Abstract:
Ear lobe is considered to be an important attribute of beauty in most cultures. Traumatic deformity with loss of portion or entire ear lobe is more common than congenital deficiency. Here we present two cases of congenital and three cases of acquired absent ear lobe and various options for reconstruction.

Keyword:
lobe, helix, auriculomastoid flap

Ear lobe reconstruction – Techniques revisited

Case studies – Congenital defective ear lobe reconstruction was done in 2 cases. Acquired ear lobe deformity correction was done in three patients, two were due to road traffic accident and one was a human bite. Case 1 -A three year old female child was reported to department with absent right ear lobe since birth (fig.1a).
Left side ear lobe appears normal. Parents were very concerned about the appearance and request reconstruction. Under general anesthesia, converse two flap technique was carried out to recreate the lobe. Outer cover is raised as a hinge flap from the medial auricular surface. Lining flap is elevated from the retroauricular sulcus. Lobe appears good (fig. 1b,c,d,e,f,g).

Case 1 - Fig. 1d
Case 1 - Fig. 1e
Case 1 - Fig. 1f

Schematic representation of converse two flap techniqueCase 2 - 17 years old female presented to our department with congenital deficiency of ear lobe. Reverse auriculomastoid flap was elevated to reconstruct the lobe. Flap is elevated from both the medial surface and retroauricular region. Elevated flap hangs down as a curtain from the inferior auricular border (fig. 2a,b,c,d,e). Flap is folded.
under to create the lobe.
Case 3 – 25 year old male reported to the department with partial loss of ear lobe and lower third helix due to human bite. Long inferiorly based mastoid skin flap was elevated and folded and flap inset was given to the lower third helical defect and ear lobule (fig. 3a, b, c, d). Flap donor defect was skin grafted. 3 weeks later flap was divided and final inset was given.
**Case 4** - 20 years male with traumatic partial loss of ear lobe and lower third helix was reconstructed was post auricular flap. Superiorly based flap is elevated and flap folded on itself to create the lobule (fig. 4a,b,c).

**Discussion** – Ear lobe is composed of tough areolar and adipose (fatty) connective tissue as pliable skeleton lacking the firmness and elasticity of the rest of pinna. It has rich blood supply and contains many nerve endings. According to American sexologist Kinsey, orgasm can be brought about by merely stimulating the zone alone. Auricle develops from 3 pairs of auricular hillocks that develop around 1st ectodermal cleft between 1st and 2nd pharyngeal arches at 5th week of development. Sixth hillock contributes to the formation of ear lobule. Maruoke et al 1998, classified congenital ear lobule deformities into four types – large, adhesive, defective and cleft ear lobe. In this study only defective ear lobe is considered for reconstruction.

Careful consideration is required in order to accomplish three dimensional reconstructions and create the natural curve of the lobe. In 1907, Gavello described a bilobed flap in which posterior flap is folded under the anterior flap thus serving as the inner lining of new ear lobe. Nelaton & Ombredanne 2 1907, described a technique in which long inferiorly based mastoid flap is raised and attached to the inferior
margin of the ear. In the second stage flap is divided and folded upon itself to form a lobe. Subba Rao\textsuperscript{3} 1968 describes a hinge flap elevated from the medial auricular surface. This provides the outer cover for the lobe. Lining is by full thickness skin graft. In 1974, Davis\textsuperscript{4} advocated a technique by turning down a hinge flap from the lateral auricular surface to serve as a lining. Inferiorly based mastoid flap provide the outer cover for the new ear lobe. The most important thing is to provide bulk and fleshy lobule. Mastoid flap has a fatty prolongation along the inferior edge of flap. Fat flap is rolled under using bolster sutures and mastoid flap provide the outer cover. In this way bulk is added to the lobe. Mastoid for the lobe. Lining is by full thickness skin graft. In 1974, Davis\textsuperscript{4} advocated a technique by turning down a hinge flap from the lateral auricular surface to serve as a lining. Inferiorly based mastoid flap provide the outer cover for the new ear lobe. The most important thing is to provide bulk and fleshy lobule. Mastoid flap has a fatty prolongation along the inferior edge of flap. Fat flap is rolled under using bolster sutures and mastoid flap provide the outer cover. In this way bulk is added to the lobe. Mastoid defect is closed by direct approximation and auricular donor region is skin grafted. Various other methods of ear lobe reconstruction include limberg flaps\textsuperscript{7}, reverse flow chondrocutaneous\textsuperscript{8} flaps, double crossed skin flaps\textsuperscript{9} Only defective ear pattern was included in our study. Total numbers of cases were five. Of which two cases were congenital and 3 cases were acquired deformities. All patients were satisfied with the lobule reconstruction, although we do not have a long term follow up. Based on the literature studies, long term follow up of patients who underwent lobe reconstruction results in shrinkage. The present concept of reconstruction is to provide symmetry, long lasting result. Loco regional flaps are preferred choice with good colour thickness and texture match. The use of non anatomical cartilage graft is must as it maintains the contour and shape. Two or three staged reconstruction is the present concept. At first stage cartilage fabricated is placed in retro auricular skin and in second stage is elevated along the flap and in third stage final adjustments are done. We have adopted this new concept of lobe reconstruction in our future surgical procedures. 

Conclusions:
- Reconstruction of ear lobe with auricularis-sue whenever possible gives a good colour and texture match. Reconstructed ear lobe should look good in symmetry and smooth natural curve. Careful preoperative assessment is needed in order to accomplish tridimensional reconstruction.

References:


9 Immediate earlobe reconstruction with double-crossed skin flaps. Sleilati F., J Plast Reconstr Aesthet Surg. 2006;59(9):1003-5. Epub 2006 May 15