ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 05, pp.50367-50369, May, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

MAXILLARY LABIAL FRENUM ATTACHMENT IN CHILDREN OF DIFFERENT AGE GROUPS

***Shristi Nadar**

Saveetha Dental College

ARTICLE INFO

Article History:
Received 10th February, 2017
Received in revised form
30th March, 2017
Accepted 17th April, 2017
Published online 23rd May, 2017

Key words:

Frenum,
Attachment,
Gingival,
Mucosal.

ABSTRACT

Background: Labial frenum is a dynamic structure and is subject to variation in size, shape and position. The purpose of this cross sectional study is to examine the prevalence of various types of maxillary frenal attachments and its morphology in children. It can be gingival type, mucosal type, papillary type and papillary penetrating type.

Materials and methods: A study involving 150 children between 0 to 12 years of age visiting a private hospital in Chennai were clinically examined for maxillary labial frenum attachment under direct visual method. Parents were provided with an informed consent. Demographic details including age and sex were recorded.

Results: Total number of children who were examined were 150. The most prevalent frenal attachment among all is mucosal type followed by gingival type of attachment . 52.8% was mucosal type, 34.7% were gingival type, 9.8% was papillary type and 1.7% was papillary penetrating type. The prevalence type had no gender difference but the age had significant difference but the age had significant association. The occurrence of papillary penetrating type decreases with age.

Conclusion: The prevalent type among children in Chennai is mucosal type. The papillary penetrating type decreases with age. The dentists should correlate the age of the child and type of frenal attachment during their clinical diagnosis to avoid misjudgement.

Copyright©2017, Shristi Nadar. *This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

Citation: Shristi Nadar, 2017. "Maxillary labial frenum attachment in children of different age groups", *International Journal of Current Research*, 9, (05), 50367-50369.

INTRODUCTION

A frenulum (or frenum, plural frenula or frena) is a small fold of tissue that secures or restricts the motion of a mobile organ in the body (Nandanahosur *et al*., 2014; Diaz-Pizan *et al*., 2006; Dewel, 1946). The Maxillary labial frenum also known as frenulum labii superioris, it is a fold of mucous membrane that connects the lip and the alveolar process. It consists mainly of connective tissue and epithelium with some nerve fibres (Boutsi, 2014). Two types of classification have been introduced for the different types of frenum. Placek *et al* proposed a morphological function classification. Accordingly four types of frenum attachment are defined as mucosal, gingival, papillary and papillary penetrating (Mirko, 1974). Sewerin classified the frenum as variation in the morphology into eight different types such as Simple, persistent tectolabial, simple with appendix, simple with nodule, double frenum, frenum with nichum, bifid frenum and frenum with one or more variation of the above (Sewerin, 1971). In this research Placek classification is followed.

****Corresponding author: Shristi Nadar.***
Saveetha Dental College

Abnormal labial frenum has also been associated with various syndromes like Ehlers-Danlos syndrome, infantile hypertrophic pyloric stenosis, Holoprosencephaly, Ellis-van Creveld syndrome, and Oro-facial-digital syndrome (Priyanka *et al*.,). But the maxillary labial frenum is most commonly observed clinically with reference to the midline diastema. The aim of this proposed study is to stastistically analyse the most common type of maxillary labial frenum in South Indian population and its changes according to different age groups. It is of a concern when maxillary labial frenum becomes prominent in children. Treatment is suggested when the attachment exerts a traumatic force on the gingiva causing the papilla to blanch when the upper lip is pulled or if it causes a diastema to remain after eruption of the permanent canines. (Gkantidis *et al*., 2008; Griffen, 2015). An abnormal maxillary labial frenum attachment may complicate orthodontic therapy and can cause post orthodontic relapse (Edwards, 1977). It may also interfere with oral hygiene, cause stripping of tissue from the neck of the tooth, restrict movements of lips, interfere with speech and may produce an undesirable cosmetic result. If so, treatment is indicated (Gkantidis *et al*., 2008; McDonald *et al*., 2011).

