SUBLINGUAL FLANGE EXTENSION- ENHANCING RETENTION AND STABILITY OF MANDIBULAR COMPLETE DENTURE- A CASE REPORT

ABSTRACT
Mandibular alveolar ridges are more prone to resorption than maxillary alveolar ridges which compromise the retention and stability of the mandibular denture. Sublingual flange extension helps to achieve satisfactory retention and stability in mandibular complete denture. This case report is based on the sublingual crescent extension to achieve the maximum contact with soft displaceable tissue of the floor of the mouth.

Key Words: sublingual crescent area, sublingual folds, anterior alveolingual sulcus.

INTRODUCTION
Correct positioning of lingual borders helps to achieve retention and stability in mandibular complete dentures. For satisfactory retention and stability, denture should possess maximum contact with the soft tissue. A most important area for retention of the lower denture is anterior lingual region. The most appropriate term for this is sublingual crescent area.

Glossary of Prosthodontic Terms (GPT-8) defines sublingual crescent area, the crescent shaped area on the anterior floor of the mouth formed by the lingual wall of the mandible and the adjacent sublingual fold. It is the region of anterior alveolinguinal sulcus.

Thus extension of the anterior lingual flange of the lower denture sublingually helps to achieve retention and stability in highly resorbed ridges. Sublingual crescent extension is defined as the portion of the sublingual flange of mandibular denture that covers the anterior region of the floor of the mouth.¹

CASE REPORT
A female of age 70 years reported to the department of Prosthodontics and Crown and Bridge, Sri Guru Ram Das Institute of Dental Sciences and Research, Amritsar with chief complaint of looseness of previous denture since 2...
years. Her history revealed she was edentulous for 30 years and denture wearer for 28 years. On intraoral examination it was found that upper and lower edentulous ridges and lower ridge was highly resorbed. It was planned to give mandibular complete denture with sublingual flange extension opposing conventional maxillary denture by using impression technique explained by Azzam et al for sublingual crescent extension.

**PROCEDURE**

1. Primary impression was made by impression compound in stock tray.
2. Special tray was fabricated on primary cast
3. Extension of special tray was checked in patient’s mouth and border moulding with low fusing compound was done leaving anterior lingual border from premylohyoid , from one side to the other.¹
4. To record sublingual area, special tray was trimmed 2 mm short of floor of mouth.
5. Sublingual recording was initiated with impression compound. Impression compound was softened in water bath at 140°F and then applied to the sublingual crescent border of special tray.²
6. Soften the impression compound to a flowable consistency in sublingual crescent border with the help of a torch, tempered in hot water and placed into the patient’s mouth.
7. Patient was instructed to close the mouth and to place the tongue in normal rest position with the tip slightly touching the lingual surface of the handle of the tray.² The procedure was repeated until the sublingual crescent area is recorded perfectly and frenal notch area was relieved for openings of sublingual ducts. Low fusing compound was added along the borders of the recorded sublingual crescent in impression compound. (fig 1)This helps to maintain the good peripheral seal.¹
8. Relief holes were made in special tray and secondary impression was made with zinc oxide eugenol impression paste. All the remaining steps were done in conventional manner. (fig 2 and fig 3)
9. Patient was recalled for follow up after one week, two week and four week and patient was satisfied with denture.

**DISCUSSION**

The retention and stability of lower complete dentures are always compromised because mandibular ridges are more prone to resorption. The entire border of the denture should possess contact with the soft tissues to achieve the maximum retention. Thus anterior lingual flange extension sublingually is used to obtain retention and stability in lower mandibular denture.

The size and position of sublingual folds vary considerably in different patients. Some are large and well developed, whereas others are much smaller, particularly in elderly patients in whom degenerative changes have occurred. The smaller the fold, the poorer are the chances of complete success and the greater become the care required to achieve the necessary contact with the mucosa of the floor of the mouth.³

W. A. Lawson explained the use of sublingual folds to maintain a seal in the anterior lingual region and illustrated the tongue movements to maintain the correct downward and backward extensions of the anterior lingual border.³

Krammer k suggested that a normal tongue position is required to obtain the maximum possible extension of sublingual flange that will not interfere with functions of mastication, deglutition, and phonation which can be accomplished by having the patient swallow during the impression making procedures with the tongue in its normal position.⁴

Thus Tongue position and degree of freedom provided for tongue movement while recording the sublingual flange influence the stability and retention of lower complete denture.¹
Another requirement for sublingual flange extension of the impression is to have minimal pressure exerted on the floor of the mouth with the tongue at rest allowing the movement of the underlying genioglossus muscle without dislodging the denture. Minimal pressure may be described as weight of the softened modelling compound otherwise excess pressure will occlude the opening of the sublingual gland ducts.

Thus making the impression with minimal pressure on the floor of the mouth while tongue is at rest allows greater mobility of the underlying muscle without denture dislodgement and without occlusion of the sublingual gland duct.²

CONCLUSION

Sublingual flange extension provides a solution for the loose mandibular dentures as it helps to enhance the retention and stability of the denture.

BIBLIOGRAPHY