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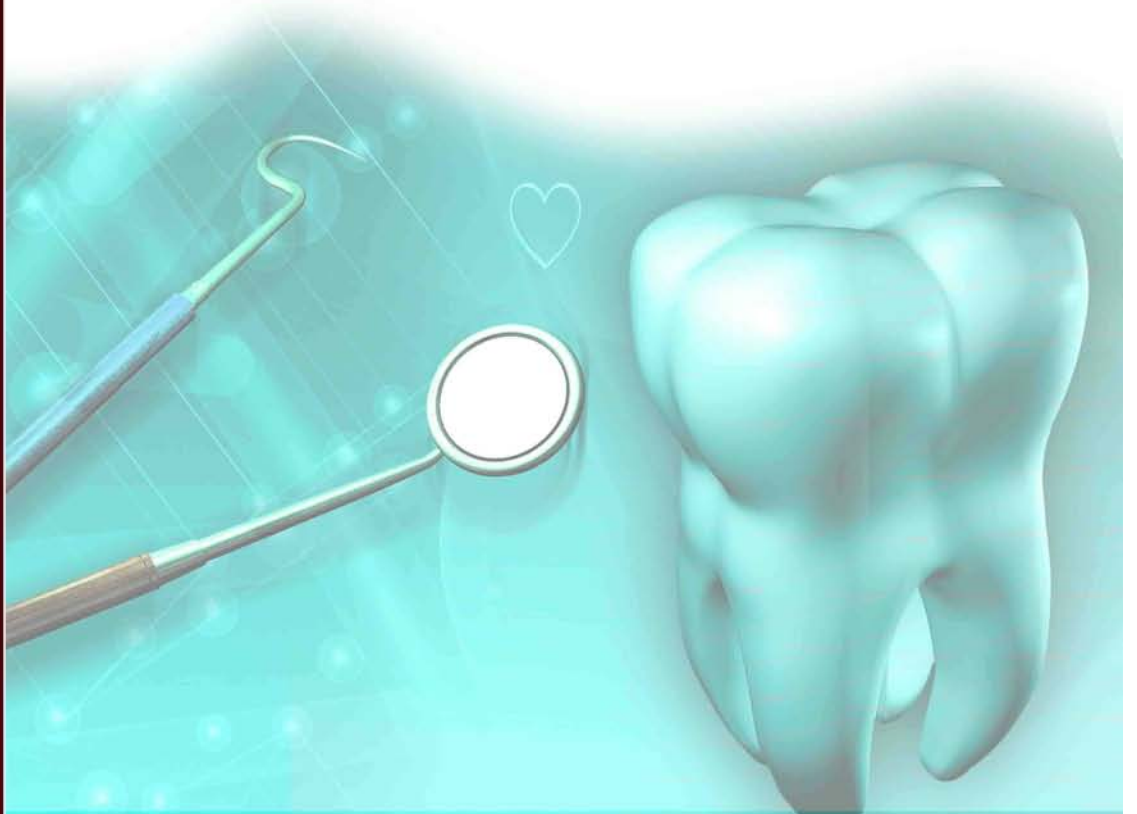


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Executive Editorial

Another humble attempt towards bringing the issue of the Institutional journal. Yeah, it is a matter of immense pride to bring forth this new issue of the journal which I feel again will be catering well to the needs of the intellectual faculty in and around the country. Simultaneously, again I would like to request the readers to ignore minor mistakes which would have crept in and to encourage the authors for their contribution of whatsoever degree to their respective fields. Saying big is always easy as easy is criticizing the people who work and struggle to come upto a level but it takes a toll to work at the ground level. But then you cannot achieve anything without struggle as you cannot reach the bank without first jumping into a river and throwing you away into the deep waters and the risks associated with it. Feeling blessed to make the journal reach a certain point in this world of harsh competition knowing the need for working more fastidiously to make the dream of reaching perfection come true.

The journal will start publishing reviews of the articles by its readers in the form of letters to Editor.

I wish again the journal goes high in its reach to the intellectual people simultaneously expressing my desire for their support for the journal. I invite you all again for your suggestions in improving the journal so that our dream of getting unmatched is met with as early as possible.

With best regards,

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PNAM: A stepping stone in the journey of cleft.

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Abstract:

Objective: To evaluate the outcome of presurgical nasoalveolar molding (NAM) therapy in the treatment of patients with non-syndromic unilateral cleft lip and palate (UCLP).

Design: A prospective study with blinded measurements.

