

“ULNER BONE GRAFT FOR NASAL RECONSTRUCTION”

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To provide skeletal support to restore nasal contour various types of materials have been used. Internal implants of tantalum, vitallium, gold, silver, ivory and more recently silicone rubber have been used. Some plastic surgeons have also used xenografts of bone^{1,2} and cartilage³ but these grafts were either resorbed or rejected.

The first report of nasal reconstruction with a bone graft was published in 1864 when Ollier⁴ used a segment of frontal bone and periosteum carried in a forehead flap. Similar technique was used by Israel⁵ and Weir⁶. First free bone graft taken from anterior tibia was used for nasal reconstruction in 1911. Carter⁷ discussed the advantage of autogenous rib graft. Many surgeons have used silicone implants for restoring nasal contour but due to relatively high degree of extrusion it has not gained popularity.

Autogenous bone graft is probably the most popular transplant material at the present period because it can be obtained in large volumes, can be contoured appropriately and can be nicely stabilized. Bone is usually removed from the iliac crest^{8,9,10} and anterior tibia¹¹. Rib graft¹² has also been used for this purpose. Ervin et al (1982)¹³ used autogenous bone graft to reconstruct nasal deformities and they concluded that the

autogenous bone grafts are the material of choice in reconstructing major skeletal defects of the nose.

In the present study ulner bone graft has been used for reconstruction of the defects of nose. The advantages of ulner bone graft are that the contour of the subcutaneous border of ulna is very well suited as an implant for the nose and too much shaping of the implant is not required. Secondly it is easier to take a graft from the subcutaneous border of ulna and it provides a good contour to the nose.

MATERIALS AND METHODS :

Ulnar bone graft has been used in four patients, having nasal deformity. Out of four patients three had congenital deformity whereas in one patient the deformity was due to leprosy. All the patients were adults. The period of followup ranged from 12 to 60 months.

TECHNIQUE :

Mid-columellar incision was employed for introduction of the graft to the dorsum of the nose as it provides direct exposure and the dissection is easier. The recipient pocket was dissected as deep as possible directly over the existing bone to provide greater amount of soft tissue over the graft. Periosteum was elevated from the recipient bone and a central

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groove was developed in the nasal bone. Particular attention was given to provide a wide contact surface.

The bone graft was taken from the upper part of the ulna and was shaped in such a manner that it fitted into the concavity of the dorsal depression. The bone graft was inserted into the pocket through the incision. A strut in the columella resting on the nasal spine was used in two cases. The junction of the strut with the graft was done by tent-pole method. A hole was made in the distal portion of the dorsal graft and the upper end of the strut was pegged into the hole. The incision was closed by interrupted 5/0 prolene sutures. Small plaster cast was applied on the dorsum of the nose in order to avoid rocking of the bone graft. The skin stitches were removed on the 5th day whereas the plaster cast was removed after 3 weeks.

RESULTS :

In all the patients the results were very good. The post operative period was uneventful. There was no clinical evidence of graft resorption.

DISCUSSION :

All the patients had a very good result. The ulner bone graft provided a good contour to the dorsum of the nose because the shape of the subcutaneous border of the ulna is very much like the contour of the dorsum of the nose. As compared with the autogenous bone grafts taken from the iliac crest and anterior tibia the ulner bone graft does not require much shaping. It is easier to take a graft from the ulna as compared to taking a graft from the iliac crest.

There was no resorption of the bone graft in any of the cases. In many series use of other materials have been advocated due to fear of resorption of the bone graft. Solid fixation, wide contact with the recipient surface are important factors in preventing graft absorption.

Silicone implants have been used by many workers^{14,15,16} but some others have observed a high rate of complications¹⁷. The worst complication of silicone implants is their extrusion either through the skin or mucosa.

For taking any autogenous bone graft it requires a donor site. The usual donor sites which have been used are the iliac crest, and the anterior tibia. It has been reported that patients had pain on ambulation when grafts were taken from these sites, whereas when a graft was taken from the subcutaneous border of ulna, there was no such difficulty. When a rib graft is taken it leaves a big scar on the chest wall which may not be liked by female patients. All the patients were given a choice of the donor area and all of them preferred the ulner graft. There were no donor site complications and in due course of time there was minimal visible scar at the donor site.

SUMMARY :

Four patients undergoing nasal skeletal reconstruction with ulner bone graft are reviewed. The rationale for the use of ulner bone graft is discussed and it is observed that ulner bone grafts give better results in reconstructing the skeletal defects of the nose.



Fig. 1. Pre-operative Photograph.



Fig. 2. Post-operative Photograph.

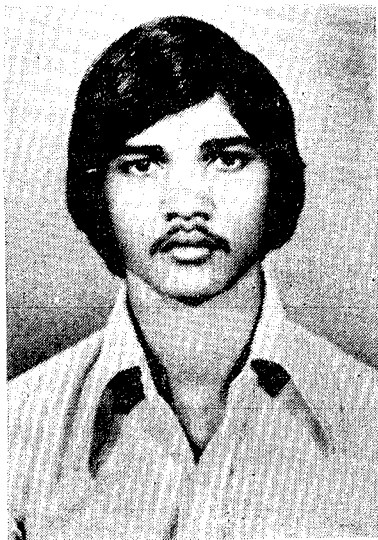


Fig. 3. Pre-operative Photograph.

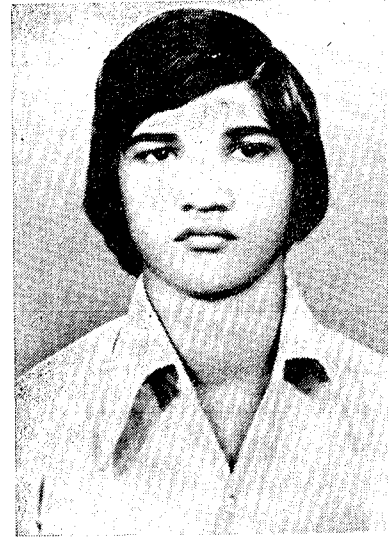


Fig. 4. Post operative photograph.

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