

Modern Otoplasty: Technique, Anatomy, and Postoperative Outcomes: Case Report

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ABSTRACT

Prominent ears represent one of the most common congenital deformities of the auricle and may produce a significant aesthetic and psychological impact on affected patients. Otoplasty is the surgical procedure indicated for the correction of these alterations, aiming to restore a harmonious relationship between the auricle and the skull through modification of the auricular cartilage. We present the case of a 45-year-old female patient who presented with aesthetic dissatisfaction secondary to bilateral prominent ears present since childhood. Physical examination revealed an increased auriculocephalic angle associated with underdevelopment of the antihelical fold and mild hypertrophy of the conchal cartilage. Bilateral otoplasty was performed for aesthetic purposes using a combined technique that included recreation of the antihelical fold with permanent Mustardé sutures and conchomastopexy to decrease the auriculocephalic angle. The procedure was carried out without intraoperative complications and with an adequate postoperative course. Follow-up evaluation showed improvement in auricular position and symmetry, with proper definition of the antihelical fold and a minimally visible retroauricular scar. The patient reported a high level of satisfaction with the aesthetic outcome. This case highlights the importance of appropriate preoperative anatomical assessment and the use of combined surgical techniques to achieve satisfactory aesthetic results in the correction of prominent ears in adult patients.

KEYWORDS: Otoplasty, prominent ears, auricle, aesthetic ear surgery, auricular deformities, antihelical fold, conchomastopexy, facial plastic surgery.

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INTRODUCTION

Auricular deformities, particularly prominent ears, represent one of the most common congenital anomalies of the auricle. It is estimated that they affect approximately 5% of the general population and primarily result from abnormalities in the development of the auricular cartilage, such as hypoplasia or absence of the antihelical fold, hypertrophy of the conchal cartilage, or a combination of both factors. Although these alterations rarely produce significant functional impairment,

they may generate considerable psychological impact, especially during childhood and adolescence, due to aesthetic perception and associated social implications.

Otoplasty is the surgical procedure indicated for the correction of these deformities, aiming to restore a harmonious relationship between the auricle and the skull while preserving the natural anatomy of the ear. Over time, multiple surgical techniques have been described, including suture-based methods, cartilage remodeling techniques, or

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combinations of both approaches, with the objective of achieving durable aesthetic outcomes and minimizing complications.

In this context, we present the case of a 45-year-old female patient who sought consultation due to aesthetic dissatisfaction related to prominent ears. The surgical approach and postoperative outcomes are described, highlighting the relevant anatomical and technical aspects involved in the correction of this deformity.

CASE REPORT

We present the case of a 45-year-old female patient with no significant family history or relevant comorbidities who presented to the plastic surgery service due to aesthetic dissatisfaction secondary to bilateral prominent ears. The patient reported that the condition had been present since childhood and had caused aesthetic discomfort and an impact on her perception of body image throughout her life, which led her to seek evaluation for surgical correction.

During the initial assessment, the patient denied any history of auricular trauma, recurrent infections, previous surgery in the auricular region, or hearing disturbances. Physical examination revealed bilateral auricular prominence with an increased auriculocephalic angle, insufficient definition of the antihelical fold, and mild hypertrophy of the conchal cartilage, findings consistent with prominent ear deformity. The retroauricular skin was intact, without previous scars or signs of inflammation or associated dermatologic pathology.

A detailed morphological analysis of the auricle was performed, demonstrating adequate proportions of the auricular components, with the main defect being the underdevelopment of the antihelical fold and increased projection of the conchal cartilage, which resulted in excessive separation of the auricle from the skull. The nature of the deformity, treatment options, and potential complications associated with the surgical procedure were explained to the patient, and informed consent was obtained for bilateral otoplasty for aesthetic purposes.

The procedure was performed in the operating room under local anesthesia with sedation, with the patient placed in the supine position following appropriate antisepsis and sterile draping. Preoperative marking of anatomical landmarks was performed, including the planned trajectory of the new antihelical fold and the area for conchal correction. An elliptical retroauricular incision was then made, followed by careful dissection through the tissue planes until exposure of the auricular cartilage was achieved.

Once the cartilage was identified, the antihelical fold was modeled using permanent Mustardé sutures in order to recreate the natural curvature of the antihelix. Additionally, conchomastopexy was performed using fixation sutures between the conchal cartilage and the mastoid fascia, which allowed reduction of the auriculocephalic angle and achievement of a more harmonious auricular position relative to the skull.



Figure 1: Preoperative image.



Figure 2. Postoperative photograph.

Bilateral symmetry as well as appropriate auricular projection and contour were verified. Meticulous hemostasis was performed, followed by layered closure using absorbable sutures for the subcutaneous tissue and intradermal sutures for the skin. Finally, a compressive auricular dressing was applied to maintain the position of the auricle and reduce the risk of hematoma formation.

