

Reconstruction of the anterior nasal septum by transplantation

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SYMMARY

Different implantation materials have been used for reconstruction of the infrastructures of the nose. Preserved allografts from the nasal septum or autografts from costal cartilage are regarded as the best.

A new technique for reconstruction of the anterior septum has been used in 14 patients during 1979-1982. A pocket (13-18 mm × 22-27 mm) was first prepared between the mucous membranes from the nasal spine to the dorsum of the nose. With a piece of 1 mm thick Silastic as a model a cartilage graft was taken from the superior part of the auricle. The perichondrium on both sides was preserved to permit a good revascularisation, keep the cartilage viable and prevent resorption. The graft was kept in place in the pocket with Silastic splint on each side of the septum for two weeks. In none of the patients was any resorption noted.

When reconstructing the infrastructures of the nose different implantation materials are available (Masing, 1977). The long-term results when using alloplastic materials are often discouraging, therefore they are seldom utilized. When the patient gets an infection in the nose the implant can be expelled. Huizing (1974) has described that, when a sufficient piece of bone from the nasal septum is available it can be used as implant with good result. Bone from the mastoid cortex (Drumheller, 1976) and iliac crest (Farrier, 1974) have also successfully been used. The disadvantages using bone as implant material are that the nose feels rigid, traumatic fractures and dislocation of the bone are observed and the resorption rate is sometimes high.

Cartilage is regarded as the best material for reconstruction of the anterior nasal septum. When septal cartilage is not available the most used implants are autografts from costal cartilage (Denecke, 1984) or preserved allografts from the nasal septum (Gammert and Masing, 1977) or costal cartilage (Huizing, 1974) of human cadaver. All these cartilage grafts are devitalized which means that they heal with fibrosis. Sometimes a high resorption rate of the cartilages is observed,

especially in the weight bearing areas, which result in new deformities (Gammert and Masing, 1977). To keep the cartilage vital it has to be taken with its perichondrium.

A new technique for reconstruction of the anterior septum has been used in 14 patients operated 1979–1982. Cartilage from the superior part of the auricle has been used as graft. The perichondrium on both sides has been preserved to permit a good revascularisation and keep the cartilage viable. No resorption has been noted in any of the patients. Postoperative curling of the cartilage has been observed in a few patients. This has not interfered with nasal breathing or the shape of the nose.

TECHNIQUE

Through a hemitransfixion incision a pocket is prepared between the mucous membranes from the nasal spine to the dorsum of the nose. Great care is taken not to make tears in the septal mucosal flaps.

A piece of 1 mm thick silicone sheet (Silastic[®]) is cut to fit into the pocket. It shall be big enough to stabilize and support the nose ($13-18 \times 20-27$ mm). With the piece of silastic as a model three incision lines are made on the posterior part of the auricle. The helix is protected and preserved to avoid deformity of the auricle. The perichondrium is kept on both sides of the graft. Where the cartilage is bent and curved the perichondrium is cut through. The skin incisions on the auricle are sutured. (Figures 1–3).

The graft is now fitted into the pocket between the mucosal flaps and kept in place with three guide resorbable sutures in the dorsum, the tip and the columella. Silastic splints are used to maintain a good position of the graft and to prevent formation of hematoma and pressure from the dorsum during the healing period. They are cut to the shape of the septum, one for each side, and kept in place with nonabsorbable very loosely tied sutures through the splints and the graft. The splints are kept in place for two weeks. An 8 cm long piece of a Portex nasal tube

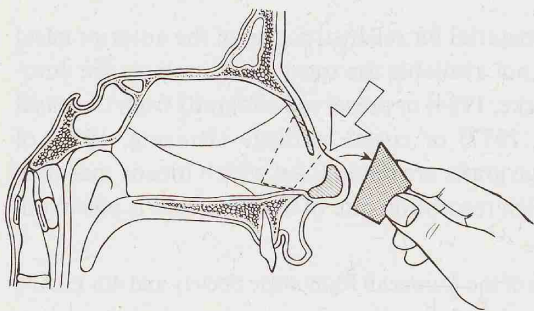


Figure 1.

A piece of Silastic is cut to fit into a pocket prepared between the mucous membranes, from the nasal spine to the dorsum of the nose.

