

Pocketed V-Flap Technique for Traumatic Earlobe Cleft Repair: A Case Report

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Abstract

Aim: Traumatic cleft earlobe repair is challenging in children, where maintaining contour and minimizing tissue loss are key. Traditional straight-line closures, Z-plasties, and local flaps can cause notching, asymmetry, or volume imbalance. We describe a pocketed V-flap technique elevating a V-shaped flap from the lateral cleft edge and inseting it into a midline pocket created on the medial lobe. The medial margin is freshened, a precise pocket is formed, and the lateral flap is advanced and secured, followed by layered closure. Used in a 7-year-old girl with a complete traumatic cleft, this method provided tension-free repair, symmetric contour, and stable projection with no early complications. The pocketed V-flap is a reproducible option for pediatric cleft earlobe repair, optimizing contour, reducing notching risk, and potentially lowering recurrence by stabilizing the flap within the medial pocket.

Keywords: Earlobe cleft; pediatric; ear reconstruction; traumatic earlobe; piercing

1. Introduction

Traumatic cleft earlobes are a frequent concern in aesthetic and reconstructive surgery, commonly resulting from earring traction, blunt trauma, or prolonged use of heavy earrings. Although often minor in scale, these defects are visually prominent and may carry significant psychosocial impact, particularly in pediatric patients ¹. A 2021 systematic review by Nassour and Watfa categorized these into six main approaches: straight-line closure (type 1), Z-plasty (type 2), flaps (type 3), L-specular plasty (type 4), double-curve plasty (type 5), and non-surgical techniques (type 6) ^{2,3}. Among these, flap-based techniques are often favored in complete clefts or when tissue volume discrepancy exists between lobular segments. However, traditional flap designs may still be limited by inferior notching, tension along the repair line, or insufficient contour restoration ^{4,5}.

Pediatric patients present unique challenges: the earlobe is smaller, thinner, and more prone to scarring, while long-term growth must be respected. In this context, we introduce a novel pocketed V-flap technique in which a lateral V-shaped flap is inserted into a precisely created midline pocket within the medial lobe.

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Case Report

A previously healthy 7-year-old girl was brought by our parents due to an earlobe cleft. The cleft occurred after traumatic injury to the ear, resulting an earring to pierce through the earlobe, which was primarily repaired years ago. The procedure was performed under local anesthesia with appropriate pediatric sedation. The cleft was complete and unilateral, located through the inferior half of the earlobe (Figure 1a). After markings were made (Figure 1b), a linear excision was made along the medial edge of the cleft to create a fresh, vascularized surface. A V-shaped full-thickness flap was then designed on the lateral segment of the earlobe, pointing medially (Figure 2a). Care was taken to preserve adequate subcutaneous tissue to maintain vascularity.

A precise midline incision was made in the medial earlobe component, extending superiorly to create a narrow pocket large enough to receive the previously elevated V-flap. Hemostasis was achieved. The flap was then carefully inserted into the medial pocket and secured in position with fine, layered suturing with 6-0 sutures (Figure 2b). The final skin closure line was gently curved, minimizing tension and aligning with the natural contour of the lobe.

A small non-compressive dressing was applied. Postoperative care included daily dressing changes with ointments and suture removal at 7 days. The patient tolerated the procedure well, with immediate postoperative symmetry and no signs of hematoma, infection, or wound dehiscence.

