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Case Report

"A Need for Medical-Dental Communication in Acquired Palatal Perforation Cases in Developing Nations"

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Abstract: Perforation of the hard palate is multi causal in nature and depending on its cause, the extent and location varies. A male patient aged 29 years was referred for prosthetic rehabilitation of a perforation of the hard palate. The patient had difficulty in swallowing, phonetics, nasal regurgitation of food since the perforation was large and extended to the soft palate. Treatment plan consented by the patient was a fabrication of hollow obturator followed by speech therapy. The hollow part of the obturator was fabricated using a soluble water based clay which dissolves upon contact with water. The obturator was retained by a combination of interproximal acrylic extension and various clasps. The obturator was retentive and met the satisfaction level of the patient.

Keywords: cleft palate, hollow obturator, developmental, water based clay, phonetics.

INTRODUCTION

Perforation of the hard palate can be either developmental or acquired (infectious and noninfectious) in nature (Patel, N. *et al*., 2015). Treatment of such cases is generally surgical correction, either alone or in combination with hard and soft tissue grafting. Closure of the palatal perforations by prosthesis is a temporary solution except in cases where surgeries are not indicated due to underlying systemic condition. Palatal perforations are annoying since they cause mixing of oral and nasal fluids, difficulty in mastication, halitosis and severely impaired phonetics (Curtis, T. A., & Beumer, J. 1996; Arigbede, A. O. *et al*., 2006). In post carcinomatous surgeries, the defect in the hard palate can be large that results in difficulty of retaining an obturator. Conventionally, they are hollowed from inside to decrease their overall weight of the obturator that indirectly aids in retention (Oki, M. *et al*., 2006). Ideally, the prosthesis design of such defects should be done before commencing the surgeries so that a prosthodontist can plan the immediate, interim and definitive obturator for better patient compliance but in developing nations there is still a lacuna in multidisciplinary approach especially between general surgeons and prosthodontist.

This clinical case report describes a case of a perforated palate post surgical rehabilitation with a hollow obturator. The article also discusses the significance of a multidisciplinary approach between medical and dental doctors since multidisciplinary treatment plan improves patient compliance and eliminates the psychological and physical trauma associated with such surgeries.

Case Report

An adult male patient aged 34 years, married and having two children, reported to the department of oral medicine and diagnosis with chief complaint of inability to speak properly after a surgery for oral cancer had left him with a hole in the hard palate. After detailed history taking and examination of previous medical records, the patient was referred to the department of prosthodontics for fabrication of an

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obturator in relation to the maxillary deformity. Medical history was noncontributory except for the fact that the patient had developed an ulcer on the hard palate in the midline region two years back for which he was treated by a local general surgeon in a private hospital in the town to which he belonged. The patient was asked to undergo prosthetic rehabilitation once the defect had healed. The patient sought treatment at local dentist who had referred him to the present institute. The patient also reported that he had started communication problems with his colleagues and his family members since he was not able to pronounce properly. Extra oral examination was noncontributory. Intra oral examination revealed an intact natural dentition in both arches. The maxillary hard palate was perforated **(Fig 1 a)** the size of which was roughly 30 mm in length and 24 mm in width that extended to and over the soft palate region. There was no hard palate bone continuity in the posterior palatal region. The patient was presented with a treatment plan of rehabilitation

Figure 1: (a) Perforated hard palate (b) Clinical block using a sterile threaded gauze piece (c) Preliminary impressions of maxillary and mandibular arches (d) Diagnostic cast

With The Obturator Followed by Speech Therapy to Which He Consented

Treatment started by making preliminary impressions using irreversible hydrocolloid (Thixotropic, Zhermach, Italy) after blocking out the defect clinically with a threaded sterile gauze piece **(Fig 1 b)** which was to be retrieved along with the impression **(Fig 1 c)**. A diagnostic cast was retrieved from preliminary impressions, which was analyzed on a dental cast surveyor (Ney, Dentsply, Hanau-Wolfgang, Germany) for location of retentive undercuts on the buccal surfaces of the maxillary posterior teeth later. Existing undercuts that were favored in term of esthetics were in the range of 0.020 to 0.030 of an inch. The definitive design for the obturator was to be hollow bulb obturator retained with wrought wire. The area of the cast near the defect was relieved by wax to an area of 3 mm onto the hard palate **(Fig 1 d)**. The obturator was processed in a conventional way, using a three component denture flask. At the time of packing, a layer of denture base acrylic (DPI-Heat cure) was placed in the defect on which a soluble water base clay (Pomade Matte Clay, Korea) was placed **(Fig 2 a)**. A layer of denture acrylic was then placed over the clay **(Fig 2 b)** and routine flasking and processing procedures were done. The retention of the denture was aided by placement of Adams clasp and a loop clasp **(Fig 2 c, d)** made from a 19 gauge stainless steel wrought wire (A J Wilcock, Australia). After denture processing was done, a small diameter hole was then drilled into the obturator from the palatal aspect and the denture.

Figure 2: (a) Acrylic layer for outer surface of the obturator (b) Water soluble clay on a layer of denture acrylic (c) Intra oral view of obturator (d) Hollow obturator

Was kept overnight in normal water at room temperature. The clay dissolved on its own and after careful flushing with a syringe, the obturator was dried and the hole was sealed with self cure repair resin (Fortex; Lucite Intl, Durham). The obturator was corrected clinically **(Fig 2 d)** for insertion and removal. The patient was educated about maintenance and then referred to a speech therapist. The patient was satisfied with the outcome of the prosthesis at the time of follow ups.

