



ORIGINAL RESEARCH PAPER

Plastic Surgery

A STUDY ON THE ACUTE MANAGEMENT OF PARTIAL AVULSION INJURIES OF THE EXTERNAL EAR IN A TERTIARY CARE HOSPITAL

KEY WORDS: Partial auricular avulsion, direct reattachment, external ear.

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ABSTRACT

Background: Traumatic injury to the external ear can cause significant deficits and poor aesthetic outcomes. Auricular avulsion remains one of the most commonly acquired ear deformities. Due to the complexity of each case, several approaches are to be considered. Multiple surgical techniques are mentioned in the acute management of auricular avulsion injuries, such as - reattachment of the tissue as a composite graft, reconstruction using local skin flaps, the pocket principle, and microvascular repair. Here we present a case series demonstrating the efficacy of simple reattachment as a treatment choice for acute partial auricular avulsion injury with intact inferior vascular pedicle. **Study design:** Prospective, interventional, institution based, conducted at Apollo Multispeciality Hospitals, Kolkata, India. **Method:** Our study includes 10 patients operated over a period of 1 year; all patients underwent direct primary repair of auricular avulsion injuries. All patients were followed up for 1 year without any significant complications. **Conclusion:** Direct reattachment of acute avulsion injuries of the external ear provides safe and predictable outcomes, and is the method of choice for most of the injuries encountered with an intact inferior pedicle.

INTRODUCTION

The prominent and exposed position of the helical external ear makes it susceptible to traumatic avulsion injuries. Such injuries can leave permanent disfiguring deformities and cause psychological trauma to the patient. Several traumatic injuries can cause auricular avulsion, with human bite injuries and traffic accidents as the leading causes[1]. Reconstruction of traumatically amputated ear continues to be a major surgical challenge because of the complex shape, unique anatomical structure of the ear, and the small size of vessels responsible for its perfusion.[2] Selection of the surgical procedure to reconstruct the traumatic avulsed ear is driven by several factors including the mechanism of injury and extent, the patient's comorbidity, and the surgeon's expertise.[3] The main goal is to achieve the best cosmetic result without destroying the periauricular area to allow future ear reconstruction in case of repair failure. Numerous reconstructive techniques have been applied with variable outcomes. Microsurgical repair should be considered when suitable vessels for anastomosis are found on the initial examination. However, despite its superior aesthetic outcome, microsurgical replantation is not possible in many hospitals, especially in the developing countries. The technical complexity of microvascular replantation necessitates on-site microvascular expertise, which is only available in specialized centers.[4,5]

This study aims to demonstrate the versatility, safety and utility of the direct re-attachment technique as a composite graft; It is a straightforward technique that can easily be performed under local anesthesia with a minimal hospital stay.

METHODOLOGY:

This prospective, interventional, institution based study was conducted at Apollo Multispeciality Hospitals, Kolkata, and included 10 patients in the age group of 20-60 years, presenting to the emergency with acute external ear injuries operated over a period of 12 months - during January 2022 - December 2022; After appropriate positioning of the patient and aseptic precautions, the injured ear was cleaned with Hydrogen Peroxide and Betadine solution; thorough debridement of non viable skin and cartilage was done; a 3 layered direct repair was done with 4-0 Vicryl Rapide and 5-0 Nylon sutures. All patients were discharged the next day. Postoperatively, the patients were instructed to use antibiotic ointment twice daily along suture lines. Skin sutures were generally removed in 7 - 10 days.

RESULTS

No venous congestion or skin necrosis were noted; only one patient had post operative wound infection, which successfully resolved with oral antibiotics and regular dressings.

Table 1 - General Details

SERIAL NO	AGE IN YEARS	COMPLICATIONS	PATIENT SATISFACTION
1	22	NIL	FAIR
2	35	NIL	VERY GOOD
3	28	NIL	VERY GOOD
4	32	NIL	VERY GOOD
5	35	NIL	GOOD
6	23	NIL	VERY GOOD
7	26	WOUND INFECTION	FAIR
8	41	NIL	VERY GOOD
9	57	NIL	VERY GOOD
10	39	NIL	VERY GOOD



Figure 1a - ear avulsion injury, 1b - after direct repair, 1c - 1 month follow up.



Figure 2a - ear avulsion injury, 2b - after primary repair, 2c - 2 months follow up.



Figure 3a – ear avulsion injury, 3b – after direct reattachment, 3c – 1 month follow up.

CONCLUSION

To summarise, direct reattachment of partial ear avulsion injuries produces good cosmetic outcome while preserving the peri auricular area for future ear reconstruction in case of reattachment failure. The predictability, technical ease, the final aesthetic outcome, short operative time, single staged procedure, and need of lesser follow up visits are some of the reasons to justify primary repair of acute ear avulsion injuries presenting with an intact inferior vascular pedicle.

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