MATERIALS AND METHODS

The study was conducted on patients who were attending a pediatric hospital in north Chennai. The age of the patients range from 10 days to 14 years. The populations attending the college were evenly spread across the upper, middle and lower socio economic groups. A study involving 150 children was performed by assessing the maxillary frenum attachment under direct visual method. The concent of the parents were taken before examining their children.

RESULTS

Chart 1 shows the maxillary frenum attachment of children aged 0-3. The mucosal type is the most prevalent which involves 50% of the frenal attachments followed by gingival which is 31.8%, 13.8% of papillary and 4.5% papillary penetrating. Chart 2 shows the maxillary frenum attachment of children aged 3-6.

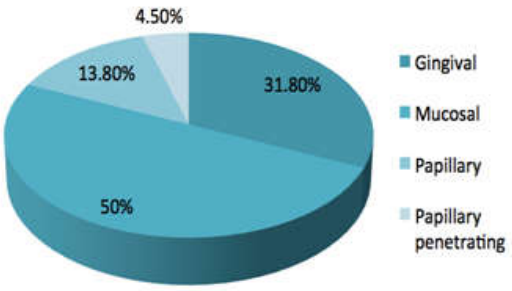

Chart 1. Maxillary frenum attachment in children aged 0-3years

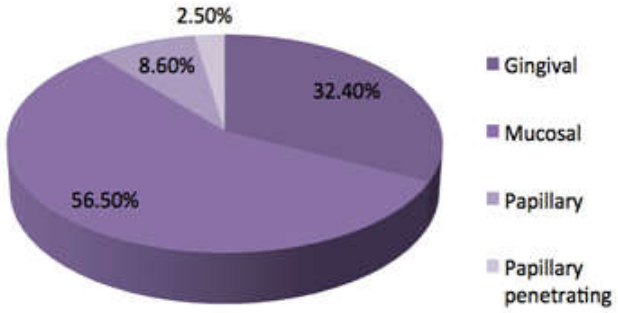

Chart 2. Maxillary frenum attachment in children aged 3-6years

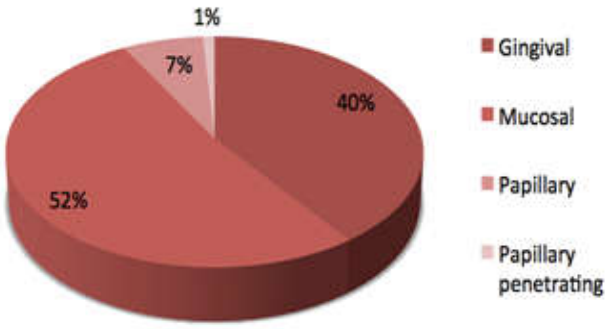

Chart 3. Maxillary frenum attachment in children aged 7-12years

The mucosal type is the most prevalent which involves 56.5% of the frenal attachments followed by gingival 32.4%, 8.6% papillary and 2.5% papillary penetrating. Chart 3 shows the maxillary frenum attachment of children aged 7-12.

