Prominent Ear Correction Using Full-Thickness Cartilage Strip

An Incomplete Cutting Technique

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Background: Prominent ears are one of the most well-known facial disfigurements influencing youngsters. Approximately 5% of the population suffers from some degree of ear prominence. More than 200 techniques have been used for the surgical correction of prominent ears, referring that no single "best" method exists and that techniques and modifications will continue to appear.

Objectives: In this work, we are going to evaluate the results of using a full-thickness cartilage strip, an incomplete cutting technique for the correction of various degrees of the prominent ear.

Patients and Methods: This prospective controlled clinical trial was carried out on a sum of 63 patients, who presented with prominent ear deformity, in the period between March 2014 and January 2020 at the plastic and reconstructive surgery department, Tanta University Hospitals, and private clinic.

Results: Sixty-three patients were operated upon, 46 were males and 17 were females, their age ranged between 4 and 23 years, and their mean age was 9.7 years. Clinical results showed excellent results in 37 patients (58.7%), good results in 18 patients (28. 6%), fair results in 8 patients (12.7%), and no poor results. Patient satisfaction showed excellent results in 32 patients (50.8%), good results in 22 patients (34.9%), fair results in 9 patients (14.3%), and no poor results.

Conclusions: Prominent ear correction using full-thickness cartilage strip, an incomplete cutting technique, is a good technique. It can be used in the correction of different varieties of prominent ears. It has a very low incidence of complications. No hypertrophic or keloidal scars have been reported.

Key Words: prominent ear correction, ear lobule, prominent concha, cartilage cutting technique

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Prominent ears are one of the most well-known facial disfigurements influencing youngsters. Approximately 5% of the population suffers from some degree of ear prominence. The cosmetic concern and the tasteful and psychosocial problems encompassing an ear distortion fill in as an impetus for guardians to look for a correction. The social signs and mental repercussions of a craniofacial variation from the norm can be destroying, subsequently engendering the powerful urge for an otoplasty at an early age.[1]

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Preoperative consent with all details was taken from all patients. Informed consent was taken from all patients who participated in the study, and additional informed consent was obtained from all individual participants for whom identifying information is included in this article.

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The prominent ear is defined by anthropometric measurements as conchoscaphal angle equal to or more than 90 degrees or an auriculocephalic angle greater than 30 degrees.[2] A deficiently bent antihelix forestalls the ordinary back collapsing of the helical-scaphal unit; the conchoscaphal angle turns out to be more obtuse, which extends the separation of the helical edge from the scalp. Furthermore, conchal overabundance extends the conchal bowl and uproots the helical edge horizontally. The auricle no longer sits close to the scalp and distends out because of the diminished keenness of the auriculocephalic point.[3]

The treatment of protruding ears has advanced after some time to incorporate endless inventive careful methods. These techniques have been ceaselessly adjusted to improve stylish outcomes.[4] More than 200 techniques have been used for the surgical correction of prominent ears, referring that no single "best" method exists and that techniques and modifications will continue to appear.[1] Today, this wide assortment of choices may upset the specialist from picking the rightmost appropriate method for a specific patient. This is the reason that mandates an exhaustive comprehension of the ear anatomy to help the surgeons in choosing the best technique.

Otoplasty techniques can be broadly divided into 2 types: cartilage cutting and cartilage sparing. Many skin excision techniques from the back of the ear have been performed. Dieffenbach excised the retroauricular skin and used a conchomastoidal suture for the fixation of the ear. Luckett combined a skin-cartilage excision along the antihelical fold with horizontal mattress sutures to get better contouring of the scapha.[5] Mustardé[6] described a technique to form a new antihelical fold using only sutures made of nonabsorbable suture material. He used posterior access to place several individual cartilage mattress sutures to bring the antihelix into the desired site.

Converse and Wood-Smith[7] performed a cartilage-breaking technique, which was used for the treatment of a severe type of prominent ear at different age groups. Pitanguy and Rebello[8] used an island technique to cover visible cartilage ridges.

Because the reason for projecting ear medical procedure is generally tasteful, extensive consideration is given toward delivering solid, stable, and good results using progressed reconstructive strategies. In this work, we are going to evaluate the results of using a full-thickness cartilage strip, an incomplete cutting technique for the correction of various degrees of the prominent ear.

