

Correction of anteverted conchal bowl deformity

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Abstract

Anteverted conchal bowl is a congenital deformity; in which the conchal bowl is convex. This condition affects the external appearance and also affects the hearing via obstructing the opening of the external acoustic meatus. In the neonatal stages it can be corrected non-surgically, where as in childhood or in an adult, it needs surgical correction. Here we present a case of a patient which was surgically treated in the ENT Unit - GH Ampara, Sri Lanka along with the surgical methods utilized.

Key words: Conchal bowl, Pinna deformity, pinnaplasty, Anteverted, Correction,

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Introduction

In a normal ear the conchal bowl is a concavity facing anterior. Anteversion makes it aesthetically unacceptable¹. In addition to the cosmetic consequences, it can occlude the external most part of the external acoustic meatus predisposing to complications such as conductive hearing loss, ear wax build-up, and Otitis externa due to poor drainage^{2,3}.

Anteversion of the Conchal bowl is a deformation abnormality. It is malleable in infancy and can be managed with splints, but in childhood or in an adult it needs corrective surgery. The patient we operated was a 4-year-old child presented to the ENT clinic, General Hospital Ampara- Sri Lanka.

Case Presentation

Our patient, a four- year-old female presented with parental concern of a deformity of the left ear. Parents wanted to get the deformity correct prior to pre-schooling. She had a nearly obstructed outlet of external acoustic meatus with conductive hearing impairment; otherwise, she was a completely normal child.

Figure 1 : shows the appearance on presentation (Anteverted conchal bowl).

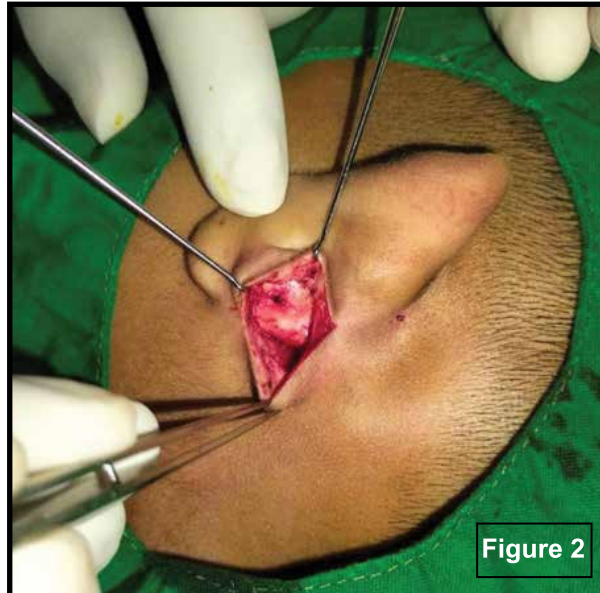


Technique

Our patient underwent correction of left sided anteverted conchal bowl under general anesthesia. A post auricular skin incision was made for a better cosmetic outcome. The incision was made vertically at the lower part of the post auricular region, at the level of the eminence of conchal bowl (Figure 2).

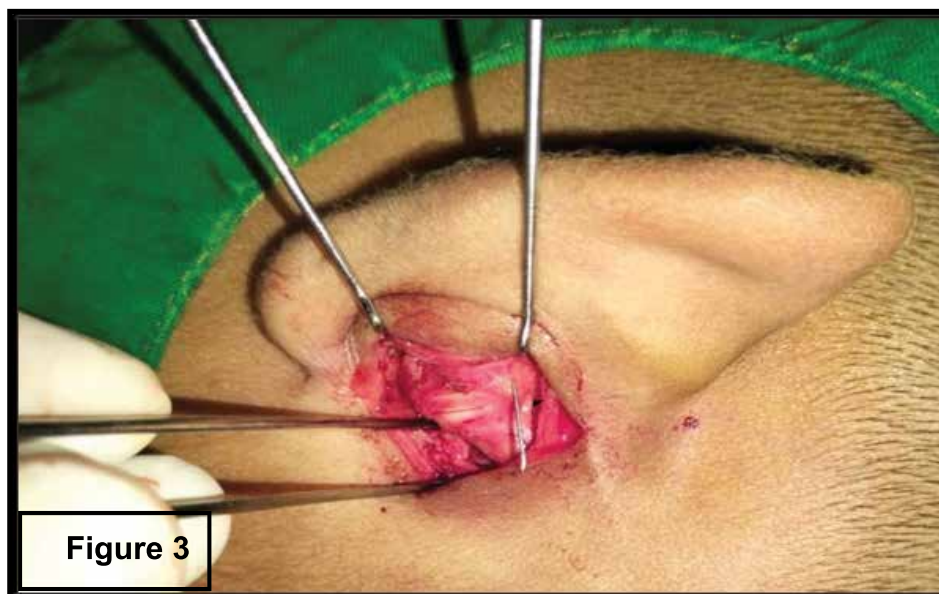
A skin flap was raised over the conchal bowl to expose the cartilage. At this stage, the convexity of the cartilage could be manually deformed in such a way to look as normal. But as the cartilage is semi-rigid, it does not remain in the corrected shape. In addition, the part obstructing the external auditory canal also could not be corrected.

