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The Neodent[®] Grand Morse[™] Helix[™] Implant Delivers Speed and Stability

Today the demand for dental implant surgery is robust. Patients and practitioners alike are seeking more comfortable, aesthetically pleasing restorative options that are relatively easy to maintain. Over the past decade, innovations in imaging, implant design, surgical techniques, and bone regeneration have helped us extend our reach to more people with better solutions. For practitioners, implants are a relatively long-term replacement that can preserve adjacent teeth and natural bone, or, in more severe cases, provide a stable support for prosthetics. For patients, the promise of a more natural functioning and aesthetically pleasing restoration has proven quite compelling.

By all accounts, patient demand is booming. The American Academy of Implant Dentistry estimates that 3 million people in the US have a dental implant and that number is expected to grow by half a million every year¹. In my practice, I perform close to 200 full arch implant surgery procedures annually and I often see fully edentulous patients who are seeking a more permanent alternative to dentures or bridges. Having a flexible, secure, and stable system to place implants precisely and efficiently is critical for a successful and long-term functional and aesthetic result.

CASE PRESENTATION

A 57-year-old, partially edentulous male came to me seeking a full mouth restoration. He was unhappy with his smile, found it increasingly difficult to eat due to missing teeth, and was experiencing pain from tooth decay. He had done a significant amount of research before coming to see me and was interested in permanent solution implants rather than dentures or bridges. Because of his history of rampant tooth decay, we decided not to try to save the existing teeth. The process, involving multiple root canals and implants, would have dramatically increased treatment time with no guarantee that the restored teeth would not be lost to further decay and the patient did not want a long (or painful) treatment plan. He was also healthy and had quite a lot of bone, which made him an excellent candidate for the implant procedure.

The procedure was straightforward. I began with the maxilla, removing the teeth, adjusting the bone, and degranulating any residual infected tissue. I then placed the implants, checked the direction of the abutments, packed bone allograft into the residual extraction sockets, trimmed the gingival tissue, placed sutures, and took impressions for transitional prosthetics. I repeated that process for the lower jaw. Using the Neodent Grand Morse Implant System, it took about four hours to complete, largely due to the stability of the implant and the ease with which I was able to secure and place the abutments.

Two significant improvements contributed to the ease and speed of the procedure. First, the new implant design combines a fully tapered body with a unique thread design for a more secure and stable connection. Internal indexation delivers a more precise method for positioning the abutment and protects against rotation, making it easier and faster to place. And with a smoother finish and rounded contours, it

was much easier to avoid adjacent bone while attaching the abutment.

Second, the driver Neodent delivers provides a more secure and stable way to pick up the implant. The driver connected very securely into all of the parts--when I attached something to it, it would stay attached. That stability reduced the "fiddling" I would often have to do during an implant process using other systems. In this case, the abutment essentially "pops and locks" into place. Because the parts and pieces went on faster and fit more securely over the course of the full procedure, I was able to save time and deliver a better patient experience.

We released the patient that same day with a full temporary prosthetic and he was able to assume his daily activities with little interruption or pain. Overall, I would give the Neodent Grand Morse Implant System an A+ for superior function and flexibility. The manufacturers took into account the issues plaguing existing lines, particularly thread design and insufficient torque. For practitioners who are placing a single implant, the Neodent Grand Morse Implant system's single restorative platform offers an innovative way to manage all bone types. For those performing a full series of implants, its stability and ease of use will save time (and frustration) over the course of the full procedure and meet patient expectations for "one-day" restorative solutions.

KEY TAKEAWAYS:

- A tapered design with internal indexation for a strong and stable connection
- Smartly engineered components improving stability and ease of use
- Dynamic thread design for improved torque
- Flexibility of abutment placement for a wider range of aesthetic choices
- Designed to work with all bone types^{2,3}

REFERENCES

1 - <https://www.aaid-implant.org/dental-implants/what-are-dental-implants/>
Date Accessed: August 8, 2018.

