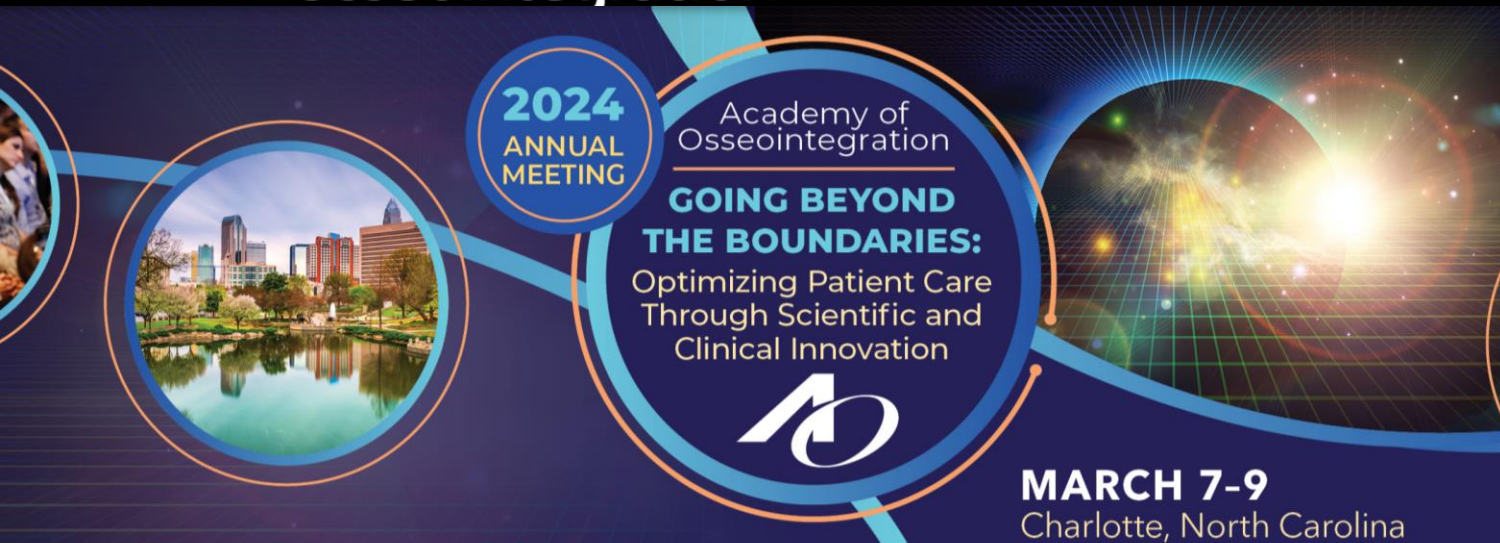




Academy of
Osseointegration



Severe atrophy of the posterior mandible presents a significant challenge in implant dentistry, necessitating innovative treatment approaches. This ten-case series explores various strategies employed for addressing severe atrophic posterior mandibles in patients aged 66 to 82 years, with seven female and three male individuals included. The primary objective was to assess the feasibility and outcomes of different implant placement techniques in this challenging clinical scenario.

The study encompassed a diverse range of cases, including three where implants were placed medial to the inferior alveolar nerve, five where implants were placed lateral to the inferior alveolar nerve, and two where implants were positioned using customized alveolar ridge splitting techniques. Furthermore, four cases involved bilateral atrophic posterior mandibles, while six cases were unilateral.

In all cases, the final restorations were screw-retained fixed prostheses, providing patients with stable and functional dentition. The choice of implant placement technique was determined based on careful preoperative assessment, including

the degree of atrophy and proximity to the inferior alveolar nerve. Implant placement medial to the nerve required advanced surgical skills to minimize potential nerve-related complications, while lateral placement allowed for more straightforward surgical access.

The two cases utilizing customized alveolar ridge splitting techniques demonstrated a unique approach to address extreme atrophy, emphasizing the importance of tailored solutions in challenging clinical scenarios.

