Prosthodontics

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5th class

Post insertion problems in complete denture .

Treating a completely edentulous patient and being able to restore some degree of function, aesthetics and the individuals self- esteem can be a very satisfying experience for a dentist. Or it can be an extremely frustrating experience if things fail to go smoothly and the patient comes back repeatedly with complaints about the quality of the denture and the capability of the dentist. Certainly the best approach is to avoid as many problems as possible. This can be accomplished most effectively by selecting a satisfactory technique and by using care in diagnosis and all phases of treatment. Adequate patient education is also essential. Factors which may limit the prognosis of treatment must be explained to the patient.

Post insertion care is a critical phase in the treatment of the edentulous patient. Scheduled and systemic follow up care can uncover minor problems and complaints which can become major problems if not treated promptly. There are problems arises subsequent to the insertion of complete dentures. These problems may be transient and may be essentially disregarded by the patient, or they may be serious enough to result in the patient being unable to tolerate the dentures. Some complication requiring a quick solution. Another difficulty would be the adaptation of the patient to the required changes in their day time habit pattern which, is not easy. Complete denture problems are divided into many general categories. Specific problems are listed in each category and their probable causes, specific diagnostic procedures, and appropriate corrective measures are present

Complete denture fabrication techniques, and placement of a complete denture are not the final steps in the treatment of edentulous patients and patient's visit to the dentist continues long after that. Two thirds of the denture wearers surveyed in a study reported that they were “very satisfied“ with their maxillary denture as compared with 51% for mandibular dentures, of the individuals who wore their dentures “all day”, 5% were “very dissatisfied” with at least one of their dentures.

Many practitioners will experience a situation, when a patient with newly fabricated complete dentures continues the experience difficulty in adapting to them; this can lead to a long period of appointments that may not result in resolution of the problem. Therefore, it is often concluded that there is some patient factor either age, gender, medical or psychological status that is hindering the success of treatment.

Treatment challenges for such patients have traditionally been described as a combination of function, comfort, and aesthetics. Often there is not total agreement between the patient and the dentist as to the adequacy of their dentures.

Several authors cite the most frequent complaints with complete dentures are those pertaining to aesthetics, retention and stability, comfort while eating, and the accumulation of food under the appliance. The factor that most often appears to have an impact on either success or failure of complete dentures is aesthetics. Sometimes the appearance of their dentures prevents from wearing them. The way in which the patient believes he should look is not always in accordance with the clinician's perception of a pleasing appearance. Other studies reported complete denture patients experiencing difficulties with their dentures most frequently complained of looseness of their dentures, aesthetics, difficulty while eating, and accumulation of food under the appliance.

Many factors may influence patients' satisfaction with their dentures:

1. Quality of bone tissue
2. Oral mucosa of denture bearing area, tissue changes that occur on denture bearing area due to alveolar ridge resorption lead to poorer denture retention and stability which consequently affects patients' satisfaction.
3. The adaptability of the neuromuscular mechanism
4. Individual feeling of security by denture wearing

5. Influence of the surrounding muscles on denture flanges
6. Viscosity of saliva
7. Patient's age
8. Position of occlusal plane
9. Occlusion
10. Hygiene, type of food, etc.

Classification of denture complaints

- **According to the time of delivery:**

- Immediate complaints.
- Delayed complaints.

- **General classification**

- **Complaints about comfort of the denture:**

  - Sore spots
  - Burning sensation
  - Redness
  - Pain in TMJ
  - Tongue & cheek biting
  - Swallowing & sore throat
  - Nausea & gagging
  - Deafness
  - Fatigue of the muscles of mastication

- **Complaints about function of the denture:**

  - Instability or poor fit
  - Interference

  a) When swallowing

  b) Clicking

- **Complaints about esthetics:**

  - Fullness under the nose

  - Depressed philtrum or naso-labial sulcus

  - Upper lip sunken in

  - Too much of teeth exposed

  - Artificial look

- **Complaints about phonetics:**

  - Whistle on “S” sounds

  - Lisp on “S” sounds

  - Indistinct “TH” & “T” sounds

  - “T sound like “TH”

  - “ F” & “V” sounds indistinct.

