

Ear Lobule Rejuvenation in Primary Facelift

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ABSTRACT

Background: With the aging process, changes in the facial proportions occurs. The auricular lobule has a significant role in the ear and facial aesthetics. With aging, the ear lobule gets distorted in shape.

Objective: The aim of this study is to address the ear lobule ptosis with primary facelift procedure.

Patients and Methods: Fifteen patients with facial skin redundancy and true ear lobule ptosis having primary facelift, were operated in Ain Shams University Hospital and Private Hospital from September 2020 to May 2022. An informed consent was obtained from all patients. Preoperative evaluation was done for the face and ptotic ear lobule was examined for its deflation, width and length measurements. Pre operative and post operative photography were taken. Primary facelift was done and ear lobule management according to degree of ptosis.

Results: Fifteen patients underwent primary facelift procedure, age was ranging from 48-60 years (average 53), with ear lobule management (nine cases had fat injection for correction of loss of volume and six cases had surgical reduction for ptosis correction) with high satisfaction scores (13/15) with no lobuloplasty complications.

Conclusion: Aesthetic consideration of ear lobule rejuvenation in primary facelift procedure augments the final aesthetic outcome of the procedure and patients' satisfaction.

Key Words: *Facelift – Aging ear lobule – Ear lobule rejuvenation – Fat injection of ear.*

Ethical Committee: Approved by the ethical committee of Ain Shams Faculty of Medicine.

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INTRODUCTION

Harmony and symmetry of the facial soft structures and facial skeleton are the main aim for reaching supreme facial aesthetics. Many rejuvenative procedures are being performed with high frequency and numerous varieties with the aim of restoring the natural balance between the different facial structures [1].

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With the aging process, alterations in the facial proportions occurs, these alterations are mainly related to the changes of the intrinsic muscles of the facial expression and chronic damage to the skin caused by ultraviolet rays with consequent damage to the collagen and elastic fibers of the dermis. In addition to the continuous effect of gravity affecting tissue elasticity. All these effects influence many individuals to start seeking aesthetic approaches with the aim to maintain their youthful appearance [2].

The auricular lobule has a significant role in the ear and facial aesthetics. It usually has different shapes [3]. With aging, the ear lobule gets distorted and develop the shape of ear lobule ptosis. In aging, individuals seek for facelift procedures. Accurate assessment of ear lobule height is indicated in aesthetic practice so that the aging ear may be addressed simultaneously with the procedure. Although interventions appear to be simple, yet its impact on the individual is very high [4]. This study was designed to highlight on the importance of the rejuvenation of the ear lobule during primary facelift.

PATIENTS AND METHODS

Fifteen patients complaining of facial aging with ptosis of the ear lobule were operated in Ain Shams University Hospital and private hospital from September 2020 to May 2022. An informed consent was obtained from all patients. Preoperative medical history, general examination and routine laboratory investigations were performed. Standard pre- and post-operative photographs were taken. Assessment of facial sagging was systematically recorded along with anthropometric assessment, and evaluation of superficial and deep fat compartment regarding malar pad of fat and jowls decent.

Ear lobule was examined for its deflation, width and length measurements (from the most caudal part of ear lobule (S=subaurale) to a point where

the lobule attached to the cheek (O=otobasion inferius) (Fig. 1) which gave the degree of ptosis according to Mowlavi et al., 2005 classification [5], where grade I ptosis (1-5mm in distance), grade II (6-10mm in distance), grade III (11-15mm in distance), grade IV (16-20mm in distance), grade V (more than 20mm in distance); pseudo ptosis is considered if the distance between intertragic incisure (I) to otobasion inferius (O) (attached cephalic segment) is more than 15mm.

All patients were marked pre-operatively for facelift operation including preauricular incision, line of deep plane entry from lateral canthus to gonial angle, submental incision for platysmal plication. Ear lobule grade II, III underwent fat injection and reduction was done in grade IV, V. The amount of reduction was determined by measuring the length of the ear and maintains a length of ear lobule 25-30% of its length (Fig. 2).

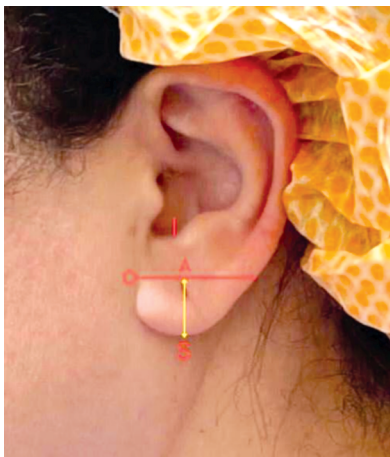


Fig. (1): Ear lobule portion: Otobasion inferius (O), subaurale (S), intertragic incisure (I), point (A): Point of junction between two lines.