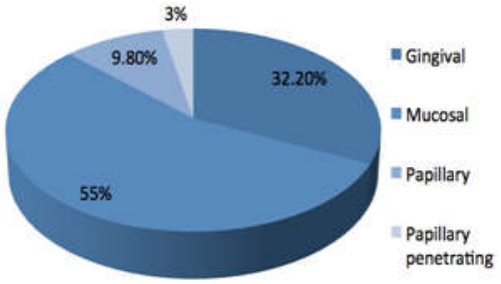

Chart 4. Maxillary frenum attachment in males

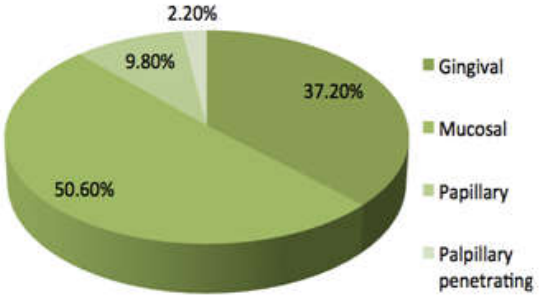

Chart 5. Maxillary frenum attachment in females

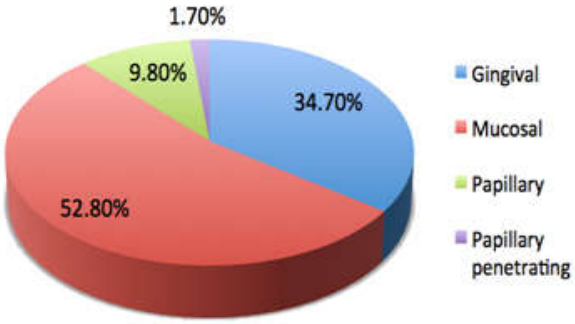

Chart 6.Prevalence of maxillary frenum attachment

The mucosal type is the most prevalent which involves 52% of the frenal attachments followed by gingival 40%, 7% papillary and 1% papillary penetrating. Chart 4 shows the maxillary frenum attachment of males. The mucosal type is the most prevalent which involves 55% of the frenal attachments followed by gingival 32.2%, 9.8% papillary and 3% papillary penetrating. Chart 5 shows the maxillary frenum attachment of females. The mucosal type is the most prevalent which involves 50.6% of the frenal attachments followed by gingival 37.2%, 9.8% papillary and 2.2% papillary penetrating. Chart 6 shows the prevalence of maxillary frenum attachment. The mucosal type is the most prevalent which involves 52.8% of the frenal attachments followed by gingival 34.7%, 9.8% papillary and 1.7% papillary penetrating.

DISCUSSION

Prevalence of different types of maxillary labial frenum attachment in relation to age is similar to that of sex. The most common type of maxillary labial frenum attachment is the mucosal type, which is followed by gingival, papillary type and papillary penetrating type. The different that is evident in the age differences is that as the age increases the papillary penetrating type decreases. 4.5 % were papillary penetrating type in children of age 0-3, 2.5% in children of age 3-6, 1% in children of age 7-12.

In a similar research done by Placek (Placek *et al*., 1974) and Janczuk and Banach, (1980) it was found that the mucosal type of frenum attachment was the most common in teens respectively. This could be also due to age since the children examined were all more than 11 years of age. In a study done by Linda Christabel *et al*. it was found that the gingival type of maxillary frenum attachment to be the most common, this research might have been more accurate than our current research due to the sample size. Similarly Boutsi *et al*. (2011), Addy *et al*. (1987), Kaimenyi, (1998), Upadaya (2012) and Bergese (1966) in their studies found gingival type as the most prevalent. In a study done by Lindsey (1977) and Popovich, (1977), the papillary penetrating type decreases with age which supports the present study. But in a study done by Boutsi, (2011), papillary penetrating type was found to be the least prevalent and that it decreases as the age increases.

This might be due to the fact that, the apical migration of frenum is due to the growth of alveolar process in coronal direction. If papillary penetrating type still persists even after mixed dentition, it may lead to several consequences. The limitations in this study is the small sample size and and a similar study should be conducted with a bigger sample size for better results and a larger age group should also be chosen. Hence it can be concluded that frenal attachment is at a more coronal level at a younger age and due to alveolar growth it assumes a mucosal and then gingival type of attachment as age advances. Therefore the dentists should correlate the age of the child and type of frenal attachment and morphological variations during their clinical examination to avoid misdiagnosis and unnecessary treatment.

REFERENCES

Addy, M., DUmmer, P.M., Hunter, M.L., Kingdom, A., Shaw, W.C. 1987. A study of the association of frenal attachment, lip coverage, and vestibular depth with plaque and gingivitis. *J Period.,* 58:752-757.

