

Chapter 10. Ear Cartilage Harvest

- **Indications:** The ear provides a readily accessible source of cartilage for structural support in the nose. Conchal cartilage is useful for support of the lateral sidewalls and alar rims (Figure 10-1). It can also be used for spreader grafts when septal cartilage is not available. It is noticeably less stiff and therefore more malleable than either septal or costal cartilage; however, both of these may be thinned to the appropriate thickness and pliability. If increased rigidity is necessary, ear cartilage may be reinforced with PDS foil that can be sutured to the graft. Composite skin and cartilage grafts can be harvested from the helical root for reconstruction of full thickness defects of the alar rim. Gentle scoring of the convex surface can create a roll of the cartilage to mimic the natural contour of the alar rim.
- **Markings:** Cartilage from the ear may be harvested from either an anterior or posterior approach with adequate camouflage of the incision. The posterior incision is marked as a curvilinear line over the middle of the posterior ear (Figure 10-2). The incision for an anterior approach is similarly placed at the superior margin of the conchal bowl below the antihelix. In harvesting cartilage from the conchal bowl, care must be taken to avoid destruction of the helical root as it merges with the conchal bowl (Figure 10-3). A large piece of conchal cartilage may be harvested in a kidney-bean shape to minimize distortion of conchal anatomy. Composite grafts of skin and cartilage should be taken from the proximal portion of the helical root where advancement of the distal end allows for primary closure. When a large piece of cartilage is desired, a posterior approach is used because of the loose subcutaneous areolar plane that facilitates dissection and exposure. However, when a skin-cartilage composite graft is necessary, often the anterior approach is preferable because of the tight attachment between the cartilage and anterior ear skin. When the posterior approach is used for a composite graft, the overlying skin is too mobile over the cartilage. The anterior approach is useful when harvesting composite grafts for correction of alar retraction.
- **Approach:** For a posterior approach, the skin incision is made with a scalpel and carried down to the level of the cartilage being careful not to incise the cartilage itself. Dissection over the cartilage proceeds with fine scissors within a relatively avascular plane to provide wide exposure. After double-checking the position of the planned resection from both anterior and posterior views, the scalpel is used to incise the cartilage itself. In doing so, a finger should be placed on the anterior aspect of the ear. The surgeon should feel a tactile “give” as the cartilage is split but before the skin has been cut. The finger adequately judges the depth of the incision so that skin over the contralateral surface is not violated. Obviously, one needs to be careful to avoid cutting one’s finger with this maneuver. Once in the correct plane, a Freer elevator or tenotomy scissors can be used to dissect out the space on the opposite side of the cartilage. Further incision of the cartilage can then be performed under direct vision with either scissors or scalpel. The graft is removed and kept in moistened saline gauze until ready for use. Adequate hemostasis is achieved, the wound is irrigated, and the skin closed in a single layer.
- **Postoperative management:** A compressive dressing should be placed into and behind the conchal bowl to minimize fluid collection in the immediate postoperative period. A Vaseline-gauze dressing can be molded within the conchal bowl and placed behind the helical framework over the incision. On top of this a gentle dry gauze dressing should be wrapped around the head and left in place for 24 hours, at which time it may be changed and any subcutaneous blood identified. Alternatively, Xeroform™ gauze can be rolled into two small balls with one placed anterior to the harvest site and one posterior. A 3-0 Prolene mattress is then used for gentle compression of the skin—tight enough to approximate but loose enough not to strangulate. If a compressive dressing is not done, a hematoma is likely to develop, which may lead to cartilage destruction and a cauliflower ear deformity. The fluid may also serve as a nidus for infection.



Figure 10-1. Anterior location of conchal cartilage harvest.

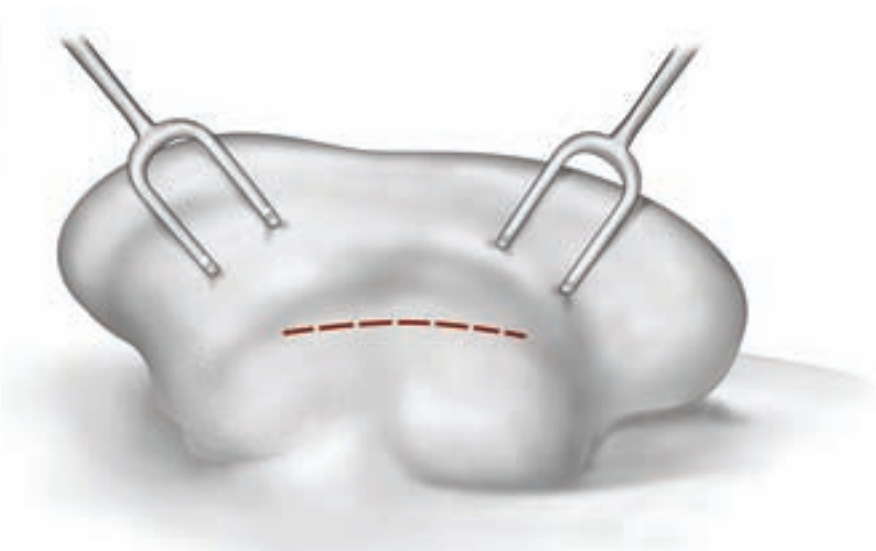


Figure 10-2. Posterior incision used for cartilage harvest.