Fig. (2): Preoperative marking of facelift and ear lobule; (A) Temporal branch of facial nerve, (B) Zone of zygomatic ligaments (C) Zone of parotido-massteric ligament (D) Zone of mandibular cutaneous ligament.

Surgical techniques:

Infiltration of the incision site and the planes of dissection which are proximal subcutaneous and deep sub SMAS planes with a solution containing vasoconstrictors [1cc adrenaline 1/1000 and 5cc tranxemaic acid (1000mg|10cc)] for hemostasis to ensure a bloodless field. Incision starts at the temporal region hooking around side burn, then it goes downwards at the root of helix. At the tragus the incision runs at the edge of tragus with a back cut at the junction between the ear lobule and the tragus. Then it continues around the ear lobule to the post auricular area through the postauricular sulcus.

Sharp dissection starts at the subcutaneous plane till the line of SMAS entry represented by a line from lateral canthus to the gonial angle where the SMAS incision is placed. This was followed by sub SMAS blunt dissection till we reach the retaining ligaments of the face. Sharp dissection of the zygomatic and mandibular ligaments is done for complete mobilization of the sagging mid and lower face.

Platysma muscle was separated from SMAS and sub-platysmal dissection was done for treating saggy neck. Tension free plication of SMAS and platysma was carried out using PDS 2/0 interrupted sutures. Closure was done by PDS 4/0 for subcutaneous layer and proline 6/0 for skin closure. To avoid pixie ear, A tension-free subcutaneous suturing was taken between deep mastoid fascia to skin.

Patients with ptosis grade (II, III) and deflation of lobule was corrected by fat injection harvested from lateral hips or tummy with a maximum of 20cc which was then centrifuged and prepare in 1cc syringe and injected using a blunt 1mm cannula. Surgical reduction was done in patients with ptosis grade (IV-V) where a line was drawn from point (O: Otobasion inferius) that met a perpendicular line passing from (I: Intertragic incisure) to (S: Subaurale) in a point A, so that residual ear tissue lift (pedicle) at the free edge of the ear ranging from 0.8-1.2cm. An excised triangle drawn from point (O)-(A) with its base equal to the amount of tissue that calculated to reach the optimal ear length (ear lobule=25% of total ear length).

RESULTS

Fifteen patients (n=15) were included in the study, age was ranging from 48-60 years (average 53). All patients underwent primary facelift procedure with ear lobule management (9 cases fat injection for correction of loss of volume (2-4cc for each lobule) and 6 cases underwent surgical

reduction for ptosis correction), Following surgery patients should withhold from wearing earrings

for 2 weeks. All patients were followed-up for one year (Figs. 3,4,5).

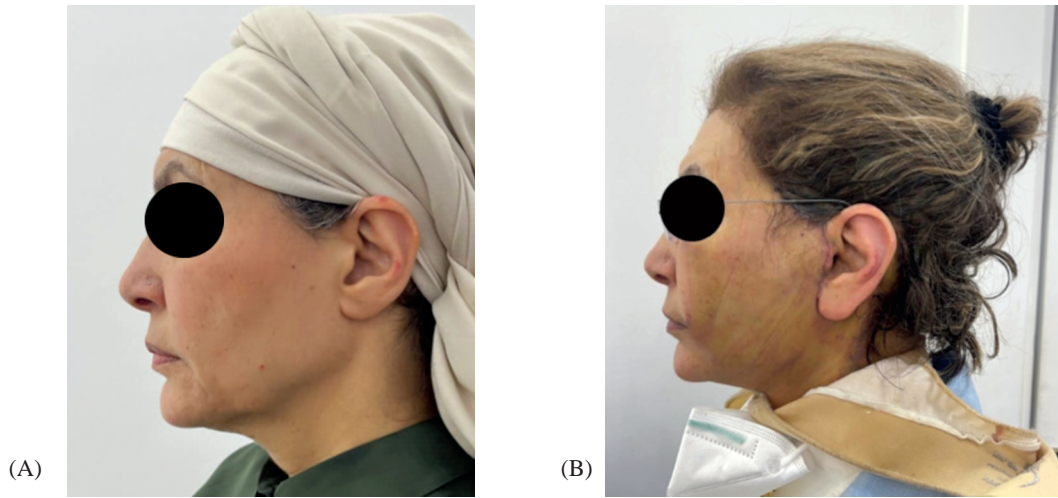


Fig. (3): (A- Preoperative, B- Postoperative) 2 weeks after primary facelift and fat injection of ear lobule.