2 - Novellino et al Clinical Implant Dentistry and Related Research 2017

"Resonance frequency analysis of dental implants placed at the posterior maxilla varying the surface treatment only: A randomized clinical trial"

3 - Valente ML, de Castro DT, Shimano AC, Lepri CP, dos Reis AC Clin Oral Investig.pdf

"Analysis of the influence of implant shape on primary stability using the correlation of multiple methods"



1 Presurgical extraoral view of patient.



2 Presurgical intraoral view maximum intercuspation.



3 Presurgical intraoral view maxilla.



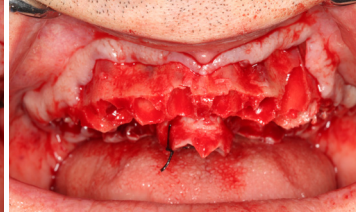
4 Presurgical intraoral view mandible.



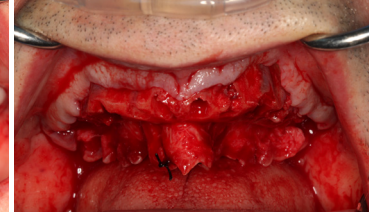
5 Presurgical panoramic radiograph.



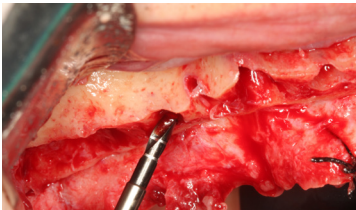
6 Full thickness flap reflection of maxillary arch.



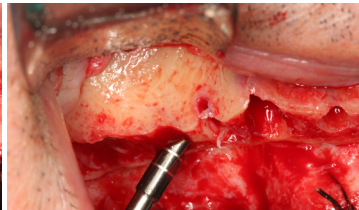
7 Full arch extraction of maxillary teeth.



8 Six millimeters of vertical bone reduction using high powered surgical drill.



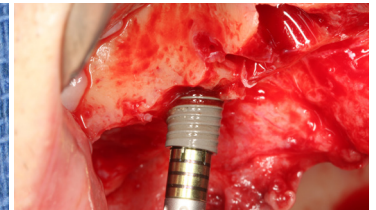
9 Pilot drill, angled to avoid maxillary sinus, being used for posterior osteotomy.



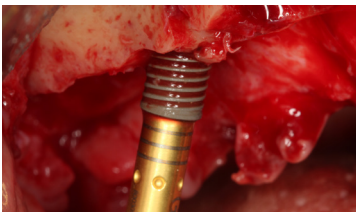
10 Final tapered drill, angled to avoid maxillary sinus, being used for posterior osteotomy.



11 Neodent® Grand Morse™ Helix™ dental implant prior to placement.



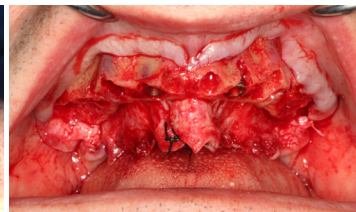
12 Neodent® Grand Morse™ Helix™ dental implant being placed with handpiece driver.



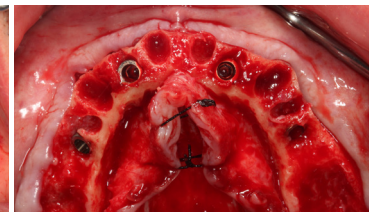
13 Neodent® Grand Morse™ Helix™ dental implant torqued to final placement with hand driver.



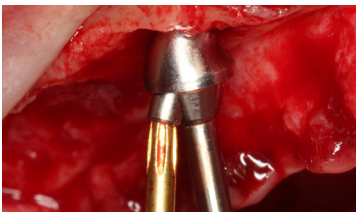
13a 60+ Ncm torque achieved with Neodent® Grand Morse™ Helix™ dental implant.



