

Prosthetic rehabilitation of gunshot wound using digital implant planning



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

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Case description

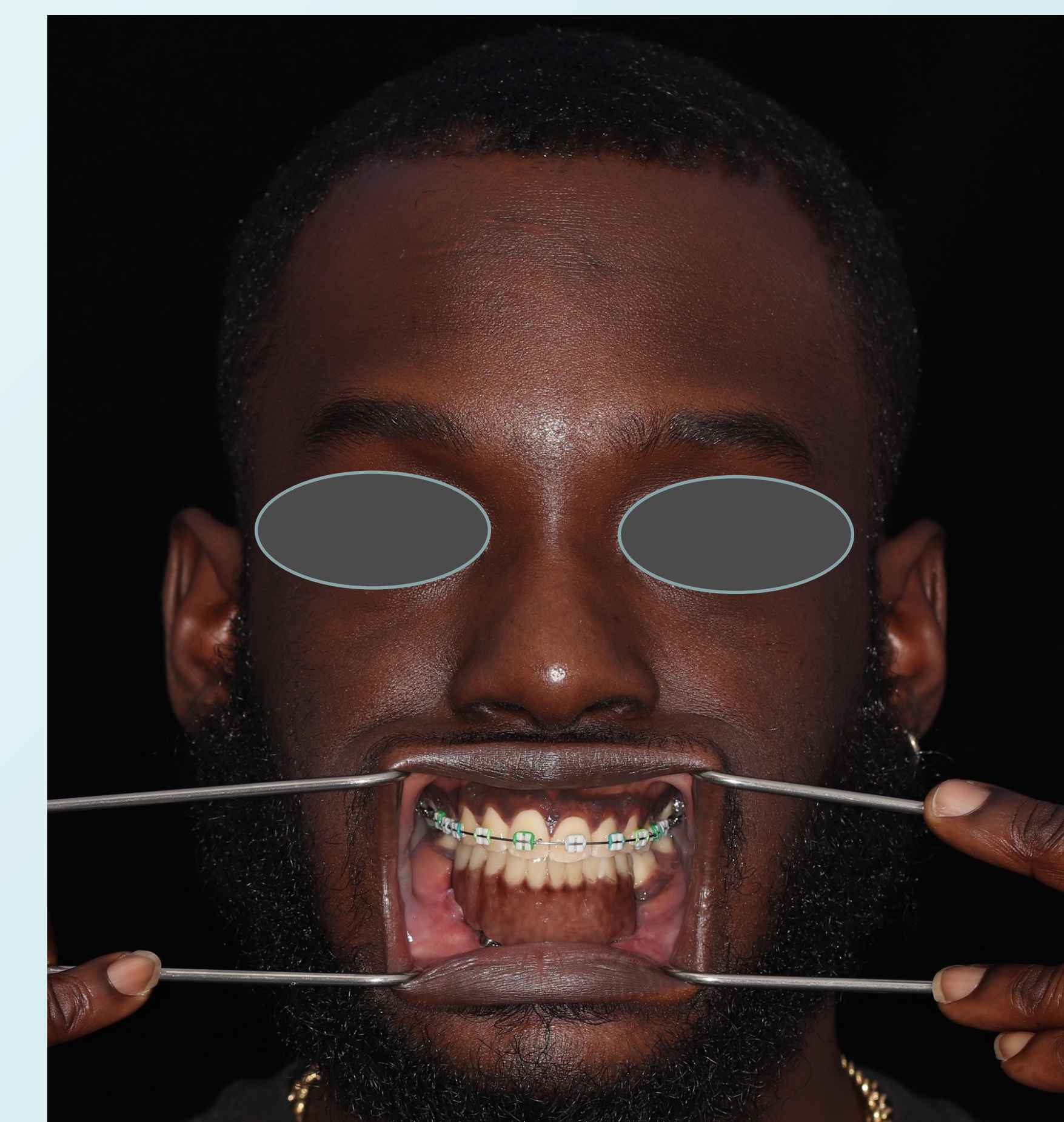
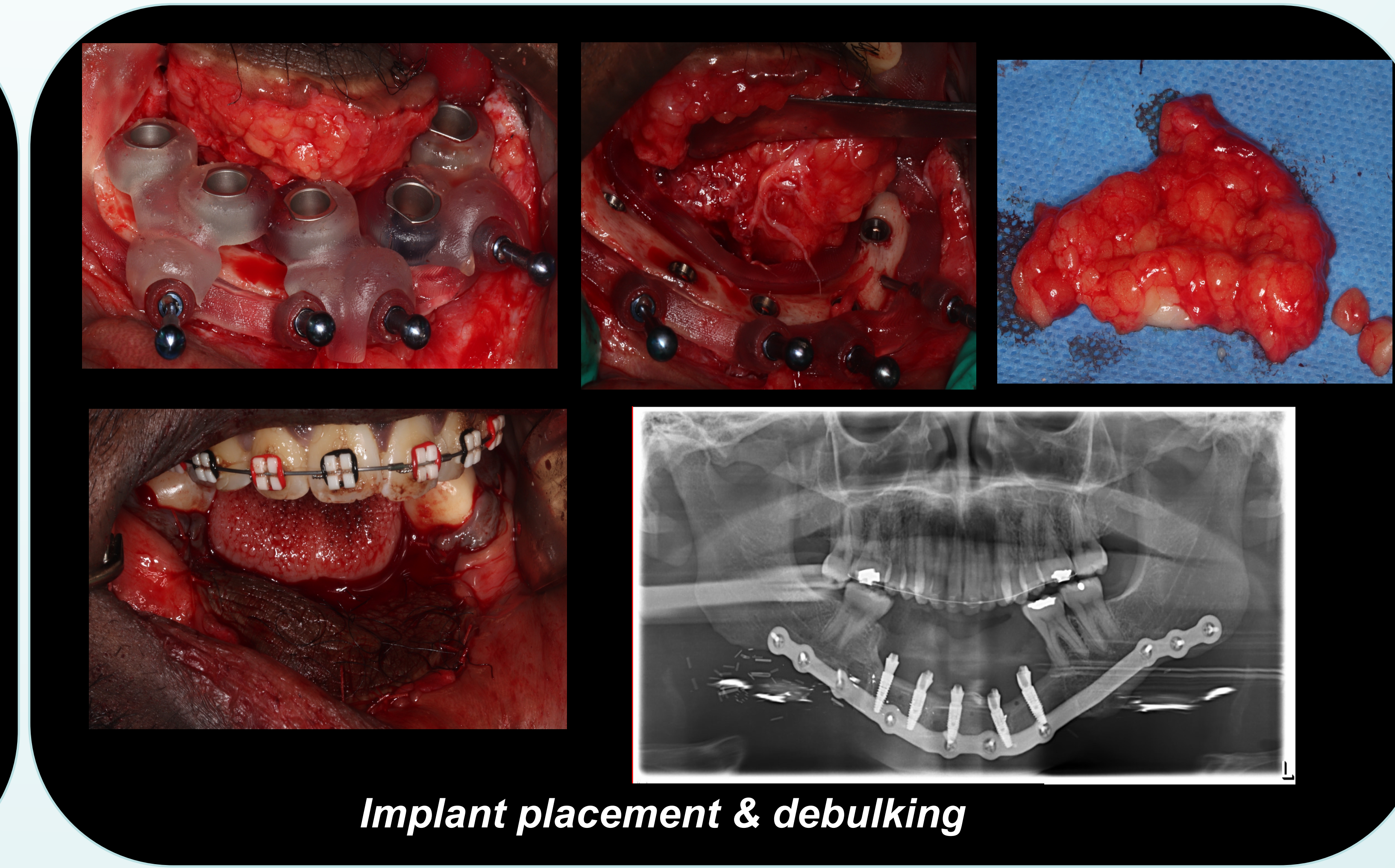
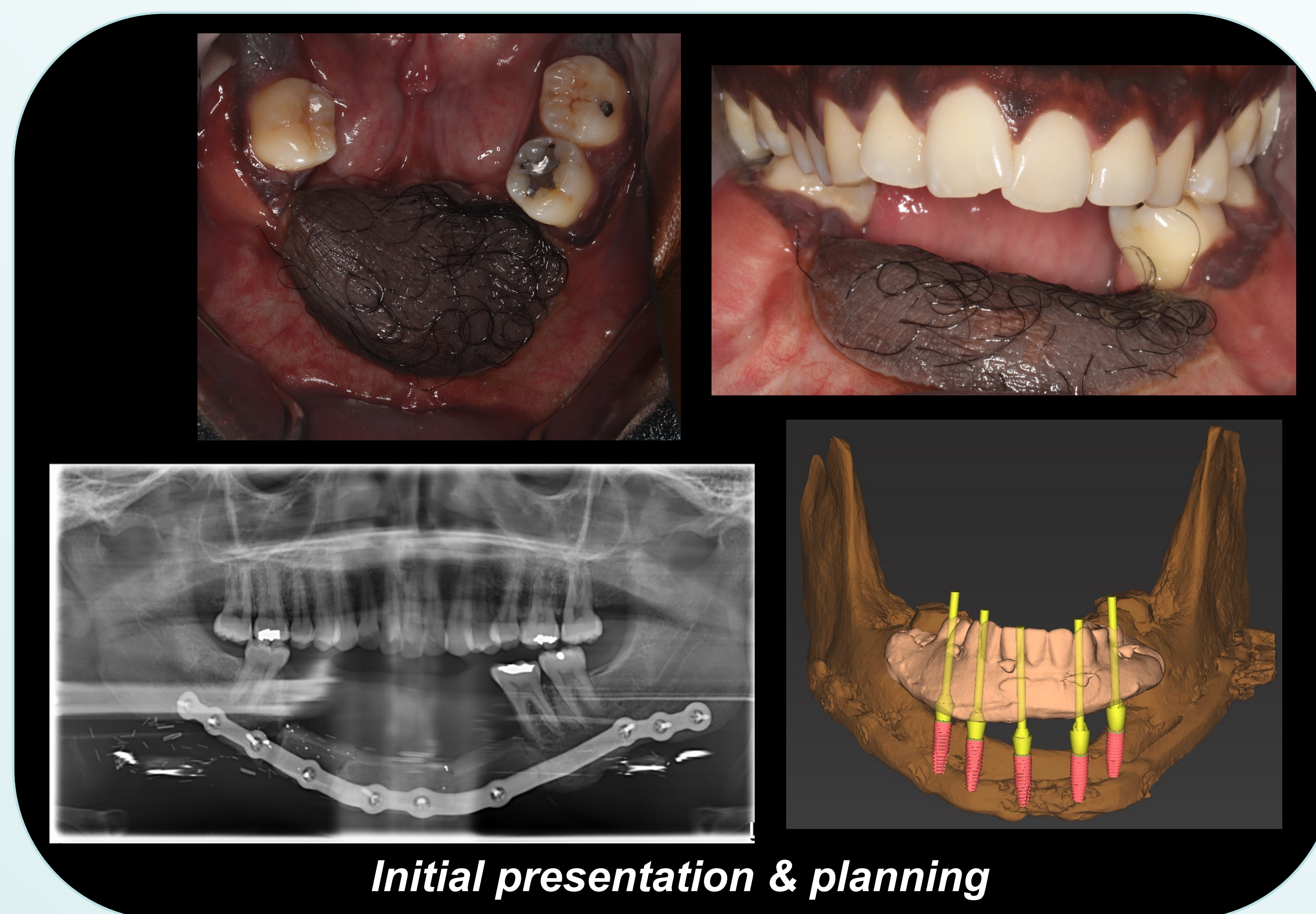
- A 24-year-old male with history of GSW underwent resection of anterior mandible, floor of mouth and buccal vestibule followed by reconstruction with fibular flap. He presented to us for replacement of missing lower teeth.
- After initial evaluation, we performed wax-try-in to verify teeth position. Record base was relined with coe-comfort and fiduciary markers were applied to obtain dual scan.
- coDiagnostiX® software was utilized to plan 5 dental implants that were placed in neo-mandible using a stackable guide followed by debulking of soft tissue.
- 3 months later the implants were uncovered and a digitally designed transitional mandibular resection prosthesis was screwed in place.
- Once the patient was satisfied with the transitional prosthesis an implant supported fixed prosthesis will be fabricated and delivered to the patient.

