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FACIAL AESTHETICS USING A CHEEK PLUMPER

Dentistry

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ABSTRACT

Facial aesthetics play a major role in person's professional and social life. Aging and rapid resorption of bone results in sunken appearance of cheeks. Cheek plumper is the most widely used prosthesis to support sunken cheeks thereby enhancing aesthetics. This case report describes a novel technique for the fabrication of an attached cheek plumper prosthesis for a completely edentulous patient with a sunken appearance.

KEYWORDS

cheek plumper, facial aesthetics, novel technique

INTRODUCTION

A long period of edentulousness and aging causes resorption of the maxillary residual ridge resulting in narrowing of the arch and loss of facial muscle support which leads to the sunken appearance of cheeks. Loss of subcutaneous fat and elasticity of connective tissue causes the sunken cheek appearance.[1] Poor facial aesthetics also has a negative psychological impact.[2] This condition can be modified either by invasive or noninvasive approach. Reconstructive surgical procedures and botulinum (BOTOX) infusion in the facial muscles are the invasive approach and prosthetic method of cheek support is the non-invasive approach. The plastic surgery procedures may result in postoperative scar and are contraindicated in old patients having medical disorders.[3]Cheek plumper is the prosthetic solution for assisting and lifting the cheeks. This case report describes the fabrication of an attached cheek plumper prosthesis for a completely edentulous patient with a sunken appearance.

Case Report

A 70-year-old male came to the department for replacing the missing teeth. On examination, the patient had an edentulous maxillary and mandibular arch with bilateral sunken appearance of cheek. (Figure 1) The patient was completely edentulous since 15 years with no history of prosthetic rehabilitation. The treatment plan was complete denture prosthesis with an attached buccal cheek plumper on either side of the maxillary denture.

Figure 1: Patient with sunken cheek appearance

The preliminary impression, final impression and jaw relation were carried out in a conventional manner. The trial denture base was tried in patient's mouth and checked for the aesthetics and phonetics. To support the cheek muscles additional wax were added on both sides of the buccal flange to form a pouch opposite to first and second molar region. (Figure 2)

Figure 2: Try In of denture with extra wax added

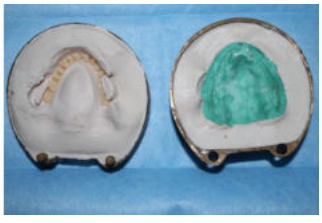

Figure 3: Hollowed out buccal pouch
Figure 4: Maxillary trial denture after dewaxing

The wax addition was in accordance with the functional movements of cheek muscles during mastication, speech, and swallowing.[7] The additional wax added was scooped out from the occlusal surface creating an open bulb to reduce the weight of the prosthesis. (Figure 3) Modified maxillary trial denture was invested and dewaxed. (Figure 4). Following this packing was done with special attention to fill the acrylic resin into the recess created for the cheek plumper. After curing the complete denture was retrieved, trimmed, and polished. (Figure 5) Inorder to avoid food accumulation in open bulb, a wax pattern of the lid was adapted on open buccal pouch. (Figure 6) The wax lid was acrylized and sealed to the hollow cheek plumper using self-cure acrylic resin. (Figure 7,8)

Figure 5: Denture with open buccal pouch
Figure 6: Wax pattern of lid adapted to buccal pouch.

Figure 7: Prosthesis and lid after acrylization

Figure 8: Completed prosthesis with lid attached
Figure 9: Finished prosthesis in situ

The maxillary complete denture with attached closed hollow bulb cheek plumper, and the mandibular complete denture was inserted (Figure:9) The patient was extremely happy as the sunken appearance of cheek was considerably improved and the prosthesis was satisfactory from a functional point of view. (Figure:10) The patient came for regular recall visits and there were no reports of any untoward experiences.

Figure 10: Pre- and post-operative view

DISCUSSION

Aesthetics play a major role in the overall satisfaction of the complete denture wearers. The maxillary arch bone resorption in the posterior region along with the resorption of the zygomatic arch leads to sunken appearance. The conventional complete denture cannot provide adequate support to the cheek muscle in cases of sunken cheeks. Hence, modification of the buccal flange of the prosthesis is necessary.[4] Sunken cheek muscles can be supported prosthetically either by detachable or undetachable cheek plumpers. Detachable cheek plumper make use of magnets, double dowel pins, push buttons or press studs, friction locks and customized Co-Cr attachments for mechanical attachments to the denture prosthesis. Such attachments have certain limitations such as loss of magnetic power, susceptibility to tarnish & corrosion, breakage, increased weight, reduced retention over time and chances of aspiration.[5]In the present case, considering the age of the patient, an undetachable prosthesis was chosen for ease of use. The denture and buccal pouch processed as a single unit avoided dimensional changes during processing of the prosthesis. The cheek plumper was made hollow to reduce the weight of prosthesis so that the retention of the maxillary denture was not compromised.[6] The stability of the complete denture was not affected since the prosthesis was made according to the functional movements of muscles during mastication, speech, and swallowing.[7]

