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**Appurtenant Technique to Manage Gagging Patient - Case Report**

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**Abstract**

The gag reflex is a physiological reaction which safeguards the airway from foreign bodies. In some people this response is exaggerated to the extent that the acceptance/provision of dental treatment becomes highly impossible. The technique proposed in this paper is application of pressure at Yintang point in order to relieve patient from stress and thereby reducing the incidence of gag reflex. The objective of this case report is to illustrate the role of acupressure as a method of controlling the gag reflex which is safe, quick, inexpensive and non-invasive. Management of patients with gagging involves many different approaches Acupressure, though based on the principles of acupuncture, the main advantage is that, it is completely non-invasive and does not require any instruments such as needle This simple technique of combining acupressure with impression making procedures to alleviate the problem of gagging during impression making is quite helpful irrespective of the severity of the reflex and impression material.

**Key words:** Acupressure, Gag Reflex, Yintang point

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**Introduction**

Gagging is the perplexing situation commonly encountered during dental procedures while making a maxillary impression. Patients with mild gagging

problems are managed successfully using minor procedural modifications. The gag reflex is a physiological reaction which safeguards the airway from foreign bodies. In some people this response is

exaggerated to the extent that the acceptance/provision of dental treatment becomes highly impossible. It tends to compromise the dental treatment and becomes distressing for both the patients and the clinicians. The apprehension developed towards the dental appointments prevents patients with gagging problem from seeking regular oral care. Consequently these patients will have poor dental hygiene and only seek dental treatment when in pain or may request treatment under general anaesthesia.<sup>1,2</sup> Management of patients with gagging involves many different approaches. And under such circumstances it is the dentist's responsibility to choose the right method of management for that particular case. One of the many methods available for controlling gag reflexes is

acupressure which is considered to be a valuable tool.

Acupressure is a method of Traditional Chinese Medicine massage based upon the same principles of acupuncture, which uses finger pressure to stimulate the pressure points. The first acupressure point for anxiety is called Yintang, or Hall of Impression. (Figure 1) This point lies midway between the medial ends of the eyebrow, in the area designated by many cultures as the "third eye". Yintang<sup>3</sup> has a very powerful action of calming the mind and because of this action is almost always used in the treatment of insomnia, anxiety and agitation. The aim of this report is to highlight the role of acupressure in controlling gag, which is a safe, economical, quick and relatively a non -invasive technique.

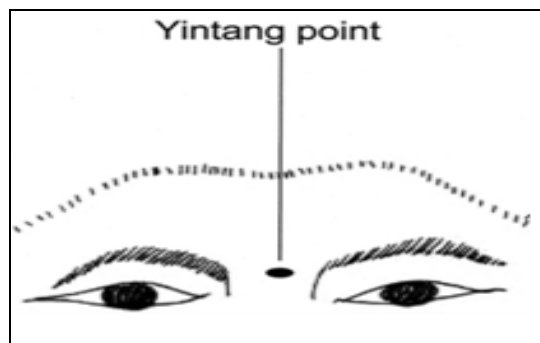


Figure 1: Location of Yintang Point

### **Case report**

A 38 year old female patient reported to the Department of Prosthodontics, Sri Ramachandra University, Chennai with the chief complaint of vomiting sensation upon wearing maxillary complete denture. Patient gives a history of complete edentulism of both maxillary and mandibular arches for past 2 years and was wearing dentures for the same for past one and a half years, with no relevant medical history. On clinical examination, it was diagnosed that the maxillary and mandibular residual alveolar ridge was rounded and well formed. Considering the various treatment modalities, it was decided that acupressure

was the most safe and reliable technique to be adopted for this patient. The objective of this case report is to illustrate the role of acupressure as a method of controlling the gag reflex which is safe, quick, inexpensive and non-invasive.

### **Clinical Procedure**

In the first visit, prior to the clinical procedure the severity of gagging was assessed using Gagging Severity Index, (Table 1) and it was found to be grade III. The primary impression of the maxillary and mandibular edentulous residual ridge was made with irreversible hydrocolloid impression material. (Alginoplast<sup>®</sup>, Regular

set, Heraeus Kulzer GmbH, Hanau, Holland)

The maxillary impression (Figure 2) was made with the mandibular edentulous trays.

During the impression procedure, the

acupressure point, Yintang, which lies midway between the medial ends of the eyebrow is pressed using prolonged finger pressure. (Figure 3)



Figure: 2 Maxillary alginate impression in mandibular edentulous stock tray



Figure: 3 Yintang Point pressured using firm finger pressure

Gradual, steady, penetrating pressure for approximately three minutes is ideal. As a general rule, the pressure applied at the acupressure point should be such that it

"hurts good" – i.e., something between firm, pleasant pressure and outright pain.<sup>4</sup> During the dental treatment, the effectiveness of the acupressure in preventing or reducing

gagging was assessed with the help of Gagging Prevention Index and it was found to be grade II (Table 2) Following which ,from the primary cast, the denture base and occlusal rims were fabricated directly omitting the clinical procedures such as border moulding and secondary impression. A U-shaped maxillary denture base with occlusal rim was fabricated in order to relieve the distal extension of the denture base into the soft palatal region. After

tentative jaw relation, teeth setting and wax trial was performed. In both tentative and try in procedures acupressure technique was employed by applying firm gentle pressure on the Yintang point<sup>3</sup>. During the try in procedure, functional impression was made with medium body (poly vinyl siloxane-Hydrosil {Dentsply/Caulk} Milford DE) impression material and the final dentures were processed.

