

KNOW THE SPACE TO IMPROVE THE RETENTION: A CASE REPORT

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Abstract

The disto-buccal boundaries of the maxilla has been termed with variety of names in dental literature, and among them coronomaxillary space has been suggested as the most consistent term. This space poses threat to retention of complete denture, hence a continuous positive peripheral seal is important in constructing the complete denture. The size of corono-maxillary space is primarily influenced by action of coronoid process, as it can be straight / flared. In individuals with straight coronoid process the space can become narrow on opening. Distobuccal border of denture have to be thinned to maintain denture in function. But in individuals with flared coronoid process, space can widen /remain constant on opening. The borders have to be widened in order to achieve retention. Hence in the present case reports an attempt is made to highlight the importance and significance of flared corono-maxillary region.

Keywords: Coronomaxillary space, Buccal flange, Distobuccal vestibular space, Post malarspace, notch.

Introduction

Obtaining proper retention in maxillary complete denture is not so critical, in most conditions, the retention can be achieved by the accurate record and extension in the distobuccal vestibular space.¹ The corono-maxillary space is that anatomic region that lies medial to coronoid process, lateral to maxillary tuberosity and bounded anteriorly by base of zygomatic process and posteriorly by pterygo-maxillary / hamular notch. Its inferior boundary is at crest of the residual ridge.² (Figure 1). This space poses threat to retention of complete denture, hence a continuous peripheral seal is important during constructing the complete denture.³

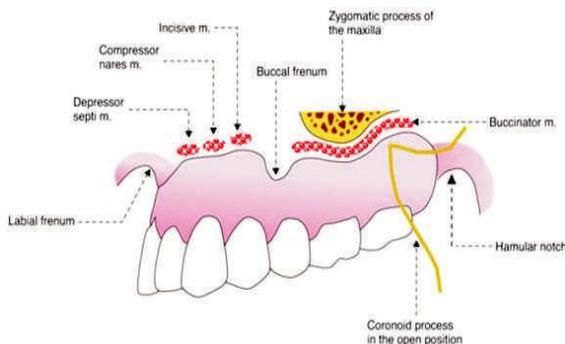


Figure 1: Boundaries Of Corono-maxillary Space

The size of corono-maxillary space is primarily influenced by action of coronoid process as it can be straight/flared. In individuals with straight coronoid process the space can become narrow on opening.⁴ But in individuals with flared coronoid process. Space can widen /remain constant on opening.⁵ As suggested by Swenson & Stout, the oral examination in this region should be done with the mouth partially closed as complete opening of mouth may obscure the complete extent of space by coronoid process.⁶

The corono-maxillary flange of the maxillary denture is that portion of the buccal flange that extends from the

zygomatic eminence of the hamular notch². In individuals with straight coronoid process as the space can become narrow on opening, distobuccal border of denture have to be thinned to maintain denture in function.⁷

But in individuals with flared coronoid process, The borders have to be widened in order to achieve retention.⁸ Hence in the present case reports an attempt is made to highlight the importance and significance of flared corono-maxillary region.

Synonyms

Other terms that have been used to identify corono-maxillary space are;

1. Buccal space or vestibule, 2. Buccal pocket, 3. Tuberosity sulcus, 4. Distobuccal angle of The buccal vestibule, 5. Buccal sulcus, 6. Buccal pouch, 7. Buccal mucous membrane reflection region, & 8. Post malar area²

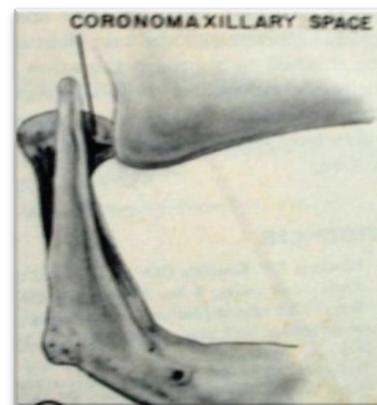


Figure 2: Narrow Corono-maxillary Space Due To Straight Coronoid Process

Case Report

A 60 year old man reported to the Department of Prosthodontics at Teerthanker Mahaveer Dental College & Research Centre with a chief complaint of missing

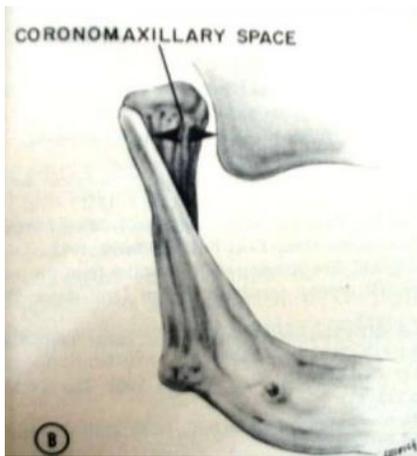


Figure 3: Wide Corono-maxillary Space Due To Flared Coronoid Process

teeth in both arches. On intra oral examination, it was evident that the ridges were smooth, regular and convex on both sides and oral mucosa was hard and unyielding. Distobuccal sulcus of maxillary arch was wider both in depth and width which can be attributed to flared coronoid process. In the present case, corono-maxillary space was measured using tongue blades with three different materials rubber base, tissue conditioner and green stick compound.

