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Case Series

Bilobed flaps for cutaneous nasal defects: a case series

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ABSTRACT

The bilobed flap is a local flap used for the reconstruction of small to moderate cutaneous nasal defects. It was first described by Esser in 1918 for use in nasal tip reconstruction. It is a double transposition flap where the first flap serves to fill the primary defect, and a second smaller fills the secondary defect. This approach seeks to distribute tension across a wider area. It is a random pattern flap with no specified blood supply. This study was done at the department of plastic and reconstructive surgery, Saveetha medical college and hospital, from January 2018 to December 2018. Five patients (four female and one male) underwent bilobed flap to reconstruct the cutaneous nasal defects out of which three patients had naevus while two patients had basal cell carcinoma nose. Their ages ranged from 35-68 years with a mean age of 52 years. The procedures were done under local anaesthesia. Post-operatively, all sutures were removed on the 5th day. This technique was performed in 5 cases with defect size ranging from 0.9×1.1 to 1.3×1.8 cm. All defects were closed under minimal wound tension, all scars were inconspicuous, no obvious complications occurred, and the aesthetic outcomes were considered favorable. The bilobed flap is a versatile, easy to perform and reliable flap for closure of small nasal cutaneous defects with good aesthetic outcomes, reduced morbidity and less scarring.

Keywords: Aesthetic, Bilobed, Cutaneous Defect, Nose

INTRODUCTION

The bilobed flap is a commonly used flap used for reconstruction of defects of the nose.[1] It is also known as the "workhorse flap" described by the Dutch surgeon Esser in 1918.[1,2] The bilobed flap is a versatile local flap that spreads tension vectors across a wide surface area and recruits' skin from areas where there is relative mobility to close defects in areas where the skin is relatively immobile. The bilobed flap can provide aesthetically better outcomes with lower morbidity and inconspicuous scarring. It is simple and suitable for repairing small- to medium-sized defects in the particular area of nasal tip.

CASE SERIES

This study was done at the dept. of plastic and reconstructive surgery, Saveetha medical college and hospital, from January 2018 to December 2018. Five patients (four female and one male) underwent bilobed flap to reconstruct the cutaneous nasal defects out of which three patients had nevus while two patients had basal cell carcinoma nose. Their ages ranged from 35-68 years with a mean age of 52 years. The procedures were done under local anesthesia. The infiltration of the local anesthetic often results in distortion of lines of contour. Therefore, the flap should be planned and drawn before the infiltration of local anesthetic. Firstly, the lesion due to be removed should be marked with an appropriate

margin circumferentially. The primary flap is the same size as the adjacent defect, and a second flap adjacent to the primary flap is about half the width of the primary flap. The primary flap then rotates into the defect, the secondary flap rotates into the primary flap donor site, and the secondary flap donor site is closed. It is important that the thickness of the primary lobe is equal to that of the second lobe. The two lobes were transposed to their desired locations. The primary and secondary defects were repaired by rotation of the two lobes. Hemostasis was performed. A 5-0 absorbable monofilament suture was used to close the deep layer, which allowed the skin layer to be closed under minimal tension. A 6-0 nylon suture was used to close the skin layer. Post-operatively, all sutures were removed on the 5th day. Follow-up period was from 3 months to 1 year (Figure 1-3).

Figure 1 (A-D): Clinical photo of naevus nasal tip, markings for bilobed flap, immediate post-op and 6 month post-op picture.

Figure 2 (A and B): Pre-op picture of naevus, immediate post-op.

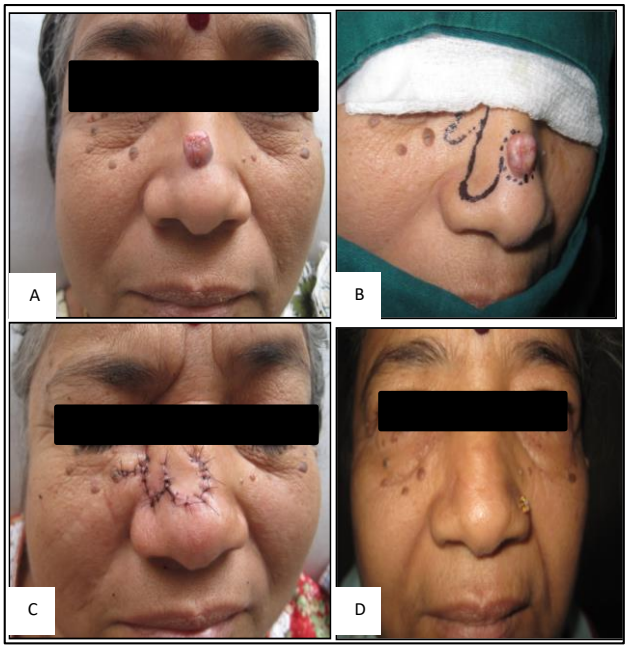

Figure 3 (A-D): Clinical photo of BCC nose, flap markings done for bilobed flap, immediate post-op picture and 8 month post-operative.