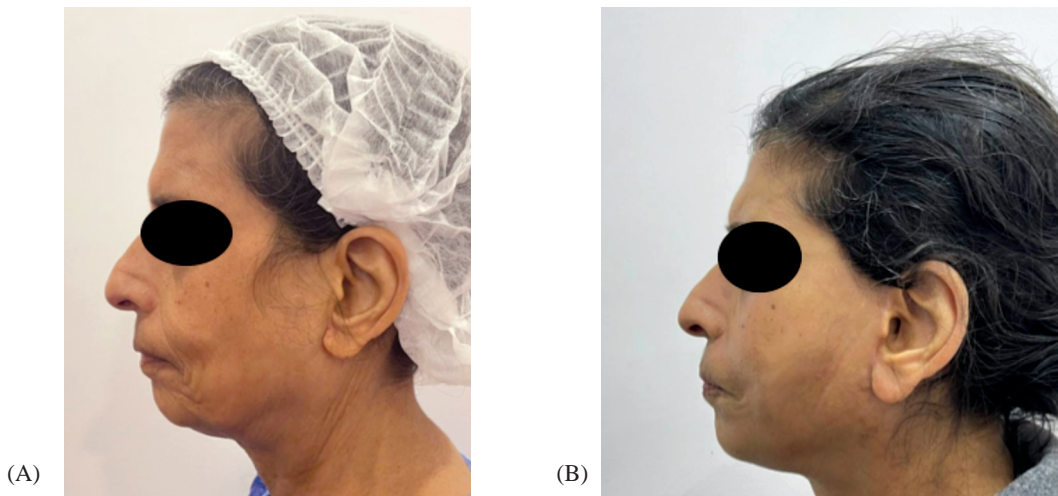


Fig. (4): (A- Preoperative, B- Postoperative) 1 year after primary facelift and fat injection of ear lobule.

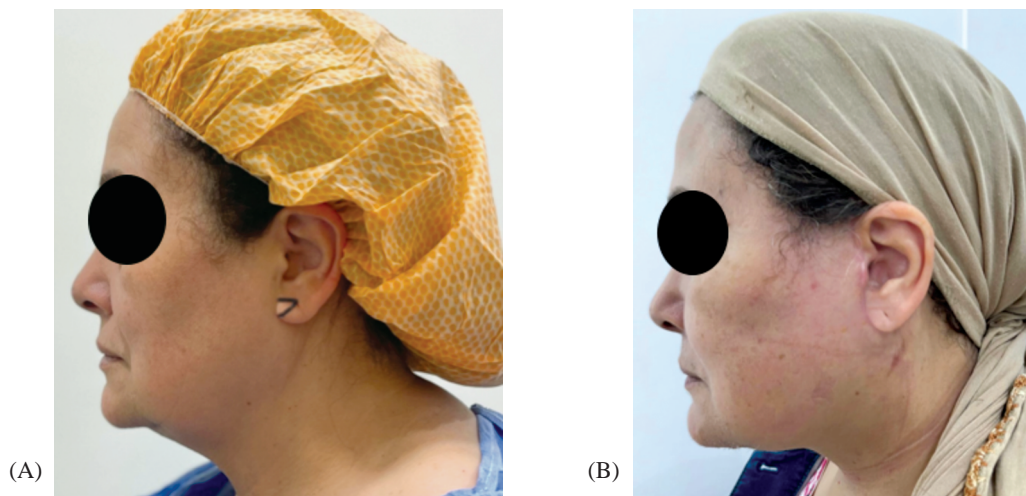


Fig. (5): (A- Preoperative, B- Postoperative) 5 months after primary facelift and ear lobule reduction.

Facelift evaluation was done by facial assessment clinically and the photographs in front, lateral and oblique views with anthropomorphic measuring of facial width, length

Ear lobule results were evaluated by using the visual analog scale6 (VAS) in the postoperative first month (by scoring between 1 and 10) 0-2 awful, 2-3 not very good, 4-6 okay, 6-8 really good, 8-10 fantastic. Visual analogue scale in this study obtained was 13-fantastic and 2 really good

Pre and postoperative measurements of ear lobule after fat injection is summarized in Table (1).

Pre and postoperative measurements of ear lobule after wedge resection with amount of excised tissue to preserve the normal ratio between ear lobule to total ear length summarize in Table (2).