PROBLEMS RELATED TO SOFT TISSUE (comfort)		
Complaints/area	Causes	Treatments
Sore spots – mandible		
Peripheral areas	Overextension	Adjust denture accordingly
	Unpolished or sharp edge	Polish denture borders
	Herpetic or apthous ulcer	Leave denture out as much as possible and wait 7-10 days
Crest of ridge	Bone spicules	Identify the area in denture with pressure – indicating paste

		and provide relief over spicule and/or surgically remove spicule
	Spinous ridge crest	Provide relief in the denture
	Pressure spots at time of impression	Use PIP or indelible pencil to determine the areas and adjust accordingly
	Occlusal prematurities	Correct occlusal defects, recheck vertical dimension and clinical remount
Side of ridge-anterior area	Overextension	Use pressure indicating paste and adjust denture border involved
	Maximum intercuspation not in harmony with centric relation	Enlarge centric area; grind mesial inclined planes of maxillary teeth and distal inclined planes of mandibular teeth using a clinical remount
Side of ridge-bicuspid area	Lingual tori (nonyielding areas)	Provide adequate relief in denture base
	Pressure spots at time of impression	Adjust denture accordingly
	Shrinkage of denture during processing (dimensional changes)	Rebase denture
	Error in occlusion - occlusal prematurities	Check occlusion on the opposite side of arch from the sore spot
	Pressure on mental foramen if ridge is greatly resorbed	Provide adequate relief

Side of ridge-posterior area	Overextension in lateral throat area	Shorten posterior of lingual flange
	Error in occlusion	Check teeth diagonally across the arch from the sore area
	Spinous projection of mylohyoid ridge distolaterally (feeling of sore throat)	Correct undercut surgically; you must under extend the denture. Relieve denture if not severe
	Overextension in anterior area (causes rotation of distal flanges)	Adjust peripheral overextension
Under lingual flange	Maximum intercuspation not in harmony with centric relation (drives mandibular denture forward)	Enlarge centric area and adjust local area-
Under labial flange	Excessive overbite	Adjust anterior occlusion
	Habit- mastication in protrusive relation	Train patient to masticate in centric
Generalized soreness and redness	Heavy biting force- strong musculature	Reduce buccolingual width of teeth; reduce vertical dimension; use soft lining if necessary
	Excessive vertical dimension of occlusion	Reduce vertical dimension
	Locked occlusion	Enlarge centric area
	Failure to provide freedom for Bennett movement (soreness usually on working side	Reduce cusps to a nonanatomical plane or reset teeth

	Improperly processed base material	Rebase denture
Sore spots – maxilla		
Peripheral areas	Overextension	Adjust denture accordingly
	Unpolished or sharp edge	Polish denture borders
	Herpetic or apthous ulcer	Leave denture out as much as possible for 7-10 days
Maxillary frenum	Overextension	Open a V-shaped notch for the labial frenum and widen the buccal frenum areas
Posterior border of denture	Sharp edge at the post dam area	Adjust sharp edge slightly without reducing dam area
Midline of denture	Prominent midsuture or torus palatinus	Provide some relief over the area
Generalized discomfort		
Improper occlusion		Correct occlusion (clinical remount)
Maximum intercuspation not in harmony with centric relation		Enlarge centric area (clinical remount)
Excessive vertical dimension of occlusion		Reduce vertical dimension (clinical remount)
Burning sensation		
Maxillary anterior hard palate and anterior alveolar ridge area	Pressure on anterior palatine foramen	Relieve area over foramen

Maxillary bicuspid area or molar tuberosity	Pressure on posterior palatine foramen	Relieve area over foramen
Mandibular anterior region	Pressure on mental foramen	Relieve area over foramen
Generalized	Improperly processed	Reline denture; replace as much as possible base material with new acrylic resin
Tongue	Allergic reaction xerostoma	
Redness		
Fiery redness - All tissue contacted by denture including tongue and cheeks	Denture base allergy (very unusual)	Remake denture and use all metal base (after allergy test)
Bearing tissues	Ill-fitting denture, Avitaminosis	Remake or rebase dentures. Employ vitamin therapy regimen
Tongue and cheek biting		
Thin or under extended periphery (base material does not provide enough support for the cheek)		Build out thin areas, or extend the short periphery
Insufficient interarch clearance between distal parts of denture bases		Thin maxillary denture over tuberosity; if more space is required, remove it from the retromolar area of the mandibular denture
Inadequate amount of horizontal overlap in molar region		Re-contour buccal surface of mandibular molars and bicuspids; eliminate the tight contact of the maxillary buccal

		cusps on the mandibular buccal surfaces
Pain in TMJ		
Insufficient vertical dimension of occlusion		Increase vertical dimension of occlusion
Maximum intercuspation not in harmony with centric relation		Make new occlusal record, regrind and remount occlusion
Arthritis		Treat with analgesics
Trauma		Treat with analgesics
Gagging		
Immediately upon insertion	Maxillary denture overextended or too thick in posterior border	Adjust denture or thin posterior border
	Lack of retention	Reline denture
	Mandibular denture too thick in distolingual flange	Reduce thickness or distolingual flange
Delay (2 weeks - 2 months after insertion)	Incomplete border seal allowing saliva under denture	Increase border seal with self-curing acrylic resin (possibly at the posterior palatal border
	Improper occlusion causing denture to loosen and allowing saliva under denture	Correct occlusion (clinical remount)
Deafness		
Decrease vertical dimension of occlusion (rare)		Increase vertical dimension of occlusion

