Review Article

Non-pharmacological Management of Gagging in a Dental Clinical Setting

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Abstract

This paper aims to review the methods of non-pharmacological management of gagging in a dental setting. Various methods have been compiled from a literature search enabling both the practitioner and patient to discuss and choose what might suit an individual the best. The author independently collected data from national and international journal articles. The MEDLINE PubMed database was also searched with appropriate keywords. A hyperactive gag reflex may make even the most straightforward dental procedure like an intraoral examination or a digital impression with an intraoral scanner extremely bothersome unless adequately understood and managed.

Keywords: Gagging, Gag reflex, Cognitive therapy, Retching, Acupuncture.

Introduction

Gagging is a recurring or common issue faced by dentists creating a challenge for effective treatment. Patients with a gag reflex will require careful examination of their oral cavity, medical history, and personal consultation.[1,2] All are a vital sources of information when managing to gagging. Stimuli such as dental instruments, the clinician's gloved fingers within the oral cavity, or even non-tactile stimuli such as the smells of various dental materials may cause many patients' exaggerated reflexes. The gag reflex is a natural and involuntary protection mechanism that safeguards the pharynx and throat from entering foreign objects.[1-10] This reflex may often be triggered by five crucial areas, also known as *Trigger Zones*: The oral cavity, the palatoglossal and palatopharyngeal folds, the base of the tongue, palate uvula, and posterior pharyngeal wall.[1-3]

Assessment of gagging: Dickinson and Fiske[11] developed two gagging classification systems, the *Gagging Severity Index* and the *Gagging Prevention Index*, using five defined grades.[4] Dentists can recognize the severity of the issue, enabling them to apply procedures to consideration or implementation to ease the patients' condition and create a calm environment during treatment.[1,3]

Classification of Gagging

Gag reflex has been classified in the following ways:[4]

1. Somatogenic gagging, prompted by touching a *Trigger Area*, could be a result of these factors:[4]
    - Malocclusion
    - Lack of tongue space
    - Thick posterior border of denture
    - Inadequate posterior palatal seal
    - Insufficient retention
2. Psychogenic gagging prompted without direct contact can occur because of these emotional states.[4]
    - Fear
    - Anxiety
    - Apprehension

Etiology

Researchers have proposed several causes based on innate or acquired local or general reflexes. The following factors are considered necessary in the etiology of gagging:[5-7]

1. Systemic Factors: Chronic gastrointestinal disease, peptic ulceration, and carcinoma of the stomach often shared in smokers and alcoholics. Chronic conditions include deviated nasal septum, nasal polyps, and sinusitis with blocked nasal passages, the usage of certain medications and pregnancy.[5,6,10]
2. Anatomical Factors: Distribution of neural pathways and especially the vagus nerve.[5-7]

Access this article online

Website: www.jrad.co.in

DOI: https://doi.org/10.53064/jrad.2022.13.4.211

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Received: Mar 12, 2022; **Accepted:** Apr. 19, 2022; **Published:** May 22, 2022

How to cite this article: Pyla S. Non-pharmacological Management of Gagging in a Dental Clinical Setting. J Res Adv Dent 2022;13(4):104-105.

3. Psychological Factors: Smell of the dental environment, an unpleasant experience, and the sound of a dental handpiece as a negative conditioned reflex.[6-10]
4. Physiological Factors: Extra and intraoral stimuli.[6,7]
5. Iatrogenic Factors: Inability of the dentist to render the procedures competently, using extended procedural time, or inadequate posterior palatal seal may cause gagging.[3,7]

Management

From both the patients' and dentists' points of view, managing the gag reflex is crucial for a successful outcome. Vital to this success is a thorough inspection of the oral cavity, the patient's medical history, and a personal discussion with the patient to ensure appropriate prevention or management as be the case.[9,12]

Non-pharmacological management strategies summarized from the literature are as listed below:[2,3,4,5,12]

1. Distraction: Distraction therapy as a short-term management modality may be playing music of the patient's choice, playing entertainment, or informative video clips on a dental unit mounted monitor or even the use of virtual reality goggles.
2. Relaxation Techniques: Patients may be reassured by helping them stay calm and comfortable with updates regarding the treatment progress and time remaining for completion.
3. Psychological Therapy: Cognitive behavioral therapy can aid in easing and comforting apprehensive patients.
4. Systemic Desensitizing Technique: The gradual exposure technique helps the patient overcome the feared stimuli. A popular example is Singer's Marble Technique. Patients were given five round multicolored marbles and were told to put the marbles in their mouths, one at a time, at their leisure until all five marbles were in their mouths. Since the fear of swallowing a foreign object can induce the gag reflex, the patients were assured that swallowing a marble would not be harmful. This strategy has been documented as being quite effective.
5. Hypnosis Technique: State of consciousness when the patient loses voluntary action and is responsive to direction or command. This is often not a successful mode of therapy because this may interfere with the patient's subconscious mind, requiring it to be performed only by a certified professional.
6. Acupressure: Applying force between the thumb and index finger at the concave point, also known as the Hegu point, can control a gag reflex. Other acupressure points include the Nei Guan, Lao Gong, Er Men and Cheng Jiang.

Conclusion

As a multifactorial etiology has been highlighted, it is essential to personalize the approach to a gag reflex based on the patient's needs ascertained by explicitly interacting with the patient.

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