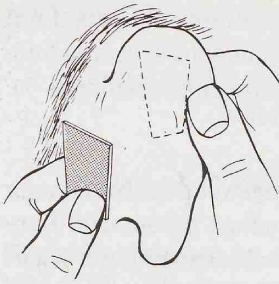


Figure 2a.
With the piece of Silastic as a model the size of the graft is drawn on the posterior part of the auricle. The helix is preserved.



Figure 2b.
Three incisions are made through the skin and the graft is then cut out. The perichondrium is kept on both sides of the graft.

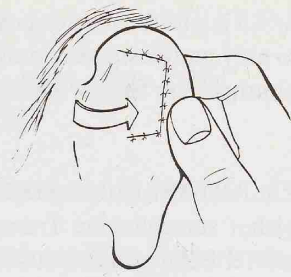


Figure 2c.
The skin incisions on the auricle are sutured.

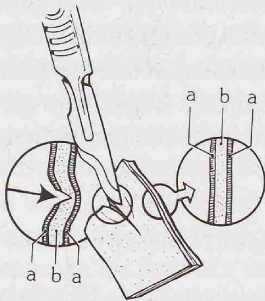


Figure 3.
Where the graft is bent or curved the perichondrium (a) on the concave side and the cartilage (b) are cut through to get a flat surface of the graft.

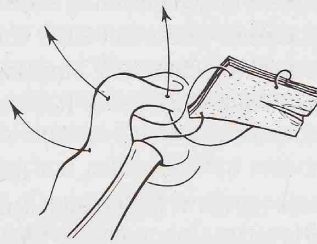


Figure 4.
The graft is fitted into the pocket and kept in place with three guide sutures of resorbable material.

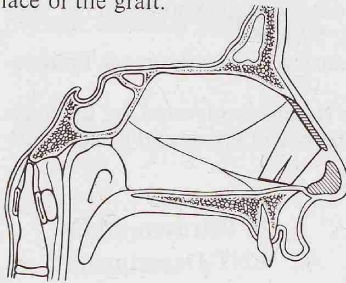


Figure 5.
The graft in position.

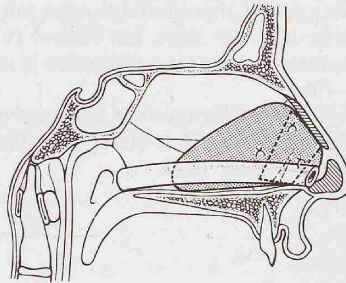


Figure 6.
To maintain a good position during the healing period Silastic splints are used. They are cut to the shape of the anterior septum and kept in place with loosely tied sutures.

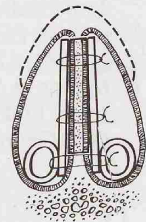


Figure 7.
An 8 cm long piece of Portex nasal tube is sutured in each nostril.

nr 4.5 is sutured in each nostril, to facilitate nose breathing during this period and to prevent the sideways movements of the splints. Gauze tampons with antibiotic ointment are loosely packed above the tubes for one or two days. (Figures 4-7).

ZUSAMMENFASSUNG

Zur Rekonstruktion infrastruktureller Bein- und Knorpelgewebe der Nase waren bisher verschiedene Transplantat-Materiale zur Anwendung gekommen. Konservierte Allografts aus dem Septum nasale respektive Autografts aus Knorpelgewebe von Rippen genossen bisher den besten Ruf.

Zur Rekonstruktion der vorderen Nasenscheidewand kam in den Jahren 1979-1982 bei 14 Fällen eine neue Technik zur Anwendung. Es wurde zuerst eine 13-18 mm × 22-27 mm grosse Tasche von der Spina nasalis zum Dorsum nasale präpariert. Hernach wurde dem oberen Rand der Ohrmuschel ein Stück Knorpelgewebe entnommen, wobei ein 1 mm dickes Silastik-Plättchen als Model diente. Durch Bewahrung des Perichondriums auf beiden Seiten wurde eine zufriedenstellende Revaskularisierung und Viabilität der Knorpelgewebes sichergestellt und gleichzeitig einen Resorption des Autoimplantats vorgebeugt. Dieses Letztere wurde mit Hilfe von 2 Silastik-Plättchen, welche beiderseits der Mucosa zwei Wochen lang eingelegt wurden, verankert. Bei keinem der so behandelten Fälle wurde eine Resorption des Autoimplantats beobachtet.

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