CASE REPORT

MANAGEMENT OF A VELOPHARYNGEAL DEFECT- PALATAL LIFTING PROSTHESIS- A CASE REPORT

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Abstract

Velopharyngeal (VP) insufficiency is a structural issue with the soft palate that results in an incomplete palatopharyngeal sphincter. When a surgically corrected soft palate is insufficient to make contact with the pharyngeal walls during function, speech aid prostheses or speech bulbs are ideal treatment options. The retentive component is incorporated into heat-cured acrylic resin material to enhance retention, resulting in improvements in hypernasality, speech, comfort, and overall patient acceptance.

Key words : velopharygeal insufficiency, palatal lift prosthesis,velopharygeal incompetence

Introduction

The velopharyngeal mechanism controls airflow between the mouth and nose, affecting the perceived voice quality. Issues with closure or structural changes in these areas can affect voice quality, categorized by physiological or structural factors.[1]Palatal insufficiency and incompetency are terms used to describe velopharyngeal issues, with subtle differences. Insufficiency relates to structural defects, incompetency to the inability of a normal structure to close properly.[2]

Velopharyngeal incompetence occurs in patients with intact anatomy but neuromuscular disorders. Surgery is preferred but not always feasible, especially in cases of advanced medical conditions. For those unable to undergo surgery, prosthetic treatment coupled with speech therapy, such as palatal lift prostheses (PLP), is recommended.[1] This article focuses on a prosthetic approach to managing and rehabilitating patients with velopharyngeal defects.

Case Report

A male patient aged 47 years reported to the department of prosthodontics with a chief complaint of difficulty in swallowing and speech. He presented with nasal twang and regurgitation of liquid due to the velopharyngeal defect.(figure 1) On elicitating the chief complaint patient had a history of squamous cell carcinoma of uvula and underwent surgical excision and chemotherapy

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was going on for the same from 2 years. He was using an interim palatal lift prosthesis which was underextended and less retentive. On examination, the patient had a defect extending beyond hard palate involving only the left soft palate region. An altered speech was noted. Patient was undergoing radiotherapy and intraorally there were teeth with deep dental caries noted, and generalized attrition noted.

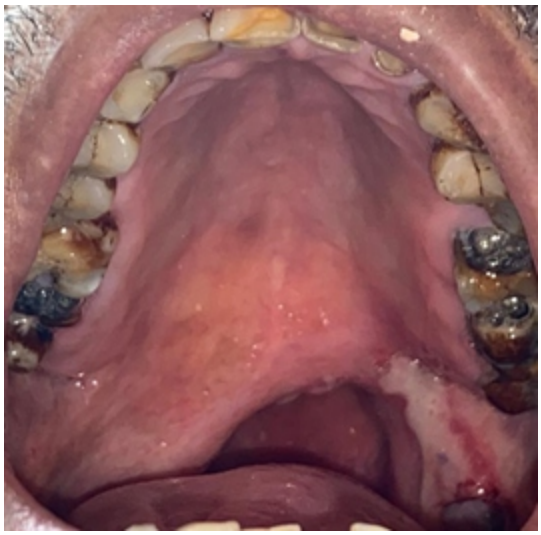

Fig. -1 intraoral image

A diagnosis of unrepaired soft palate with hypernasal speech was given. Prior to the clinical procedure, the detailed treatment option and plan was conveyed to the patient and an informed consent was obtained.

Procedure

1. Diagnostic impression of the maxillary and mandibular arch was made using irreversible hydrocolloid in perforated stock tray.(figure 2)
2. Diagnostic cast were fabricated using dental stone.
3. Clasp were made on to the molars and premolars and a wax pattern was done and 2, 1mm wire was used in the posterior region to strengthen the extension.
4. Flasking was done and the prosthesis was fabricated with heat cure resin.(figure 3)
5. Insertion was done and the extensions were checked and overextension was trimmed.
6. The posterior intaglio surface was relined by using soft liner by instructing the patient to swallow and head movements was done after inserting the prosthesis.(figure 4)
7. The patient was recalled periodically once every month and the relining of the soft palate defect was done.

Fig. 2- maxillary arch impression with irreversible hydrocolloid

Fig 3- palatal lift prosthesis intaglio surface

Fig 4- insertion of the palatal lift prosthesis

Discussion

The velopharyngeal sphincter, composed of the soft palate and the lateral and posterior pharyngeal walls, is crucial for effective speech and swallowing. Insufficient tissue in this area results in velopharyngeal insufficiency.[3]The main goals of prosthodontic treatment are to restore chewing, swallowing, and achieve functional speech. For patients with velopharyngeal defects, the preferred definitive prosthesis is typically an obturator, ideally designed as a single unit.[4] In this case report the patient was undergoing radiotherapy so an intermediate palatal lift prosthesis was given to the patient. The velopharygeal defect was still healing and contracting so we used soft liner in the intaglio.

Achieving patient's acceptance and compliance with a PLP continues to pose a major challenge. Issues such as dysphagia and limited speech improvement in the short term are frequently cited as contributing factors.[5] Due to discomfort, such as swallowing difficulty or triggering the gag reflex while wearing a PLP, the device necessitates meticulous clinical adjustment. Sometimes, multiple adjustments are required before achieving the desired fit, particularly in patients with a sensitive soft palate and high gag reflux. This adjustment process involves trial and error with brief reinsertions of the device. Our proposed design simplifies the process of finding the appropriate angle.[5]

Heat-cured polymethyl methacrylate resins offer ease of construction and repair, lightweight properties, and polymerization without residual components. They also exhibit low bacterial adherence and provide an unlimited working time. Combining easy vertical inclination adjustment with direct palatal portion adjustment in the mouth can streamline the procedure and decrease the need for multiple adjustments and appointments.[6]

Conclusion

For patients with palatopharyngeal defects, a definitive treatment option may involve a Co-Cr cast partial denture with a hollow bulb in the affected area to restore speech, swallowing, and chewing functions. However, an interim palatal lift prosthesis is necessary during the treatment phase.

References

1. Shifman A, Finkelstein Y, Nachmani A, et al: Speech-aid prostheses for neurogenic velopharyngeal incompetence. J Prosthet Dent 2000;83:99-106
2. Rilo B, Fernández-Formoso N, da Silva L, Pinho JC. A simplified palatal lift prosthesis for neurogenic velopharyngeal incompetence. Journal of Prosthodontics. 2013 Aug;22(6):506-8.
3. Tuna SH, Pekkan G, Gumus HO, Aktas A. Prosthetic rehabilitation of velopharyngeal insufficiency: Pharyngeal obturator prostheses with different retention mechanisms. Eur J Dent 2010;4:81-7.
4. Wu YL, Schaaf NG. Comparison of weight reduction in different designs of solid and hollow obturator prostheses. J Prosthet Dent 1989;62:214-7.

5. Raju H, Padmanabhan TV, Narayan A: Effect of a palatal lift prosthesis in individuals with velopharyngeal incompetence. Int J Prosthodont 2009;22:579-585
6. Rilo B, Fernández-Formoso N, da Silva L, Pinho JC. A simplified palatal lift prosthesis for neurogenic velopharyngeal incompetence. Journal of Prosthodontics. 2013 Aug;22(6):506-8.

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