



**American Academy of Maxillofacial Prosthetics
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Program Speaker – Gabriela A. Zimmer, DDS, MS

Title

Osteotomy Guide for the Osteocutaneous Fibula Flap with Endosseous Implants in Maxillofacial Reconstruction

Abstract

Maxillofacial reconstruction with vascularized bone restores facial contour and provides structural support and a foundation for dental rehabilitation. Unfortunately, dental implants in these reconstructions are yet to be standard of care, even though implant survival has been reported by Panchal et al. in 2020 to be 92.2% (follow-up of 36 months), with 97% survival in immediate placement (follow-up of 14 months), and 89.9% survival rate in delayed placement (follow-up of 40 months).

Differentiation of implant survival and biomechanical implant-prosthetic success, especially in patients receiving adjuvant radiotherapy, is crucial when planning implant positions and angulations. Prosthodontic input to the design of the osteotomy guide facilitates the placement of endosseous implants during the surgical procedure, to best guide the head and neck surgery team.

The current trend in different institutions in the United States is directing towards prosthetically driven maxillofacial reconstruction after a maxillofacial resection. However, the challenge comes in the setting of a malignancy, where treatment in a timely manner is crucial. The use of familiar dental implant planning softwares, such as Implant Studio from 3Shape[®], in combination with open-source softwares like MeshMixer[®], can aid in a simplified workflow for the use of osteocutaneous fibula flap with endosseous implants in maxillofacial reconstruction.

This new proposed workflow is intended to improve the interface of these patients' treatment, by having an efficient in-house design and fabrication of the implant osteotomy guide for the fibula flap maxillofacial reconstruction, by decreasing the time from clinical consultation to surgery date, and potentially shortening the surgical time. This methodology also facilitates endosseous implant position to optimize functional rehabilitation, positively influencing not only the survival of the implants, but also the biomechanical success of the implant supported fixed resection prostheses by reducing postoperative complications.

Biography

Dr. Zimmer received her first dental degree in Universidad de Concepcion, Chile, and later from the UCLA School of Dentistry. She then obtained her Advanced Prosthodontics certificate and Master of Science at The Ohio State University. To finalize her training, she recently completed the Mayo Clinic Maxillofacial Prosthetics and Dental Oncology fellowship.

Her research interest is in dental materials, and maxillofacial prosthetic rehabilitation in the setting of trauma, congenital malformations, and head and neck cancer.

Gabriela's childhood home is in Concepcion, Chile, and now currently lives in Hilliard, OH with her husband and family. She enjoys biking, watching movies, singing, playing guitar, and is a Columbus Blue Jackets fan