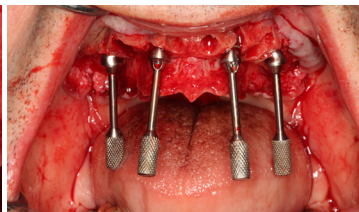
14 Maxillary arch following placement of Neodent® Grand Morse™ Helix™ dental implants.



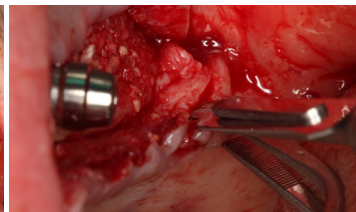
15 Occlusal view of Maxillary arch following placement of Neodent® Grand Morse™ Helix™ dental implants.



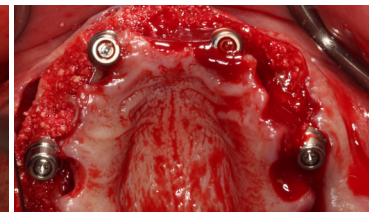
16 Placement of 17 degree Neodent® Grand Morse™ abutment.



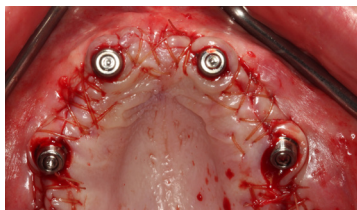
17 Maxillary arch following placement of Neodent® Grand Morse™ abutments.



18 Connective tissue being trimmed from palate with partial thickness incision.



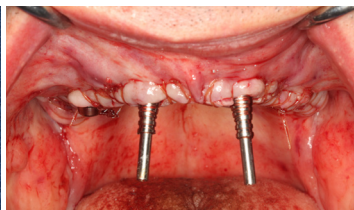
19 Bone allograft placement into extraction residual sockets.



20 Gingival flap closure with running combination sutures.



21 Maxillary transitional restoration indexing.



22 Transitional copings with pins attached to abutments for restoration pick-up.



23 Indexed transitional restoration placed intraorally for restoration pick-up.



24 Maxillary transitional restoration after intraoral pick-up.



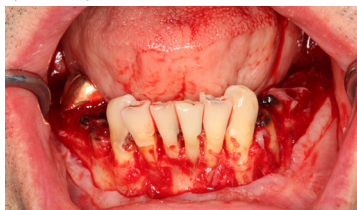
25 Closed tray impression copings placed for polyvinylsiloxane impression.



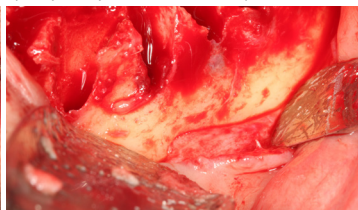
26 Maxillary impression with polyvinylsiloxane.



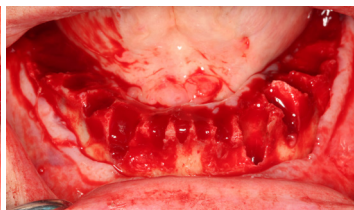
27 Completed maxillary impression with polyvinylsiloxane.



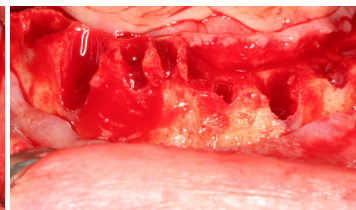
28 Mandibular arch full thickness flap reflection.



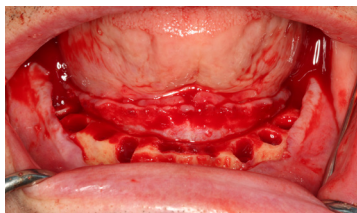
29 Identification of mental foramen.



