophic irradiated skin developed multiple areas of basi-squamous carcinomatous degeneration which required repeated excision and skin grafting. She presented with a grossly scarred "skeletonised" nose (Fig. 2, A and B). Composite auricular grafts were used to reconstruct the left alar rim and full thickness grafts were applied to the dorsum of the nose. The tip of the nose was overgrafted using a composite ear lobe segment with some subcutaneous fatty tissue. The supra-alar regions were released and built up with full thickness pre-auricular skin. Dermabrasion of the dorsum of the nose helped to blend the mosaic of grafts into a smooth and uniform skin surface (Fig. 2, C, D and E).

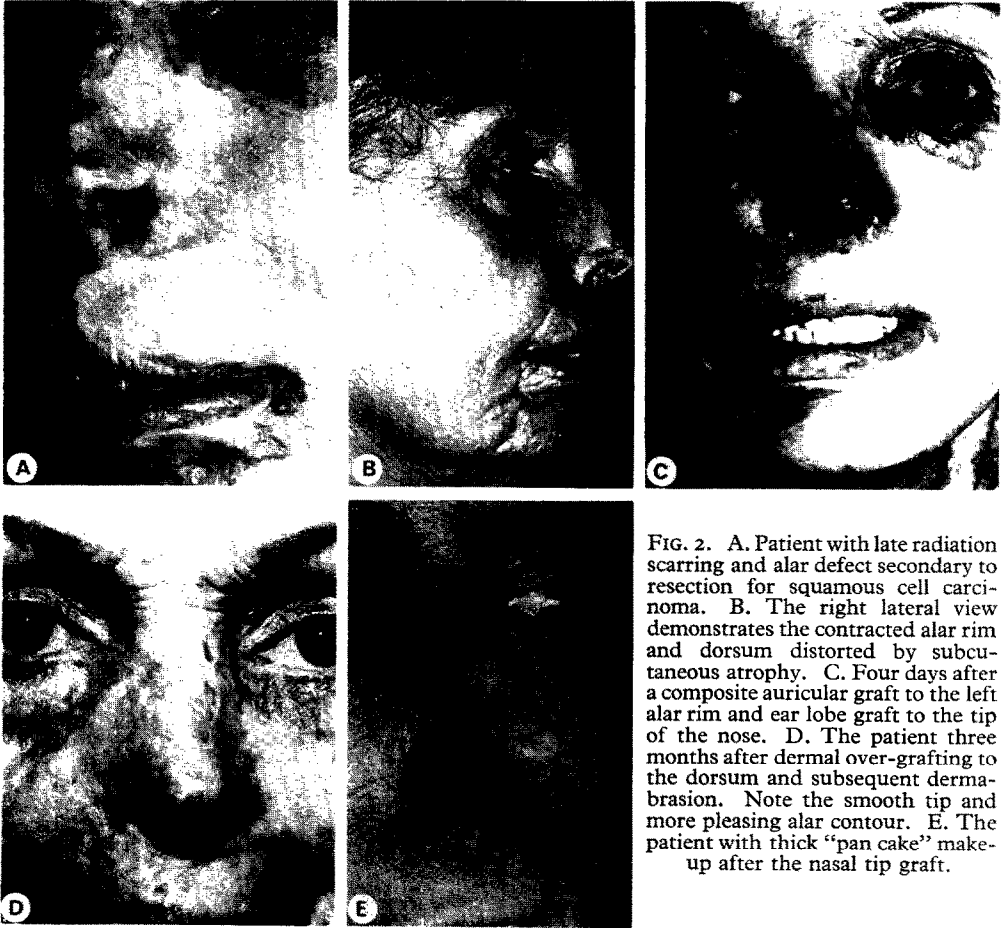


FIG. 2. A. Patient with late radiation scarring and alar defect secondary to resection for squamous cell carcinoma. B. The right lateral view demonstrates the contracted alar rim and dorsum distorted by subcutaneous atrophy. C. Four days after a composite auricular graft to the left alar rim and ear lobe graft to the tip of the nose. D. The patient three months after dermal over-grafting to the dorsum and subsequent dermabrasion. Note the smooth tip and more pleasing alar contour. E. The patient with thick "pan cake" make-up after the nasal tip graft.