Patients: Ten patients with UCLP treated from 2009 to 2012.

Interventions: The starting age for P NAM therapy was 3.2 days and the average length of the therapy was 162 days. Main Outcome Measures: Measurements on patients and of intraoral casts were made, and statistical analysis were used to compare the differences between pre- and post therapy measurements.

Results: After P NAM therapy, there was a statistically significant decrease in both intra-oral cleft width and columellar deviation ($p < 0.05$). There was also a statistically significant increase in cleft nostril height, maxillary width, and columellar width ($p < 0.05$). Moreover, although there was increase in the affected nostril width but it was statistically insignificant.

Conclusions: P NAM therapy decreases intersegment alveolar cleft distance. It increases nasal symmetry by decreasing columellar deviation, increasing nostril height on the affected side, maintaining bialar width of nose, increasing columellar length, and creating more symmetrical nostril heights and widths. It also decreases need for secondary bone grafting and reduces scar formation after cheiloplasty.

Key words: P NAM, non-syndromic, UCLP

Introduction:

The controversy over the use of presurgical orthopedic treatment for patients with unilateral cleft lip and palate remains an unresolved debate. The influence of infant orthopedics on the end result of cleft lip and palate is a question that will probably never be answered conclusively because these are just one aspect of relatively short duration in a complex sequence of spontaneous development and treatment procedures acting over a long period of time. The treatment of patients with cleft lip and palate (CLP) remains a subject of considerable controversy. At present, there are two competing isms. One involves surgical correction alone, whereas the other doctrine involves surgical correction in conjunction with presurgical molding of the cleft segments. Advances in maxillofacial surgery have corrected many of the deformities associated with CLP. However, persistent problems with associated nasal deformities have given rise to the use of presurgical nasoalveolar molding (PNAM) in cleft-treatment protocols. The theory of P NAM treatment is based on Matsuo's research that the

nasal cartilage is still developing and is subject to repositioning within the first 6 weeks of life (Matsuo and Hirose, 1991).¹ Grayson et al. (1999) described the first treatment protocol for P NAM.² Although there have been a number of reports regarding the effectiveness of P NAM in patients with unilateral CLP (Bennun et al., 1999; Grayson et al., 1999; Maull et al., 1999; Cho, 2001; Grayson and Cutting, 2001; Pfeifer et al., 2002; Da Silveira et al., 2003; Yang et al., 2003; Liou et al., 2004), there have been few reports on its efficacy in patients with bilateral CLP (BCLP) (Grayson and Cutting, 2001; Da Silveira et al., 2003).^{3,2,5-9} The purpose of this study was to quantitatively evaluate the outcomes of P NAM therapy in patients with UCLP. The particular focus of this study was on the effect that P NAM has on the alignment of alveolar segments and nasal symmetry.

Materials and methods:

P NAM therapy was used on 10 patients with UCLP who presented at the Dept. Of Oral and Maxillofacial Surgery, from January 2009 to March

2012. The protocol was approved by an ethical committee and informed consent was obtained. Ten infants (4 boys and 6 girls) with unilateral cleft were included in this study. Seven infants were born with complete cleft lip and palate and 3 infants were born with incomplete primary cleft lip and palate. Six infants had a cleft on the right side; 4 had a cleft on the left side.

The average age of the patients on commencing Pnam therapy was 3.2 days (range: 0.4 to 7 days) and the average length of therapy was 162 days (range: 113 to 242 days). The criteria for inclusion in this study were that the patient had a unilateral, nonsyndromic CLP, and that the patient's family agreed that the patient would undergo Pnam therapy.

After the initial evaluation by a multidisciplinary cleft craniofacial team, an alginate impression was taken of the newborn during the initial visit. After preparation of special tray, heavy bodied silicon material was used to take the final impression. The infant was held upside down & impression tray was inserted into oral cavity, in an inverted position to prevent the tongue from rolling or fall back & to allow it to drain out of the oral cavity. The tray is seated adequately covering the anatomy of upper gum pads & material to flow. After impression is set, the tray is removed, mouth is examined for residual impression material. The impression is then poured in a dental stone to obtain accurate cast. (Fig. 1)

Appliance Design:

A molding plate was fabricated on dental stone model. All the undercuts & cleft space were blocked with block out wax. The plate was 2mm in thickness and made up of hard, self cure acrylic & lined with denture soft tissue liner material. A retention button is fabricated on 21 gauge stainless steel wire, positioned anteriorly at an angle of approximately 40° to the plate. Since patients were having unilateral cleft, only one retention arm was incorporated & positioned in such a way that it remained close to the medial portion of the inner nostril on the affected side and then covered with

orthodontic resin (Fig.10). The vertical position of retention arm was located at the junction of appliance & lower lip, (Fig.3, 4). The nasal stent was added only after inter-alveolar cleft inter-segmental distance became less than 10 mm. The Pnam appliance was adequately secured with the help of orthodontic elastics & adhesive tapes.