PATIENTS AND METHODS

This prospective controlled clinical trial was carried out on a sum of 63 patients, 46 were males and 17 were females, who presented with prominent ear deformity, in the period between March 2014 and January 2020 at the plastic and reconstructive surgery department, Tanta University Hospitals, and private clinic. Their age was between 4 and 23 years, and their mean age was 9.7 years. All deformities were bilateral, so the study included a total of 126 prominent ears. All patients, as well as their parents, had officially signed written informed consent for photography and treatment. All patients were operated on using the full-thickness cartilage strip incomplete cutting technique. The 2 ears were operated upon in the same sitting. The follow-up period ranged between 1 and 6 years with the mean follow-up of 2 years.

Criteria for Patient Selection

Inclusion Criteria

This study included all patients who presented to us complaining of the prominent ear at variable ages.

Exclusion Criteria

This study excluded patients with connective tissue disease.

All selected patients were subjected to the following: full history taking including name, age, sex, address, telephone number, and history of previous treatment or interventions; previous drug treatments; or previous interference using operations or lasers. Written informed consent for photography and treatment was obtained from all patients.

Surgical Technique

All the prominent ear correction procedures were performed under general anesthesia. The procedure was performed under a complete aseptic technique. The whole face including both ears was sterilized using povidone-iodine 10%. The surrounding areas were covered with sterile towels. The head ring was used to fix the patient on his side during the turn of the head from side to side. The required site of the antihelical fold and ear lobule was first determined by gentle pressure over the helix of the ear (Fig. 1C). Three straight needles were used to define the required position of the antihelix and ear lobule, one at the junction of the inferior crus with the antihelix (Fig. 1D), the second one at the upper end of the required antihelical fold (Fig. 1E), and the third one at the lowest part of the antihelix that gave the right position of the ear lobule (Fig. 1F). A solution of 1/200,000 adrenaline in normal saline was injected into the whole undersurface of the anterior and posterior ear skin to get a clean, bloodless, easy hydrodissection field (Figs. 1G, H). Two Prolene traction sutures were taken at the helix, one at the junction of the upper and middle third and another one at the junction of the middle and the lower third of the helix (Fig. 1I); these stitches was used to helping traction of the ear anteriorly during dissection. Five minutes were allowed till the adrenaline provoked its maximum vasoconstrictor effect. A posterior incision just above the postauricular sulcus was performed. Dissection was performed to separate the whole