Case No. 2. A 62-year-old Caucasian woman had received 10 "mild" radiation treatments for porous and hyperhidrotic skin over the nose and cheek some 28 years earlier. The skin became thin and was replaced by atrophic scar draping the nasal-malar complex. Multiple excision of basi-squamous cell carcinomas of her cheeks, chin, upper lip and nose had been required over the subsequent 20 years. When first seen by us, the nose presented as a mass of glistening scar tissue with several small ulcers (Fig. 3A).

The skin of the cheek was excised widely and that over the nose was removed down to the perichondrium. The defect was covered with a full thickness graft from the right buttock. (Fig. 3B).

Seven years later the smoothness of contour and texturing of the skin on the dorsum of the

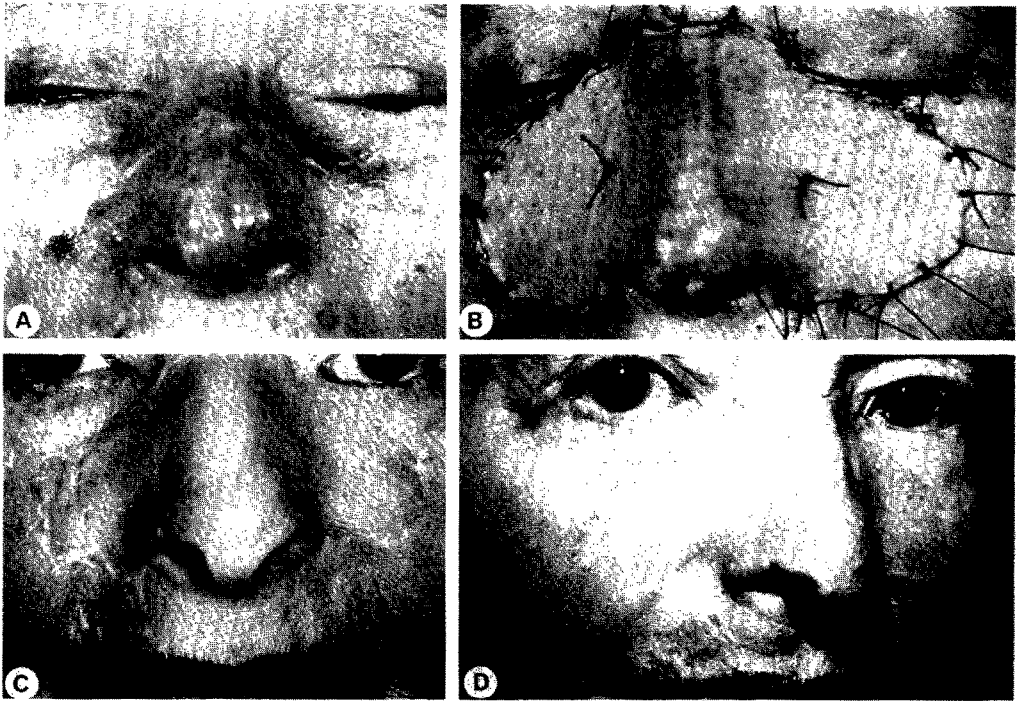


FIG. 3. A. Patient with chronic scarring and ulceration of the nose and malar region: the late effects of radiation therapy. B. Resurfacing of the nose and malar region with full thickness skin from the hip area. C and D. The result seven years later.

