



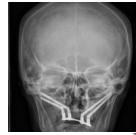
# Modified Screw-Retained Obturator Impression Technique following Recurrence after Maxillary ZIP flap Reconstruction



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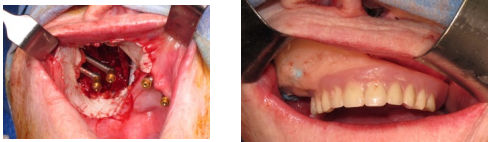
We present the workflow for patients with recurrence needing further resection, following their initial ZIP flap. We describe the clinical steps involved in changing the patient from their initial implant supported fixed bridge prosthesis into an implant supported removable obturator, as well as specific features of the modified screw-retained impression technique.



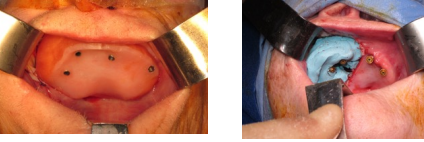
ZIP flap  
pT2 N2b SCC right hard palate.  
Right maxillectomy (Brown 2B),  
right neck dissection and ZIP flap  
into radial forearm free flap. PORT



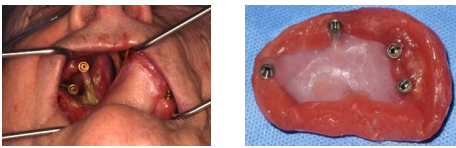
Recurrence  
Elderly patient and PORT so not  
suitable for further free flap



Resection of recurrent SCC  
Screw retained surgical obturator  
constructed prior to surgery  
Modified at fit with putty or cold cure  
acrylic



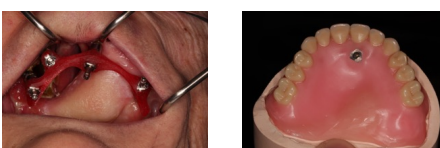
Review ??? weeks  
Remove surgical obturator  
Chairside acrylic relines as required



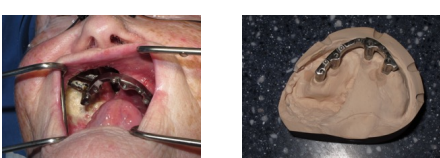
Screw retained impression  
Light cure acrylic baseplate  
Modified chairside tray material  
Wash impression of periphery



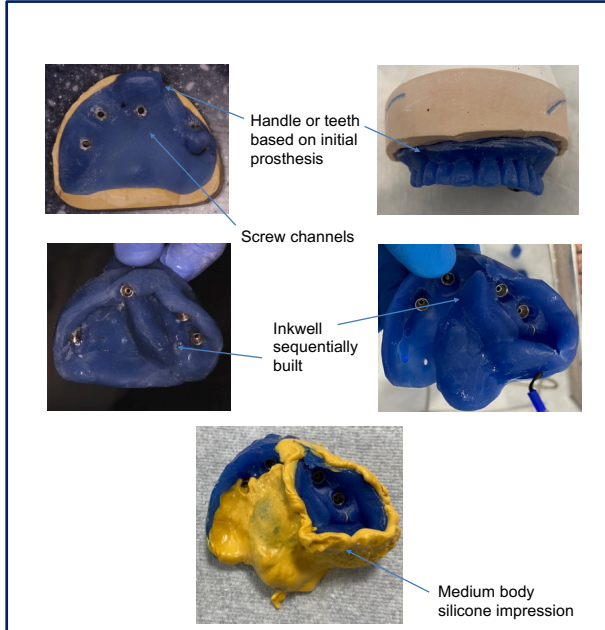
Verification and registration  
or tooth trial



Bar trial  
Milled bar with mini rethins for  
secondary retention



Fit prosthesis  
Implant retained bar obturator with  
inkwell



**Advantages**

- Impression technique allows details of defect to be captured without risk of impression materials becoming stuck in undercuts
- Implant retained so no need to engage defect but simply create a seal, removes the discomfort that patients can feel when needing to use the bung for retention
- Implant positioning of the zygomatics provides much needed 'in-defect' support
- Prosthesis with excellent retention and stability
- Removable prosthesis provides access for hygiene and further surveillance

**Summary**

The ZIP flap technique<sup>1</sup> has been well established for many years for the management of low-level maxillary malignancy. The technique enables patients to be fully rehabilitated in within 29 days on average<sup>2</sup>, restoring patients functional and aesthetic needs in a timely fashion. The average age of our patient cohort at time of surgery is 73 years, resulting in surviving<sup>3</sup> patients experiencing recurrence being at a very advanced age, so unlikely to be fit for a further free flap. Conversion of patients from their initial prosthesis to an implant supported removable obturator enables a second accelerated rehabilitation with the advantages that the existing zygomatic implants can provide.

1. Butterworth CJ, Rogers SN. The zygomatic implant perforated (ZIP) flap: a new technique for combined surgical reconstruction and rapid fixed dental rehabilitation following low-level maxillectomy. *Int J Implant Dent.* 2017 Dec;3(1):37.  
 2. Butterworth, CJ., Lowe, D., & Rogers, S. N. The Zygomatic Implant Perforated (ZIP) flap reconstructive technique for the management of low-level maxillary malignancy – clinical & patient related outcomes on 35 consecutively treated patients. *Head & Neck.* 2021 doi:10.1002/hed.26833  
 3. Rogers SN, Adatia A, Hackett S, Boscarino A, Patel A, Lowe D, Butterworth CJ. Changing trends in the microvascular reconstruction and oral rehabilitation following maxillary cancer. *European Archives of Oto-Rhino-Laryngology* 2022 (In press)