

Gagging and its Management: A Review



Medical Science

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ABSTRACT

Gagging in dental patients can be disruptive to dental treatment and may be a barrier to patient care, preventing the provision of treatment and the wearing of prostheses. This article considers the normal gag reflex and factors that may be associated with the etiology of gagging and a review of the management of patients with an exaggerated gag reflex and including the strategies to assist clinicians.

Introduction

Gagging is a normal reflex mechanism to prevent the foreign bodies from entering into trachea. Gagging defined as "an involuntary contraction of the muscles of the soft palate or pharynx that results in retching". It commonly occurs during dental procedures. For some patients, severe gagging can be elicited by the dentist's fingers or instruments contacting the oral mucosa or even by non tactile stimuli. Providing dental treatment for this challenging group can be a stressful experience for both patients and clinicians.^[1,2]

Normal defense mechanism that prevents foreign bodies from entering the trachea, pharynx, or larynx is characterized by contraction of the oropharyngeal muscles, peristalsis becomes spasmodic and uncoordinated reversing the direction and finally the air is forced over the closed glottis producing a characteristic retching sound.

Gagging behavior includes puckering of lips, elevating & furrowing of tongue with rotation from back to front & hyoid bone in centre elevated, elevation of soft palate, fixation of hyoid bone, closing of nasopharynx, contraction of ant & post pillars of fauces, causing the tonsils to rotate in anteromedial direction, elevation, contraction & retraction of larynx & closure of glottis, retching or uncoordinated respiratory muscle spasm and vomiting.^[2-5]

Etiology of Gagging

It is associated with trigger zones, which are defined as; a focus of hyperirritability in tissue, which when palpated, is locally tender and gives rise to heterotrophic pain. In case of gagging Trigger zones includes palatoglossal and palatopharyngeal folds, base of tongue and palate, uvula and posterior pharyngeal wall. Factors involved in etiology of gagging are classified as physiologic factors, psychologic factors, local and systemic factors, anatomic factors and iatrogenic factors.

Physiologic Factors

It is characterized by presence of psychic stimuli resulting from excessive fear, apprehension, anxiety etc. It includes two main categories of patients: the somatogenic group & the psychologic group. Also there are two types of physical stimuli : tactile & nontactile. In dental prosthesis physiological factors include inadequate post dam, overextended borders, disharmonious occlusion, under extended dentures, smooth shiny surface and inadequate freeway space.

Psychologic Factors

They are called as psychological gaggers. In these patients psychosomatic reactions occur. In these patients fear toward the procedure can be seen. These patients can be treated by learning history mechanisms occur that are classical conditioning and operant conditioning.

Local And Systemic Factors

Local and systemic disorders include nasal obstruction, sinusitis, nasal polyps, mucosal congestion of the upper respiratory

tract, medication that cause nausea as a side effect, chronic gastrointestinal disease, chronic gastritis, peptic ulceration and carcinoma of the stomach.

Anatomic Factors

Anatomic factors includes anatomic abnormalities and oropharyngeal sensitivities, a long soft palate, a sudden drop at the junction of hard & soft palate or an atonic and relaxed soft palate that allows uvula to contact the tongue & soft palate to touch the posterior pharyngeal wall.

Iatrogenic Factors

These includes poor clinical technique & execution of intraoral procedures, overloaded impression tray, temperature extremes of instruments, poorly retained prosthesis, overextended prosthesis and increased vertical dimension.

Management of Gagging

Clinical Management^[6-10]

It involves general factors, surgical technique and modifications. General factors of managing gaggers includes asking the patient to concentrate on deep breathing through nose, use nasal decongestant before appointment, addressing fear to the dentist, putting lidocaine on posterior part of the tongue, placing topical anesthetics on intraoral films before placing them in mouth, listening to music-thus distraction of patient attention, providing the treatment in short increments, diverting the patient's attention from the gagging stimuli, engage the patient in conversation on some topic of special interest, have the patient count rapidly up to 50 or 100, tell the patient to breath audibly through the nose and at the same time, rhythmically tap the right foot on the floor, instruct the patient to raise his or her leg and hold it in the air. A well rested and relaxed patient with an empty stomach is less likely to gag.

Surgical technique employed for those who cannot tolerate complete dentures. In these patients persistent gagging occurs due to atonic and relaxed soft palate. Leslie derived an operation technique to shorten and tighten the soft palate and also removal of uvula if it is observed to be long.

Prosthodontic Management^[12-17]

Singer technique is used for conditioning It is also called as "marble technique". It involves multiple visits. During the first visit, five marbles are placed in the patient's mouth. The patient instructed to use them for a week. During second the ability to tolerate marbles is evaluated. During next visit, before making impressions, topical anaesthetic is applied and primary impressions are made. A "training bead" is placed in the lower anterior midline to guide the patient to be able to endure the presence of both base plates. Then complete denture is fabricated following the conventional technique.

Pharmacologic Measures^[11,15,19]

It includes use of anesthesia. Mucosal surfaces can be desensitized using sprays, lozenges, mouth rinses, injections. But it has disadvantages like nausea and vomiting. Also injection of local

anesthetic is used but as it distends the tissues, thus results in compromised retention. Conscious sedation is achieved with inhalational, oral and intravenous agents. It maintains reflexes that protect patient's airway. Patients who do not respond to any behavioral therapy or sedation are treated using drugs. The Drugs used to control gagging are classified as peripherally acting (topical and local anesthetic) and centrally acting (anti-histamines, sedative and tranquilizers, parasympatholytics and central nervous system depressants) agents.

Psychological Intervention^[20-25]

It has been observed to be the most successful method. Objective is to "unlearn" behaviors that produce gag and to reduce anxiety. It is achieved by various methods. Relaxation abolishes gag reflex and overrides unhelpful thought processes thus asking the patient to tense & relax certain muscle groups and provide assurance in a calm atmosphere. Distraction temporarily diverts patient's attention through conversations. Distraction and relaxation are used when patient is unable to dissociate from gagging. Suggestion is also the distraction technique refined by adding an element of suggestion. Patient must be in-

formed that retching will not occur during distraction activity. Use of visual imagery and hypnosis is also included.

In re-education techniques, maladaptive thoughts and experiences of the patient are altered through positive reinforcement. It is reversal of conditioning process by unlearning the behavior. Incremental exposure of feared stimulus to patient under relaxation & reassurance is done. The aversive stimuli increased in intensity, duration and frequency. Patient habituates by developing coping strategies towards discomfort and panic. Sensory flooding relies on rapid extinction of the link between the stimulus and gagging and by this aversive reactions are diminished.

Conclusion

No single technique serves as universal remedy for the successful management of the gagging in dental patients. The management techniques should suit the needs of the individual patient. It can be ascertained by taking a detailed history, examination and managed by a combination of many techniques dictated by the causes.

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