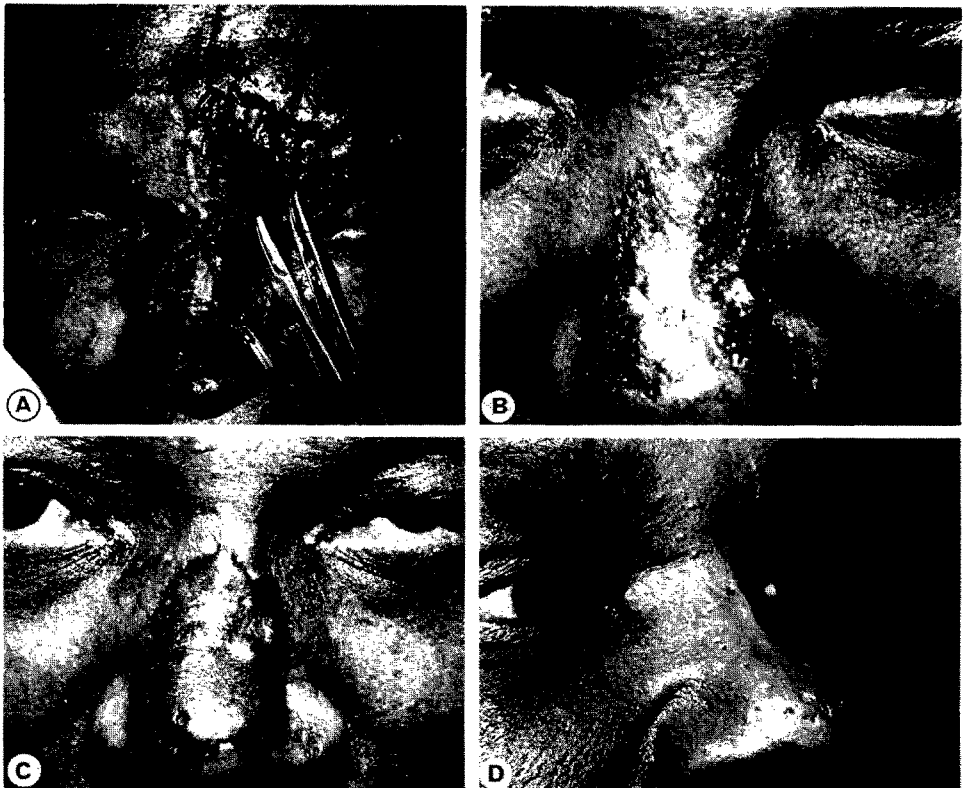


FIG. 4. A. This patient suffered a windscreen degloving injury of the nose, forehead and eyelids. B. A large portion of the avulsed skin, replaced as a defatted free graft, become necrotic. C. A full thickness post-auricular graft produced a heaped-up and hypertrophic graft. D. The patient after dermabrasion and some dark make-up, to disguise the hypopigmentation after the dermabrasion.

nose was impressive. The colour match of the full thickness buttock skin was less satisfactory but was improved by dermabrasion and the use of suitable cosmetics. (Fig. 3, C and D).

Case No. 3. A 44-year-old Negro woman suffered a severe windscreen injury. Her facial injuries included complete avulsion of all the soft tissues from the dorsum of the nose and a compound fracture of the nasal bones. The avulsed skin was thinned and replaced as a full thickness skin graft (Fig. 4A). This failed miserably and the wound healed by granulation to leave the underlying nasal bones and upper lateral cartilages covered by scar tissue. (Fig. 4B).

Four months later, the patient underwent dermabrasion to the dorsum of the nose, combined with a full thickness overgraft of post-auricular skin. The graft took well. Irregularity at the edges of the graft required serial dermabrasion and the use of cosmetics to hide some hypo-pigmentation in the graft (Fig. 4, C and D).