Emphasis was placed on recording the full extension of sulcus in corono-maxillary area by having the patient open his mouth half way and move the mandible laterally during border molding and final impression procedure. A gentle molding of the region was done by pulling the cheek outward, downward and inward. Conventional procedures for complete denture construction were followed. The processed denture had a thicker and wider denture border in the corono maxillary area. On measuring, it was found to be 6 to 8 mm which can be attributed to flared coronoid process.



Figure 4- Frontal View of Patient

Literature Review

Swenson⁶ emphasized the need for functional filling of the space. Edwards advised that the maximum retention resulted when the buccal vestibule was completely filled. Sears⁹ thought in order to gain the best atmospheric pressure effect, the vestibule should be occupied to its



Figure 5: Lateral View of Patient



Figure 6: Intra Oral View

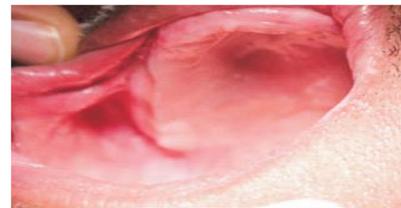


Figure 7: Right Coronomaxillary Space

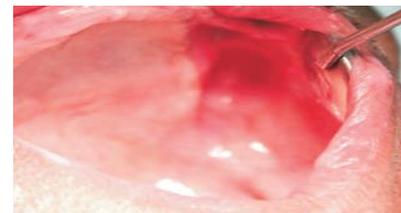


Figure 8: Left Coronomaxillary Space

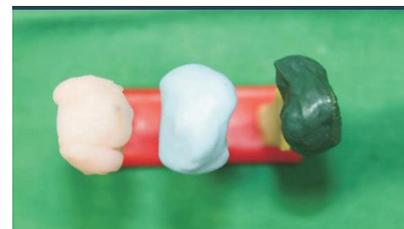


Figure 9 : Tongue Blades With Tissue Conditioner, Rubber Base Material And Green Stick Compound Used To Measure Distobuccal Border.

full width, or even slightly over filled. Neill and Nairn¹⁰ suggest that the space can remain the same or widen on opening and cautioned against possible deficiencies in the impression of the tuberosity sulcus regions if the mouth is opened wide during border molding. Hickey



Figure 10: Disto Buccal Border Of Denture Measured With Metal Caliper

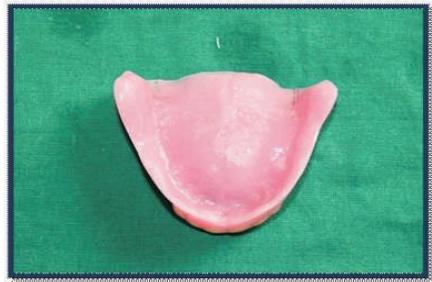


Figure 11: Final Denture Showing Intaglio Surface showing wide disto-buccal border

andzarb¹¹ described a gentle border molding procedure by pulling the cheek out, down and in. Watt and Macgregor warned against the patient “swinging the jaw from side to side”. They noted that reducing the flange by this motion would breach the valve seal. These observations are consistent with a flared coronoid process.

Discussion

The purpose of this paper is to highlight the importance of coronomaxillary space so that the final denture will have good retention and stability. denture retention can be difficult to achieve if the seal is incomplete in the coronomaxillary region. Most patients exhibit variable success in denture retention; therefore, special attention in this region is necessary. Any overextension (vertical and/or horizontal) in this area will cause retention loss.¹² Question comes how to record the space. In previous studies by Y G.Naveen et al¹³ used a space impression tool consists of the use of a modified tongue blade that, in conjunction with low-fusing impression compound to measure the width of the coronomaxillary space. In the present case report, the width of the coronomaxillary space was measured using three different materials rubber base, tissue conditioner and green stick compound. The maxillary denture was measured at disto buccal border using metal calipers. The measurement obtained was closer to that done by rubber base rather than tissue conditioner and green stick.

Conclusion

The case reports presented here illustrate that complete denture retention can be enhanced by careful recording of dimensions of coronomaxillary space using suitable material. Every complete denture case must be

thoroughly scrutinised because it is the most neglected area in the oral cavity

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