

PROSTHODONTIC MANAGEMENT OF GAGGING
: A REVIEW

ABSTRACT:

The gag reflex is a complex physiologic phenomenon. The problem compromises the quality of dental treatment and is a barrier to optimal patient care. The function of the reflex is protective in nature. When the reflex is abnormally active, the dentist may be presented with a bewildering and frustrating problem in various dental procedures, resulting in a strong potential for compromised treatment. The purpose of this paper is to describe methods of managing the gagging patient that has a sound rationale based on modified treatment approaches.

Key words: Gagging, trigger zones, vomiting, reflex, management.

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INTRODUCTION

Gagging is an involuntary contraction of muscles of soft palate or pharynx that results in retching. It is a normal protective reflex designed to protect the airway and remove irritant material from the posterior oropharynx and upper GIT tract. Gagging reaction ranges from mild choking to violent, uncontrolled retching which may/may not precede

vomiting.¹

It is a reflex mechanism in which afferent signals are carried by trigeminal, glossopharyngeal and vagus nerves from receptors around the mouth, tongue, soft palate to the brain in medulla oblongata. Efferent signals are carried out by trigeminal, facial, vagus, hypoglossal and sympathetic nerves which results in gagging.²

ETIOLOGICAL FACTORS

<p>ANATOMIC FACTORS:</p> <p>A. Atonic and relaxed soft palate</p> <p>B. Long soft palate</p> <p>C. Sudden drop at the junction of soft and hard palate</p> <p>D. Undue sensitivity of the soft palate, uvula, fauces, posterior pharyngeal wall and tongue</p>	<p>MEDICAL FACTORS</p> <p>A. Nasal obstruction</p> <p>B. Postnasal drip</p> <p>C. Catarrh</p> <p>D. Nasal polyp</p> <p>E. mucosal congestion of upper respiratory tract</p> <p>F. Chronic gastrointestinal diseases notably chronic gastritis, peptic ulcers and carcinoma of stomach</p> <p>G. Hiatus hernia and uncontrolled diabetes</p>	<p>PSYCHOLOGICAL FACTORS</p> <p>A. Stress</p> <p>B. Phobia</p> <p>C. Alcoholism</p> <p>D. Fear</p> <p>E. Visual and olfactory stimuli</p>	<p>DENTAL FACTORS</p> <p>A. Thin consistency impression material</p> <p>B. Oversized impression tray</p> <p>C. Inadequate posterior palatal seal</p> <p>D. Restricted tongue space in dentures</p> <p>E.. Poor retention.</p> <p>F.Surface finish of acrylic resin.</p> <p>G.Inadequate free way space.</p> <p>H. Poor execution of intra oral procedures</p>
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Some people have a reduced or absent reflex, whilst others have a pronounced one. Pronounced gag reflexes can compromise all aspects of dentistry, from the diagnostic procedures and radiography to any form of active treatment. In some patients with marked gagging reflexes, it can lead to avoidance of treatment.

Active gag reflex upsets the patient, compromises quality of treatment and frustrates the dentist. Effective management of gagging depends on treatment of the cause and not merely the symptoms. By thorough examination, taking adequate medical history, conversation with the patient, the dentist needs to determine cause for gagging which can be because of iatrogenic factors, organic disturbances, anatomic or psychological factors.³

REVIEW OF LITERATURE

Schote et al (1959)⁴ gave the relationship of gag reflex to the vomiting reflex and describe that vomiting centre lies in the dorsal portion of the lateral reticular formation of medulla oblongata.

Singer et al (1973)⁵ tried to place glass marbles in mouth prior to the treatment of denture patients.

Murphy et al (1975)⁶ surveyed gagging and analyzed medical history. He attributed the problem to complete or partial maxillary dentures. he treated gagging patients by construction of clear acrylic training plate combined with relaxation therapy.

Flamer and Connely (1984)⁷ suggested technique for

construction of plateless dentures which are not covering palatal vault but it is satisfactory only if maxillary ridge is well formed.

CAUSES OF GAGGING

5 Intraoral areas are known to be "Trigger Zones": palatoglossal and palatopharyngeal folds, base of tongue, palate, uvula and posterior pharyngeal wall. Sensitivity to these areas is known to cause gag reflex.⁸ Various factors are as follows:

CLASSIFICATION OF GAGGING

ACC. TO KROLL (1963): Psychogenic or somatic in origin

ACC. TO FAIGENBLUM (1968): On the basis of severity of the problem: mild or severe retching

ACC. TO DAVIS: Physiological or psychological

MANAGEMENT OF GAGGING REFLEX

The aim of treatment is to allow the patient to receive dental care such as restorative treatment or wearing of dental prosthesis with minimum of anxiety and stress. (6) The various management strategies are as follows:

1. Psychological intervention
 2. Prosthodontic management
 3. Pharmacological measures
 4. Surgical intervention
 5. Acupressure and Acupuncture
1. PSYCHOLOGICAL INTERVENTION