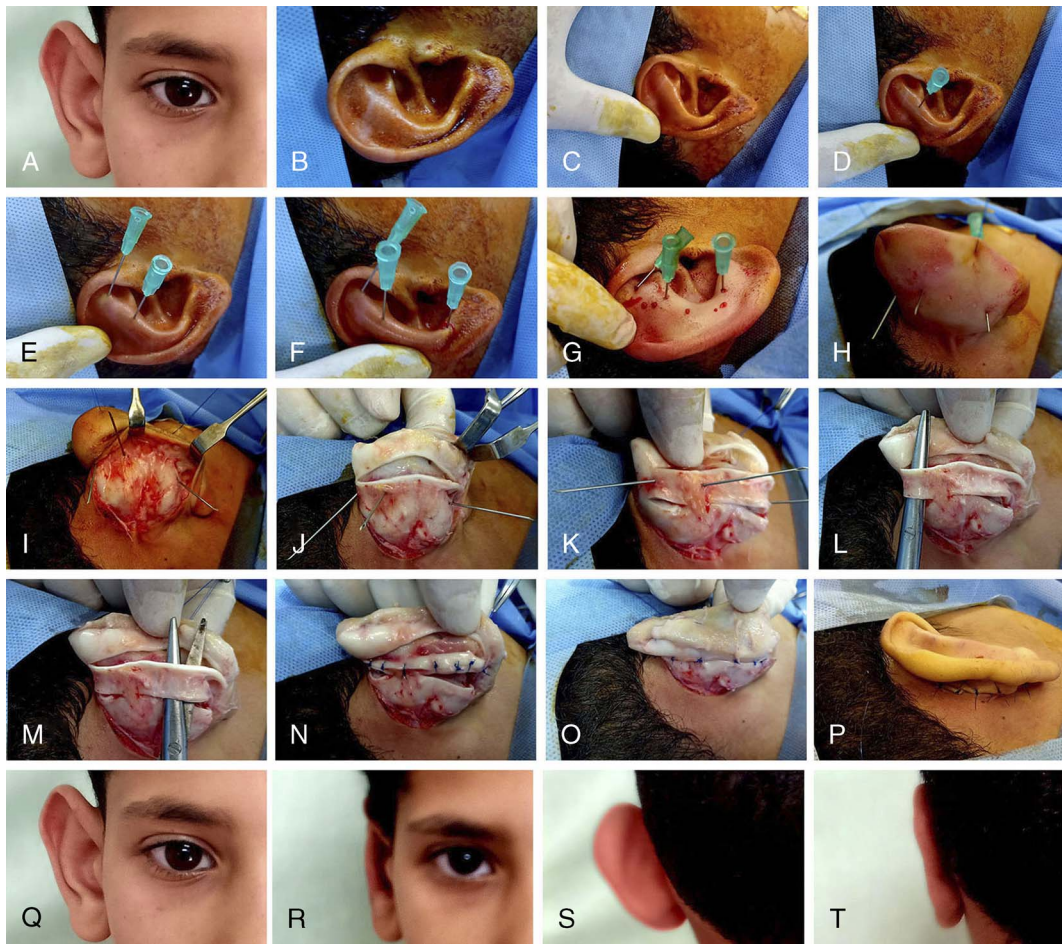

FIGURE 1. A, Preoperative frontal view, (B) preoperative on table, (C) press to define the proposed site of the antihelix and ear lobule, (D) needle at the junction of the inferior crus with the new antihelix, (E) needle at the upper end of the antihelix, (F) needle at the lower end of the new antihelix, and (G, H) subcutaneous adrenaline injection into the anterior and the posterior surfaces of the ear. I, Dissection of the posterior skin from the cartilage to the helix. J, Anterior cartilage cutting incision 2 to 4 mm in front of the needles. K, Two incisions, 2 to 4 mm posterior to the needles leaving only 5 mm at the junction of the inferior crus with the antihelix. L, M, Complete separation of the cartilage strip from the anterior skin, (N) tubing of the cartilage strip upon itself, (O) suture of the anterior cartilage to the posterior behind the tubed one, (P) complete skin closure, (Q) preoperative frontal view, (R) late postoperative frontal view, (S) preoperative posterior view, and (T) late postoperative posterior view. full color online

TABLE 1. Descriptive Analytic Data of Different Variability in Age, Sex, Fitzpatrick Skin Type, Clinical Satisfaction, Patient Satisfaction, and Complications Encountered

Variable	Total No. Patients	%
Age, y		
4–10	35	55.6
11–20	20	31.7
Above 20	8	12.7
Sex		
Male	46	73
Female	17	27
Fitzpatrick skin type		
Type III	29	46
Type IV	26	41.3
Type V	8	12.7
Clinical assessment		
Excellent	37	58.7
Good	18	28. 6
Fair	8	12.7
Bad	0	0
Patient satisfaction:		
Excellent	32	50.8
Good	22	34.9
Fair	9	14.3
Bad	0	
Complications		
Infection	0	0
Keloid scar	0	0
Wound disruption	1	1. 6
Unequality	2	3. 2
Under correction	1	1. 6
Overcorrection	4	6.3
Suture extrusion	2	3. 2

posterior auricular skin from the cartilage up to the level of the helix, slight withdrawal of the needles that defined the position of the antihelix and ear lobule in-place during dissection was performed, and reinserting them after the posterior skin was completely freed from the cartilage (Fig. 1I); the dissected posterior skin was retreated anteriorly to give full exposure to the cartilage. Three cartilage cutting incisions were performed (according to the degree of conchal prominence), one anterior to the needles by 2 to 4 mm, a long incision extending from the level of the upper needle to the level of the lower one (Fig. 1J), and another 2 incisions posterior to the needles by 2 to 4 mm were done, one started from the level of the upper needle and stops at the level of the second needle and another incision starting from 5 mm below the middle needle, up to the level of the lower needle, leaving around 5-mm cartilage strip at the level of the junction of the inferior crus with the helix, intact (Fig. 1K). Separation of this cartilage strip from the anterior skin was performed (Figs. 1L, M). Thus, a 4- to 8-mm breadth cartilage strip was completely separated except at 3 points, the upper end, junction of the inferior crus with the antihelix, and the lower below the level of the new antitragus. The strip of cartilage strip was then tubed upon itself using 5.0 Prolene, starting from its upper up to its lower end, to form the superior crus and the antihelix (Fig. 1N). Finally, the most anterior cartilage is sutured to the most posterior one behind the tubed cartilage, helping in defining the new antihelix and added more contouring to the inferior crus (Fig. 1O). The skin was then closed (Fig. 1P). The dressing was then applied to help in keeping the anatomical structures in place using cotton, gauze, and a light head crepe bandage.