Fatigue of the muscles of mastication	
Excessive vertical dimension of occlusion	Reduce vertical dimension of occlusion
Insufficient vertical dimension of occlusion	Increase vertical dimension of occlusion

PROBLEMS RELATED TO FUNCTION			
Complaints/area		Causes	Treatments
Instability			
Looseness of mandibular denture		Error in occlusion (maximum intercuspation not in harmony with centric relation)	Correct faulty occlusion by remount and regrind procedure
		Occlusion plane too high	Reset teeth at a lower plane
		Underextension of periphery (inadequate impression)	Rebase denture providing proper extension
		Inability of patient to master denture	Use denture adhesives to help develop skill in handling denture (for a short time only)
		Tongue position (retracted tongue)	
Looseness of maxillary denture	Occasionally	Underextension in some area	Correct with self-curing acrylic resin; first check with compound for diagnostic purpose
		Faulty occlusion	Correct Occlusion

		Overextension of peripheries	Adjust denture accordingly
		Dehydration of tissue due to alcoholism	Remove cause
		Displacement of flabby tissues when making impression	Correct surgically; modify impression technique to change primary denture stress-bearing area to the buccal shelf
	When eating on either side	Nonyeilding area in hard palate (ridge tissue yields under chewing stresses; denture rocks on hard area	Provide relief chamber over non-yielding area
		Incorrect tooth position (teeth may beset too far buccally off ridge	Rebalance in lateral excursions; reset teeth where nature should have had them
		Chewing resistant foods	Instruct patient to maintain soft diet until mouth is conditioned to wearing denture
	Approximately every 2 hours	Heavy mucinous saliva	Prescribe astringent mouthwashes and regular scrubbing of dentures; reduction of carbohydrate

		Incorrect tooth position (teeth may be set too far buccally and labially	Correct surgically; change primary denture stress -bearing area to the buccal shelf
		Improper incising habits	Train patient to masticate in centric relation
		Loss of posterior palatal seal (seal on hard palate; posterior limit not in hamular notches; insufficient valve seal)	Increase postpalatal seal with self-curing acrylic resin; first use compound as a diagnostic aid
	When yawning or opening wide	Denture base too thick in buccal posterior area (coronoid process exerts forward and downward force on posterior of denture upon opening)	Reduce thickness of denture base
		Overextended in hamular notch	Shorten denture until pterygomaxillary ligament does not exert tension on posterior border when mouth is opened wide
		Inadequate posterior palatal seal	Increase postpalatal seal with self-curing acrylic resin
	When talking	Inadequate posterior palatal seal	Increase postpalatal seal with self-curing acrylic resin

		Overextended in posterior region	Shorten posterior until soft palate does not lift upward and break contact with the denture base
	When occluding in centric relation	Improper occlusion	Correct occlusion
		Poor denture foundation (flabby tissues over ridge)	Correct surgically; change primary denture stress-bearing area to the buccal shelf
		Incorrect tooth position (teeth set too far buccally)	Reset teeth
		Maximum intercuspation not in harmony with centric region	Enlarge centric area
		Nonyielding area in hard plate	Provide relief in area
	Only a feeling of looseness (support and retention are present yet denture feels suspended in mouth	Large area of nonyeilding tissue in hard plate	Provide relief chamber, adequate to permit denture to be properly seated
Interference			

When swallowing	Maxillary denture too thick or over-extended in posterior region	Reduce thickness or adjust posterior
	Mandibular denture too thick or overextended in posterior lingual flange area	Reduce thickness or adjust posterior lingual flange area
	Insufficient vertical dimension of occlusion	Reduce vertical dimension
	Excessive vertical dimension of occlusion	Reduce vertical dimension
	Incorrect tooth position (posterior teeth set too far lingually - tongue crowded	Reset teeth
Clicking	Excessive vertical dimension of occlusion	Reduce vertical dimension
	Ill-fitting dentures	New dentures
	Overextended lower dentures	Reduce peripheral length

