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Review Article

Post Insertion Denture Problems and Its Management in Complete Denture Patients -A Review

Dr Renu Gupta[1], Dr Venus Chandel[2], Dr Divya Vashisht[3], Dr Priya Ravichandran[4], Dr Varsha Khichi[5]

[1]Professor and Head, [2,4,5]PG student, [3]Professor, Department of Prosthodontics, HP Government Dental College & Hospital, Shimla, HP, India

ABSTRACT:
The provision of complete denture services can be both a fulfilling and, at times, a challenging endeavor. This complexity arises from the significant difficulties associated with the prosthetic rehabilitation of edentulous patients. Clinicians must consider the morphological and neuromuscular alterations that accompany edentulism, in addition to the various medical and psychological issues that exacerbate the patient's oral condition. It is essential for the prosthodontist to actively emphasize the critical elements of education and motivation concerning the patient's use of the prosthesis.

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Corresponding Author: Dr. Venus Chandel, PG student, Department of Prosthodontics, HP Government Dental College & Hospital, Shimla, HP, India

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INTRODUCTION

With advancements made in medical science, the life expectancy of human beings is steadily increasing. Along with the increased average life span of our population, the number of geriatric patients requiring dentures for replacement of missing teeth is also increasing.[1]

A variety of factors are involved in the designing of complete dentures and no factor can be ignored as it can lead to a complete failure of the denture causing post-placement problems. There is a wide spectrum of problems associated with denture placement[2]. Ill-fitting dentures will worsen this situation and patients may avoid denture must be compatible with the surrounding environment, and must restore the certain social activities like speaking, smiling, eating etc. in the presence of other person.[3] Complete denture is essential to rehabilitate the stomatognathic system by improving masticatory efficiency, phonetics, and aesthetic appearance of completely edentulous patients. Hence, the follow-up care of complete denture is an important step and it helps to correct minor problems and complaints, as wearing complete dentures with problems and complaints may have adverse effects on the health of denture supporting tissues.[4] Hence, this article reviews about post insertion instructions, problems, and management in denture patients.

1.1. According to Hartwell and rahn.[5]

1. Incompatibility with the surrounding oral environment,
2. Problems related to mastication,
3. Disharmony with functions like speech, respiration and deglutition,
4. Dissatisfaction with aesthetics and deterioration of soft tissues or bony support.

1.2. According to winkler[6]

1. Tissue irritation and ulceration.
2. Defective speech.
3. Inability to eat due to rough surface of the denture to tongue contact.

4. Faulty aesthetics.

1.3. According to Morstad and Petersen[7]
1. Comfort.
2. Function.
3. Aesthetics and phonetics.

1.4. According to sharry[8]
1. Common complaints.
2. Uncommon complaints.

1.5. Post insertion denture problems[9, 10]
1. Looseness or instability
2. Lower rises when mouth is opened
3. Sore spots
4. Gagging
5. Feeling of space in upper denture
6. Phonetic problems
7. Cannot eat most foods/ masticatory insufficiency
8. Loss of taste
9. Clicking while eating or talking
10. Tenderness when swallowing
11. Food under dentures
12. Saliva under dentures
13. Dislodgement when drinking
14. Drooling at corners of mouth
15. Excessive bulk
16. Cheek, lip, or tongue biting
17. Halitosis
18. Dry mouth (Xerostomia
19. Excessive salivation
20. Peculiar tastes
21. TMJ problems
22. Burning sensation

1.6 Complaints according to Fenn[11]
1. Pain
    a) Localized painful area with ulceration
        - Blebs and surface irregularities
        - Periphery too sharp
        - Post dam too deep
        - Edges of relief areas
        - Lack of relief
        - Occlusal error
        - Excess periphery
    b) Localized painful area without ulceration
        - Upper displaceable ridge
        - Rough bony alveolar ridge
        - Dental remnant
        - Mental foramen
        - Mylohyoid ridge
        - Buccal prominence of tuberosity
        - Lack of relief
        - Occlusal error
        - Excessive VD
        - Peripheral over extension
        - Denture into undercut
        - Cramped tongue space
        - Mucosal displacement