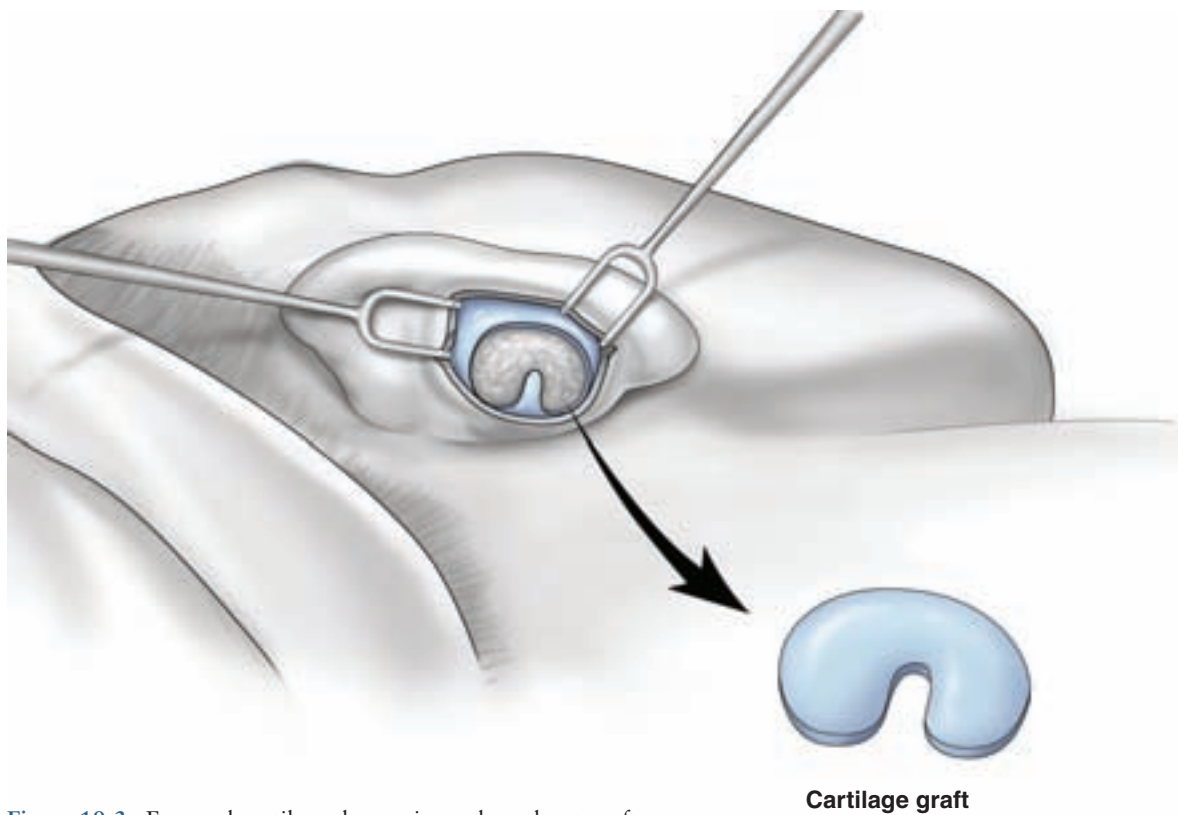


Figure 10-3. Exposed cartilage donor site and resultant graft.

Cartilage graft

- *Pitfalls:*
 - Proper anatomic definition of the conchal bowl will be lost if the helical root is resected during graft harvest. This key structure should be identified and marked preoperatively.
 - A postoperative gentle pressure dressing and close postoperative follow-up to evacuate any fluid is important.
- *Tips:*
 - The helical root should be identified and marked preoperatively. As such, cartilage graft harvested

from the conchal bowl will assume a kidney-bean shape with a cutout from where the helical root is left in situ.

- Do not crush ear cartilage to “smooth it out.” Crushing leads to a pebbly, irregular appearance and may calcify.¹

REFERENCE

1. Gruber R, Pardun J, Wall S. Grafting the nasal dorsum with tandem ear cartilage. *Plast Reconstr Surg.* 2003;112:1110.



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