**Table 1** Gagging severity index (GSI)

Grade	Description
I	Very mild, occasional and controlled by the patient
II	Mild, and control is required by the patient with reassurance from the dental team
III	Moderate, consistent and limits treatment options
IV	Severe and treatment is impossible
V	Very severe; affecting patient behavior and dental attendance and making treatment impossible

**Source: Dickinson, 2000**

Table 2 Gagging prevention index (GPI)

Grade	Description
I	Obtunded gag reflex; treatment successful
II	Partially controlled gag reflex; all treatment possible
III	Partially controlled gag reflex but frequent gagging; simple treatment Possible
IV	Inadequately controlled gag reflex; simple treatment unable to be completed
V	Gag reflex severe; no treatment possible

Source: Dickinson, 2000

### Discussion

The etiology of gagging is very complex and not fully understood till date. The etiology is somatic, psychogenic or a combination of both. Many techniques have reported in the literature to overcome the problem of gagging during impression making. However, there is no single technique that is suitable for every patient.<sup>5</sup> Psychological approaches involves prolonged procedures and highly cooperative patients in order to obtain successful results.<sup>6</sup> Surgery was not highly recommended and not suitable for all cases.<sup>7</sup> Singer's marble technique<sup>8</sup> required motivation of the patient. However, this

approach presents definite medico-legal risks of aspirating some of the marbles by the patient in the event of practice. On the other hand, drugs have limited effect on mild cases and seem to stimulate gagging for severe cases.<sup>2</sup> Topical anaesthetics tend to increase nausea and vomiting.<sup>9</sup> This is due to the sense of numbness produced in the sensitive palate and pharyngeal areas that may be subject to the vomiting reflex. Centrally acting drugs - antihistamines, sedatives tranquilizers, and parasympathetic and CNS depressants - offer only a short term solution; especially for some severe cases.<sup>10</sup> Complicated techniques have been

employed in severe cases. Hypnosis and behavioral therapy were utilized in hysteric patients.<sup>11</sup> Keeping in consideration the patient's chief complaint of vomiting sensation on wearing maxillary denture and to overcome the difficulties of the above mentioned techniques, acupressure was chosen as the appropriate treatment. The technique proposed in this paper is application of acupressure at particular sites in order to relieve patient from stress and thereby reducing the incidence of gag reflex. Acupressure, though based on the principles of acupuncture, the main advantage is that, it is completely non-invasive and does not require any instruments such as needle. The

acupressure technique is simple as compared to many of those discussed above. With the personal participation of the patient, the impression making process was smooth and effortless since it has given the patient confidence and control over the situation. The technique has been shown to be accurate and valid irrespective of the severity of gagging reflex. The final prostheses were clinically assessed and were found to be quite successful and satisfactory as the roofless maxillary dentures were fabricated using mandibular impression trays which also aided in reducing the gag reflex. (Figure: 4)



Figure: 4 Roofless Maxillary Complete denture prosthesis

Since the roofless dentures do not extend into the posterior palatal seal region, there is no contact of the acrylic denture base in that region thereby reducing the incidence of gag reflex along with the acupuncture technique.

Taking into consideration the advantages of the present technique, such as, non-

### **Conclusion**

Gag reflex is experienced in various circumstances, such as during or as a consequence of dental procedure. It is highly crucial to make a clear-cut distinction between the general or local causes of gag reflex and the psychological component involved in it. There seems to be no universal remedy for the successful management of the gagging patient. A wide range of management strategies have been explained and they should be tailored in order to suit the needs of individual patient. The skill and patience of the clinician is also responsible for controlling such a situation in order to carry out the treatment with

invasive, economical and fabrication of roofless maxillary denture with mandibular impression trays, we can conclude that acupuncture is a novel and appurtenant method in managing patients with gag reflex.

satisfactory results for the patient. This simple, inexpensive, non-invasive technique of combining acupuncture [Yintang Point] with altered impression making procedures to alleviate the problem of gagging during impression making is quite helpful irrespective of the severity of the reflex and impression material.

### **References**

1. Wright SM. Medical history, social habits, and individual experiences of patients who gag with dentures. J Prosthet Dent 1981; 45:474-478.
2. Conny DJ, Tedesco LA. The gagging problem in prosthodontic treatment-



- Part I: description and causes. J Prosthet Dent 1983; 49:601-606.
3. Litscher G. Shenting and Yintang: Quantification of Cerebral Effects of Acupressure, Manual Acupuncture, and Laserneedle Acupuncture Using High-Tech Neuromonitoring Methods. Medical Acupuncture Vol. 16
  4. Gach MR. How to Apply Pressure to Acupressure Points. [www.acupressure.com](http://www.acupressure.com)
  5. Conny DJ, Tedesco LA. The gagging problem in prosthodontic treatment. Part 1: Identification and causes. J Prosthet Dent 1983; 49:601.
  6. Kovats JJ. Clinical evaluation of the gagging denture patient. J Prosthet Dent 1971; 25; 6: 613-619.
  7. Leslie SW. A new operation to overcome gagging as an aid to denture construction. J Can Dent Assoc 1940; 6:291-294.
  8. Singer I L. The marble technique: A method for treating the "hopeless gagger" for complete dentures. J Prosthet Dent 1973; 29:146-150.
  9. Schole ML. Management of the gagging patient. J Prosthet Dent 1959; 9:578-83.
  10. Saunders WH. intravenous Valium for the gagging patient. Trans Acad Ophthalmol Otolaryngol 1973; 77; 6: 411.
  11. Epstein LH, Hershen M. Behavioral control of hysterical gagging. J Clin Psychol 1974; 30; 1: 102-104.