2. Appearance
    - Facial appearance
    - Dissatisfaction with teeth colour, shape, position
    - General dissatisfaction
3. Inability to eat
    - Over extended denture
    - Eating form anterior teeth
    - Unbalanced occlusion
4. Lack of retention and instability
    - Wide opening of mouth
    - Over extension
    - Tight lips
    - Tongue space
    - Under extension
    - Lack of saliva
    - When coughing or sneezing

5. Clicking of teeth
    - Excessive VD
    - Movement of lower denture
    - Lack of balanced denture
    - Porcelain teeth
6. Nausea
    - Denture over extended
    - Under extended
    - Thick posterior border
    - Protrusive imbalance
7. Inability to tolerate denture
    - Cramped tongue space
    - Altered vertical height
    - Altered occlusal plane
    - Unemployed ridge
8. Biting cheek and tongue
    - Cheek biting due to insufficient overjet and reduced vertical height
    - Biting tongue due to decrease tongue space
9. Food under denture due to lack of peripheral seal
10. Inability to keep denture clean

TIME BOUND REDRESSAL OF POST-INSERTION PROBLEMS[12]

Table 1: Problems after 24 hours of denture insertion:	**Cause**	Treatment
Trauma at the peripheral area	Sharp edge of acrylic or an acrylic pearl	Use disclosing agent, an area of wipe off would be seen, remove the sharp edge and smoothen out the denture periphery
Gagging	i) Overextended maxillary denture. ii)Decreased stability of the maxillary denture. iii) Overextended mandibular denture iv)Over polished maxillary denture	i)Check for proper extension in the posterior palatal seal area. ii)Check for Occlusal prematurity's iii)Check for the over extension in the retro mylohyoid area and correct accordingly.
Difficulty in swallowing	i)Overextended mandibular denture in the retro mylohyoid area ii)Increased vertical dimension of occlusion	Check for over extension and correct accordingly
Pain or ulceration in the labial or buccal freni in either the maxillary and mandibular denture	Freni not relieved properly	Use disclosing media and correct accordingly

Difficulty in speech.	This problem could range from lisping or whistling sound while speaking due to the incorrect contour of the palate of the maxillary denture, to a difficulty in getting adapted to the new dentures	Check for the sounds while patients speak words containing a lot of the "s" alphabet and correct the palatal contour. If the problem is difficulty in getting used to new dentures, educate the patient

Table 2: Problems which the patient presents with 72 hours after denture insertion Problem	**Cause**	**Treatment**
Pain or area of ulceration present at the crest of the ridge	Usually a result of occlusal prematurity.	Locate the prematurity using articulating papers and correct accordingly. No alterations to be done to the intaglio surface if it is found to be smooth.
Soreness or ulceration present at lingual part of the slope of the anterior part of the mandibular ridge	This is usually due to incorrect recording of the centric relation which results in shifting of the mandibular denture base resulting in trauma.	i)If the shift from the centric is very minimal, it can be corrected using selective grinding. ii)However if gross amount of movement of the mandibular denture base is seen, at least one of the dentures must be remade
Soreness at the area of the buccal frenum of the maxillary denture	This results when the retentive qualities of the denture hold it in place, while enough relief is not provided at the area of the buccal frenum.	Use disclosing agent and provide relief to the buccal frenum as required.
Dentures making clicking sound when the patient tries to speak	This is the result of increased vertical dimension of occlusion.	i)If the increase is slight, correct it using selective grinding. ii)If the increase is gross, remaking of the dentures may be required
Ulcerations on the lateral borders of the tongue	This is usually due to a sharp edge of a tooth or too much lingual tilting of the occlusal surface of the lower teeth leading to cramping of the tongue	i)Check for the cramping of the tongue by asking the patient to protrude the tongue slightly, if the mandibular denture lifts dentures must be remade. ii)However, if the cause is a sharp cusp of a tooth, round it off.
Pain at posterior aspect of upper denture on opening	Flange at the buccal aspect of the tuberosity too thick	Use disclosing agents to locate the area of excess, relieve and repolish.