This technique was performed in 5 cases with defect size ranging from 0.9×1.1 cm to 1.3× 1.8 cm. All defects were closed under minimal wound tension, all scars were inconspicuous, no obvious complications occurred, and the aesthetic outcomes were considered favorable. The patients were then followed for 3 months and 18 months. No major complications occurred in the post-operative period. There were no dissymmetry deformities or retraction deformities of the nasal ala in any of the cases.

DISCUSSION

The rotation flap most frequently used and promoted to reconstruct small tissue defects on the nose is the bilobed flap. The bilobed flap is a double transposition flap where the first flap is used to fill the primary defect, and a further flap fills a secondary defect. This approach seeks to distribute tension across a wider area. It is a random pattern flap supplied by the musculocutaneous and cutaneous arteries that perforate through the subcutaneous tissue.[3-5] The nasal skin is typically divided into three zones.[6] Zone I in the upper half of the nose is the thin, loose, compliant, and non-sebaceous skin of the dorsum and sidewalls. Zone II includes the thick, taut, non-compliant, and sebaceous skin of the nasal supratip, tip, and alae. This part readily reforms to its previous shape, and thus it is difficult to contour and reconstruct. Zone III encompasses the areas of the triangles, columella, and nasal infratip lobule, where the skin again becomes thin, loose, and non-sebaceous. Consideration of such categories is critical in the nasal reconstruction of small to medium-sized defects as the type, color, and texture of the skin surrounding the nasal defect play a crucial role in determining the optimal method for

reconstruction. In 1989, Zitelli modified the bilobed flap to include a total transposition arc of 90°-110° and an approximately 45° pivotal arc between each lobe.[7] Zitelli's bilobed flap uses skin from the mid dorsum and the sidewall. Smaller angles of flap transposition produce less severe "dog ear" deformities along the border of the flap and allow the surgeon to transfer the flap more easily producing lesser wound tension causing less alar displacement. This design decreases the likelihood of complications and suitable for the reconstruction of defects of the lower third of the nose. The main reported disadvantage of Zitelli's bilobed flap is alar retraction resulted from distal flap tension. Cho and Kim stated that this distal tissue retraction and distortion is a result of pivotal restraint.[8] In 1987, Dzubow discussed the effect of pivotal restraint on flap rotation and transposition.[9] He stated that the flap was restrained by the tissue located around the pivotal point (the base of the flap), when any flap of tissue was either rotated or transposed around a pivotal point. The greater degree of flap movement around the pivotal point, the more the flap shortens. McGregor and Soutar studied 44 patients with an average size of nasal defect of 1.5 cm which had been closed with a bilobed flap at least six months prior.[10] They noted excellent cosmetic results with minimal tissue distortion, minimally visible residual scars and the colour match, contour and tissue symmetry described as exceptionally good. Pin-cushioning effect which was seen earlier did not appear to be a problem and was found in only one case. Tissiani et al. describe the versatility of the bilobed flap in a case series of 42 patients who had bilobed flaps done across a wide range of anatomical sites including cheek, upper lip, zygoma, upper limb, and lower limb.[11-13] Other options for the repair of defects in Zone II include the nasolabial flap, dorsal nasal flap, forehead flap, and full-thickness skin graft which are time-tested and reliable but complications like swelling, scarring, flap necrosis, infection, and bleeding are well known. Due to the crescentic shape of the flap, it is at risk of developing pincushion deformity as a result of tissue contraction beneath the flap. With less tension, this improves. The small rotation arc helps to reduce tension. Standing cutaneous deformities are also a risk, and again can be reduced with a smaller rotation arc. Cutaneous scars in the flap donor area is a contraindication for this flap.

CONCLUSION

The bilobed flap is versatile and can be used in many parts of the body to revise or reconstruct skin defects, especially of the nose. It is easy to execute, reliable with good aesthesis and minimal to no morbidity.

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