Appliance Adjustments:

The inner side of the acrylic plate was relieved for alveolar segment approximation. Patients were monitored and the plates were adjusted during biweekly visits. The advancement of the alar cartilages into the nasal tip was accomplished by adding acrylic to the nasal stents. Columellar lengthening was achieved by the combined force of the nasal stents and the horizontal pro-labial band. All parents were instructed on how to insert and remove the Pnam appliance, which was worn at all times except for routine cleaning. Parents were also instructed to apply a thin coating of lubricant on the nasal stent and under the cleft nostril prior to insertion. The procedure continued until the time of cheiloplasty at approximately 4 to 7 months of age.

The endpoint for the treatment of patients with Pnam was when the ICW was less than 3 mm and when the nostril rim on the affected side had been repositioned (Fig.11, 12). In this study, this was around 4-7 months of age. Upon completion of the Pnam therapy, another set of intraoral and extra-oral casts were made by the same technique. A computerized random number was assigned to each model in order to blind the treatment stage of the casts to the examiner who would make measurements in the next stage. All impressions, casts, and Pnam appliances were made by the same author.

Measurements were performed on the actual casts and on the patients. The following measurements were performed on intraoral casts: intraoral arch width and cleft width (Table 1; Fig.9). The following measurements were performed on the patients: bialar width, columellar deviation, nostril height, and width and columellar

angle, length and width using calipers (Table 2; Fig. 2, 5-8).

Statistics:

All measurements of each time set were compared with paired t tests. Significance for all linear and angular measurements was determined at $p < 0.05$ and $p < 0.01$.

Dependability:

To establish technical reliability, two randomly selected patients were re-measured and reanalyzed 3 days later by the same examiner. Two sets of measurements were compared with paired t tests to examine the intra-observer error. There was no significant difference ($p < 0.01$) between the two sets of measurements.

Results:

There was no statistically significant change in the arch width. The arch width was increased in six patients and reduced in four patients. Widths of cleft ranged from 5 to 17 mm at the initial visits. After pre-surgical naso-alveolar molding, the ICW ranged from 0.5 mm to 11 mm. The change in the ICW varied individually. In the best case, alveolar gap width changed from 15 mm at the initial visit to 0.5 mm before cheiloplasty. In the worst case, cleft width was reduced by only 3 mm, from 13 mm. In comparing 10 complete-cleft newborn infants with 3 incomplete-cleft newborn infants, there were comparatively little change in ICW and consumed more time from beginning till the end of treatment.

The extra-oral measurements (Table 3) revealed a statistically significant increase in bialar width. The average increase in bialar width was 4.04 mm. In addition, there was a statistically significant increase in the columellar length which changed from 3.43 mm to 6.95 mm before cheiloplasty. But change in columellar width was not significant. Nostril heights were improved on the affected side (average 3.27 mm) after pre-surgical NAM. There was little difference in change in nostril height noted in complete and partial cleft neonates. There was an increase in the nostril width of the cleft but number was statistically insignificant.

Columellas were deviated to the unaffected side with an average of 50.12° on initial visit. The columella became more upright (67.6°) before cheiloplasty and almost to a right angle after cheiloplasty. There were significant differences noted in each time interval comparison.

Discussion:

Treatment of pre-surgical NAM should be initiated as soon as possible after birth. During the peri-natal period, maternal estrogen rises, which triggers an increase in hyaluronic acid. Hyaluronic acid reduces cartilage, ligaments, and connective tissue elasticity by breaking down the intracellular matrix. The degree of plasticity in neonatal cartilage is highest after birth and gradually reduces as infants grow. This might be due to high levels of hyaluronic acid in estrogen that was transferred from the mothers to the infants. The cartilage subsequently loses its pliability at around 6 weeks. Therefore, pre-surgical NAM is most successful during the first 3 to 4 months of life (Matsuo *et al.*, 1984).¹

In accord with the chondral-modeling hypothesis (Hamrick, 1999), NAM may be acting as an inductive mechanism that stimulates the activity of immature nasal chondroblasts, producing an interstitial expansion that is associated with improvements in nasal morphology.¹⁰

In this study NAM appliance is successful in guiding separated maxillary alveolar segments into a normal position and cleft width reduced significantly, but a complete osseous bridge is not seen. The noses of newborn infants with unilateral cleft lip and palate measurements related to nostril symmetry had improved after pre-surgical NAM and right before cheiloplasty.

