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The study evaluating the reliability of fovea palatine as a guide for posterior denture extension

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Abstract

The maxillary complete denture gets adequate retention by achieving both post-palatal and peripheral seal. The posterior border of the maxillary complete denture must terminate posterior to anterior vibrating line (AVL) and anterior to posterior vibrating line (PVL). The fovea palatine act as landmarks for locating anterior vibrating line.

Purpose: The study was conducted to evaluate the relation of fovea palatine with anterior vibrating line as determined by Valsalva maneuver and Palpatory method.

Materials and Methods: The anterior vibrating line (AVL) is located by Valsalva maneuver and Palpatory method and marked by indelible pencil. The fovea palatine are identified and marked and related with anterior vibrating line (AVL) regarding the position. Then, the distance of separation between anterior vibrating line (AVL) and fovea palatine is measured with caliper.

Results: The mean separation between fovea palatine and vibrating line using Valsalva maneuver and Palpatory method is 0.66mm and 1.34mm respectively. Statistically significant results were observed when two methods were compared with student's t-test.

Conclusion: The present study shows that fovea palatine lie anterior to anterior vibrating line but may be seen on and posterior to anterior vibrating line.

Keywords: flexion line, fovea palatine

Introduction

The complete denture still remains the treatment of choice for edentulism. The maxillary complete denture retention depends on the properly incorporated posterior palatal seal. The posterior palatal seal is the area of soft palate on which pressure within physiological limits can be applied to aid in retention of the denture. This area lies between anterior and posterior vibrating lines. This area improves retention and patient comfort, minimizes gag reflex and food accumulation, compensates for resin curing shrinkage and limits posterior denture extension.

Locating anatomic and physiologic boundaries of this area enhances the denture seal. The fovea palatine can play a very important role in determining the posterior denture extension.

According to Nagle and Sears, fovea palatine marks the posterior border of hard palate. Swenson concluded that vibrating line passes 2mm anterior to fovea palatine.

Aims and objectives: This study was conducted to evaluate the relation of fovea palatine with anterior vibrating line.

Materials and Methods: 112 edentate subjects were included in the study except those with palatal torus reducing posterior palate visibility. The subjects were examined for

1. Visibility in the posterior part of the palate
2. Number and location of fovea Palatine

Fovea palatine were not visible in 12 subjects. The study was conducted on the rest of subjects. The posterior palatal seal area was dried with gauze. The two methods that were applied for eliciting, locating, palpating and marking the anterior vibrating line with indelible pencil include.

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1. Valsalva maneuver
2. Palpatory method using T-burnished

Valsalva maneuver: Anterior flexion line is elicited by performing the Valsalva maneuver. It involves asking the patient to hold the nose and blow into it. By this, the intranasal pressure is raised which in turn deflects the soft palate downwards and forwards to make the anterior vibrating line prominent. AVL was marked with indelible pencil.

The distance between AVL and fovea palatine was measure with metal caliper.

Palpatory method using T-burnished: the T- burnisher was

used to locate and palpate the anterior vibrating line. AVL was marked with indelible pencil. Again, the distance between AVL and fovea Palatine was measured.

Results

The study revealed that fovea palatine lie in coincident with, anterior and posterior to AVL in 47%, 35% and 18% cases while using Valsalva maneuver. That is C>A>P

fovea palatine lie in coincident with, anterior and posterior to AVL in 35%, 21% and 44% cases while using palpatory method. That is P>C>A

Table 1: Relation of fovea palatine with anterior vibrating line

Method	AVL and fovea coincide (C)	Fovea anterior to AVL (A)	Fovea posterior to AVL (P)
Valsalva maneuver	47	35	18
Palpatory method	35	21	44

The mean separation between fovea palatine and vibrating line using Valsalva maneuver and Palpatory method is 0.66mm and 1.34mm respectively. Statistically significant

results were observed when two methods were compared with student’s t-test.

Table 2: Comparison of separation between fovea palatine and vibrating line

Parameters	Separation between fovea Palatine and vibrating line	
	Valsalva maneuver	Palpatory method
Mean	0.66	1.34
Standard deviation	1.211	1.7112
t-Value	2.67	
p-Value	0.03	

Discussion

The maxillary complete denture requires post-palatal and peripheral seal for adequate retention. The posterior border of the maxillary complete denture must terminate posterior to anterior vibrating line (AVL) and anterior to posterior vibrating line (PVL). The present study revealed that anterior vibrating line lies posterior to fovea palatine by 0.6-1.34mm that is in accordance with studies conducted by Lye.

According to Chen, the fovea palatine lie behind the anterior vibrating line.

Conclusion

The present study shows that fovea palatine lie anterior to anterior vibrating line but may be seen on and posterior to anterior vibrating line. Within the limitations of the study, it can be concluded the fovea-palatine are not reliable landmarks for the posterior maxillary denture.

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