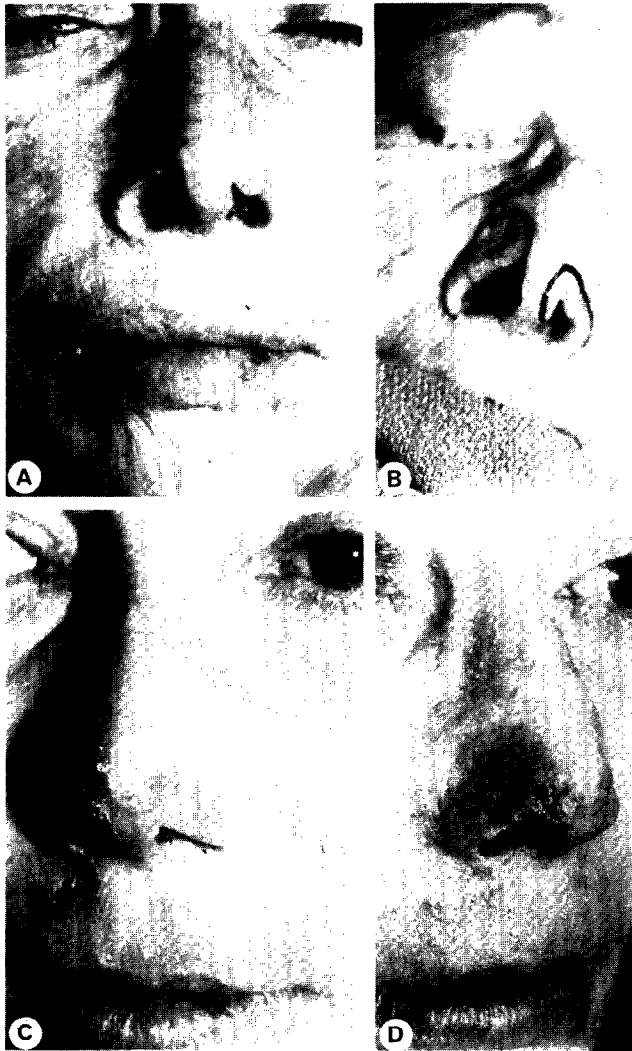


FIG. 5. A. The wide and retracted alar margins are a visible blemish in this patient with severe burns of the face and nose. B. The scarred alar rims were cut back, turned over and grafted with full thickness post auricular grafts. C and D. The patient, several months later.

Case No. 4. A 63-year-old Caucasian woman suffered severe burns of the face in an explosion, leaving her with a skeletonised, deformed nose (Fig. 5A). Ten months after the accident, large turn-down flaps of the external nose brought more tissue to the alar rims (Fig. 5B). Full thickness grafts of post-auricular skin were used to graft the raw surface of the nose.

Three months later, this procedure was repeated on the right side, the nose was dermabraded and small cartilage grafts from the conchal region were used to accentuate the alar curve and build up the nasal tip.

Three months later, some minor Z-plastics were carried out along with further dermabrasion and another full-thickness skin graft to the right alar rim.

Now seventeen months after the accident, the patient has a markedly improved contour of the nose, which is improved by skilled make-up camouflage (Fig. 5 C, and D).



FIG. 6. A. A skeletonised nasal tip following radiotherapy tumor resection and resurfacing with a thin split graft and radiotherapy. B. The nasal tip is smooth and the colour match is much more acceptable after a deep dermabrasion and full thickness pre auricular skin grafting.

Case No. 5. A 62-year-old Caucasian woman presented with a sclerosing basal cell carcinoma of the tip of the nose. She was given fifteen treatments of radiotherapy eight years ago. One year later, a recurrence of ulceration at the nasal tip was treated with a thin split thickness skin graft, but another recurrence appeared five years later (Fig. 6A).

A resection of a large wedge of the right alar rim revealed basal cell carcinoma. A nasolabial flap from the right cheek was rotated into position. A pre-auricular (left) full-thickness skin graft was used to resurface the depressed lower one-third of the nose after de-epithelisation.

The patient later underwent several stages of overgrafting and dermabrasion, along with minor recontouring procedures (Fig. 6B).

DISCUSSION

Full thickness skin from pre- and postauricular, supra-clavicular, mastoid and submental areas are used to give good colour-match and texture (Edgerton and Hauser, 1960). Subcutaneous fat and areolar tissue can be transferred to provide bulk and

contour. Rees (1960) described transfer of free composite grafts of skin, cartilage and subcutaneous fat for small facial defects. Serial overgrafting (Rees and Casson, 1966) and later dermabrasion complete the surface sculpturing.

The preparation of a bed to accept a skin graft using dermabrasion with a wire brush has been well described by Serafini (1962). The vascularisation of the graft depends on the abundant vascular bed of the subdermal plexus. A skeletonised nose may reveal perichondrium with a meagre vascular supply when stripped of the overlying dermis, yet successful skin grafting on perichondrium and even bare cartilage is possible. Indeed it has been shown by Gingrass *et al.* (1975) that full thickness skin grafts may survive over relatively avascular areas whereas a split thickness skin graft may fail. They also demonstrated that survival of a full thickness skin graft over a silicone sheet was much improved if the edges were overlapped, thus increasing the vascular contact. The same principle is demonstrated by dermal overgrafting in the appearance of a heaped up dermal-graft junction which needs surgical trimming and abrasion.

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