Postinsertion denture problems

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Even when utmost care is taken in the fabrication of complete dentures, there are always unforeseen problems that arise when the patient is attempting to adjust to the new prosthesis. These problems may be classified under four major headings: (1) comfort, (2) function, (3) esthetics, and (4) phonetics.

None of these four considerations is more important than another, but a patient may be willing to put up with one problem in order to achieve near perfection in another. These problems can arise because of one or several factors. An example is an upper denture that loses its retention. Six different factors may cause loss of retention of an upper denture. They are: overextended borders, underextended borders, lack of posterior valve (palatal) seal, short palate or a posterior palatal seal placed on the hard palate, interceptive occlusal contacts on one side of the arch, and interceptive occlusal contacts on the anterior teeth.

COMFORT

When a patient complains of sore spots, it is necessary to analyze the cause. Sore spots in the buccal vestibule are most often the result of overextended borders. However, malocclusion may cause them. Sore spots at the posterior end of the denture may be caused by a posterior palatal seal that is too deep, too sharp, or by the denture being too long. Adjustments in this region must be made very carefully to prevent loss of the border seal.

Single sore spots on the crest of the ridge are usually due to inaccurate denture bases, or "bubbles" of acrylic resin. However, malocclusion in that region may be the cause. General soreness on the crest of the ridge is nearly always an indication of too great a vertical dimension of occlusion. This is best corrected by remaking one of the dentures.

Soreness under the lingual or labial flange of the lower denture indicates that a deflective or interceptive occlusal contact is moving the denture base. The dentures should be remounted on an articulator and the occlusion corrected.

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A burning sensation under the denture base is usually caused by pressure on a nerve as it leaves the nasopalatine, the anterior palatine, or the mental foramen. Relief of the tissue from pressure by the denture base over the foramen involved is usually sufficient. If a general burning sensation exists, vitamin B therapy may be indicated. With avitaminosis, the tissue is usually red and inflamed. An allergic reaction to acrylic resin is extremely rare, and it can be ruled out if only the sup-

Table I
Complaints about comfort of dentures and causes

Patient's complaint	*Cause of complaint*
1. Sore spots	
A. Sore spots in vestibule	a. Overextended borders
B. Sore spots posterior limit of upper	a. Posterior palatal seal too deep b. Sharp posterior palatal seal c. Overextension
C. Single sore spots over ridge	a. Malocclusion in that area b. Inaccurate denture base c. Bubbles of acrylic resin
D. Generalized soreness over the ridge	a. Vertical dimension too great b. Inaccurate denture base
E. Soreness under lingual flange of lower	a. Centric occlusion not in harmony with centric, drives lower denture forward b. Overextended lingual flange
F. Soreness under labial flange of lower	a. Too much overbite b. Patient's habit, wants to masticate in protrusive c. Overextended labial flange
2. Burning sensation	
A. Anterior hard palate and anterior alveolar ridge areas B. Bicuspid area to molar tuberosity C. Lower anterior ridge	a. Pressure on: 1. Anterior palatine foramen 2. Posterior palatine foramen 3. Mental foramen
3. Tongue and cheek biting	a. Posterior teeth edge to edge b. Overclosure c. Posterior teeth too far lingual or buccal
4. Fiery redness of all tissues contacted by denture, including tongue and cheeks	a. Denture base allergy
5. Redness of bearing tissues	a. Ill-fitting denture b. Avitaminosis
6. Pain in temporomandibular joint	a. Vertical dimension of occlusion too small b. Centric occlusion not in harmony with centric relation c. Arthritis d. Trauma