Treatment of the unilateral cleft lip has been a challenge in regards to overall facial esthetics. Even though surgeons try to perform early lip and palate repair, achieving optimum nasal shape and form was always been arduous task. Nasal reconstruction at the time of primary lip repair, the long-term results are still questionable. Millard 1982; Millard and Morovic, 1998 and Grayson *et al.* (1999) propose that definitive repair of cleft lip and nose should be done

as early as possible.^{11, 12, 2}The idea of correcting the nostril cartilage symmetry before primary lip repair was advocated by Matsuo and Hirose (1991).¹³ However, their device could be applied only to individuals with incomplete clefts, who usually demonstrate a lesser degree of nostril asymmetry than do those with complete clefts. Grayson et al. (1993) first introduced a pre-surgical NAM device in 1993, and the technique can be applied successfully to patients with complete cleft lip and palate.²

The objectives of pre-surgical NAM in the unilateral cleft patients are to guide separated maxillary alveolar segments into normal position, reduce cleft width, correct the malpositioned nasal cartilages, columella and philtrum; to bring the columella toward the midsagittal plane; to increase columella length; to improve symmetry of the nostril apertures; and to reduce scar formation after cheiloplasty (Grayson et al., 1999).² Recent clinical studies support the benefits of pre-surgical NAM or alveolar molding alone (Santiago et al., 1997; Grayson et al., 1999; Maull et al., 1999).^{14, 2, 4} By reducing the alveolar gap in combination with gingivoperiosteoplasty (GPP), pre-surgical NAM decreases the need for alveolar bone graft (Santiago et al., 1997). Pre-surgical NAM would reduce the rate of secondary alveolar bone grafts more than 60% during mixed dentition, and the procedure would not affect growth of the face (Santiago et al., 1997; Grayson et al., 1999).^{14, 2} Approximations of the lip and alveolar cleft via alveolar molding minimizes lip tension before and after cheiloplasty, thereby reducing scar formation (Grayson et al., 1999).² By adding the nasal molding to alveolar molding, the treatment effect are additive in terms of aesthetics and function.

Maull et al. (1999) reported a long-term study demonstrating improvement of nasal symmetry with pre-surgical NAM, as compared with pre-surgical alveolar molding alone without nasal stenting (control group). Their results indicated that pre-surgical NAM significantly increases the symmetry of the nose.⁴

In this study, the results demonstrated

significant reduction in cleft width; nostril height and width were most symmetrical right after cheiloplasty. Although pre-surgical NAM successfully increased nostril height on the affected side, the nostril was still wider. This is because orbicularis oris affects nasal morphology by displacing the insertion of the columella toward the non-cleft side, hypoplasia of the lesser segment as well as a deficiency of maxillary bone. A missing or lowered nasal floor can be corrected only by cheiloplasty, which would make the nostrils even more symmetrical in terms of height, width, and columella angle.

Factors contributing to alveolar gap reduction in this study would be 1) relief on the inner side of the acrylic molding plate at the direction of segment approximation; 2) force of lip taping; and 3) soft tissue force created on cleft-segments at the time of sucking while appliance in situ. Alveolar gap was reduced in size when room was created by gradually relieving the inner side of a passive acrylic molding plate for approximation of a major segment on biweekly visits. The molding plates passively pushed the greater segment of the alveolar ridges toward the lesser segments during sucking. Lip taping offered outer pressure to approximate the upper lip and alveolar gap, to decrease width of the nasal base, and permits the lip segments to be placed in a more anatomically correct position to facilitate lip repair under minimal tension, so that healing and scarring can be minimized.

Conclusions:

NAM in infants improves long-term nasal esthetics, reduction in number of nasal surgical procedures, reduced need for secondary bone grafts in the majority of patients if gingivoperiosteoplasty is included in the protocol, and savings in cost to the patient and society through the reduction in number of surgical hospital admissions.

Acknowledgements:

Competing interests: None declared

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Ethical approval: Approved

Patient consent: Obtained.