Complications that occurred after facelift procedure include seroma mainly in postauricular area in 4 cases, facial nerve weakness mainly marginal mandibular branch in 1 case and hypertrophic scar in 1 case, all cases were managed conservatively.

Concerning Complications after lobuloplasty; (hypertrophic scar, depressed scar, wide scars, and wound infection). In the present study, there were no complications in any of the patients during the postoperative follow-up period.

Table (1): Pre and postoperative measurements of ear lobule after fat injection.

Patients	Measurement from O-S right ear (mm)		Measurement from O-S left ear (mm)	
	Preoperative	Postoperative	Preoperative	Postoperative
1	11	8	10	7
2	13	11	13	10
3	12	9	13	9
4	13	8	13	9
5	12	8	12	9
6	13	9	13	8
7	10	7	11	7
8	14	11	14	11
9	12	8	11	8

Table (2): Pre and postoperative measurements of ear lobule after wedge resection.

Patients	Total right ear length (cm)	Measurement from I-S right ear (mm)	Measurement from O-S right ear (mm)	Amount of excised tissue right ear (mm)	Total left ear length (cm)	Measurement from I-S left ear (mm)	Measurement from O-S left ear (mm)	Amount of excised tissue left ear (mm)
1	8.5	25.9	15	4	8.3	25.9	14	5
2	8	26	17	6	7.6	26.5	15	7
3	8.6	28	20	6	8.8	28	18	6
4	7.8	26.8	17	7	8	26.5	15	6
5	8	27.7	18	7	7.9	27	14	7
6	8.7	30	21	8	8.5	29	20	8

DISCUSSION

Rejuvenative procedures of the face are uprising in techniques and maneuvers. Treatment tools of facial aging convey two major rules: Natural comprehensive 3D rejuvenation of the face and care primarily about the patient's safety with ensuing natural long-term results [7].

Aging is a progressive process that involves all facial structures; however, the start and the progress of age-related changes varies between individuals and each definite structure. The ears

age exactly like other parts of the body. It is very important to keep the ears aesthetic look in synchronization with the other rejuvenated areas for fulfilling the overall aesthetic outcome [8].

A perfect youthful ear lobule is conical, elastic, with a rounded c-shape lower border. Its length is 1.5-2cm (25%-30% of length of the long axis of the ear) and should be maintained in this ratio to avoid overcorrection. It is hanging superiorly from tragus, antitragus and helix. Some ear lobules are attached to the cheek, while other ear lobules hang freely [9].

Signs of aging lobule includes sagging, wrinkling due to sun damage contributing and a thin flat appearance. Moreover, it may develop deep rhytids [4].

Examination of ear lobule ptosis and deflation is an imperative step that must be considered during examination of aging face for facelift. Preoperative measurements must be taken from inter-tragic incisure to otobasion inferius to differentiate between pseudo ptosis and true ptosis and in case of true ptosis, distance from otobasion inferius to subaurale should be taken to assess the degree of ptosis and hence the appropriate management to determine which technique best suits the patients.

Surgical rejuvenation comprises two main steps: Reduction of sagging, restoration of volume, with revitalization of the texture and tone of skin. Among the minimally invasive techniques, autologous fat grafting has been used and found to be effective, with little cost, minimal hazards and side effects, use of patients' own fat grafts with long lasting effects and potential adipose derived stem cell rejuvenation of the overlying skin [10]. In this study, we performed a structural fat grafting of ear lobule in grade II, III ptosis according to Mowlavi Classification 5 in 9 cases with a high satisfaction score and long-lasting effects.

Other surgical management options included wedge resection and direct closure, which was stated as well in multiple studies with multiple geometrical designs [11].

In our study 6 cases were managed surgically which was performed in grade VI, V ptosis with our aim to restore the normal proportion of the ear lobule to the all-ear length with special attention to maintain aesthetic outcome. All cases had satisfaction scores comprises high level of satisfaction among the studied group with uneventful healing of all cases.

To avoid improper positioning of the ear lobule in facelift procedure, special care must be taken during the designing of excision and during performing it. As a major golden rule while performing surgery on ear lobule; regardless of the dissection plane and the vector of lifting, deep retention sutures were always placed to minimize wound

tension and avoid pulling down of ear lobule toward the angle of mandible forming pixie ear deformity [4].

Conclusion:

During primary facelift assessment of ear lobule should be an integral step of the procedure, as addressing the ear and its aesthetic is now considered structural step in pan facial rejuvenation.

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