

Zygomatic Implants for Nasal Prosthesis: A Case Report

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Introduction

Implants have significantly improved stability of maxillofacial prosthetics particularly in total rhinectomy cases. However, challenges persist regarding the placement and effectiveness of these fixtures due to differences in bone availability and viability. While the application of dental implants for securing nasal prostheses is well-established, the use of zygomatic implants in irradiated patients are less frequently documented. Oral maxillofacial surgeons (OMFS) and maxillofacial prosthodontists (MP) may work together to assist in nasal prosthetic rehabilitation. Zygomatic implants have demonstrated success in the nasofacial area for nasal prosthetics.

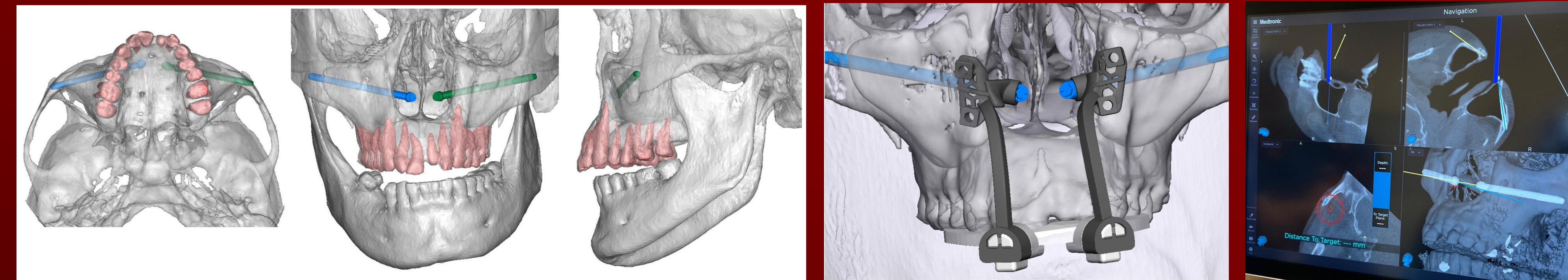
Case Report

A 52-year-old male with history of T2N0M0 Stage II nasal SCC treated with total rhinectomy and chemoradiation therapy, which concluded in 2017 without recurrence, presented to OMFS and MP teams for nasal reconstruction. Prior prosthetic trials were unsuccessful due to poor stability. In 2017, his premaxilla/nasal floor received 60-40Gy and bilateral zygomas received 20Gy. His radiation exposure limited his options for reconstruction. Zygomatic implant placement with CT-guided navigation (CTGN) for nasal prosthetic retention was elected.



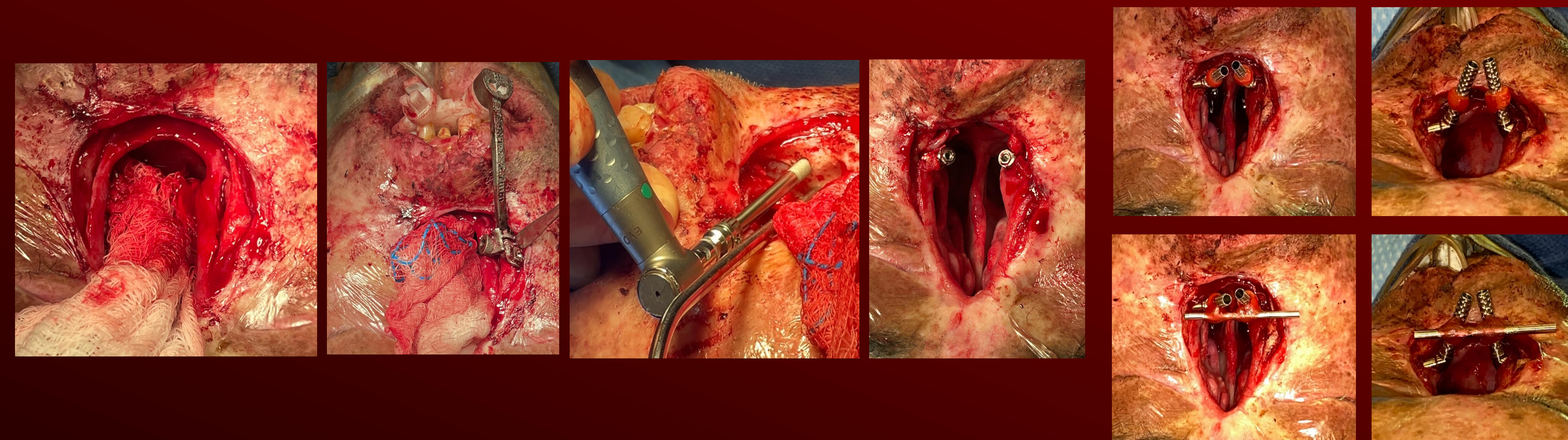
Preoperative Planning

Virtual surgical planning (VSP) with preoperative CBCT scan was employed to guide pilot holes; ensuring optimal prosthetic position and at least 7mm of inter-implant spacing. Files from the VSP were then utilized for CTGN. Once pilot holes were placed and guides removed, the surgical drill was calibrated to the CTGN system and implant sites were prepared in sequence with the elected implant system.



Surgical Procedure

A 4.0 x 45mm zygomatic implant torqued at 40 Ncm and a 4.0 x 40mm zygomatic implant torqued at 70 Ncm were placed on the right and left zygomas respectively. The MP then connected the 2 implants with the use of titanium cylinders and self-curing resin.



Results

Postoperative CBCT scan showed proper placement of implants. The implants were followed at 1- week, 1-month and 4- months after placement. Osseointegration of implants was confirmed. Patient is currently in the process of fabricating the nasal prosthesis by the MP.



Conclusion

Zygomatic implants present as a good treatment option for the retention of nasal prosthesis in patients exposed to maxillary radiation after total rhinectomy. Surgical placement of zygomatic implants with the aid of CTGN present as a useful and predictable tool in ensuring proper placement.