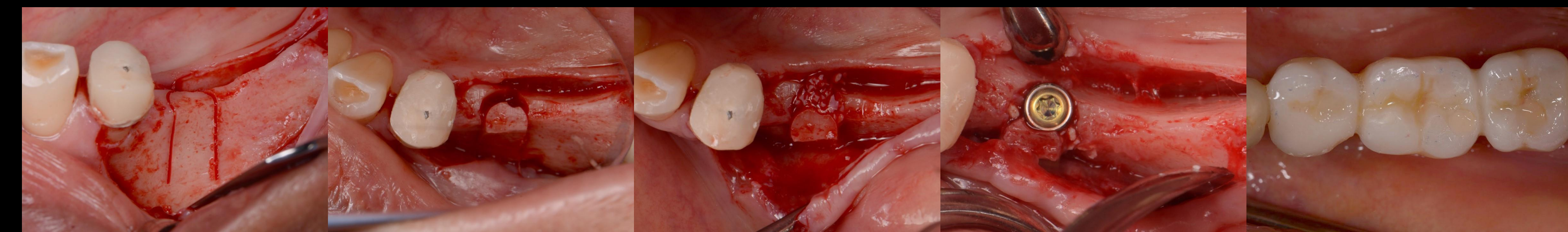
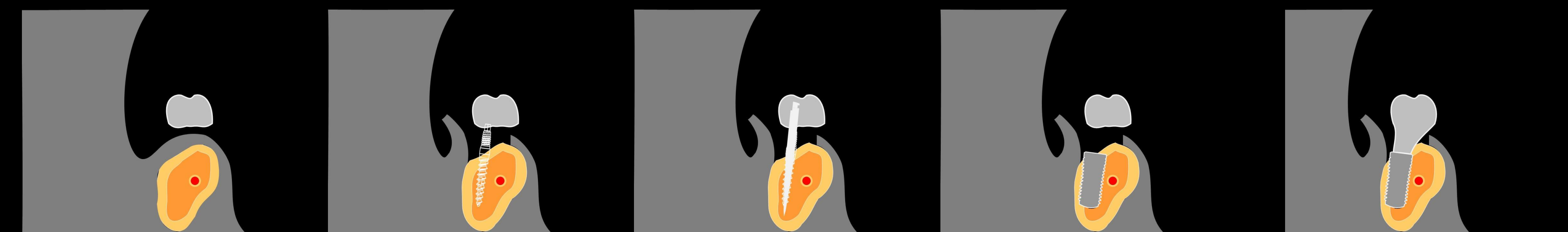
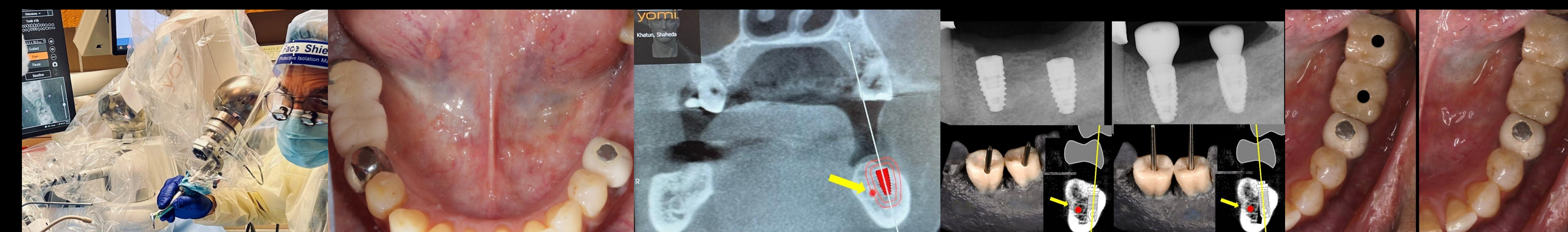
This case series sheds light on the diversity of treatment options available for managing severely atrophic posterior mandibles, highlighting the importance of individualized treatment planning and execution. While each case had unique considerations, the successful outcomes achieved with screw-retained fixed restorations underscore the effectiveness of these approaches in restoring both function and aesthetics. Further research and larger-scale studies are needed to refine treatment protocols and enhance predictability in achieving favorable results for patients with severe atrophic posterior mandibles.

Treatment Options for Severely Atrophic Posterior Mandible: A Ten-Case Series

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- Lateralization/Transposition of IAN
- Use of short implants, guided bone regeneration (GBR) with implants, DO, vertical ridge augmentation, or the placement of tilted implants
- ILIAN (Implant Lateral to IAN) – NDI + RDI
- Revisit the numbness - etiology, safety distance, nature of implant surgery
- The fusion of ILIAN with the CARS
- The synergy between ILIAN and Robotic-Assisted Surgery
- The comprehensive approach involving ILIAN, CARS, and Robotic-Assisted Surgery
- IMIAN (Implant Medial to IAN)
- The application of Free Gingival Graft (FGG) after the restoration process – ovoid punch technique



1. Lorean A, Kablan F, Mazor Z, et al. Inferior alveolar nerve transposition and reposition for dental implant placement in edentulous or partially edentulous mandibles: A Multicenter retrospective study. International Journal of Oral and Maxillofacial Surgery. 2013;42(5):656-659. doi:10.1016/j.ijom.2013.01.020
2. Losa PM, Cebrian JL, Guñales J, Burgueño M, Chamorro M. Mandibular fracture after inferior alveolar nerve lateralization. Journal of Craniofacial Surgery. 2015;26(7). doi:10.1097/scs.0000000000002188
3. Howe MS, Keys W, Richards D. Long-term (10-year) dental implant survival: A systematic review and sensitivity meta-analysis. J Dent. 2019 May; 84: 9-21.
4. Esposito M, Grusovin MG, Felice P, Karatzopoulos G, Worthington HV, Coulthard P. The efficacy of horizontal and vertical bone augmentation procedures for dental implants-a Cochrane systematic review. Eur J Oral Implantol. 2009 Sep 1; 2(3): 167-184.
5. Chin M, Toth BA. Distraction osteogenesis in maxillofacial surgery using internal devices: Report of five cases. J Oral Maxillofac Surg 1996; 54: 45-53.
6. Scipioni A, Bruschi GB, Calesini G. The edentulous ridge expansion technique: A five-year study. Int J Periodontics Restorative Dent 1994; 14: 451-459.
7. Misch CM, Misch CE. The repair of localized severe ridge defects for implant placement using mandibular bone grafts. Implant Dent. 1995 Winter; 4 (4): 261-267.
8. Cruz M, Cruz G, Cruz F, Morales-Vadillo R, Cruz-Pierce S. Lateral Approach to the maxillary sinus and mandibular canal in severely atrophied posterior alveolar bone. International Journal of Oral & Maxillofacial Implants. 2018 Mar 1; 33 (2): 412-418.
9. Daróz SR, Cardoso ES, Manso MC, Vidigal GM. Evaluation of bone width lateral to the mandibular canal as an alternative approach for implant installation. Implant Dent. 2013; 22: 97-101.
10. Froum SJ, Kadi RO, Wangrimongkol B, Hengjeerajaras P, Reis N, Yu YCP, Cho S-C. The custom alveolar ridge splitting (CARS) technique for predictable horizontal ridge augmentation in the atrophic anterior maxilla – A retrospective case series study. Accepted for publication in IJPRD 2020.