Table II
Complaints about function of dentures and causes

Patient's complaint	*Cause of the complaint*
1. Instability	
A. When not occluding	a. Overextension of borders and posterior limit b. Underextended borders c. Loss of posterior palatal seal 1. Posterior palatal seal on hard palate 2. Posterior limit not in hamular notches 3. Insufficient posterior palatal seal d. Dehydration of tissues due to alcoholism e. Flabby tissues displaced when making impressions
B. When incising food	a. Loss of posterior palatal seal (same reasons as above) b. Anterior teeth placed too far labially c. Poor denture foundation (flabby anterior tissues) d. Improper incising habits
C. When occluding in centric	a. Malocclusion 1. Premature individual tooth contacts 2. High occlusion on one side of arch 3. High occlusion in bicuspid areas b. Upper denture riding on median hard palate c. Flabby tissues over ridge d. Teeth set too far buccally e. Centric occlusion not in harmony with centric relation
2. Interference	
A. Swallowing	a. Upper 1. Overextension in the posterior 2. Too thick in posterior b. Lower 1. Overextension in the lingual 2. Too thick lingual posterior flanges c. Overclosure of the vertical relation of occlusion d. Posterior teeth too far lingual—crowds tongue e. Too great a vertical relation of occlusion
B. Gagging	a. Immediate gagging on insertion Upper 1. Overextension 2. Too thick posterior border Lower 1. Distolingual flange too thick b. Delayed gagging (2 weeks to 2 months after insertion) 1. Incomplete border seal allowing saliva under denture 2. Malocclusion causing denture to loosen, allowing saliva under denture

Table II
Complaints about function of dentures and causes—Cont'd

Patient's complaint	*Cause of the complaint*
C. Clicking	a. Vertical dimension of occlusion is too great b. Unstable lower (borders overextended)
D. Deafness	a. Vertical dimension of occlusion is too small
E. Muscles of mastication become fatigued	a. Vertical dimension of occlusion is too small b. Vertical dimension of occlusion is too great
3. *General feeling dentures are not right, but with absence of pain (patient has high pain tolerance).*	a. Malocclusion b. Centric occlusion is not in harmony with centric relation c. Incorrect vertical relation of occlusion

porting tissues are red and inflamed. All of the tissues that contact the denture bases will be fiery red if it is an allergic response.

Tongue and cheek biting can be corrected by shaping the denture to increase the horizontal overlap of the teeth. Tooth substance is removed from the lingual side of the upper teeth to relieve tongue biting, and from the buccal side of the lower teeth to relieve cheek biting. Vertical dimension of occlusion that is too short can cause cheek biting.

If pain occurs in the temporomandibular joint for the first time shortly after the dentures were inserted, it could be caused by either a vertical dimension of occlusion that is too small, or a centric occlusion that is not in harmony with centric relation. When properly diagnosed, either of these errors can be corrected. However, pain caused by arthritis or trauma is more difficult to treat. This type of pain usually has a previous history, and is not associated with the fabrication of new dentures.

Patients' complaints about the comfort of the dentures and the causes of their discomforts are outlined in Table I.

FUNCTION

If dentures are unstable when they are in occlusion it is usually due to a faulty impression, displaced (hyperplastic) tissue, or over- or underextended borders. A very common error causing instability is loss of the posterior palatal seal by (1) an underextended posterior border placing the posterior palatal seal on the hard palate; (2) a posterior border not in the hamular notches; or (3) an inadequate posterior palatal seal. Dehydration of the tissues due to alcoholism or illness is also a possible cause of dentures instability.

INSTABILITY WHEN INCISING

The loss of the border seal when incising can be due to the anterior teeth being placed too far labially, hyperplastic supporting tissues in the front of the

mouth, and incorrect incising habits. Through a process of elimination, the offending factor or factors can be determined. If the cause is a bad incising habit, patient education is the answer. If the anterior teeth are too far forward, a more favorable relation to the ridge must be established.

MALOCCLUSION

Malocclusion is the most frequent cause of instability of dentures during mastication. If the malocclusion is not too severe, it can be corrected by making a new interocclusal record, remounting the dentures on the articulator, and correcting the occlusion. Other common causes of instability with the teeth in occlusion include: the centric occlusion not coinciding with centric relation; the upper denture rocking across the median raphe; the teeth set too far buccally; or hyperplastic tissues over the ridges which allow displacement of the denture during function.

When dentures are first inserted, they often feel large and cumbersone to patients. However, when dentures continue to interfere with swallowing, cause gagging, clicking, or make the muscles of mastication fatigued, the occlusal vertical relation and the extension of the bases must be checked.

