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Glabellar Hatchet Flap for Reconstruction of the Nasal Dorsum – A Case Report

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Abstract **Case Report**

Reconstruction of nasal defects presents a challenge for the reconstructive surgeon due to the complicated aesthetic subunits of the nose and limited available adjacent mobile skin with varying color, texture, and thickness. The ideal tissue needs to be of similar color, texture, and thickness to that of the defect. The glabellar flap is the ideal flap for closure of proximal nasal dorsal defects. Here, we present a case of a soft tissue defect in the proximal third of the nasal dorsum which was resurfaced with the glabellar hatchet flap.

Keywords: Nasal Reconstruction, Glabellar Flap, Aesthetic, Nasal Subunit.

INTRODUCTION

McCord and Wesley were the first to describe the glabellar flap, in which a V-shaped incision is converted to a Y-shaped suture line, a type of V-Y advancement [1]. The advantages of the glabellar flap in this area are that it's easy to perform, useful for deep defects, including those that extend to bone, as the glabellar skin is thick and the flap provides a good blood supply from both the subdermal plexus and the supratrochlear vessels. According to the subunit principle, if more than 50% of a subunit is involved, excision of the entire subunit should be done followed by reconstruction.

CASE REPORT

A 24 year old male presented to us with a soft tissue defect in the upper part of the nose since 1 week following a road traffic accident. He gives history of nasal bleed immediately after the trauma but stopped by conservative management. There was no history of loss of consciousness, vomiting, seizures, ear or mouth bleed. There is no history of co-morbidities. On examination, there is an abrasion about 1.5cm at the nasal tip and a soft tissue loss of 2 x 1.5cm in the proximal third of the nasal dorsum. CT scan of the face showed no fractures of the facial skeleton. We planned for debridement and a local flap cover after obtaining neurosurgical clearance. Under local anaesthetic infiltration, the lesion was debrided with an ensuing defect of 3 x 2cm. The defect was resurfaced with a local hatchet-shaped axial sliding glabellar flap and the secondary defect was closed primarily with 5-0 nylon sutures. Haemostasis was secured and inset was given with 5-0 nylon sutures over Segmuller drains. The post-operative period was uneventful and sutures were removed on the 7th post-operative day.

Fig-1: Clinical picture of the raw area

Fig-2: Photograph after debridement & flap marking

Fig-3: Flap incision made

Fig-4: Flap elevated

Fig-5: Immediate post-operative picture

Fig-6: Early post-operative picture

DISCUSSION

Carl von Graefe in 1818 was the first to use the glabellar flap according to his book on rhinoplasty, "Rhinoplastik." The glabellar flap was then used in the later centuries by many other surgeons, but was first described by McCord & Wesley as a V-Y advancement flap [1]. In 1955, Morrison and colleagues described the reverse glabellar flap for distal defects like the nasal tip, alar lobule, columella, and even the upper lip whereas Seyhan in 2009 used this reverse flap to reconstruct lower eyelid, nose, medial canthal and malar region. The glabella is a median bony elevation between two superciliary arches present just above the nasion which is an intersection of internasal and frontonasal suture. The skin covering the glabella is known as glabellar skin, which is also the source of redundant thick skin commonly used for reconstruction of the upper nasal dorsum and medial canthal area [2]. Supraorbital and the supratrochlear arteries (branches of the ophthalmic artery) supply forehead and medial canthal area [3]. The skin of the glabella, nasal tip, and alae is thick and rigid owing to a thick fibromuscular layer and an abundant presence of sebaceous glands. In reconstructions involving this area, it is necessary to take into account the color, texture, and morphology of the different anatomical subunits of the nose, as well as the tension lines in each region [4]. The skin of the glabellar region is commonly used to resurface defects of the external nose because of its excellent blood supply, ample reserve of tissue, and its satisfactory mobility. The classic glabellar flap described by Gillies and subsequently modified by Reiger, has become a flap of choice for defects on the lateral surfaces of the root of the nose and in the area of the medial canthus [5]. Variations of this flap can be used to repair defects of the dorsum, tip, or lateral walls of the nose and of the ala regions. Transposition flaps and their variants can be moved into the surgical defect by rotation and/or advancement [6]. These flaps have the advantage of an excellent blood supply derived from nasal branches of the angular artery, a branch of the facial artery, which supplies the lateral walls of the nose and hence, there is a low risk of necrosis when used as a rotation flap [7, 8].

CONCLUSION

The glabellar hatchet flap is a highly versatile and simple to perform flap with a robust blood supply that provides excellent functional and aesthetic results for defects of the proximal nasal dorsum.

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