Table 3: Complaints presented by the patient after about a week of denture insertion Problem	**Cause**	**Treatment**
Pain about periphery of dentures	Excessive vertical dimension of occlusion	i)If excess is less than 1.5 mm -grind ii) If the excess is more than 1.5 mm. remake dentures at a new VDO
Appearance-Complaints may arise from patient or relatives. Common complaints include: shade of teeth too light or dark; mould too big/small; arrangement too even or irregular or lacking diastema.	i)Patient failed to comment at trial stage, or has subsequently been swayed by family or friends. ii)Perhaps the change from the old denture to the replacement denture	Accurate assessment of patient's aesthetic requirements ii)Ample time for patient comments at trial stage iii) Use any available evidence to assist - photographs, previous dentures

Table 4: Complaints reported by the patient after 3 weeks of denture insertion Problem	**Cause**	**Treatment**

Cannot open mouth wide enough for food'.	Excessive VDO	Can remove up to 1.5 mm from occlusal plane by grinding, but if more is required, remake dentures
Eating difficulties.	Dentures move over supporting tissues	Construct dentures to maximise retention and minimize displacing forces.
'Blunt teeth'	Broad posterior occlusal surfaces which replaced narrow teeth on previous denture. Non- anatomical type teeth used where cusped teeth previously used.	Where non-anatomical teeth used, careful explanation of rationale is required, may be possible to reshape teeth, Routine use of narrow tooth moulds recommended.
Speech problems- **May affect sibilant (eg s), bilabial (eg p,b), labiodental (eg f.v)**	Cause may not be obvious. May be unfamiliarity - check that problem not present with old dentures.	i)Check for vertical dimension accuracy, and that vertical incisor overlap not excessive. ii) Palatal contour should not allow excessive tongue contact or air leakage iii) patient's speech is assessed at trial insertion
Gagging	This complaint could be the result of food getting under the maxillary denture base and causing the denture base to dislodge and irritate the dorsal surface of the tongue, leading to gagging.	i)Check for proper extension and seal at the posterior palatal seal area ii)Addition at the area with self -cure acrylic resin could be done to achieve a better seal.

Other complaints related to denture are

1. Problems associated with maxillary denture[7]

A) Maxillary denture dislodges, while performing some function, due to

- Extension in the hamular notch area
- Inadequate relief to the frenum attachment.
- Excessive thick denture bases over the distobuccal alveolar tubercle area leaving insufficient space for the forward and medial movement of the anterior border of the coronoid process.
- When the anterior maxillary teeth being placed very much far in the anterior direction.
- When the maxillary posterior teeth being placed very much far in the buccal direction.
- Placement of posterior palatal seal very much far in the superior direction, that result in displacement of soft tissue, which result in dislodgement of the maxillary denture.
- Occlusal disharmony.

B) Dislodgement of maxillary denture, when jaws are at rest[13]

1. Underfilled buccal vestibule.
2. No border seal present.
3. Excessive formation of saliva.
4. Xerostomia.

The consistency of saliva is usually involved when, maxillary denture slowly loses its retention and if contraction occur at modiolus, dislodgement of denture occurs, if the flanges of the denture were not contoured properly.

C)Upper drops while talking or laughing:

1. Inadequate posterior palatal seal
2. Poor peripheral seal
3. Occlusion not balanced

2. Problems with mandibular denture[13]

A). Dislodgement during function

1. Extending in the lateral direction beyond the external oblique line
2. Over extension of the lingual flange.
3. Placing the occlusal plane too high, causing dislodgement when the tongue tries to handle the bolus of food.
4. Improper contour of the polished surface

B) Lower denture unseated during moderate tongue movements

1. Poor border seal.
2. Lingual flange over-extended.
3. Clearance for lingual frenum.
4. Occlusion not balanced.

3)Gagging[14]

Gagging can be classified as 3 types

1. Psychogenic: - which starts in the patients mind itself, without any initiation and is very much difficult to treat.
2. Somatogenic: - it has its initiation from the body i.e. denture or any dental procedure, and it can be treatable.
3. Dental reason: - over extended denture base in posterior palatal seal area, poor occlusion, lack of retention, excessive vertical dimension.

Treatment

1. Determination the cause when possible.
2. Remove all biological and mechanical factors that may contribute to the problem.
3. Prescribe a combination of hyoscine, hyoscyamine and atropine with a sedative during the initial period of denture use.
4. Acupressure.
5. Consider referring the patient for psychiatric help.

4. Feeling of space under maxillary denture

Might be due to shrinkage of the denture resin, due to processing error and if there is any history or anterior traumatic occlusion, which result in paraesthesia of nasopalatine nerve.

5. Problems related to phonetics[13]

When patient is having problem in speaking, when maxillary anterior set too long or too far down, when maxillary anterior set too short or too high up, when there is improper anteroposterior positioning of maxillary anterior teeth.