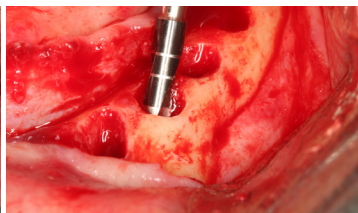
30 Full arch extraction of mandibular teeth.



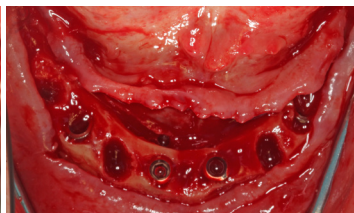
31 Bone reduction of mandibular arch at halfway point.



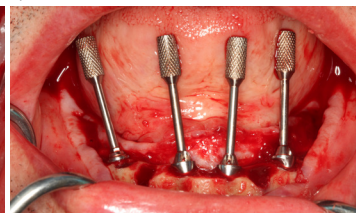
32 Nine millimeters of vertical bone reduction using high powered surgical drill.



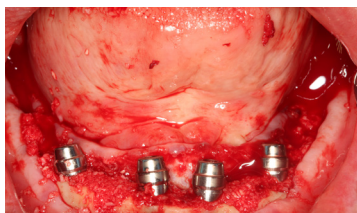
33 Final tapered drill, angled to avoid mental foramen, being used for posterior osteotomy.



34 Mandibular arch following placement of Neodent® Grand Morse™ Helix™ dental implants.



35 Mandibular arch following placement of Neodent® Grand Morse™ abutments.



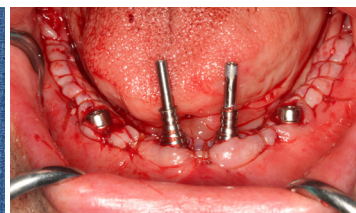
36 Bone allograft placement into extraction residual sockets.



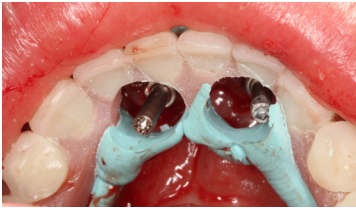
37 Gingival flap closure with running combination sutures.



38 Mandibular transitional restoration indexing.



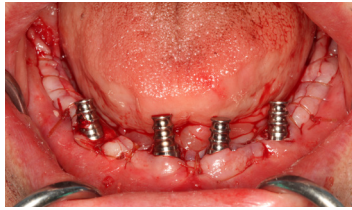
39 Transitional copings with pins attached to abutments for restoration pick-up.



40 Indexed transitional restoration placed intraorally for restoration pick-up.



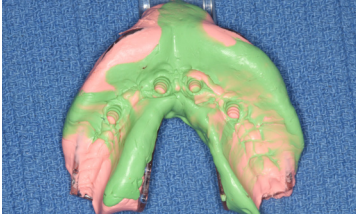
41 Mandibular transitional restoration after intraoral pick-up.



42 Closed tray impression copings placed for polyvinylsiloxane impression.



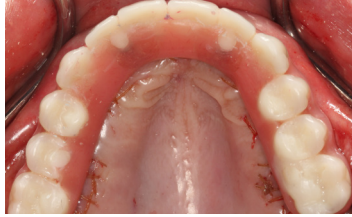
43 Mandibular impression with polyvinylsiloxane.



44 Completed mandibular polyvinylsiloxane impression.



45 Completed maxillary and mandibular transitional restorations.



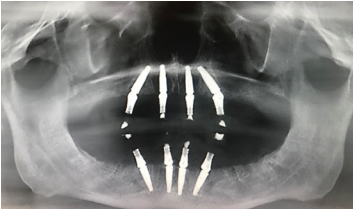
46 Postsurgical intraoral view of maxillary transitional restoration.



47 Postsurgical intraoral view of mandibular transitional restoration.



48 Postsurgical intraoral view of transitional restorations in maximum intercuspation.



49 Postsurgical panoramic radiograph.



50 Postsurgical extraoral view of patient.