Bergese, F. 1966. Research on the development of the labial frenum in children of age 9-12 (in Italian). Minerva Stomatol. 15:672-676.

Boutsi, E.A. 2014. The maxillary labial frenum. *J CranioMax Dis.,* 3:1-2.

Boutsi, E.A., Tatakis, D.N. 2011. Maxillary labial frenum attachment in children. *Int J Paed Den.,*21(4):284-288.

Dewel, B.F. 1946. The normal and the abnormal labial frenum: CLINICAL differentiation. *J Am Dent Assoc.,* 33:318-29.

Diaz-Pizan, M.E., Lagravere, M.O., Villena, R. 2006. Midline diastema and frenum morphology in primary dentition. J Dent Child (Chic) 73:11-4.

Edwards, J.G. 1977. The diastema, the frenum, the frenectomy: a clinical study. *Am J Orthod.,* 71:489-508.

Gkantidis, N., Kolokitha, O.E., Topouzelis, N. 2008. Management of maxillary midline diastema with emphasis on etiology *J Clin Ped Dent.,* 32(4):265-72

Griffen, A.L. 2005. Periodontal problems in children and adolescents. In: Pinkham JR, Casamassimo PS, Fields HW Jr.Mctigue DJ, Nowak AJ,eds. Pediatric dentistry: Infancy through Adolescence 4th ed.ST. Louis, Mo: Elsevier Saunders; 417.

Janczuk, Z., Banach, J. 1980. Prevalence of narrow zone of attached gingiva and improper attachment of labial frena in youths. *Comm Dent Oral Epidemiol,* 8:385-386.

Kaimenyi, J.T. 1998. Occurrence of midline diastema and frenum attachments amongst school children in Nairobi, Kenya. *Ind J Dent Res.,* 9:67-71.

Linda Christabel *et al*. Prevalence of Type of Frenal Attachment and Morphology of Frenum in Children, Chennai, Tamil Nadu, JP Journals – 10015/1343.

Lindsey, D. 1977. The upper mid-line space and its relation to the labial frenum in children and in adults: a statistical evaluation. *Br Dent J.,* 143:327-332.

McDonald, R.E., Avery, D.R., Hartsfield, J.K. 2011. Acquired and developmental disturbances of the teeth. In: Dean JA, Avery DR, McDonald RE, eds. Mc Donald and Avery's Dentistry for the child and Adolescent. 9th ed. Maryland heights, Mo:Mosby Elsevier:119-20.

Mirko, P., Miroslav, S., Lubor, M. 1974. Significance of the labial frenum attachment in periodontal disease in man. Part I. Classification and epidemiology of the labial frenum attachment. *J Periodontol,* 45:891-4.

Nandanahosur Basavanthappa Nagaveni, Kagathur V. Umashankara. 2014. Morphology of maxillary labial frenum in primary, mixed, and permanent dentition of Indian children. *J Cranio Max Dis.,* 3:5-10.

Placek, M., Skach, M., Mrklas, L. 1974. Significance of the labial frenum in attachment in periodontal disease in man-Part I: classification and epidemiology of the labial frenum attachment. *J. Periodnotal,* 45:891-894.

Popovich, F., Thompson, G.W., Main, P.A. 1977. The maxillary interincisal diastema and its relationship to the superior labial frenum and intermaxillary suture. *Angle Orthod,* 47:265-271.

Priyanka, R. Sruthi, T. Ramakrishnan, Pamela Emmadi, and N. Ambalavanan. An overview of frenal attachments.

Sewerin, I. 1971. Prevalence of variations and anomalies of the upper labial frenum. *Acta Odontol Scand*; 29:487-

Uadhyay, S., Upadaya, N.G. 2012. Attachment of maxillary labial frenum in Nepalese children. *Orthodontic J Nepal,* 2(1) :2 8-31

****