DISCUSSION

In developing nations, surgeries related to oral cancer are still being performed by general surgeons, ENT surgeons or plastic surgeons since the specialty of oral and maxillofacial surgery is still not being recognized by the masses. Medical fraternity generally considers us just dentists while dental fraternity seems to be the only who are aware of oral and maxillofacial surgeon (Balaji, S.M. 2007; Vadepally, A. K. *et al*., 2015). After undergoing surgery for cancer removal, rehabilitation of the patient can be done mainly by two ways either construct the defect surgically or rehabilitate the defect with prosthesis. Whichever may be the case, the prosthodontist has an important role to play in fabrication of either a surgical, interim or a definitive obturator. According to studies done by Tonga and Dugad, (Rastogi, S. *et al*., 2008) it has been found that only 33% of surgeons refer the cases for prosthetic rehabilitation citing reasons like inadequate dental set up at hospitals and lack of trained maxillofacial prosthodontists (Tongya, R.R., & Dugad, J.A. 2018). Compared to a study done in the United Kingdom, 65 % of surgeons were found to have access to the services of a maxillofacial prosthodontist thus influencing their decision (Ali, A. *et al*., 1995). The present case, despite being a case report is a further evidence to substantiate previous studies.

Whoever performs the surgery, it is mandatory to consult the prosthodontist even if surgical reconstruction is planned. The prosthodontist should be allowed to fabricate surgical guides that guide surgeon for precise surgeries and also plan immediate, interim or definitive obturators. Prosthetic rehabilitation during and immediately after surgery helps in restoration of appearance, psychosocial functioning and improve vocational status the combination of all affecting quality of life after such surgeries (Newton, J. T. *et al*., 1990). Although there are different types of obturators which serve different functions at different times, they all have basic general advantages that include closure of defect, normal feeding practice within days of adaptation, keep the wound clean, promote healing and reduce postoperative hemorrhage, improve speech, and more importantly don't allow the patient to become a psychologically wrecked person (Mattoo, K. *et al*., 2014; Mattoo, K.A. *et al*., 2011).

There are different methods and different materials for hollowing the obturator. The method described in this article is simple and inexpensive since water soluble clays have now become available at ordinary stationary shops.

CONCLUSION

Dentistry has changed its scope and dimensions in the last two decades. Surgeons are expected to know the medical advances in prosthetic rehabilitation of the present age. A prosthodontist should be consulted before surgical correction of oral cancer.

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REFERENCES

1. Patel, N., Bohra, C., Gajanam, G., Sandin, R.L., & Greene, J.N. (2015). palate perforation: infectious and non infectious causes. *Infectious Diseases in Clinical Practice 00(00): 1-4.*
2. Curtis, T. A., & Beumer, J. (1996). Restoration of acquired hard palate defects. *Maxillofacial Rehabilitation Prosthodontic and surgical considerations*, *2*, 225-69.
3. Arigbede, A. O., Dosumu, O. O., Shaba, O. P., & Esan, T. A. (2006). Evaluation of speech in patients with partial surgically acquired defects: pre and post prosthetic obturation. *J Contemp Dent Pract*, *7*(1), 89-96.
4. Oki, M., Iida, T., Mukohyama, H., Tomizuka, K., Takato, T., & Taniguchi, H. (2006). The vibratory characteristics of obturators with different bulb height and form designs. *Journal of oral rehabilitation*, *33*(1), 43-51.
5. Balaji, S.M. (2007). Textbook of oral and maxillofacial surgery. *New Delhi: Elsevier.*
6. Vadepally, A. K., Sinha, R., Uppada, U. K., Rama Krishna Reddy, B. V., & Agarwal, A. (2015). Oral and maxillofacial surgery: Perception of its scope among the medical fraternity and general public. *J Cranio Max Dis*. 4: 21-7.
7. Rastogi, S., /Dhawan, V., & Modi, M. (2008). Awareness of oral and maxillofacial surgery among–health care professionals–a cross sectional study. *Journal of Clinical and Diagnostic Research*, *2*(2), 1191-1195.
8. Tongya, R.R., & Dugad, J.A. (2018). Maxillofacial prosthodontic rehabilitation: a survey on head and neck sugeons ttitude and opinion. *Indian journal of applied research 8(10): 51-52.*
9. Ali, A., Fardy, M.J., & Patton, D.W. (1995). Maxillectomy- to reconstruct or obturate? Result of a UK survey of oral and maxillofacial surgeons. *Br J Oral MaxillofacSurg, 33,207-210.*
10. Newton, J. T., Fiske, J., Foote, O., Frances, C., Loh, I. M., & Radford, D. R. (1999). Preliminary study of the impact of loss of part of the face and its prosthetic restoration. *The Journal of prosthetic dentistry*, *82*(5), 585-590.
11. Olson, M. L., & Shedd, D. P. (1978). Disability and rehabilitation in head and neck cancer patients after treatment. *Head & neck surgery*, *1*(1), 52-58.
12. Mattoo, K., Singh, M., & Rahman, S. (2014). Rehabilitation of disfigurement associated with maxillectomy by a cheek plumper prosthesis. *Am J Med Case Rep*, *2*, 200-3.
13. Mattoo, K.A., Kumar, S., & Yadav, L. (2011). Contact burn deformity - fabricating a prosthesis - a case report. *JIDA 5:735-36.*