The procedure was completed without intraoperative incidents. During the immediate postoperative follow-up, the patient showed adequate clinical evolution without evidence of early complications such as hematoma, infection, or wound dehiscence. Subsequent follow-up visits demonstrated appropriate auricular positioning, improved definition of the antihelical fold, and reduction of the auriculocephalic angle, with a discreet and aesthetically acceptable retroauricular scar.

At medium-term follow-up, the patient reported a high degree of satisfaction with the aesthetic result, highlighting improvement in facial harmony and body image perception, without late complications or recurrence of the deformity.

DISCUSSION

Prominent ears represent the most common congenital deformity of the auricle, with a prevalence of approximately 5% in the general population. This condition is mainly characterized by an increased auriculocephalic angle, typically greater than 30°–40°, frequently associated with hypoplasia or absence of the antihelical fold, hypertrophy of the conchal cartilage, or a combination of these factors.

Although it does not produce significant functional impairment, the aesthetic and psychological impact may be considerable, making otoplasty one of the most commonly performed procedures in facial plastic surgery.

Over time, numerous surgical techniques have been described for the correction of prominent ears. These techniques may be broadly classified into suture techniques, cartilage-weakening techniques, and combined techniques. The choice of technique depends on several factors, including the type of auricular deformity, cartilage elasticity, patient age, and surgeon experience.

TABLE 1. Main Anatomical Causes of Prominent Ears

Anatomical alteration	Description	Approximate frequency
Antihelical fold hypoplasia	Absence or poor definition of the antihelical fold	60–70%
Conchal hypertrophy	Excessive projection of the conchal cartilage	20–30%
Increased concha-mastoid angle	Excessive separation of the auricle from the skull	10–15%
Combined deformities	Association of several alterations	Frequent

TABLE 2. Normal Anatomical Parameters of The Auricle

Parameter	Approximate value
Auriculocephalic angle	20°–30°
Helix–mastoid distance (upper third)	10–12 mm

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Helix–mastoid distance (middle third)	16–18 mm
Helix–mastoid distance (lower third)	20–22 mm
Average ear length	5.5–6.5 cm

TABLE 3. Main Otoplasty Techniques

Technique	Author	Surgical principle
Mustardé	Mustardé	Permanent sutures to recreate antihelical fold
Furnas	Furnas	Conchomastopexy to reduce auriculocephalic angle
Chongchet	Chongchet	Anterior cartilage incision and weakening
Stenström	Stenström	Anterior cartilage scoring
Converse	Converse	Complete cartilage remodeling

TABLE 4. Most Common Complications in Otoplasty

Complication	Approximate frequency
Hematoma	1–5%
Infection	<1%
Suture extrusion	2–4%
Auricular asymmetry	3–6%
Recurrence of prominence	5–10%
Keloid	Rare

TABLE 5. Indications According To Type of Auricular Deformity

Type of deformity	Recommended technique
Antihelical hypoplasia	Mustardé sutures
Conchal hypertrophy	Conchomastopexy (Furnas)
Rigid cartilage	Cartilage weakening techniques
Combined deformity	Combined techniques

In the present case, the patient exhibited a combined auricular deformity characterized by antihelical fold underdevelopment and conchal prominence, which corresponds to one of the most frequently reported presentations in the literature. For this reason, a combined technique was selected, using Mustardé sutures to recreate the antihelical fold and conchomastopexy to reduce the auriculocephalic angle.

Several studies have demonstrated that combined techniques provide improved aesthetic outcomes and lower recurrence rates, as they allow simultaneous correction of the main anatomical alterations responsible for the auricular deformity. Furthermore, preservation of the natural anatomy of the auricle and careful placement of sutures contribute to reducing complications such as asymmetry or contour irregularities.

In the present case, the surgical procedure achieved adequate auricular symmetry, proper definition of the antihelical fold, and reduction of the auriculocephalic angle without intraoperative or postoperative complications. These results

are consistent with those reported in the literature for this surgical approach.

CONCLUSION

Otoplasty is a safe and effective surgical procedure for the correction of prominent ears, allowing restoration of the aesthetic harmony of the auricle and improvement of the patient's body image perception. Adequate preoperative evaluation of anatomical alterations and appropriate selection of surgical technique are fundamental factors in achieving satisfactory and long-lasting outcomes.

In the present case, the combination of techniques aimed at recreating the antihelical fold and reducing the auriculocephalic angle allowed adequate correction of the auricular deformity, with favorable aesthetic results and no complications during postoperative follow-up.

This case highlights the importance of an individualized approach in the correction of auricular deformities and the effectiveness of combined techniques in the management of prominent ears in adult patients, contributing to improved aesthetic outcomes and patient satisfaction.

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