IOCPr 2025 Conference
The 1st International Online Conference on Prosthesis
10–12 December 2025 | Online
MDPI

Prosthetic rehabilitation of velopharyngeal insufficiency in a patient with locally advanced carcinoma oropharynx: a case report

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INTRODUCTION & AIM

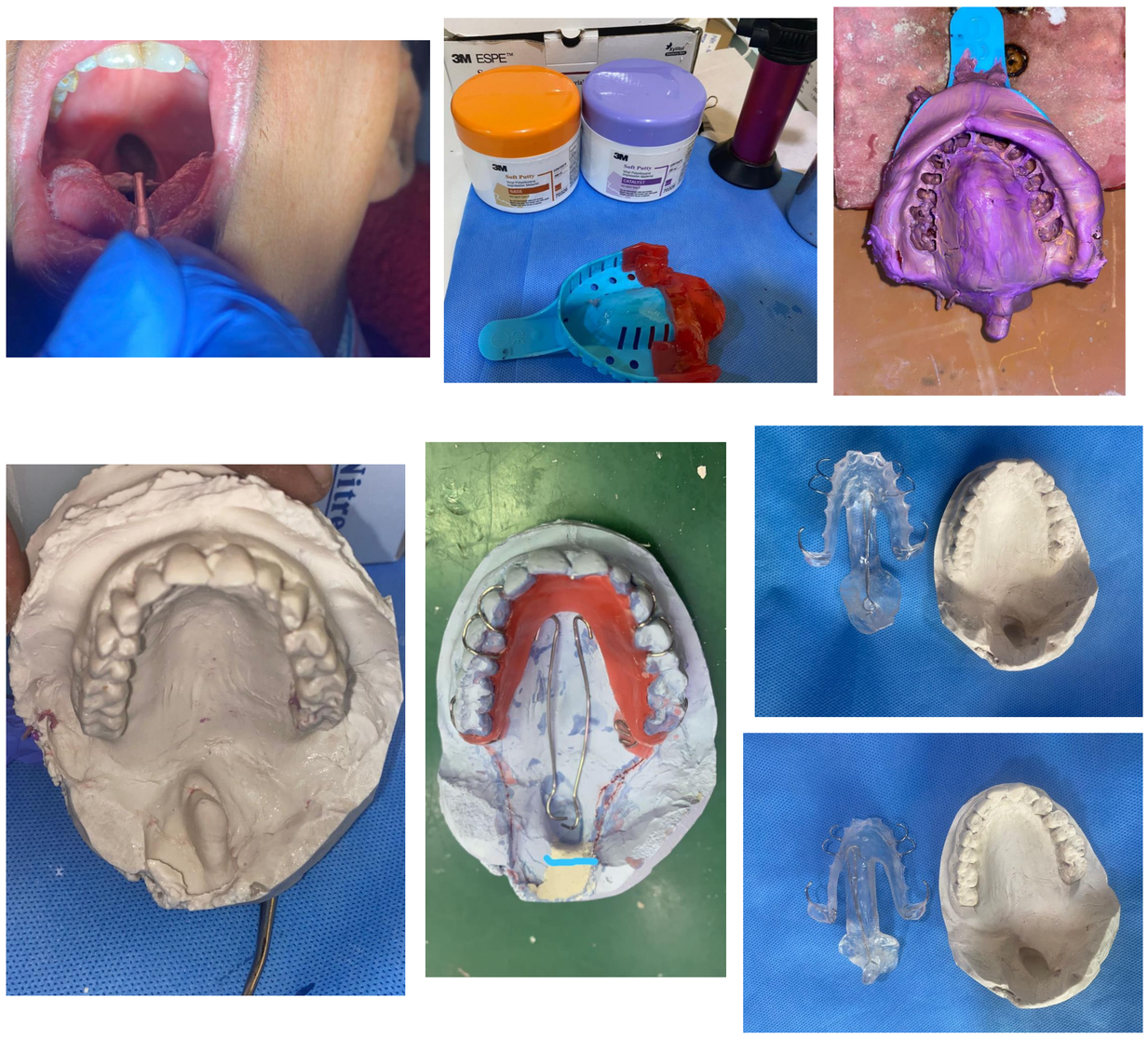
Oropharyngeal carcinoma and its treatment can cause structural and functional loss of the soft palate, leading to velopharyngeal insufficiency (VPI) with hypernasality, nasal regurgitation, and impaired speech. When surgical reconstruction is not feasible, prosthetic rehabilitation with a velopharyngeal obturator, supported by speech therapy, offers an effective alternative.

METHOD

A 50-year-old male presented with a 2-month history of dysphagia, voice change, and slurred speech. Clinical and radiological evaluation revealed an ulceroproliferative lesion involving the soft palate, right tonsillar fossa, and pharyngeal wall with cervical lymphadenopathy. Biopsy confirmed moderately differentiated squamous cell carcinoma. Following treatment, he developed loss of the uvula and posterior soft palate, resulting in incomplete velopharyngeal closure. A customized velopharyngeal obturator was fabricated to restore soft palate function. Concurrently, a structured speech therapy program was initiated to correct compensatory articulation, enhance intraoral pressure, and improve airflow control.

RESULTS & DISCUSSION

The obturator provided immediate improvement in oro-nasal separation, reducing hypernasality and nasal regurgitation during swallowing. With adjunctive speech therapy, the patient achieved consistent oral articulatory placement and improved intelligibility. Rehabilitation also enhanced swallowing and contributed to psychosocial confidence.



Patient mouth → Custom tray fabrication → Final PVS impression → Master cast → Surveying & design, Wax-up with stainless steel retention clasps → Processing (acrylic curing) → Finishing & polishing → Finished removable velopharyngeal obturator (speech bulb)

CONCLUSION

This case demonstrates the importance of prosthetic rehabilitation for patients with VPI after oral cancer treatment. A velopharyngeal obturator, combined with targeted speech therapy, represents a minimally invasive and cost-effective approach to restore soft palatal closure, improve speech and swallowing, and enhance quality of life.

FUTURE WORK / REFERENCES

Future efforts will evaluate long-term functional outcomes, optimize obturator design, and explore enhanced speech therapy strategies using biofeedback to support sustained velopharyngeal competence.