PROBLEMS RELATED TO ESTHETICS		
Complaints	Causes	Treatments
Fullness under nose	Labial flange of maxillary denture too long or too thick	Reduce length or thickness of labial flange
Depressed philtrum	Labial flange of maxillary denture too short	Increase length or thickness of labial flange
Upper lip sunken in	Maxillary anterior teeth set too far lingually	Reset anterior teeth labially
Too much of the teeth are exposed	Excessive vertical dimension of occlusion	Reduce the vertical dimension of occlusion
	Incisal plane too low	Reset teeth at higher plane
	Cuspids and lateral incisors too prominent	Adjust accordingly
Artificial appearance	Technique setup (teeth are too regular in alignment)	Individualize by rotating and shortening some teeth
	All teeth in same shape	Choose different but complimentary shades; use staining techniques

	Lack of individualization of teeth	Grind incisal edges and angles
	Lack of individualization of denture base	Individualize gingival contour and color of denture base

PROBLEMS RELATED TO PHONETICS		
Complaints	Causes	Treatments
Whistle on "S" sounds	Air stream passes unimpeded or with inadequate impedance between the dorsal surface of the tongue and the anterior palate	Increase the palatal resin convex contours lingual to the maxillary central incisors to impede the air stream passing between the tongue and palate. Create rugae if necessary
Lisp on "S" sounds	The air stream passing between the tongue and anterior palate is excessively impeded, usually by rugae or excessive resin contour(to small anterior air space).	Thin the palatolingual area
Maxillary & Mandibular incisors or premolars contact during sibilant (s, sh, z, ch) sounds	Occlusal vertical dimension too great	Reduce occlusal vertical dimension until premolars no longer contact during speech

Clinician observes that incisal edges of maxillary incisors contact the lower lip 1 mm or more labial to the wet/dry junction of lower lip when "F" & "V" sounds are made	Maxillary teeth may be set too far labially	Evaluate lip support and overall appearance of anterior teeth as they are positioned. Reset to a more lingual postiion as needed. incisal edge of maxillary incisiors should contact the wet dry junction ro just lingual to it during production of the "F" & "V" sounds.

A study done for CD complains. The results showed that the number of mandibular dentures requiring adjustments was significantly higher than maxillary dentures in all the post-insertion appointments.

Most frequently injured maxillary areas were posterior palatal seal area in the soft palate (27%), in the mandible, the most frequently injured areas were retromylohyoid area (48.6%).

The least common locations for maxillary ulcerations were hard palate and mid-palatal suture (0%), incisive papilla and rugae (0.65%), tuberosity (2.6%), and buccal and labial sulci (4.6%). The lowest frequency of lesions in the mandible was seen in the sublingual fold (0%), labial sulcus and mylohyoid region of the lingual sulcus (1.2%) and buccal frenum and buccal shelf (2.1%).

No significant differences were detected between males and females in terms of mucosal injuries in the above-mentioned anatomic areas of the maxilla and mandible.

The most frequently observed faults in denture construction related to retention and vertical and horizontal jaw relationships. There is significant relationship between inadequate retention and in proper intermaxillary relationships and patient's complaints of looseness and difficult eating.

Clinician must carefully evaluate the denture for faults in horizontal and vertical jaw relationships before concluding that the patient's complaint is related to age, gender, or general medical condition

Limitations of Dentures

- Dentures are less efficient than natural teeth
- Some people can eat all foods easily, but these are the exception
- Generally the better the ridge form, the fewer problems are encountered. Patients with minimal ridges should be advised that their dentures will likely move (especially the mandibular) and their efficiency will therefore be reduced.
- Patients with minimal ridges will likely encounter more sore spots than others.
- It is wise to point out these limitations to patients prior to the delivery appointment so that it is viewed as an explanation, rather than an excuse.

Adaptation to Dentures

Adaptability is affected by:

1. Length of time wearing dentures.
2. Amount of residual ridge remaining.
3. Degree of changes made in new dentures.
4. Individual variation (e.g. patients with more acute **oral** sensory perception have more difficulty adapting).

Adaptation to Chewing may be affected if:

1. CO has been changed to coincide to CR.
2. Tooth positions (esp. incisors) have changed.
3. Vertical dimension has changed.

These patients may experience initial decreased efficiency, cheek or lip biting. Adaptation may be improved by initially eating soft foods, increasing to hard foods, cutting food into smaller pieces, and placing food towards the corners of the mouth. Adaptation may be accompanied by an initial, transitory increase in saliva. Patients should be advised of the need to persevere while their neuromusculature adapts to the new prostheses.

Speaking may be affected by changes in:

1. Tooth position (esp. anteriors).
2. Tongue space (particularly if patients have been without dentures for some time).
3. Palatal contours.

Initial speaking problems are usually transitory, since the tongue is very adaptable – tooth positions must be close at delivery, however).

Appearance may be changed in some individuals. These changes are usually due to:

1. Increasing length of incisors (worn).
2. Changes in vertical dimension.
3. Improved lip support (not help with wrinkles).