Introduction

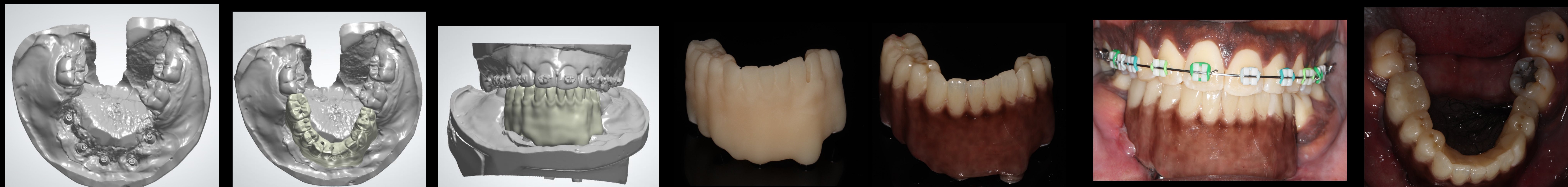
- Digital technology advancement has revolutionized the planning and execution of prosthetic rehabilitation for patients with dentofacial deformities. This has allowed prosthodontist and surgeons work more coherently in planning and executing reconstructive cases to achieve a more ideal result.
- The purpose of this poster presentation is to illustrate digital workflow utilization in reconstruction of a patient with gunshot wound (GSW).

Discussion

- Utilization of digital resources can offer alternate options of prosthetic rehabilitation in challenging situation.
- Our case highlights the feasibility of making conversion prosthesis using CBCT data and digital workflow for a neo-mandible.
- Additive manufacturing provides the ability to manufacture prosthesis larger than 30 mm in height when large pucks are not available.



Implant retained Interim Prosthesis



Digital workflow & intraoral pictures

References

- Awadalkreem F, Khalifa N, Ahmad AG, Suliman AM, Osman M. Prosthetic rehabilitation of maxillary and mandibular gunshot defects with fixed basal implant-supported prostheses: A 5-year follow-up case report. Int J Surg Case Rep. 2020;68:27-31. doi: 10.1016/j.ijscr.2020.02.025. Epub 2020 Feb 19. PMID: 32113167; PMCID: PMC7044639.
- Khatib et al <https://doi.org/10.1016/j.joms.2017.07.070>