Psychotherapy includes: relaxation, distraction and desensitization procedures

a) RELAXATION: Gag reflex may be a manifestation of an anxiety state. Relaxation techniques are helpful in reducing the gag reflex like ask the patient to tense and relax certain muscle groups, starting with legs and working upwards, while continually providing reassurance in calm atmosphere.

b) DISTRACTION: These techniques are to divert the patient attention and to allow short dental procedures to be performed by engaging the patient in conversation, by asking the patient breathe audibly through the nose and at the same time rhythmically tap the right foot on the floor, by instructing to patient to raise one leg and hold it in air.⁹

2. PROSTHODONTIC MANAGEMENT

1. During the initial steps of impression making following points should be considered:

a) Selection of tray: Tray size should be appropriate. Oversized tray can lead to gagging.

b) Material selection: Impression material of thin consistency should be avoided. Use of fast setting material is advocated. Tray should not be overloaded with impression material.

c) Posterior palatal seal should be appropriately recorded and should not be underdamed or overdamed.

d) Modified maxillary custom tray can also be used to

prevent gagging. It is easy to use these trays using disposable saliva ejectors at distal aspect so that excess impression material flow through these areas without triggering the soft palate.⁹

2. Recording jaw relations: Vertical dimension of occlusion should be appropriately recorded because when vertical dimension decreases space for tongue also decreases due to which tongue will fall back and it can lead to gagging.

3. In known gagger Marble technique is suggested. The patient is asked to keep 5 marbles in their mouth, as often as possible, in a week prior to the commencement of prosthodontic treatment⁹

4. TRAINING BASES: In desensitization technique, a patient is progressively supplied with series of small to full sized denture bases. A thin acrylic denture base without teeth is fabricated and the patient is asked to wear it at home, gradually increasing the length of the time the training base is worn.

5. ROOFLESS DENTURE- maxillary denture can be reduced to a U-shaped border situated approximately 10mm from the dental arch. Denture wearers with the above type of dentures reported that reduction of the palatal coverage influences their sense of taste positively, and reduces or eliminate gagging tendency.

6. MATTE FINISH DENTURE- Jordan in 1954 suggested



ACUPUNTURE (Fig. 1)

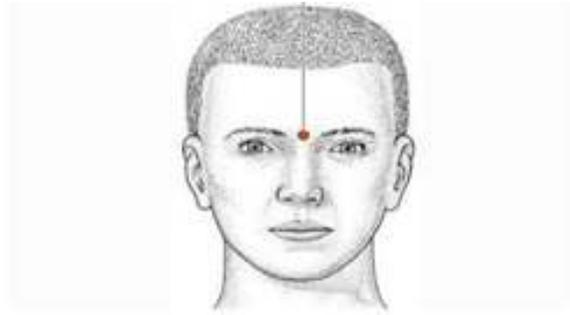


Fig. 2



Fig. 3. Neiguan Point, concave area at medial aspect of forearm below the palm



Fig. 4. Hegu point, concave area between first and second metacarpal bones

that a smooth highly polished surface coated with saliva may produce a slimy sensation which is sufficient to cause gagging in some patients; a matte finish has been advocated as more acceptable in this situation.

7. CONTROLLED BREATHING METHOD- This method advocated by the National Child Birth Trust for use by women in labour is similar to that advocated by Morphy. All patients were instructed in controlled rhythmic breathing and told to practice it for one or two weeks before prosthetic treatment commenced. The breathing was slow, deep and even, and the rhythm maintained by concentrating the mind upon a particular verse or tune with an even tempo.

3. PHARMACOLOGICAL METHODS

When clinical and prosthodontic procedures fail, pharmacological assistance is taken to control the gagging. Drugs used are classified as peripherally acting which include topical and local anesthetics and centrally acting drugs are antihistamines, sedatives, tranquilizers and CNS depressants.

4. SURGICAL CORRECTION

Leslie reported that persistent gagging results from atonic and relaxed soft palate which is found in nervous patients. So he advocated an operation to tighten and shorten the soft palate.¹⁰

5. ROLE OF ACUPUNCTURE: Acupuncture is a system of medicine in which a fine needle is inserted through the skin to a depth of a few millimeters, left in place for a time, sometimes manipulated and then withdrawn. There is a specific, recognized anti-gagging point on the ear. The needles are not disturbed during access to the mouth for dental treatment. (Fig. 1)

6. ACUPRESSURE TECHNIQUE: Acupressure points are sensitive points in the human body that feel soreness or distention, when deep pressure is applied for five to twenty minutes. These points are located on the left and right concave areas at the medial aspect of the forearm and the concave area between the first and second metacarpal bones. Acupressure points for gagging are Yingtang, Neiguan, Hegu. (Fig 2, 3 and 4)

CONCLUSION

Overt gagging can be distressing for both the patient and clinician. There appears to be no universal remedy for the successful management of the gagging patient. A wide variety of management strategies have been described and these should be tailored to suit the needs of individual patients. This can only be ascertained by taking a detailed history. In many situations a combination of treatment techniques is required.

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