

# Lessons Learned from Delayed Versus Immediate Microsurgical Reconstruction of Complex Maxillectomy and Midfacial Defects

## Experience in a Tertiary Center in Mexico

Eric Santamaria, MD<sup>a,\*</sup>, Erika de la Concha, MD<sup>b</sup>

### KEYWORDS

- Maxillectomy • Free flaps • Radiotherapy • Head and neck reconstruction
- Immediate reconstruction • Delayed reconstruction

### KEY POINTS

- Free flaps have become the first option for reconstruction of maxillectomy and midfacial defects, with successful functional and aesthetic outcomes, particularly when performed immediately.
- Delayed reconstruction of maxillectomy defects is associated with significantly higher rates of complication probably secondary to radiotherapy and recurrent infections from long-term oral or nasal cavity communication.
- Therefore, multiple free and local flaps are required in this group of patients to address wound dehiscence with hardware exposure, orocutaneous fistula, and upper lip or partial nasal retraction and to provide stable skeletal and soft tissue reconstruction.

### INTRODUCTION

Reconstruction of maxillectomy and midfacial defects are among the most challenging procedures in plastic surgery. Defects in this anatomic area frequently have suboptimal aesthetic and functional outcomes, affecting speech, oral competence, eye globe position and function, among

others.<sup>1–3</sup> Microsurgical free tissue transfer is currently the treatment of choice for the reconstruction of complex midfacial defects.<sup>1</sup> The overall success rate of microsurgical transfer of tissue in the head and neck is reported to be more than 90%.<sup>4</sup> Various factors and patients' characteristics have been identified as having an influence in the outcome of microsurgical reconstruction.<sup>5,6</sup>

---

This article has not been presented previously at any meeting or conference.

Disclosures: The authors have nothing to disclose.

Patient Consent: Patients provided written consent for the use of their images.

<sup>a</sup> Department of Plastic and Reconstructive Surgery, Hospital General Dr. Manuel Gea Gonzalez, National Cancer Institute, Universidad Nacional Autonoma de Mexico, Av. Calzada de Tlalpan 4800, Tlalpan, Sección XVI, 14080 Ciudad de México, Mexico; <sup>b</sup> Department of Plastic and Reconstructive Surgery, Hospital General Dr. Manuel Gea Gonzalez, Av. Calzada de Tlalpan 4800, Tlalpan, Sección XVI, 14080 Ciudad de México, Mexico

\* Corresponding author.

*E-mail address:* ericsanta@prodigy.net.mx

Clin Plastic Surg 43 (2016) 719–727

<http://dx.doi.org/10.1016/j.cps.2016.05.011>

0094-1298/16/\$ – see front matter © 2016 Elsevier Inc. All rights reserved.

Apart from patients' medical conditions, preoperative treatment with radiotherapy is one of the main factors that influences postoperative outcomes.<sup>7,8</sup> The introduction of radiotherapy has resulted in increased survival of patients diagnosed with head and neck malignancies; therefore, current treatment involves a combination of surgical resection with either immediate or delayed reconstruction and radiotherapy.<sup>9,10</sup>

In the year 2000, Cordeiro and Santamaria<sup>2</sup> published a classification system and algorithm for reconstruction of maxillectomy and midfacial defects. Flap selection was determined by the type of bony resection and missing soft tissue volume and skin surface and is described as follows: *type I*, limited maxillectomy; *type II*, subtotal maxillectomy; *type IIIa*, total maxillectomy with preservation of orbital contents; *type IIIb*, total maxillectomy with orbital exenteration; and *type IV*, orbitomaxillectomy. This classification system helps to determine the best approach for microsurgical free flap reconstruction based on the type of defect.

The objective of this article is to describe the common pitfalls encountered in delayed and immediate microsurgical reconstruction of complex maxillectomy and midfacial defects. The authors present the most commonly used free flaps, complications, and functional and aesthetic outcomes in complex midfacial reconstruction in a tertiary center in Mexico.

## METHODS

Over a 16-year period (1999–2015), 37 patients were reconstructed for complex midfacial defects using 52 free flaps that were performed by a single surgeon (E.S.) at a tertiary center, Hospital General Dr Manuel Gea Gonzalez, in Mexico City. The authors conducted a retrospective chart review to record demographic data, reconstructive procedures, and complications and compared the functional and aesthetic outcomes between delayed and immediate reconstruction groups. The measurements were exported to the Statistical Package for Social Sciences (IBM SPSS Statistics 23.0) for statistical analyses. The differences in the immediate and delayed reconstruction groups were compared using a 2-sample *t* test, with a 95% confidence level. *P* values less than .05 were considered significant. The institutional review board of Hospital General Dr Manuel Gea Gonzalez approved this study.

## RESULTS

A total of 37 patients were included in this study (immediate reconstruction group: 13, delayed

reconstruction group: 24). The diagnoses of each group are presented in **Table 1**. The average patient age was 52 years (range 35–68 years) and 44 years (range 23–71 years) in the immediate and delayed reconstruction group, respectively. Patient characteristics and demographics are presented in **Table 2**. No statistically significant differences were observed between both groups regarding sex, smoking, diabetes, hypertension, and other comorbidities. The delayed reconstruction group had statistically significant ( $P = .003$ ) more preoperative radiotherapy (66.7%) than the immediate reconstruction group (15%).

Types of free flaps used for reconstruction of midfacial defects based on the authors' classification system described in 2000<sup>9</sup> are listed in **Table 3**. The most commonly used was the fibula osteocutaneous free flap ( $n = 24$ ), followed by the rectus abdominis myocutaneous free flap ( $n = 15$ ). In contrast to the authors' previous algorithm treatment, the radial forearm osteocutaneous and fasciocutaneous free flaps were rarely used ( $n = 6$ ). In addition to using multiple free flaps, some patients required one or more local flaps for reconstruction of complex structures, such as eyelids, lips, and nose. The delayed group required more local flaps for reconstruction of these complex structures ( $n = 12$ ) compared with the immediate group ( $n = 4$ ). These flaps included 9 forehead flaps for eyelids ( $n = 3$ ) and partial nasal ( $n = 6$ ) reconstruction, 3 lower lip to upper lip switch-flap procedures, 2 naso-labial flaps for partial nasal reconstruction, and 2 facial artery myomucosal flaps for upper lip inner lining.

A total of 52 free flaps were performed in 37 patients (**Table 4**). In the immediate reconstruction group ( $n = 13$ ) only 3 patients required 2 free flaps to complete their reconstruction. Whereas, in the delayed group 8 patients required 2 free flaps and 2 patients required 3 free flaps. The most common combination of free flaps was fibula osteocutaneous free flap and a soft tissue free flap, to provide volume replacement and skin

**Table 1**  
Diagnosis of patients

Diagnosis	Immediate Reconstruction $n = 13$ (%)	Delayed Reconstruction $n = 24$ (%)
Malignant tumor	8 (61.5)	16 (66.7)
Benign tumor	4 (30.8)	6 (25.0)
Trauma	1 (7.7)	2 (3.0)

Download English Version:

<https://daneshyari.com/en/article/4107800>

Download Persian Version:

<https://daneshyari.com/article/4107800>

[Daneshyari.com](https://daneshyari.com)