The first dressing was performed on the second postoperative day to check for any complications, at that point a clean dressing, and the bandage was reapplied ceaselessly for 6 days. The stitches were taken out on the seventh postoperative day.

Postoperative Management

Recording of operative data for each patient was done including operative time, surgical complications, and vital measures.

Prophylactic Antibiotics

Cefotaxime was administered with the induction of anesthesia and continued for 48 hours postoperatively. Pain relief was achieved with narcotics in the immediate postoperative period and thereafter by nonsteroidal anti-inflammatory analgesic medications. The discharge sheet was fulfilled for each patient before discharge including date of discharge, hospital stay, and any complications such as wound disruption, bleeding, or hematoma.

Follow-up Sheet

Patients were followed up postoperatively after discharge from the hospital after 1 week, 2 weeks, 1 month, 3 months, 6 months, and 1 year or more.

The following data were recorded after at least 3 months:

Preoperative photography and the photographic session during the last follow-up visit were considered to be the documented photographic result. Functional outcome and aesthetic outcome data were documented. Unfavorable aesthetic outcome data, such as scar complications, were also reported. Symptomatic pain, difficulty in daily work, difficulty to find a sleeping position, improvement in the quality of life (physical life–social life), and degree of the satisfaction of the patient or their parents were also documented. Patients' satisfaction was evaluated according to the patient-reported outcome measures, which were questionnaires that measured the patient or their parent's views of satisfaction about the following parameters: aesthetic shape, lifestyle, comments of relatives, and general satisfaction degree. The collected data were organized and tabulated. The patients were asked to rate their degree of satisfaction at a 4-point score of 1 (poor), 2 (fair), 3 (good), and 4 (excellent), which was used for evaluating each parameter. Clinical satisfaction was performed by 3 plastic surgeons not sharing in this work, through an overall score from 1 to 4, contrasting the aesthetic appearance, the resultant scars, the level of progress at the ear lobule, the anterior, lateral, and posterior views of the ear, the front, sidelong, and back perspectives on the ear; the consequences of the preoperative and last subsequent photography were surveyed as excellent, good, fair, and poor.

RESULTS

This study was carried out on 63 patients, 46 males and 17 females. Their age ranged between 4 and 23 years with a mean age of 9.7 years. All cases were completely healed from the procedure within 7 to 11 days. The downtime varied from 10 to 14 days. All the postoperative adverse effects like erythema and edema were transient and cleared completely on follow-up within 2 weeks. Because the prominent ear is one of the most elective cosmetic surgical procedures, the rate of complications or adverse incidents was minimal. None of the patients developed a hematoma, tissue necrosis, or purulent local infection. No cases with hypertrophic or keloid scars were reported. No recurrence of the ear deformity was reported during the long-term follow-up. Adverse effect like wound disruption, caused by naughty kids, was reported in 1 patient (1.7%); uneventful complete healing occurred under conservative treatment. Cartilage stiffness was accounted for in 7 adult patients (11. 1%), which commanded extraordinary