Figure 2: post auricular incision



As a corrective strategy, we were able to make the cartilage more maneuverable by making multiple incisions over the posterior surface of the cartilage. These multiple incisions were made, only involving posterior perichondrium of the cartilage while keeping the anterior perichondrium intact. The exact area which needs manipulation can be determined accurately by inserting a 25 gauged needle anteriorly. (Black arrow)

Figure 3: shows usage of 25G needle to confirm accuracy of area for manipulation



Once the cartilage is lax, it was attached it to the soft tissue over the mastoid achieving the proper shape of the conchal bowl. It was done in multiple levels, starting with the meatal part. Proline (7.0) was used as the suture material and the skin was sutured with 4.0 polyglycolic acid. A paraffin gauze ball was placed over the conchal bowl anteriorly for pressure effect and a crepe head bandage was applied for 24 hours.

The patient was reassessed eight weeks later. The wound healing was normal, and the scar was hidden as we have placed it post-auricular. The aesthetic appearance of the conchal bowl was markedly acceptable and the meatus was open as in a normal ear (Figure 4).

Figure 4: post operative results



Discussion

Thirty percent of neonates are having some degree of auricular anomaly¹. The helix or anti-helix is affected in the majority³. The conchal bowl deformity is a relatively rare condition⁴. In a neonate it can be managed with non-surgical methods, whereas in an adult needs surgery^{2,4}.

Non-surgical methods include various appliances leading conchal bowl to reform. This method is only useful in the neonatal period⁴. The auricular cartilage becomes firm after birth due to the reduction of estrogen levels⁵.

There are various methods described to correct the anteverted conchal bowl. Some studies recommend simple excision of the cartilage, and some illustrate autologous graft techniques. Anchoring the conchal bowl to the posterior mastoid periosteal soft tissue is also an accepted method³. In this study we describe the cartilage manipulating technique as a novel approach. It is easy to perform, does not need special training and gives an excellent outcome.

Conclusions

Conchal bowl anteversion is a rare pinna deformity which leads to aesthetic and functional problems. It can be corrected non surgically in the neonatal period where as surgically in later life. In this report we demonstrate the technique of manipulating the conchal cartilage and correcting the deformity in an effective way. Similar case series would be beneficial in improving the quality of the technique.

References

- 1 Bartel-Friedrich S, Wolke C: Classification and diagnosis of ear malformations. *GMS Curr Top Otorhinolaryngol Head Neck Surg.* 2008, 6:Doc05.
- 2 Schönauer F, Di Martino A, Gault DT: Anteverted concha: a new ear deformational anomaly. *JPRAS Open.* 2015, 5:46-50. 10.1016/j.jpra.2015.06.004
- 3 Hong P: Reconstruction of congenital inverted conchal bowl deformity: our experience in two of four children. *Clin Otolaryngol.* 2012, 37:409-11. 10.1111/j.1749-4486.2012.02520.x
- 4 Tan ST, Abramson DL, MacDonald DM, Mulliken JB: Molding therapy for infants with deformational auricular anomalies. *Ann Plast Surg.* 1997, 38:263-8. 10.1097/0000637-199703000-00013
- 5 Porter CJ, Tan ST: Congenital auricular anomalies: topographic anatomy, embryology, classification, and treatment strategies. *Plast Reconstr Surg.* 2005, 115:1701-12. 10.1097/01.prs.0000161454.08384.0a