References:

1. Matsuo K, Hirose T. Preoperative non-surgical over-correction of cleft lip nasal deformity. *Br J Plast Surg.* 1991;44:5–11.
2. Grayson BH, Santiago PE, Brecht LE, Cutting CB. Presurgical nasoalveolar molding in infants with cleft lip and palate. *Cleft Palate Craniofac J.* 1999;36:486–498.
3. Bennun RD, Perandones C, Sepliarsky VA, Chantiri SN, Aguirre MI, Dogliotti PL. Nonsurgical correction of nasal deformity in unilateral complete cleft lip: a 6-year follow-up. *Plast Reconstr Surg.* 1999;104:616–630.
4. Maull DJ, Grayson BH, Cutting CB, Brecht LL, Bookstein FL, Khorrambadi D, Webb JA, Hurwitz DJ. Long-term effects of nasoalveolar molding on three-dimensional nasal shape in unilateral clefts. *Cleft Palate Craniofac J.* 1999;36:391–397.
5. Cho B. Unilateral complete cleft lip and palate repair using lip adhesion and passive alveolar molding appliance. *J Craniofac Surg.* 2001;12:148–156.
6. Pfeifer TM, Grayson BH, Cutting CB. Nasoalveolar molding and gingivoperiosteoplasty versus alveolar bone graft: an outcome analysis of costs in the treatment of unilateral cleft alveolus. *Cleft Palate Craniofac J.* 2002;39:26–29.
7. Da Silveira AC, Oliveira N, Gonzalez S, Shahani M, Reisberg D, Daw JL Jr, Cohen M. Modified nasal alveolar molding appliance for management of cleft lip defect. *J Craniofac Surg.* 2003;14:700–703.
8. Yang S, Stelnicki EJ, Lee MN. Use of nasoalveolar molding appliance to direct growth in newborn patient with complete unilateral cleft lip and palate. *Pediatr Dent.* 2003;25:253–256.
9. Liou EJ, Subramanian M, Chen PK, Huang CS. The progressive changes of nasal symmetry and growth after nasoalveolar molding: a three-year followup study. *Plast Reconstr Surg.* 2004;114:858–864.
10. Hamrick MW. A chondral modeling theory revisited. *J Theor Biol.* 1999;201:201–208.
11. Millard DR. Early correction of the unilateral cleft lip nose, *Plast Reconstr Surg.* 1982;70:64–73.
12. Millard DR, Morovic CG. Primary unilateral cleft nose correction: a 10-year follow-up. *Plast Reconstr Surg.* 1998;102:1331–1338.
13. Matsuo K, Hirose T, Tomono T, Iwasawa M, Katohda S, Takahashi N, Koh B. Nonsurgical correction of congenital auricular deformities in the early neonate: a preliminary report. *Plast Reconstr Surg.* 1984;73:38–51.
14. Santiago PE, Grayson BH, Cutting CB, Gianoutsos MP, Brecht LE, Kwon SM. Reduced need for alveolar bone grafting by presurgical orthopedics and primary gingivoperiosteoplasty. *Cleft Palate Craniofac J.* 1998;35:77–80.

Table: 1

Measurements	Description
Intraoral Cleft Width (ICW)	Distance between the most anterior aspects of the alveolar ridges
Intraoral arch width (IAW)	Distance between widest curvature of the maxillary alveolar arches

Table: 2

Measurements	Description
Bi-alar width (BAW)	Distance between the most lateral aspect of the right and left ala
Columellar width (CW)	Distance between the most lateral points at the base of the columella
Columellar length (CL) Nostril height (NH)	The length of the columella Distance from the most cranial aspect of the inner rim of the nostril to the base
Nostril width (NW)	Distance in the horizontal plane at the widest point of the nostril to the inner rim of the ala
Angle of columella from cleft side (CA):	A line bisecting the columella was drawn from the tip of the nose to the reference line joining two columella, and the angle was measured from the affected nostril.

Table: 3

	Before treatment	After treatment	Difference
Intraoral measurements			
IAW	38.12	39.21	1.09
ICW	14.03	7.82	-6.21
Extraoral measurements			
BAW	29.28	31.04	1.76
CW	3.36	4.13	1.23
CL	3.43	6.95	3.42
NH	2.51	5.78	3.27
NW	12.32	13.51	1.19
CA	50.12 ^o	67.6 ^o	16.6 ^o

Legends:

Figure 1 : Cast

Figure 2 : Columela length(CL) columela width(CW)

Figure 3: Positioning of nasal stent

Figure 4: Pro-labial banding with orthodontic bands and adhesive tapes

Figure 5: Bialar width measurement(BAW)

Figure 6: Nostril height measurement (NH)

Figure 7: Nostil width on cleft side measurement (NW)

Figure 8: Collumelar angle(CA)

Figure 9: Measuremnts on cast -Inter cleft width (ICW), Inter alveolar Width(IAW)

Figure 10: NAM appliance.