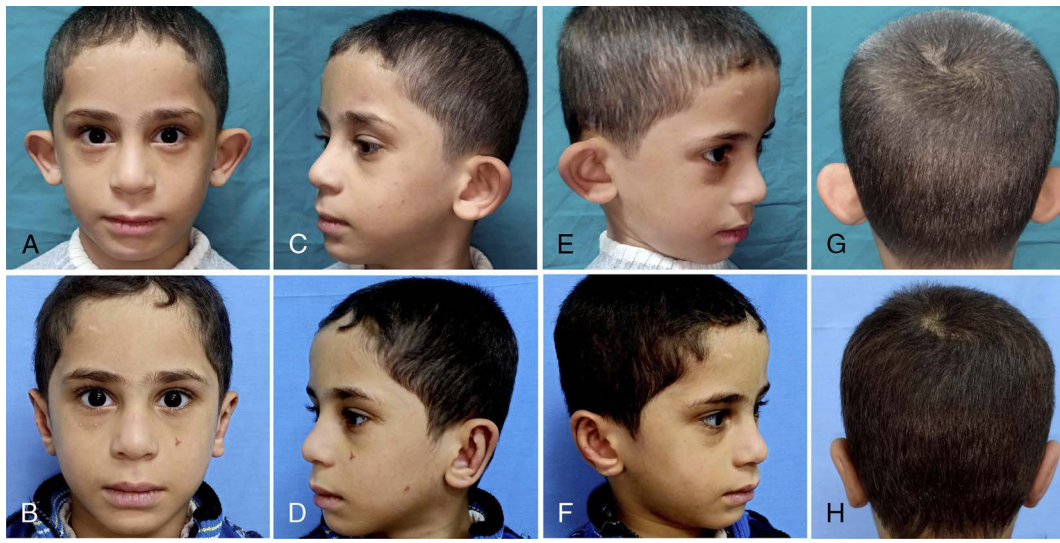

FIGURE 2. Preoperative of 1 of 2 twins: (A) anterior, (C) Rt lateral, (E) Lt lateral, and (G) posterior views, showing deficient antihelical fold, superior crus, deep concha, prominent ear lobule, and wide cephalon-auricular dimension. Six months postoperative: (B) anterior, (D) Rt lateral, (F) Lt lateral, and (H) posterior views, showing excellent ear reshaping with normal ear contour, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

consideration during the development of the antihelix. Three patients had a residual deformity, 2 patients had asymmetry, and 1 patient had undercorrection. Overcorrection was accounted for in 4 patients (6.3%). Suture extrusion occurred in 2 cases without a problem.

Clinical assessment was performed by 3 plastic surgeons not sharing in this work, using a 4-point scale. It showed excellent results in 37 patients (58.7%), good results in 18 patients (28. 6%), fair results in 8 patients (12.7%), and no poor results. Patient satisfaction was evaluated according to patient-reported outcome measures, questionnaires measuring the patients' views of satisfaction about the following parameters: aesthetic shape, lifestyle, comments of relatives, and general satisfaction. A 4-point scale was used. It showed excellent results in 32 patients (50.8%), good results in 22 patients (34.9%), fair results in 9 patients (14.3%), and no poor results. Results are reported in Table 1 and Figures 2, 3, 4, 5, 6, 7, and 8.

DISCUSSION

The common aim of the present-day otoplasty techniques is to form an ear that appears normal with acceptable protrusion, symmetry, and shape. A superior comprehension of the anatomic variations from the norm permits the specialist to treat the patients successfully.

Skin excision techniques for the correction of the prominent ear deformity were first performed by some authors. Ronen and Adrien[5] reported that Dieffenbach tried to correct the prominent ear deformity using postauricular skin excision at the auriculocephalic sulcus followed

FIGURE 3. Preoperative of the second twin: (A) anterior, (C) Rt lateral, (E) Lt lateral, and (G) posterior views, showing deficient antihelical fold, superior crus, deep concha, prominent ear lobule, and wide cephalon-auricular dimension. Six months postoperative: (B) anterior, (D) Lt lateral, (F) Rt lateral, and (H) posterior views, showing excellent ear reshaping with normal ear contour, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

FIGURE 4. Preoperative (A) anterior and (C) posterior views showing absent antihelical fold, superior crus, and wide cephaloauricular angle. Six months postoperative (B) anterior, (D) posterior, (E) Rt lateral, and (F) Lt lateral views showing excellent ear reshaping, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

by conchomastoidal fixation. Jeffrey et al[9] reported that DeSchweinitz and Randall fused the auricular cartilage to the mastoid with glue and bandaged it for the firm union, but no cartilage was excised. Both authors reported that there was an increased incidence of hypertrophic and keloidal scar formation. They revealed this to the increased tension on the suture line. In our work, no postauricular skin was eliminated, so no tension was applied by any means at the suture line. Likewise, in our examination, we have performed our method on patients with Fitzpatrick skin type III (29), type IV (26), and type V (8). No keloidal or hypertrophic scars were recorded. We uncovered that because no skin was taken out and no pressure was applied on the stitch line during skin closure. Lastly, strict adherence to skin preservation cannot be overemphasized. None of the skin, even if appearing to be excessive after setback, should be excised.

