Denture Troubleshooting: Solving Common Post Insertion Problems

by John Nosti, DMD, FAGD, FACE, FICOI

Despite meticulously following techniques to make denture outcomes more predictable, post-insertion complications still arise. These problems result in operator frustration, patient dissatisfaction, and many times, loss in the patient’s confidence with the practitioner. Discussed here are some frequent post-insertion complications and their remedies.

Understand occlusion

Fabrication of maxillary and mandibular dentures combined is indeed a full-mouth rehabilitation. It is common for patients to go more than five years prior to having a new set of dentures fabricated. Worn teeth, loss of vertical dimension and altered ridge form are some of the conditions that lead to occlusal disharmony in the existing dentures which are often times not corrected prior to fabrication of the new prosthetics. Occclusal disharmony in new prosthetics will lead to continued complaints of sore spots in one or various areas despite the presence of ulcerations or areas of erythema. Typically patients will present with the need for more adjustments than the dentist views as normal.

This usually results in frustration with both the practitioner and patient, where one usually abandons or dismisses the other. If the patient has no difficulty in placing or removing the dentures, and only starts to have discomfort in areas following function, occlusion should be the first thing to be evaluated. Many other complaints seen related to occlusion are: soreness in the anterior hard palate and anterior ridge areas, soreness from premolar to tuberosity or over the entire ridge unilaterally, delayed gagging, muscles of mastication becoming fatigued, sialorrhea (hypersalivation), and discomfort while chewing.

When centric relation does not coincide with maximum intercuspsation the denture will have interferences in the occlusion that can cause soreness or cislodgment and the denture will lack a bilateral balanced occlusion in excursions. Interferences many times cause the patient to posture their mandible forward in removable prosthetics causing the patient to function in protrusive. This will lead to the soreness in the anterior sites previously mentioned.
Correction of the occlusion can be done by performing a centric relation bite registration of the dentures, performing a lab remount, and correcting the occlusion through equilibration. Centric relation can be recorded by mounting a gothic arch tracer (Candulor CRS Set and VCR or Coble Balancer) (Figs. 1 & 2), performing a gothic arch recording and an open bite centric registration with a hard registration material such as Futar-D (Kettenbach). Prevention of occlusal issues can be done by performing a gothic arch tracing during the fabrication process.

**Understand the anatomy**

Many of the commonly seen post-insertion complications could have been remedied from a clear understanding of the anatomy during the final impression visit(s). While slight overextension of the denture borders is typically desired, too much overextension, and under extension can be problematic. (Figs. 3 & 4)

**Common conditions seen in the maxillary prosthesis due to overextension include:**

1. Sore spots in the maxillary vestibule: Using pressure indicating paste (PIP) or an indelible marker (Thompson Stick), can help determine if the concern is due to excessive length or pressure point. Apply PIP to the affected area and adjust any portion of the denture that shows through the paste. Individual sore spots can be identified with indelible marker, transferred to the denture following insertion, and adjusted accordingly.

2. Difficulty swallowing, discomfort in the soft palate, speech issues, and gagging can all be caused by over extension of the maxillary denture onto the soft palate or posterior palatal seal. Because the action of talking makes an overextended denture on the soft palate to become loose, the patient must hold their tongue against the denture during talking. Remove the denture, ask the patient to hold their nose and attempt to expel air through it while the border of the hard and soft palate are outlined with indelible marker (Fig. 5). Insert the denture and repeat the process of having the patient hold their nose and attempt to expel air through it. Remove the denture and adjust any acrylic extending beyond the outline of the posterior palatal seal present on the denture.

3. The denture becoming loose during function or opening wide (yawning). Overextension of the flanges onto the labial frenums will typically cause the denture to become loose during function. This can be easily solved by placing PIP in the area of the frenum, inserting the denture, extending the patient’s cheek in the area of the frenum and activating the frenum by pulling down on the cheek.
Many times the dentist will cause the denture to drop during this process. While the frenum may not remove the PIP, simply creating more relief in the denture in this area will many times solve this problem.

Overextension onto the Hamular notch frenum is best adjusted by using an indelible marker on both frenums (Fig. 6), placing the denture in place, and having the patient open as wide as they can. Solution to this problem may involve either removing the excess acrylic, or surgery to reposition the frenum. Many times these overextension issues can be avoided with improved knowledge of the anatomy, or border molding/muscle molding during the impression process.

Common conditions seen in the overextension of the mandibular prosthesis include:

1. Anterior portion of the denture lifts is commonly caused by overextension in the region of the genioglossus muscle (Fig. 7). Place PIP in the anterior intaglio surface of the mandibular denture, place into position, hold, and ask the patient to first touch their tongue to the roof of their mouth, then stick out their tongue and move from side to side. Remove any overextended areas indicated with the

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labial vestibular attachment in patients with atrophic ridges (Fig. 8). Place PIP as indicated previously, place the denture, and request the patient to retract their mandibular lip over the incised edge of the mandibular teeth.

