A Scaphomastoid Sutures Technique for Prominent Ear Otoplasty

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Suture-based techniques are favored in otoplasty in comparison with cartilage scoring as they minimize damage to the perichondrium and the possibility of cartilage necrosis. However, the described methods are still reported to have high recurrence rates due to suture extrusion or infection. Traditionally, surgeons have used conchoscaphal sutures to correct effacement of the antihelical fold or conchomastoid sutures with or without cartilage excision to correct conchal hypertrophy. We have unified these techniques allowing a simple reproduceable suture-based technique that can minimize commonly encountered complications. The novel scaphomastoid suture technique initially described by the senior author can address the poorly defined antihelical fold and conchal bowl hypertrophy.

The marking of the pinna anteriorly at points extending from the antihelix to the helical rim, usually 4 in total; these are markers for the scaphomastoid sutures (Fig. 1A). With this technique, it is not necessary to use the cumbersome and often unreliable technique that uses a needle and blue dye to mark the optimal points of the conchoscaphal sutures (Fig. 1B).

A butterfly-shaped marking is made in the posterior 1/3 of the postauricular skin of the ear. The rationale being the final incision would eventually lie in the postauricular sulcus, hidden from view (Fig. 1B). Skin is excised taking care to leave a generous amount of adipofascial tissue below. The scapha region is then exposed by raising a thin flap anteriorly (Fig. 1C). Placing a ball of wet gauze over the conchal region helps facilitate skin flap elevation and optimizes traction (Fig. 1D). The posterior skin flap is raised down to the glistening white fascia of the mastoid.

From the anterior ink markings over the helical rim, posterior markings are made to help judge the placement of the scaphomastoid sutures. Prolene sutures 3-0 dyed are used; the first scaphomastoid suture is placed in the most inferior part of the ear. A deep cuff of mastoid fascia is taken and then sequential bites of adipofascial tissue above the perichondrium are taken until a horizontal bite of the scapha is taken, the process is then repeated downward to where the original bite from the mastoid fascia was taken (Fig. 2A). The suture ends are not tied but clipped to allow for later adjustment. These horizontal mattress-type scaphomastoid sutures are repeated; usually 4 are needed in our experience to correct the conchoscaphal angle. The advantage of taking small sequential bites with the scaphomastoid sutures is that bowstringing of the thread. This is avoided, which is a common problem in the traditional Mustarde technique (Fig. 2B).

Once all the scaphomastoid sutures have been placed, the surgeon can assess the degree of correction needed dynamically by tying the threads down. This allows for subtle adjustment and refinement avoiding over or undercorrection (see video, Supplemental Digital Content 1, which displays a novel technique that addresses the poorly defined antihelical fold, cochal hypertrophy and has a distinctive postauricular incision. This video is available in the “Related Videos” section of the Full-Text article on PRSGlobalOpen.com or at http://links.lww.com/PRSGO/A837). This adjustment and dynamic testing cannot be performed with multifilament sutures such as Ticon. Once a satisfactory correction is deemed, the sutures are tied. With the technique of scaphomastoid placement, the knots are deep as they lie near the mastoid. The cuff of adipofascial tissue left behind for sequential bites of the horizontal mattress sutures are then used to provide a further seal over the knots (Fig. 2C). There is no need to raise a flimsy adipofascial flap, which often does not provide robust coverage. Adipofascial and skin closure is with 5.0 Vicryl rapide. Children are brought back to dressing clinic in 1 week and a head band is used for a further 6 weeks.

The senior author has used this technique for 15 years and has found the dynamic testing, which the surgeon can use at the end of suture placement, ensures a natural appearance to the antihelical fold (Fig. 3).

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Fig. 1. A, Posterior butterfly incision. B, Anterior markings for scaphomastoid sutures. C, Web gauze ball to help facilitate flap elevation. D, Scapha and mastoid fascia exposed, adipofascial tissues left behind, markings demonstrate where horizontal mattress sutures will be placed.

Fig. 2. A, Bite taken from mastoid fascia and sequential bites taken across adipofascial tissue to prevent bowstringing. B, All 4 scaphomastoid sutures placed. C, Dynamic testing of antihelix correction. D, Sutures tied deep and close to mastoid fascia and further 2 layers (adipofascial, skin) of closure over the knots.
Fig. 3. Before and after pictures of a typical otoplasty case.

Video Graphic 1. See video, Supplemental Digital Content 1, which displays a novel technique that addresses the poorly defined antihelical fold, cochal hypertrophy and has a distinctive postauricular incision. This video is available in the “Related Videos” section of the Full-Text article on PRSGlobalOpen.com or at http://links.lww.com/PRSGO/A837.

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