Figure11: Before PNAM.

Figure 12: After PNAM.



Fig. 1

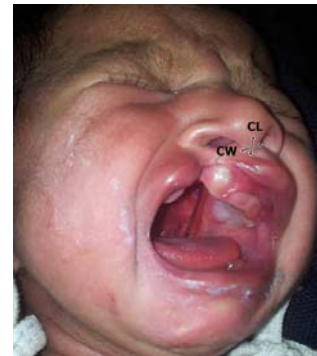


Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8

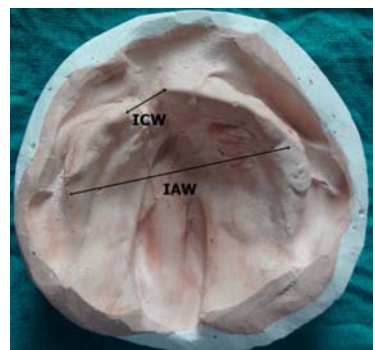


Fig. 9



Fig. 10



Fig. 11



Fig. 12

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Body Dysmorphic Disorder

Dr. Archana Jatania^a, Dr. Sunil Kumar B.^b, Dr. Raju Rathod^c

Abstract:

Body dysmorphic disorder (BDD) is characterized by an intensely negative emotional response to a minimal or non-existent defect in the patient's appearance. The head and face are common foci for this preoccupation, so orthodontists may see patients who have excessive concerns about their dentofacial appearance. This article describes about the features seen in a patient with BDD and the treatment options for the patient

Keywords: Body dysmorphic disorder.

Introduction:

Body image plays an important role for patients seeking orthodontic treatment. It affects how patients feel about their physical appearance and, in extreme cases, can lead to subjective fears of ugliness.¹ Every patient is different and every person comes with his or her unique pattern of responding to others, making decisions, and carrying out plans. Each patient's personal experience, family history, and cultural differences will naturally influence individual responses to orthodontic treatment strategies.² Psychological factors may influence a patient's perception of their malocclusion as well as the treatment plan. It is difficult to know or predict how a patient will view his or her individual situation. Orthodontists need to be sensitive to differences between patients' and their own preferences in formulating treatment plans. Different and unanticipated behaviors among patients often become challenging for the orthodontist. Body dysmorphic disorder is a very common psychological disorder encountered by orthodontists.

Body dysmorphic disorder:

Dysmorphophobia was originally described as "the sudden onset and subsequent persistence of an idea of deformity; the individual fears he has become, or may become, deformed and feels tremendous anxiety of such an awareness."³ Changes in the classification of psychiatric illness means that dysmorphophobia has been redefined

into delusional and non-delusional variants; the non-delusional variant is now called body dysmorphic disorder (BDD). BDD is defined as "a preoccupation with some imagined defect in physical appearance or a gross exaggeration of a slight physical anomaly."² Three criteria must be fulfilled for a diagnosis of BDD.

1. The person is preoccupied with a defect in appearance. Either the defect is imagined or, if there is a defect, the person's concern is excessive.
2. The preoccupation causes significant distress in social, occupational, and other important areas of functioning.
3. The preoccupation is not better accounted for by another mental disorder— eg, anorexia nervosa.

The main cognitive feature of BDD is excessive preoccupation with appearance and the belief that the imagined defect represents a personal inadequacy. A person's level of functioning can vary considerably. Most people are capable of at least limited social functioning and find ways to avoid full exposure of their "defect" in public. These avoidance strategies include camouflage by applying makeup or wearing concealing clothes. In contrast, others become virtually housebound. The prevalence of BDD is unknown. Under-diagnosis and under-representation are likely because patients are secretive about their symptoms and do not always seek professional treatment.

The onset of BDD is commonly during adolescence, and early childhood experiences and psychological vulnerabilities might have an impact on symptoms. In addition, many sufferers are

unmarried, unemployed, and socially isolated.⁵ BDD can be the primary problem or secondary to other psychiatric disorders. BDD is often present with depressive disorders (a lifetime prevalence of 83%), social phobias (35% lifetime prevalence), and obsessive-compulsive disorder (29% lifetime prevalence).¹ BDD has also been found in conjunction with substance abuse.