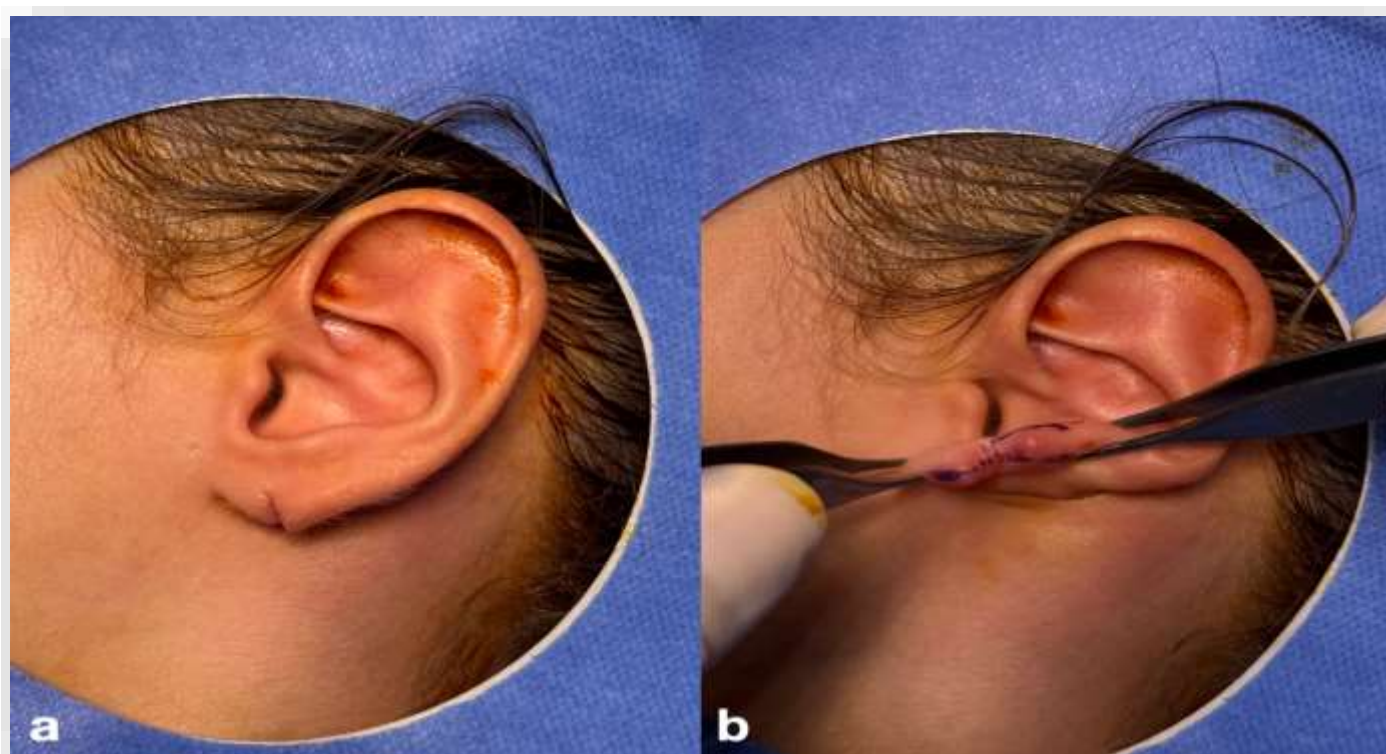


Figure 1. (a) Preoperative appearance of the complete traumatic cleft earlobe in a 7-year-old female. (b) Design of the reconstructive technique, involving a limited excision on the cleft-side of the medial component followed by a midline incision on the lobule for the pocket and a V-shaped flap elevated from the lateral component of the cleft.