Treatment

Increase the passage of air (slowly) by removing some of the resin in increments behind the anterior teeth. If no improvement, try flowing some red carding wax in 1 mm increments, over the anterior and lateral palate to insure tongue contact. If the air channel is blocked there may be a "shushing" or lisping sound. This is may be due to an excessive V.D.O.

Solution

Before considering a remake at a reduced V.D.O., increase the size of the channel by thinning the anterior portion of the palate.

6. Inability to eat food[15]

Some of the edentulous patients come with a problem, that they are not been able to eat food with their complete denture. This could be due to poor muscular control, could be the one reason that patient was not able to chew/masticate the food. Other reason could be that the patient expectations were too high with the prosthesis delivered, that he/she wants to eat every food that once they enjoyed when they have natural teeth.

Treatment

1. Psychological boost up to the patient.
2. Dentist can change the occlusal scheme, can go for lingualized occlusion.
3. Can use lingual bladed teeth.

7. Clicking sound while eating food

1. Over extended complete denture.
2. Premature contacts.
3. Excessive vertical dimension of occlusion.

Treatment

1. Clinical remount should be done, with occlusal equilibration.

2. Relining or rebasing, in case the fit of the denture is not appropriate.

8. Pain during swallowing
Mostly due to overextended distolingual complete denture flange. This over extension produces slight to moderate sensation of pain during swallowing. It should be corrected by reducing the overextended denture flange with the use of disclosing agent and after than smoothened the denture flange.

9. Drooling of saliva at the corner of the mouth[13]
1. Usually seen in patients with poor muscular control
2. When there is closed vertical dimension of occlusion
3. In cases of hypersalivation

Treatment modality should be to treat the underline cause, if this occurs due to decreased vertical dimension of occlusion, new denture should be made with correct vertical dimension and another attempt should be made to control the drooling of saliva at the corner of the mouth by making the denture flange a bit thicker at the modiolus area.

10. Cheek biting, lip biting or tongue biting[16]
The most common cause of cheek biting is due to presence of inadequate overjet between the maxillary and mandibular anterior teeth. It can be corrected by increasing the overjet by reducing the buccal surface of lower posterior teeth. Cheek biting is also due to loss of vertical dimension, because of these cheeks tend to occlude between the occlusal surface of the denture. Tongue biting can be treated by reducing the palatal surface of maxillary posterior teeth, mostly the maxillary molars. Lip biting is mostly due to poor neuromuscular control in the old patients.

11. Whistling[17]
When the patient wears the denture for the first time, the patient may complain of whistling while talking which could be because of increased palatal vault depth and compressed arch form. Lowering the palatal contour should help the condition. Failure to duplicate the rugae could also lead to this problem.

12.Drooling at the corners of the mouth
This problem may occur due to a decreased vertical dimension and an attempt should be made to correct the vertical dimension. Also, if the vertical dimension is correct, then an attempt should be made to increase the thickness of the flange in the modiolus area.

13. Xerostomia[17]
Many elderly patients take multiple medications and many of these drugs can cause xerostomia which negatively affects the patient's ability to tolerate complete dentures. Such patients have difficulty masticating and swallowing, particularly dry foods. This could be overcome by instructing the patients to drink fluids while eating. Xerostomia patients should also be advised to drink plenty of water (a minimum of eight glasses) daily. Lack of lubrication at the denture-mucosa interface can produce denture
sores. If xerostomia is caused by a decrease of salivary gland secretions, the use of artificial saliva and frequent mouthrinses particularly during meals may be helpful. A palatal reservoir filled with artificial saliva will enhance the quality of life of xerostomia denture wearing adults. Sialagogues, which are drugs that stimulate the flow of saliva without affecting its ptyalin content, can be prescribed to the patient if some glandular function still is present

CONCLUSION
The patient should be dealt with in a sympathetic manner, keeping in mind that such complaints are very important to patient. A scrutiny based on a thorough knowledge of normal and abnormal tissue response as well as of the fundamentals of complete denture prosthesis is essential in treating the problems connected with complete denture use. There are many ways that dentures can be improved and dentists should be able to assess the quality of a denture in terms of aesthetics, support, retention, stability, occlusion, vertical dimension and extension of the denture bases.

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