BDD preoccupations can affect any body part. However, Phillips and Diaz⁶ found that women were more preoccupied with breasts, hips, legs, and weight, and men were more preoccupied with height, genitalia, excessive body hair, body build, and hair thinning. Veale et al⁷ noted that 86% of their BDD patients mentioned some aspect of their faces. For this reason, dentists, plastic surgeons, maxillofacial surgeons, and orthodontists might be the first clinicians to become involved with these patients. BDD patients also present to dermatology clinics with symptoms including preoccupation with wrinkles, spots, acne, large pores, scars, and skin picking.

BDD in orthodontics:

There has been little research on the impact of BDD in orthodontic or orthognathic patients. It is known to significantly affect quality of life and is associated with depression and obsessive compulsive disorder. It is therefore important to determine the patients' concerns and whether they have previously received treatment. It is essential to elicit when the concerns started and what impact they are having on their lives. It is also important when managing BDD patients to establish the events that led to the development of BDD, although a patient's recall of events is retrospective and can be biased. One psychological factor related to biased retrospective recall that might contribute to BDD is a high level of negative affectivity. This represents a general negative condition and encompasses such affective states as anger, scorn, revulsion, guilt, and sadness. The reporting of previous events might be influenced by this personality style, and thus it is difficult to reach definitive conclusions about the role of critical events in the development of BDD.

Treatment of BDD:

Because of uncertainties regarding the etiology of BDD, there are several treatment modalities including medication, psychotherapy, behavioral therapy, and, occasionally, surgery. Some studies reported improvement or resolution of BDD with antidepressants; the most successful medication is the specific serotonin reuptake inhibitors, such as clomipramine and fluoxetine.⁸ However, Phillips et al⁹ cautioned that, for effective treatment of BDD with specific serotonin reuptake inhibitors, patients require long treatments and often higher doses than those used for depression. The role of surgery for the treatment of BDD remains controversial,¹⁰ but it is generally recognized that surgery rarely improves the situation and can even make matters worse because the patient finds a new "defect" or becomes even more concerned about the existing defect. Andreasen and Bardach¹¹ suggested that, because the imagined defect is emotional rather than physical, the patient will rarely be satisfied with the result of surgery.

Conclusion:

BDD occurs often enough in adult orthodontic patients that all clinicians should be aware of its features. This study should make clinicians ask a few well-chosen questions at the start of each new consultation to help identify the potential bad-risk patients.

References:

1. Sarah Hepburn and Susan Cunningham. Body dysmorphic disorder in adult orthodontic patients. *Am J Orthod Dentofacial Orthop* 2006;130:569-74.
2. Graber and vanas dell . *Orthodontics –current principles and techniques*. 5th edition
3. Fava GA. Morselli's legacy: dysmorphophobia. *Psychother Psychosom* 1992;58:117-8.
4. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders, DSM-IV*. 4th ed. Washington, DC: American Psychiatric Press; 1994. p. 466-9.
5. Phillips KA, McElroy SL, Keck PE, Pope HG, Hudson JI. Body dysmorphic disorder: 30 cases of imagined ugliness. *Am J Psychiatry* 1993;150:302-8.

6. Phillips KA, Diaz SF. Gender differences in body dysmorphic disorder. *J Nerv Ment Dis* 1997;185:570-7.
7. Veale D, Gournay K, Dryden W, Boocock A, Shah F, Willson R, et al. Body dysmorphic disorder: a cognitive behavioural model and pilot randomised controlled trial. *Behav Res Ther* 1996;34:717-29.
8. Allen A, Hollander E. Body dysmorphic disorder. *Psychiatr Clin North Am* 2000;23:617-28.
9. Phillips KA, Kim JM, Hudson JI. Body image disturbance in body dysmorphic disorder and eating disorders. *Psychiatr Clin North Am* 1995;18:317-34.
10. Pogrel MA, Scott P. Is it possible to identify the psychologically "bad risk" orthognathic surgery patient preoperatively? *Int J Adult Orthod Orthognath Surg* 1994;9:105-10.
11. Andreasen NC, Bardach J. Dysmorphophobia: symptom or disease? *Am J Psychiatry* 1977;134:673-6.

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Management of Oral Submucous Fibrosis with Buccal Fat Pad Technique: A Case Report

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Abstract:

Oral submucous fibrosis (OSMF) which presents with a severe degree of trismus remains a difficult surgical problem. Several modalities have been tried in the past to relieve the trismus as medical and surgical management which included the excision of fibrotic bands and repair of the resultant defect with different flaps.

