

VIDEOS OF SURGICAL PROCEDURES IN DERMATOLOGY

Cartilage Graft in the Reconstruction of the Pinna of the Ear[☆]

Injerto de cartílago en la reconstrucción del pabellón auricular

Description

Complete excision of a neoplastic lesion on the pinna of the ear may affect the cartilaginous skeleton of this structure (Fig. 1). In contrast to the situation with other facial structures, surgery to the ear has few functional repercussions. However, cosmetic changes due to scar retraction during the healing process are common.

Substitution of the cartilage is possible using alloplastic materials or autologous cartilage grafts.



Figure 1 Surgical defect affecting the cartilage of the anti-tragus.

Cartilage grafts can be of elastic cartilage (the concha or antihelix of the ear) or of hyaline cartilage (from the nasal septum or costal cartilage). Elastic cartilage is ideal for reconstruction of the pinna as it retains its original shape after the healing process.¹ Hyaline cartilage is harder and more resistant but less malleable, and therefore less suitable for this site.

A cartilage graft must be of a similar shape to the defect and of a slightly larger size. If possible, the graft should be fixed to the perichondrium; otherwise the cartilage is introduced into dermal "pockets" and fixed with resorbable suture (Fig. 2). Cartilage grafts are used in combination with local flaps for skin cover.

The survival of cartilage grafts is excellent, with reported rates of around 95% at 20 years. Survival depends on several factors: blood supply to the recipient site, size of the graft, manipulation of the cartilage, postoperative trauma, and the presence or absence of overlying and underlying perichondrium.²



Figure 2 Cartilage graft to the anti-tragus fixed with resorbable suture.

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Technique

The surgical technique can be seen in the video of the procedure.

Indications

- Cartilage grafts are indicated for the repair of cartilaginous defects of the pinna of the ear—particularly defects of the helix—that cause asymmetry or functional alterations,² such as a lack of support for glasses. These grafts can also occasionally be used to provide greater firmness to specific anatomical subunits, such as in reconstruction of the earlobe.
- The technique is also indicated at other sites, such as the lower eyelid or the ala nasi, where it is used after excision of the supportive tissues (tarsus, cartilage) to prevent the risk of ectropion or collapse of the nares during inspiration.

Contraindications

Cartilage grafts should not be used at sites with a poor blood supply, such as over scar tissue, as this will deprive the cartilage of oxygen and nutrients.

These grafts are not suitable for defects larger than 1.5 cm as their viability is limited and the excision from the donor site may leave a deformity.

Complications

- Short-term and long-term results are usually good, with very few complications.
- Chondritis or perichondritis may develop at the donor site; these may be sterile, induced by manipulation of the cartilage, or secondary to infection, often due to *Pseudomonas* species.³

Graft extrusion, deformation, or displacement is usually due to inadequate fixation.

Conclusions

The surgical technique for cartilage grafts is simple and the results are very good. These grafts are indicated for small and medium-sized defects that cause functional and/or cosmetic impairment due to the absence of the cartilaginous support. The technique is usually performed in a single operation and carries no additional costs as no alloplastic materials are used.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.adengl.2013.02.006>.

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