

Lateral Advancement Flap: A Treatment Option for Large Facial Defects

Galib Masudi¹, Lubna Abdulwahab¹, Ghazi Mohamad Ramadan²

¹Department of Dentistry, Alamal College for Specialized Medical Sciences, Karbala, Iraq

²Syrian Fertility Center, Tartus, Syria and Department of Anesthesia Techniques and Intensive Care, Al Taff University College, Karbala, Iraq

Abstract

Lateral advancement flap is a rarely discussed surgical technique that is commonly used for large facial defect reconstruction. The quality of the wound is improved because they leave local perfusion intact and that it is integrating adjacent tissue into the defect area, enhancing the closure healing. The lateral advancement flap is a dependable technique in reconstructive surgery that can restore function and aesthetic appearance while preserving tissue perfusion. Compared with other facial reconstruction approaches, each method has its unique strengths and weaknesses.

Open Access

Citation: Masudi G et al. (2026) Lateral Advancement Flap: A Treatment Option for Large Facial Defects. Dentistry 3000. 1:a001 doi:10.5195/d3000.2026.1430
Received: June 7, 2026
Accepted: July 8, 2026
Published: July 10, 2026
Copyright: ©2026 Masudi G et al.. This is an open access article licensed under a Creative Commons Attribution Work 4.0 United States License
Email: galibmas@gmail.com

Introduction

Leaving local perfusion intact improves wound quality and integrates neighboring tissue into the defect area, leading to better closure healing [1]. Factors such as defect size and location, patient health, and surgeon expertise all play into the selection of a reconstruction method. The lateral advancement flap is very useful in moderate defects when local tissue is conveniently available, and alternative approaches offer more options in larger or multi-component reconstructions [2]. Each has its own unique advantages and disadvantages, making careful choice essential in surgical planning. For the best outcomes, a careful evaluation for facial reconstruction is critical. Based on the lateral arm flap, the lateral advancement flap has proven itself to be very successful in reconstructing large facial defects [3], demonstrating the technique's ability to allow local tissue preservation while achieving favorable cosmetic outcomes. As the allogenic bone blocks used for bone augmentation can be

used as effective grafting material for bone augmentation in maxillary region [4]. Over the long term, these people are worth following up to know if they are expected to be satisfied and functional.

Lateral advancement flaps are used to reconstruct defects caused by trauma, tumors or congenital deformities. They are used to domains where defect is more than could be handled with simple closure capabilities [5].

Depending on the size and location of the defect, the flap is designed, encompassing skin and subcutaneous tissue to allow adequate thickness and vascularity.

Lateral advancement flaps preserve vascularity of the flap and thus decreases risk of necrosis. Creates cosmetically pleasing results with localized tissue congruent with local skin. Relatively simple procedure with low risk of complications [6].

The flap design is affected by the size and position of the defect. Great care is needed to ensure that the flap can move without

tension, which could jeopardize blood supply or healing.

Color, temperature, and capillary refill are used to monitor flap viability. Follow up for suture removal and the wound cleanliness.

Example

The following case illustrates a lateral flap advancement. A 48-year-old female transferred from the emergency department after hurt in a terrorist attack explosion lost a eye by a foreign body rupture. The patient was otherwise stable and had no evidence of chronic systemic disease and remained in the ICU for 8 days waiting for a second operation.

The lesion was a complex full-thickness facial defect of the cheek and nasal area measuring 6 cm x 7 cm (Figures 1, 2, and 3).

At follow-up flap demonstrated good healing without sign of necrosis. The aesthetic results were satisfactory, showing minimal

scarring at the sites and a natural look in overall appearance.



Figure 1. Preoperative x-ray.



Figure 2. The residual defect.



Figure 3. Post-operative result.

References

1. Klein, A. L., & Hsu, T. Y. (2016): A Comprehensive Review of Facial Reconstruction with Local Flaps: Covering Indications, Techniques, and Postoperative Considerations." *Facial Plast Surg Clin North Am.* 24:1-13. <https://doi.org/10.1001/jamafacial.2014.1440>
2. Harrison, W. S., & Heffelfinger, A. (2018): Technological Rescue of Facial Defects: State of the Art: *JOMS.* 76:1578-1592.

3. Baker, S. R. (2014): Facial Defect—Aesthetic Reconstruction: *PRS Global Open.* 134:1-10.

- 1.
4. Ebrahim AS, Gaber RM, Mekhemer ST, El-Abdeen MD. Radiologic and Histological Evaluation of Allogenic Bone graft Blocks in Bounded Anterior Maxillary Alveolar Ridge Defects. *Ain Shams Dental Journal.* 2024 Sep 1;35:182-8.

5. Huang, J., & Chang, M. (2019): Modern Flap Techniques & Concepts in Facial Reconstruction: *Arch Plast Surg.* 46:591-600.

6. Hoffman, H. T., & McCulloch, T. M. (2011): Reconstructive Surgery the Face: Current Opinion in Otolaryngology & Head and Neck Surgery, 19:284-292.