SINGLE-STAGE TOTAL EARLOBE RECONSTRUCTION IN A YOUNG MALE: A CASE REPORT

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ABSTRACT

This case report details a young male patient's successful single-stage total earlobe reconstruction. The patient, a 24-year-old male, presented with a near complete earlobe loss following a traumatic injury. Utilizing an innovative surgical technique, the reconstruction achieved excellent cosmetic and functional outcomes, demonstrating the efficacy of single-stage procedures in such cases.

KEYWORDS

Ear lobe reconstruction, single stage reconstruction, traumatic avulsion, local flap, cartilage graft

***Received on**: August 25, 2024*
***Accepted for publication**: November 06, 2024*

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DOI: https://doi.org/10.3126/nmcj.v26i4.74472

INTRODUCTION

The external ear is a complex three-dimensional structure that aids both hearing and balance. The ear lobule is a subunit within the external ear, and it receives a large amount of blood supply which aids in keeping it warm. It also possesses a range of morphological significance that ties to geographical, racial and physiological variations, and plays a role in facial aesthetics. Although earlobes do not serve a known biological function, they have been considered to be an erogenous zone.[1] The large blood supply in the earlobes may contribute to keeping the ear warm. A more recent, large-scale study identified six genetic variants associated with earlobe attachment.[2] Earlobe deformity can be congenital or acquired, latter mostly due to external injury. Earlobe avulsion is a traumatic injury that can result from various incidents, including accidents and assaults. It is also a reference point to judge symmetry in the face, making its reconstruction crucial.[3,4]

Reconstruction of a deficient ear lobule tends to be very successful due to the presence of a strong arterial supply through branches of the post-auricular and occipital arteries.[5] Reconstruction of the ear lobule requires local flaps from around the ear because of the scarcity of tissue in the external ear with firm skin adherence to underlying cartilage. Various techniques have been described. The most common one is the two-stage repair, leading to prolonged recovery time and increased patient discomfort. Here, we describe the surgical procedure to reconstruct the entire ear lobe in one stage which offers promising results in terms of both aesthetic and patient satisfaction.

CASE REPORT

A 24-year-old male presented to the emergency department with left earlobe injury following human bite during an assault. Patient had no other significant medical history. On examination, the patient had a complete avulsion of the right earlobe with near total amputation, with defect extending to the preauricular area. The avulsed tissue was not viable for reattachment.

No additional imaging was necessary as the clinical examination provided sufficient information regarding the extent of the injury. After admission and necessary investigations, the decision was made to perform a single-stage earlobe reconstruction using local tissue rearrangement techniques. Local anesthesia with sedation was administered. A postauricular skin flap was designed to match the size and shape of the missing earlobe. The flap was carefully elevated and transposed to the defect site. The donor site was closed primarily. A small piece of cartilage from the concha was harvested and placed within the flap to provide structural support. The flap was meticulously inset to recreate the natural contour of the earlobe. The skin was closed using fine, non-absorbable sutures. The patient was prescribed antibiotics and analgesics. Instructions were given to keep the surgical site clean and to avoid any trauma to the area. Sutures were removed after one week. The patient was followed up at one week, one month, and three months postoperatively. The reconstructed earlobe healed well without any signs of infection or necrosis. The patient expressed high satisfaction with the cosmetic outcome, and the earlobe's appearance was symmetrical with the contralateral side.

Fig. 1: Complete avulsion of left ear lobe

Fig. 2: One stage repair with post-auricular flap

Fig. 3: Reconstructed ear lobe post recovery

DISCUSSION

The need for earlobe reconstruction relies on the extent of deformity as well as the outweighed outcome as compared to possible risks. Conservative management may allow for self-healing of wound, but it may not yield optimal aesthetic outcomes.

In patients having no desire for the latter or with a higher risk for further surgical complications, conservative management can be done. Or in cases of infected wound, healing and infection resolution can be done while postponing the need for a reconstruction.

Various techniques have been described. Single stage earlobe reconstruction as romboid flap described by Ibrahim *et al*,[4] Gavello technique or turover flap, each having its own advantages and disadvantages. Turnover and rhomboid flaps may not provide enough soft tissue to reconstruct the entire earlobe compared to the contralateral side. Gavello technique is perfomed by taking a skin flap from the posterior mastoid region, flap is divided into two lobes, with one forming the new earlobe lining.[6] One disadvantage is that it can be applied only for small defects. Two-stage reconstruction techniques like the one reported by Nélaton and Ombrédanne are similar to total auricular reconstruction, which describes forming a pocket to insert a cartilage graft.[7,8] Three-stage technique like cervical or mastoid pencil tube flap requires can leave significant donor site scars.[3]

The technique we used presents a viable alternative to multi-stage procedures, reducing overall treatment time and patient morbidity. Using local tissue provides adequate soft tissue which comparable in thickness to the contralateral side and supple in consistency along with the strength to withstand the weight of piercing which is common cultural practise in our part of the world. The skin is of limited width in the postauricular region which may not be enough to provide for adequate amount of tissue for entire lobule. Anterior skin from the face may contain hair bearing area along with scar placement in visible area of the face. Infra auricular region provide with ample tissue for it to be turned over and reconstruct the ear lobule with adequate thickness and consistency. The flap we used is based infero-posteriorly so as the lax tissue in the infra auricular region is used to turn over and the scar is hidden. The lobule is also separate from the face which matches that of the contralateral side. It is also within the territory of the posterior auricular artery and donor site is closed primarily. The flap's shape is raised in hatched modification of V-Y, accommodating the semicircular shape of the lobule. Use of local flaps and cartilage grafts allows for a natural appearance and satisfactory functional outcomes. This case demonstrates that with meticulous planning and execution, excellent results can be achieved in a single surgical session.

In conclusion, this case report highlights the success of single-stage total earlobe reconstruction in a young male, offering a promising approach for similar cases. Further studies with larger patient cohorts are recommended to validate the efficacy and reproducibility of this technique.

ACKNOWLEDGMENTS

The authors would like to thank the surgical team and the patient for their cooperation.

Conflict of interest: None

Source of research fund: None

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