2. Entire denture lifts up or dislodges from the posterior in an anterior direction can be caused by overextension in the mylohyoid and retromylohyoid areas (Fig. 9). This can be corrected by placing PIP on the distal lingual flanges of the denture, placing the denture, holding the denture in place, and asking the patient to stick out their tongue and move it from side to side in an action similar to licking their top and bottom lip. This overextension is typically not an adjustment in the vertical length of the denture, but a horizontal thickness adjustment (as indicated by the blue arrows in Figure 9 in the distal lingual flange. (Figs. 9 and 10)

3. Difficulty swallowing and gagging can be caused by overextension in the vertical aspect of the distal lingual flanges. Placing PIP in a similar fashion as the previous complication may help with determining how much vertical requires removal. Many times slowly adjusting until the patient is comfortable is adequate.

Excessive vertical dimension may result in patients showing too much teeth, TMJ pain, muscle pain, difficulty swallowing, gagging, clicking of the dentures, sialorrhea (hypersalivation) and a general feeling that the “dentures aren’t right.” This can be corrected three ways: First, by performing a centric relation bite, a lab remount, and occlusal adjustments to decrease the vertical dimension. Second option is to perform a lab remount, remove the teeth from the denture base, reposition in wax and re-evaluate, and reprocess. Third option is to replace the prosthetics.

Overclosure in the vertical dimension may result in patients showing too little teeth, TMJ pain, gagging, instability when not occluding, and difficulty swallowing. Correction is accomplished by either adding resin to the occlusal/incisal surfaces of the teeth, removing and repositioning teeth, or fabrication of a new denture.

When a denture is loose the first thing to determine is whether or not it is underextended. This can be accomplished by adding green stick compound or thermoplastic compound to the borders and perform border/muscle molding. If this solves the problem the denture can be reprocessed with the additional lengths added. Under extension in the distal lingual flanges of the mandibular denture is common. If a mandibular denture is loose, many times adding length in the distal lingual flange may help to add retention, as long as care is used to prevent overextension into the retromylohyoid/mylohyoid areas.

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impression material such as Hydrocast or Linal. The patient is allowed to wear the denture for 24 hours with the functional impression material in place to determine proper extensions and intaglio surfaces. Following this evaluation of fit and function the denture can be processed. Overextended borders that are difficult to detect with PIP may also be detected with functional impression material. The areas of denture show through (Fig. 11) are removed until only a thin layer of the functional impression material is present. This allows the doctor to determine the muscle activity over longer periods of time and the patient’s natural environment.

Contraindications to a denture reline include unresolved TMJ or muscle pain, poor aesthetics, poor occlusal or incisal planes, improper tooth position in relation to ridge form, fractured or worn teeth, and issues with the vertical dimension of occlusion. Speech issues many times will correct themselves within a 2-3 week period of time, as it does with fixed anterior prosthodontics. Many patients can adapt to the new position of the anterior teeth, which many times is different from the previous worn dentures.

Following a three-week period of time it should be assumed that the patient will not adapt. Some of the consistent problems seen are—lisp on “S” sounds is caused by too narrow an air space on the anterior portion of the palate. This is many times seen in a patient with a large anterior ridge, and thick area of rugae on the denture. The denture should be thinned to allow more air to escape. Whistle on “S” sounds is caused by the denture either being too thin on the anterior portion of the hard palate, or the anterior teeth being set too far forward. If the aesthetics are correct, wax can be added to the rugae area until the whistle stops. Wax can also be added to the lingual of the anterior teeth to create a larger gingival area which also may stop this from occurring. Once the speech problem has been corrected the denture can be reprocessed with the additions to either area.

“Th” and “T” sounds indistinct are often caused by the anterior teeth being set too far forward. “F” and “V” sounds indistinct is due to the anterior teeth being set too far lingual. Correction can be accomplished by removing the teeth, resetting in wax, confirm the new position, and reprocess.
"Speech issues many times will correct themselves within 2-3 week period of time, as it does with fixed interior prosthodontics."

**Conclusion**

It is important to understand that our patients do not function like the static entities of impression materials or articulators. Complete dentures can be very rewarding through the use of proper procedures during fabrication, and a clear understanding of post-insertion adjustment techniques. With a little time and focus the prosthesis provided to the patient should provide years of satisfaction and aesthetic and functional enjoyment for the patient.

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**Author Bio**

Dr. John Nosti practices full-time in Mays Landing/Somers Point, New Jersey, as well as Manhattan, New York, with an emphasis on functional cosmetics, full-mouth rehabilitation and TMJ dysfunction. Dr. Nosti is the clinical director for The Clinical Mastery Series, a continuum geared towards advancing the cosmetic and functional practices of dentists worldwide. He is a member of the American Dental Association, American Academy of Cosmetic Dentistry, American Academy of Craniofacial Pain, American Academy of Dental Sleep Medicine and the Crown Council. Dr. Nosti also holds fellowships in the Academy of General Dentistry, the Academy of Comprehensive Esthetics, and the International Congress of Oral Implantologists.

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