An eclectic surgical technique for the correction of protruding ears

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Summary

The "suture-only" technique for correcting 'bat' ears provides an aesthetically pleasing result. The ear contour can be altered and remodelled without cutting the pinna cartilage, thereby avoiding possible permanent disfigurement. The object of the 'suture-only' procedure is to normalize a somewhat ridiculous and embarrassing physical appearance which may cause permanent psychological and personality damage.

Some surgical techniques require excision of a cartilage wedge or weakening of the pinna cartilage to facilitate the correction of the pinna contour. This procedure may result in a sharp unnatural ridge of the anthelix laterally (Fig. 1). Other surgical techniques tend to move away from cutting or weakening of the pinna cartilage. The 'suture-only' technique offers the advantages of changing and remodelling the ear contour as well as achieving symmetry without permanent or irreversible cartilage damage. If the contour is not desirable or symmetry has not been achieved, the sutures are simply removed and replaced until the desired effects are achieved.

The basic and most common defects of protruding ears are: (i) an exaggerated concha-cephalic angle of varying degrees to the plane of the mastoid bone (Fig. 2A), and (ii) an unfolded anthelix which is poorly developed instead of forming a definite ridge.

Fig. 1. Unwanted surgical results in the case of a cartilage-cutting and weakening technique. Although a sharp unnatural anthelix was achieved, the ear was still prominent and had to be corrected with the 'suture-only' technique.

Fig. 2A. (Micro-, macro- and 'cauliflower' ears do not fall within the scope of this article.) Both these deformities can be corrected by using the 'suture-only' technique. A modified eclectic technique of the 'suture-only' principle is described, consisting of concha 'set-back' and anthelix roll-over sutures.

Patients

One hundred and forty patients were included in this study. The average age of the patients was 5 1/4 years, the youngest being 4 years and the oldest 45. There were 92 males (±65%) and 48

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Fig. 2. Coronal section through the pinna. A — schematic representation of a protruding ear. The anthelix is not developed, while the concha-cephalic angle is increased (1 = roll-over suture in situ, but not tied. The 3/0 prolene suture encompasses both layers of the perichondrium; 2 = 'set-back suture in situ, but not tied. The suture encompasses both layers of the perichondrium as well as the temporal bone periosteum). B — roll-over suture (1 = tied to create an anthelix; 2 = 'set-back suture is still untied). C — roll-over suture (1 = tied as well as 'set-back' suture; 2 = tied suture, which decreases the post-auricular-cephalic angle).
females (±35%). The average stay in hospital was 4 hours, and adults were treated under local anaesthesia. All patients were treated as outpatients. Eighty-eight (70%) of the patients required roll-over as well as pin-back sutures, e.g. correction of the anthelix as well as the conchal deformities. Forty-two (±30%) of the patients required only pin-back sutures, and 3 (±2%) only a unilateral correction of a protruding ear. The follow-up period was 7 years.

Method

The hair is shaved 2 cm around the back of the ear. The ears are draped and treated individually. The post-auricular fold and posterior surface of the ear are infiltrated with 2% local anaesthetic and 1/80 000 adrenaline for haemostasis. A post-auricular ellipse of skin is removed on the posterior surface of the ear as well as on the adjacent temporal aspect (Fig. 3). The subdermal soft tissue over the lateral mastoid surface is removed, including transection of the post-auricular muscle to accommodate the concha when pinned backwards. The mastoid periosteum is not removed and is left intact. The roll-over sutures are placed first. Usually two are required — one to create the normal anthelix and the other to create the inferior crus (Fig. 2 A, B, C).

Fig. 3. The post-auricular ellipse of skin has been removed, with three ‘set-back’ untied sutures in situ.

Polypropylene sutures 3/0 may be used and are placed deep to the skin to prevent shining through on the conchal surface. The sutures encompass both layers of perichondrium but not the skin. Usually two concha-mastoid ‘set-back’ sutures are placed. The conchal position is gauged by placing the concha in the desired position onto the mastoid. The conchal ‘set-back’ suture is then placed through the conchal cartilage and the mastoid periosteum (Fig. 2 A, B, C). All sutures are well knotted to prevent slipping of the knot. Sutures are cut very short onto the skin to prevent shining through on the conchal surface. The sutures encompass both layers of perichondrium but not the skin. Usually two concha-mastoid ‘set-back’ sutures are placed. The conchal position is gauged by placing the concha in the desired position onto the mastoid. The conchal ‘set-back’ suture is then placed through the conchal cartilage and the mastoid periosteum (Fig. 2 A, B, C). All sutures are well knotted to prevent slipping of the knot. Sutures are cut very short onto the skin to prevent shining through on the conchal surface.

Discussion

The ‘suture-only’ technique is appealing because more pleasing aesthetic results can be achieved with ‘bat’ ears. An incorrectly placed suture can be replaced without damaging the final result. This is not the case with an incorrectly placed cartilage excision, which may create a sharp unnatural-appearing anthelix. With minimal training, skin and cartilage marking and trail sutures, which are used with other techniques, may be avoided. Elevation of the skin over the anterior or posterior pinna surface is also redundant and time-consuming. Complications of this technique are minor and usually easy to deal with. Suture sinuses may be excised under local anaesthesia. Minor wound–skin dehiscence may be treated with local wound care. This usually develops with too much wound/skin-edge tension. Chondritis has as yet not been a complication, most probably because the cartilage is not mutilated.

A too shallow post-auricular fold can be avoided by placing the post-auricular skin wedge excision at least 1,5 cm away from the anthelix on the posterior surface.

Hypertrophic scars and keloids have been observed in only 1 case, which necessitated scar revision at a later stage. Local wound infection could have contributed to the original scar hypertrophy. Inadequate correction occurred in 3 adult patients — mostly unilaterally as an asymmetry. A second procedure was necessary for adequate correction. The most important advantage of this technique is the relative ease of the procedure, natural-looking ears with a rounded anthelix, and long-lasting results (Fig. 4). A sharp and unnatural-looking anthelix is avoided. The novice can achieve pleasing results with minimal trial and error.

Fig. 4. The satisfactory result 7 years after the operation using the ‘suture-only’ technique.

REFERENCES