Cartilage weakening procedures have been used in the treatment of prominent ears. Concerning the approach, both the anterior and the posterior approaches permit making another antihelical overlay without the need to make slices through the cartilage. As for aesthetic results,

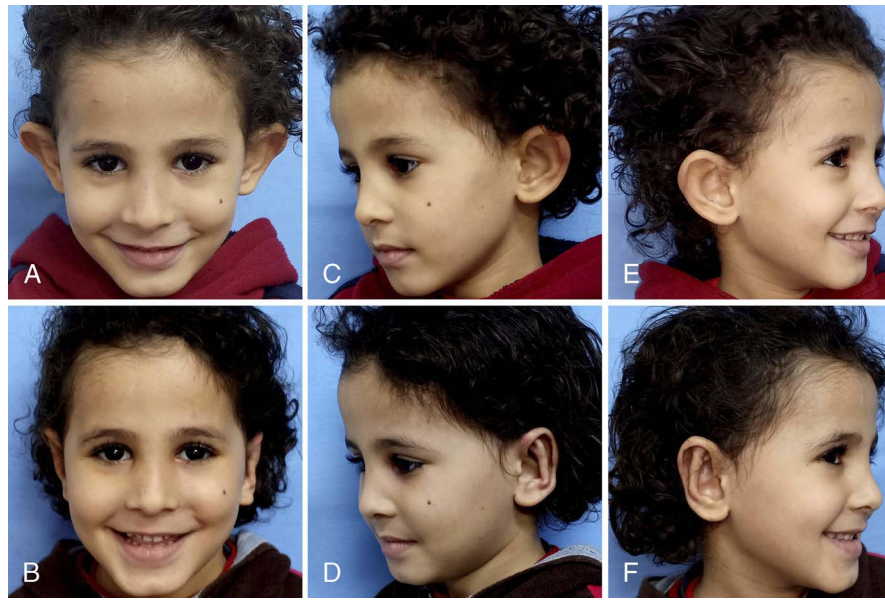

FIGURE 5. Preoperative (A) anterior, (C) Lt lateral, and (E) Rt lateral views showing deficient antihelical fold, superior crus, deep concha, and prominent ear lobule. Six months postoperative (B) anterior, (D) Lt lateral, and (F) Rt lateral views showing excellent ear reshaping with normal ear contour, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