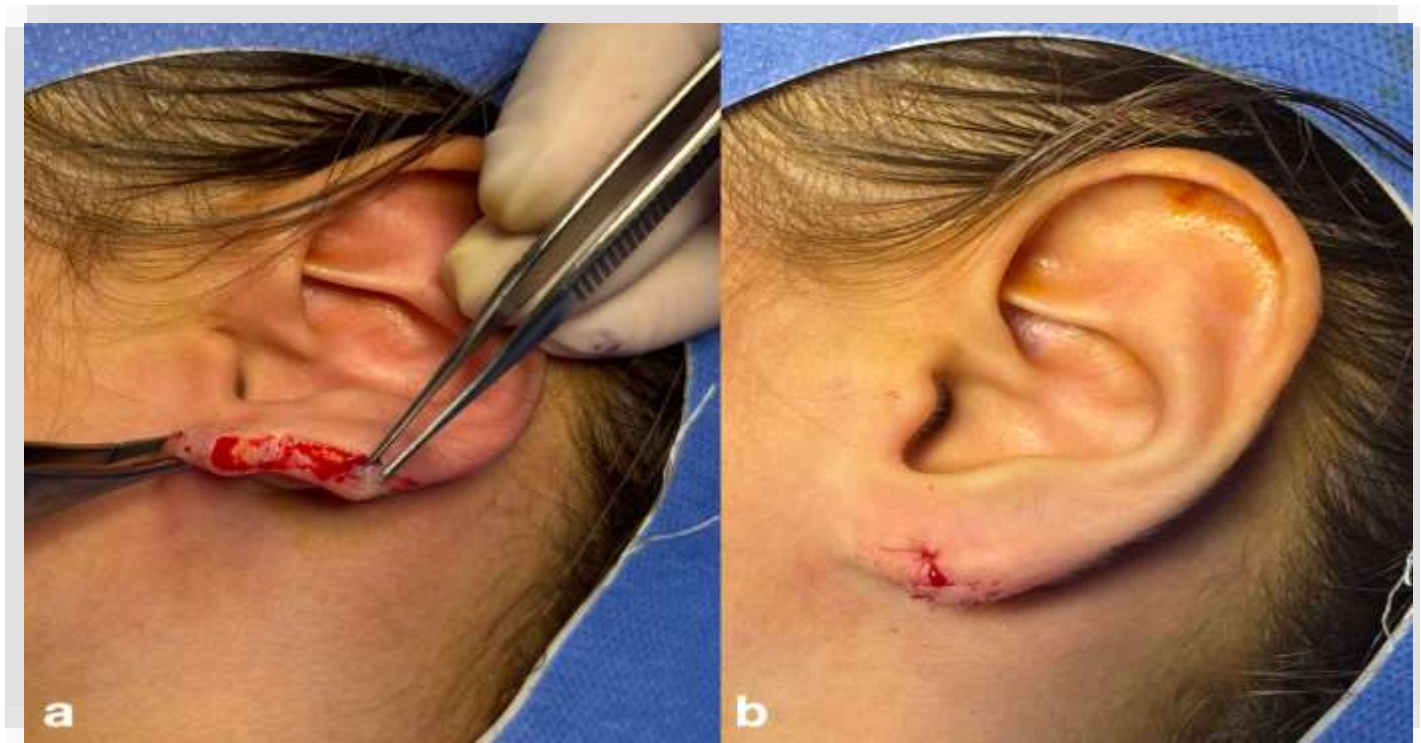


Figure 2. (a) Creation of the raw surface on the medial component and elevation of a V-shaped flap on the lateral component, which is held with a surgical forceps. A precise midline incision is then made on the medial lobe to create a narrow pocket designed to receive the lateral V-flap. (b) Immediate postoperative result after flap adaptation of the flap to the pocket and primary layered closure.

Discussion

Surgical repair of traumatic earlobe clefts demands a balance between simplicity, aesthetic precision, and structural preservation. Although numerous techniques exist, many focus on minimizing visible scarring or notching, often through variations of straight-line closure, Z-plasty, or complex flap designs [1–3]. However, these approaches may fall short in cases with lobular tissue asymmetry or volume loss—particularly in pediatric patients where anatomical structures are smaller, thinner, and more vulnerable to distortion.

The technique described here addresses this gap by utilizing a V-shaped flap harvested from the lateral lobe and inset into a midline pocket in the medial segment. This configuration creates a tension-free repair with secure tissue interlock, distributing closure forces more favorably and restoring lobular contour without dog-ears or notching. The pocketed design also ensures flap stability and minimizes dead space, potentially reducing recurrence and improving scar quality. Unlike conventional rotation or advancement flaps, this method avoids broad undermining and respects the vascular integrity of both components. It is easily reproducible, requires no special instruments, and is particularly suited for pediatric patients with traumatic clefts and small lobular anatomy. We believe this technique represents a simple yet effective refinement in cleft reconstruction.

Ethical Approval: Ethical approval was not required for this report. The study was conducted in accordance with the ethical standards of the institution and the principles of the Declaration of Helsinki.

Informed Consent: Written and oral informed consent was obtained from the patient's legal guardians for this report and publication of images.

Conflict of Interest: The authors have no conflict of interest to declare.

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Generative AI: No artificial intelligence-based tools or generative AI technologies were used in this study.

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