Difficulty in swallowing can be caused by the upper denture being extended too far posteriorly, or by the lower denture extending too far posteriorly into the retromylohoid space. If the denture bases constrict the movement and freedom of the tongue by having the teeth set too far lingually, or if the base material is too thick and heavy, swallowing will be difficult. An increased or grossly decreased vertical dimension of occlusion can also contribute to difficulty in swallowing.

Any of the causes of swallowing difficulty can cause gagging when dentures are inserted. If the gagging occurs two weeks to two months after the insertion, an imperfect border seal or malocclusion may cause the denture to loosen and the patient to gag.

If the vertical dimension of occlusion is too great, the teeth may click during speech, or the muscles of mastication may become fatigued. Overextended lower denture borders may be a factor in clicking.

When a patient says the dentures "just don't feel right" but reports no pain, malocclusion, or incorrect centric relation, an incorrect vertical relation of occlusion could be the cause. All three could be involved. A few minutes spent in rechecking the occlusal vertical dimension, making new interocclusal records, and remounting the dentures on the articulator can save many minutes and adjustments later.

The patient's complaints about the function of the dentures and the causes of the complaints are shown in Table II.

ESTHETICS

The time to adjust a denture for esthetics is at the time of the try-in. If there is any doubt about fit, a second try-in should be arranged.

If a patient complains of fullness under the nose after wearing the dentures for a few days, the labial flanges can be thinned or shortened as needed. The "artificial" look can be modified by grinding the incisal edges and angles to produce a more individualized appearance. Most other corrections require removing the teeth from the base, resetting them in wax, and then reprocessing the denture,

Table III
Complaints about the esthetics of the dentures and causes

Patient's complaint	*Cause of complaint*
1. Fullness under nose	a. Labial flange of upper too long or too thick
2. Depressed philtrum and/or naso-labial sulcus	a. Labial flange too short, too thin
3. Upper lip sunken in	a. Upper anterior teeth too far lingual
4. Shows too much of the teeth	a. Vertical dimension too great b. Incisal plane too low c. Cuspids and laterals too prominent
5. Artificial look	a. Technique set-up, the teeth are in too regular alignment (individualize by rotating and shortening some teeth) b. All teeth same shade c. Lack of grinding incisal edges and angles d. Lack of individualizing gingival contours and color of denture base

Table IV
Complaints about the phonetics with the dentures and causes

Patient's complaint	*Causes of complaint*
1. Whistle on "s" sounds	a. Too narrow an air space on the anterior part of the palate
2. Lisp on "s" sounds	a. Too broad an air space on the anterior part of the palate
3. "Th" and "t" sounds indistinct	a. Inadequate interocclusal distance
4. "T" sounds like "th"	a. Upper anterior teeth too far lingual
5. "F" and "v" sounds indistinct	a. Improper position of upper anterior teeth either vertically or horizontally.

using cold-curing acrylic resin to attach the teeth. Patients' complaints about the esthetics of the dentures and the solutions to these complaints are shown in Table III.

PHONETICS

It is difficult to locate the source of speech problems at the try-in stage because the tongue and lips do not react the same way with wax as they do with the finished and polished denture base. However, whistling on the "s" sounds can indicate that the anterior part of the tongue is being crowded by the upper bicuspids making too small a groove for the tongue down the center of the palate. This forces the air to whistle through the small space. By adding a ridge of acrylic resin to the palate of the denture in this region, the flow of air will be cut down and the whistling stopped.

Lisping on the "s" sounds indicates that the air space is too broad and the palate should be thinned.

When the "th" and "t" sounds are indistinct, there is an inadequate interocclusal distance. This may be corrected by thinning both the lower and the upper denture bases from the lingual side and from the lingual side of the bicuspids. However, the vertical dimension of occlusion must be reduced to allow for more interocclusal distance. If the "t" sounds are similar to the "th" sounds, the anterior teeth are too far back in the mouth.

In the normal "f" and "v" sounds, the upper anterior teeth contact the lower lip at its highest point. If these sounds are indistinct, the upper incisors must be moved either vertically or horizontally to their proper positions. Some of the phonetic problems and their causes are listed in Table IV.

SUMMARY

Postinsertion problems can be serious problems for dentists. A systematic approach to the solution of these problems has been suggested.

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