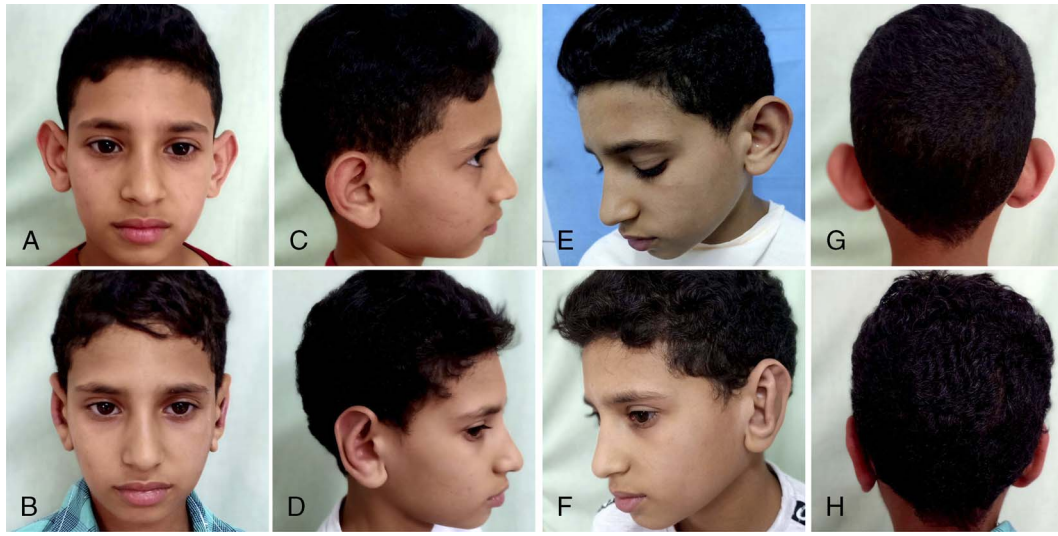

FIGURE 6. Preoperative (A) anterior, (C) Rt lateral, (E) Lt lateral, and (G) posterior views showing deficient antihelical fold, superior crus, deep concha, prominent ear lobule, and wide cephalon-auricular angle. One-year postoperative (B) anterior, (D) Rt lateral, (F) Lt lateral, and (H) posterior views showing good ear reshaping with normal ear contour, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

there may be a late relapse in which the auricles become unstuck months after being operated on, which takes place in 2% to 13% of cases according to the series, depending on the technique.[10,11] The authors observed more relapses with the anterior approach, probably because of the increased extrusion of sutures as a result of the thinner anterior skin of the ear, which resulted in decreasing of tension on the cartilage and so the relapse. In our study, we had not been confronted with such type of relapse because of performing a 2-layer skillful controlled closure, one for tubing and the second one for shaping a layer of cartilage behind it.

Excision procedures used to decrease conchal hypertrophy can be gathered into those that excise cartilage alone and those that excise both skin and cartilage. Ronen and Adrien[5] reported that Luckett's method to make another antihelical crease included excising a crescent segment of cartilage from the back and reapproximating the leftover edges to one another. In any case, this makes a sharp overlap with an unnatural appearance. The cartilage-only methods are usually performed through a posterior approach, whereas the skin and cartilage methods generally are performed using an anterior approach. Neither of the methodologies has a proven advantage, and the choice is a matter of personal preference. The Converse procedure is an illustration of a classic, yet confounded, cartilage-cutting technique.[7] Two, full-thickness cartilaginous cuts are made along the conchal edge and the desired antihelical fold to frame an island of cartilage, which is then tubed and secured with sutures to make the new antihelical fold.

Pitanguy et al[12] portrayed an easier method that includes the arrangement of a more modest cartilage island by parallel cuts in the area of the desired antihelical fold; this island is then projected forward to

FIGURE 7. Preoperative (A) anterior, (C) Rt lateral, (E) Lt lateral, and (G) posterior views showing deficient antihelical fold, superior crus, deep concha, prominent ear lobule, and wide cephalon-auricular angle. One and half years postoperative (B) anterior, (D) Rt lateral (F) Lt lateral, and (H) posterior views showing good ear reshaping with normal ear contour, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

FIGURE 8. Preoperative (A) anterior, (C) Rt lateral, (E) Lt lateral, and (G) posterior views showing deficient antihelical fold, superior crus, deep concha, prominent ear lobule, and wide cephalon-auricular angle. Two years postoperative (B) anterior, (D) Rt lateral, (F) Lt lateral, and (H) posterior views showing good ear reshaping with normal ear contour, well-defined antihelix, superior crus, excellent improvement of the cephaloauricular angle, and normal ear lobule contour and place. Lt, left; Rt, right. full color online

make an antihelical fold by approximating the cartilage with mattress sutures. Maricevich et al[13] evaluated their results of the Pitanguy island technique and stated that it is a straightforward and solid method for carefully selected cases because it is not appropriate for patients who have a typical antihelix. In our study, we had performed a full-thickness cut of the cartilage using 1 long incision anterior and another 2 incisions posterior, leaving only around 5-mm cartilage strip at the level of the intersection of the inferior crus with the helix, intact. Thus, a 4- to 8-mm breadth cartilage strip was completely separated except at 3 points, the upper end, junction of the inferior crus with the antihelix, and the lower below the level of the new antitragus. The strip of cartilage was then tubed upon itself using 5.0 Prolene, starting from the upper end up to the lower end, to form the superior crus and the antihelix. Finally, the most anterior cartilage is sutured to the most posterior one behind the tubed cartilage, thus avoiding the sharp edge of other techniques, helping in the definition of the new smooth antihelix, adding more contouring to the antitragus, and correcting the prominent ear lobule deformity.

