

Septal reconstruction in the deficient nose

G. H. Drumbeller, Everett (Washington), U.S.A.

THE subject of implantation and transplantation in reconstruction nasal surgery was well covered in this journal by Huizing (1974) but has left several areas for expansion. In those cases where there is no ethmoid bone available and the cartilaginous septum is absent or deformed beyond functional reconstruction, one must assess the best options which are available for the reconstruction of the septum.

Plastics, Boplant, isogenous bone, cartilage, fascia, sclera, autogenous rib cartilage and autogenous cancellous iliac bone have all been utilized. Plastics are most discouraging and will usually be extruded and frequently are complicated with infection. Isogenous bone and cartilage are well tolerated but will be absorbed and replaced with fibrous tissue. Autogenous fascia is well tolerated but is not rigid enough to qualify as the most desirable for long range results. Sclera is readily available and may be used instead of fascia and is especially good in infected cases such as septal abscess.

Autogenous rib cartilage is well tolerated and is an excellent implant material and usually will continue to live in its new location. It has the disadvantage of tending to curl or warp and is not obtained without some hazard and inconvenience to the patient.

Autogenous cancellous iliac bone has been utilized successfully on the dorsum but has tended to absorb from the septal space. The cortical bone of the ilium is difficult to obtain in a relatively straight piece and is quite thin. Thicker autogenous cortical bone, which is relatively straight and of sufficient size for reconstruction of the caudal septum, is usually available from the mastoid bone which has had no previous surgery. Rhinologists are usually well trained in the anatomy of the ears and are able to obtain a suitable implant with a minimum of inconvenience to the patient.

In order to assure the highest degree of survival of the bone it is necessary to develop two viable septal mucosal flaps. This is done via the Right hemitransfixion and usually demands sharp dissection with a BP || 11, || 15, and sharp pointed scissors. A columellar pocket and freeing of the media crura is adequately presented by Hinderer (1971).

To obtain the mastoid cortex the mastoid is exposed usually on the right via a post auricular incision. The donor site is posterior to the tympanomastoid suture and posteroinferior to the petrosquamous suture. The average adult mastoid will yield a relatively straight piece of cortical bone measuring 1.5 x 16 x 18 mm.

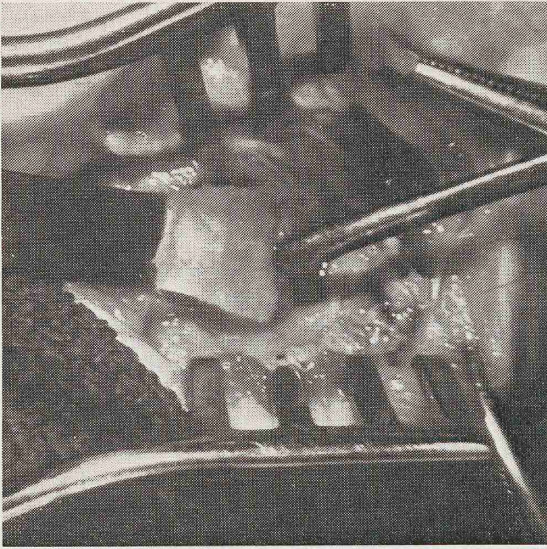


Figure 1. Mastoid cortex removal with 9 mm chisel-osteotome.

In order to avoid fracturing the piece during removal an outline of the transplant is made to a depth of 2 mm all 4 sides with a 9 mm chisel-osteotome. The groove is then utilized to elevate the cortical bone from all sides a little at a time until it is freed as one piece. (Figure 1). Usually the cellular structure of the mastoid



Figure 2. Integrity of mastoid may be preserved in well developed mastoids after removal of transplant.

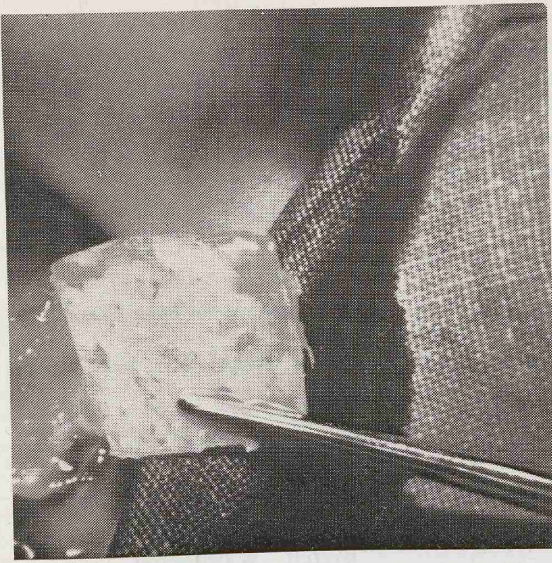


Figure 3. Mastoid cortex before drilling guide holes.

need not be invaded although this should be of little consequence if it occurs. (Figure 2).

The transplant may then have the edges trimmed with bone scissors to 90° following which 4 holes are placed with a small electric drill for fixation with guide sutures. (Figures 3 and 4). Survival acceptance of this transplant has been excellent

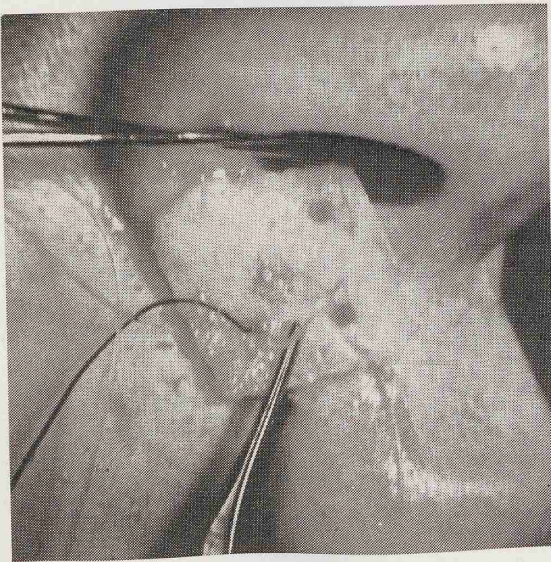


Figure 4. Mastoid cortex septal transplant with guide sutures.

where the mucoperichondrium has been preserved bilaterally and post operative infection and/or trauma has been avoided. Healthy surviving transplants of mastoid cortical bone have been observed for four years in the septa of cases of atrophic rhinitis and those cases of deficient septal bone or cartilage where it has been utilized. The future will determine long range results.

In summary nothing new is being presented. A readily available source of suitable autogenous cortex bone for transplantation is suggested and recommended.

REFERENCES

1. Hinderer, K. H., 1971: Fundamentals of anatomy and surgery of the nose. Chapter 24. Aesculapius Publ. Comp. Birmingham (Alabama).
2. Huizing, E. H., 1974: Implantation and transplantation in reconstructive nasal surgery. Rhinology, 12, 93-106.

G. H. Drumheller, M. D.,
1515 Pacific Avenue,
Everett, Washington,
USA 98201.