The hollowness of the complete denture can be achieved either by putty or lost salt technique. [8]However, both the techniques have limitations in assessing the adequate dimension of the hollowness of the denture during the processing. It may result in either inadequate or excess thickness of the denture border, leading to perforation or increased weight of the prosthesis.[9] The removal of putty after processing of the denture would be difficult. In the lost salt technique, there are chances of displacement of salt during the processing of denture.[10] To avoid such problems, in this case report, scooping out of wax was done to maintain an even thickness of the walls of buccal pouch. It also considerably reduced the weight of the prosthesis.

CONCLUSION

Prosthetic rehabilitation of a completely edentulous patient not only aims at the replacement of missing teeth but also in improving the aesthetics. This case report describes a simple and cost-effective treatment method for the fabrication of attached hollow buccal cheek plumper prosthesis that improves the facial appearance in a patient with sunken cheeks which ultimately improve aesthetics and psychological well-being.

REFERENCES

1. Pietrokovski, J., Starinsky, R., Arensburg, B., & Kaffe, I. (2007). Morphologic characteristics of bony edentulous jaws. Journal of Prosthodontics: Official Journal of the American College of Prosthodontists, 16(2), 141–147. https://doi.org/10.1111/j.1532-849X.2007.00165.x
2. Kudsi, Z., Fenlon, M. R., Johal, A., & Baysan, A. (2020). Assessment of Psychological Disturbance in Patients with Tooth Loss: A Systematic Review of Assessment Tools. Journal of Prosthodontics: Official Journal of the American College of Prosthodontists, 29(3), 193–200. https://doi.org/10.1111/jopr.13141
3. Carruthers, J., & Carruthers, A. (2009). Botulinum toxin in facial rejuvenation: An update. Dermatologic Clinics, 27(4), 417–425, v. https://doi.org/10.1016/j.det.2009.08.001
4. Albaker, A. M. (2013). The oral health-related quality of life in edentulous patients treated with conventional complete dentures. Gerodontology, 30(1), 61–66. https://doi.org/10.1111/j.1741-2358.2012.00645.x
5. Rathee, M., S, D., Malik, S., Wakure, P., & Chahal, S. (2021). Rehabilitation and Esthetic Enhancement of Edentulous Patient with Hollow Cheeks Using Innovative Detachable Cheek Plumper: Case Report. European Journal of Dental and Oral Health, 2(6), Article 6. https://doi.org/10.24018/ejdent.2021.2.6.123
6. Caculo, S. P., Aras, M. A., & Chitre, V. (2013). Hollow dentures: Treatment option for atrophic ridges. a clinical report. Journal of Prosthodontics: Official Journal of the American College of Prosthodontists, 22(3), 217–222. https://doi.org/10.1111/j.1532-849X.2012.00921.x
7. Kapur, K. K., & Soman, S. (1965). The effect of denture factors on masticatory performance. ii. influence of the polished surface contour of denture base. The Journal of Prosthetic Dentistry, 15, 231–240. https://doi.org/10.1016/0022-3913(65)90092-2
8. Gardner, L. K., Parr, G. R., & Rahn, A. O. (1991). Simplified technique for the fabrication of a hollow obturator prosthesis using vinyl polysiloxane. The Journal of Prosthetic Dentistry, 66(1), 60–62. https://doi.org/10.1016/0022-3913(91)90354-y
9. Radke, U., & Mundhe, D. (2011). Hollow maxillary complete denture. Journal of Indian Prosthodontic Society, 11(4), 246–249. https://doi.org/10.1007/s13191-011-0082-9
10. Aggarwal, H., Jurel, S. K., Singh, R. D., Chand, P., & Kumar, P. (2012). Lost salt technique for severely resorbed alveolar ridges: An innovative approach. Contemporary Clinical Dentistry, 3(3), 352–355. https://doi.org/10.4103/0976-237X.103636