Even though cartilage-saving procedures are preferred, cartilage-cutting ones might be valuable in more serious unmistakable ear prominence. In cases of extreme conchal hypertrophy, extraction of the overabundance cartilage of the rising conchal bowl may be essential. Moreover, extracting the postauricular muscle can be useful to accentuate the setback.[14] In our study, even in extreme cases, we did not excise any cartilage, as we found that tubing of the cartilage strip and forming a second layer of cartilage behind it are sufficient to overcome the problem of conchal hypertrophy.

An extraordinary prominent ear lobule may be present with the prominent ear deformity. Some authors addressed this problem through simple full-thickness wedge excision or a modified fishtail excision.[15] Mal-correction of the prominent ear lobe during correction of the prominent ear deformity, as the use of excessive Mustarde stitches, may result in the telephone ear deformity. In our study, we have overcome this problem through the beginning of stitching the cartilage strip from the upper end, this will take the upper end of the ear to its ordinary position, and extending to the furthest limit of the antitragus. Finally, the most anterior cartilage is sutured to the most posterior one to cover the tubed cartilage, adding more contouring to the antitragus and correcting the prominent lobule.

Complications after prominent ear correction can be classified into early and late stages, with the former occurring up to 14 days postoperatively and the latter occurring after the initial 14-day period.[16] Sadhra et al[17] reported complications that occurred within the first 2 weeks as bleeding, hematoma, and infection. They referred to this as insufficient hemostasis during surgery or other errors in surgical technique. In our study, we have 1 case (1.7%) of wound disruption caused by a naughty child; no bleeding or infection was encountered because of perfect hemostasis and the use of antibiotics.

Some authors reported late complications as suture extrusion, scarring, asymmetry, and unsatisfactory results. They also reported suture extrusion as a result of either incorrectly placed sutures too close to the skin, the tension on cartilage, or infection. They also reported that abnormal scar formation includes hypertrophic scarring or keloid formation. Unsatisfactory results such as overcorrection, undercorrection, recurrence, telephone deformities or reverse telephone deformities, and cartilage irregularities have been also reported.[18] In our study, the complications described were less frequent; they did not represent major problems. Overcorrection was experienced in 4 (6.3%); this happened toward the start of this work. We have overcome this issue by picking the legitimate width of the cartilaginous strip, which was variable somewhere in the range of 4 and 8 mm according to the level of conchal deformation.

Orhan et al[19] detailed that managing the ear cartilage during the otoplasty operation at a more youthful age is simpler than that at the grown-up age. We had reported the same observation that correction of the prominent ear deformity at a younger age with delicate cartilage was a lot simpler, shorter in time, and needed a shorter postoperative compressive bandage, than that at an older age with stiff cartilage. In our study, correction of the stiff cartilage in 7 reported patients mandated extraordinary efforts to avoid the cartilage break down. We have reported complications like ear unequality in 2 cases (3.3%), undercorrection in 1 (1.7%), and suture extrusion in 2 (3.3%). We had not reported any case with postoperative keloidal or hypertrophic scars despite working on patients with Fitzpatrick skin type III (29), type IV (26), and type V (8), as we did not remove any skin and the wounds were closed without undue tension.

Ito et al[20] described in their study that 85% of full ear size had been achieved by the age of 3 years. In contrast, Farkas et al[21] in his work reported that 85% of full size was achieved only by 6 years of age. Gosain et al[22] reported that they had followed up 12 children

undergoing otoplasty under 3 years of age (youngest, 9 months). They found that no growth restriction was observed in the bilateral or unilateral cases with at least 39 months of follow-up. In our study, the youngest patient was 4 years and the oldest one was 23 years with a mean age of 9.7 years. We observed during the follow-up period, which ranged between 1 and 6 years with the mean follow-up of 2 years, that there was no restriction of growth occurred. We also found that, at a younger age, the cartilage is more pliable, so repositioning and cutting techniques can be used more easily than in adults.

CONCLUSIONS

Prominent ear correction using full-thickness cartilage strip, an incomplete cutting technique, is a good technique. It can be used in the correction of different varieties of prominent ears. It has a very low incidence of complications. No hypertrophic or keloidal scars have been reported. Nevertheless, long-term follow-up anthropometric studies should be performed to study the effect of this operation on the growth of the ear.

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Informed consent was received for publication of the figures in this article.

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