The buccal fat pad also called Bichat's fat pad is one of the several encapsulated fat masses in the cheek. It is found that a pedicled graft of buccal fat enables closure of oral defects with little morbidity at the donor site as compared to the other local flaps. We will propose buccal fat pad as a source for the reconstruction of the defect after fibrotomy in younger age groups as the evidence of early epithelization is an added advantage. However, in elderly age groups with chronicity of the disease, the volume of buccal fat pad due to atrophy may be a drawback.

We report herewith a histopathologically proven case of OSMF with initial interincisal mouth opening of 10 mm which was treated surgically with buccal fat pad flap reconstruction technique followed by active mouth opening exercise for 6 months with Histers jaw exerciser. Patient maintained his increased 26 mm interincisal mouth opening and was followed up to 12 months to notice any malignant changes in the oral cavity.

Appreciating the precancerous nature of oral submucous fibrosis with development of slowly growing squamous cell carcinoma in one-third of OSMF patients any changes should be monitored closely. Efforts then should be directed towards maintaining maximal mouth opening. Recognition of this entity is, of course the first step in its proper management.

Key words : Malignant transformation, buccal fat pad flap, oral submucous fibrosis, trismus.

Introduction:

Oral submucous fibrosis (OSMF) is an insidious chronic disorder affecting any part of the oral cavity and sometimes the pharynx. Although occasionally preceded by and or associated with vesicle formation, it is always associated with juxta-epithelial inflammatory reaction followed by a fibroelastic change of the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa, causing trismus and inability to eat (1). OSMF has a high rate of morbidity because it causes progressive inability to open the mouth, resulting in inability to eat and consequent nutritional deficiencies (2). Mortality rate is significant because it transforms into oral cancer, particularly squamous cell carcinoma at a rate of 7-30% (2).

Management includes cessation of habit and surgical release of fibrous bands followed by forceful opening of the mouth by coronoidectomy and coverage of surgical defects with buccal fat pad flap and postoperative active jaw physiotherapy for 6 months (3). Surgery may induce scar tissue which reduces mouth opening due to scar contraction in mouth closing muscles (4). Relapse is a common complication that occurs after surgical release of the oral trismus caused by OSMF. A variety of jaw opening devices have been used to treat trismus. Devices currently in common clinical use include stacked tongue depressors, corkscrew devices, the Therabite Jaw Motion Rehabilitation System and Histers jaw exerciser (5).

The purpose of this article is to report a definite treatment approach that combined surgery

with active physiotherapy to improve the jaw opening to prevent relapse and small effort has been made in the present study aiming to endure adequate functional disease free mouth opening and to detect any developing malignant change at its earliest.

Case report:

A 26 year-old female patient reported to our Department with a complaint of increasing difficulty of mouth opening and mastication since 3 years. The patient had habit of chewing betel nuts four times, a day for 5 to 6 years. She used to keep the betel nut in the mouth, against the cheeks for approximately 30 minutes each time, chew, and finally spit it out. The patient stopped this habit completely 2 years before. OSMF was confirmed histopathologically and an informed consent was taken prior to the surgery. Routine pre-anesthetic investigations were done. Initial interincisal mouth opening was recorded which was 8 mm (figure 1). Under aseptic precautions, a fiberoptic bronchoscope was used for intubation of the patient for administration of general anesthesia. Incisions were made by using an electrosurgical knife extended from the corner of mouth to the soft palate at a level of the linea alba, avoiding injury to duct of parotid gland. Fibrotomy of the bands was done. The coronoid processes were approached through the same incision and a bilateral coronoidectomy was carried out. The maxillary and mandibular third molars were extracted. Intraoperative interincisal distance was recorded (figure 2).

The Buccal Fat Pad was approached through the posterior- superior margin of the buccal defect that was created (raw area created after the fibrotomy procedure up to retromolar trigone region), bluntly opened with the fine haemostat or scissor and then gently dissected until the fat protrudes into the mouth. The Buccal Fat Pad was eased into the mouth gently by applying external pressure over the cheek until a sufficient amount was obtained to cover the defect without tension. The Buccal Fat Pad graft was then secured in place with horizontal mattress sutures (figure 3). The same

procedure was performed on the other site. Patient was extubated and shifted to recovery room. The patient was instructed and motivated to do physiotherapy herself for up to 6 months (figure 4). Patient was reviewed postoperatively after 1 week, 15 days, 1 month, 3 months, 6 months and 12 months (figure 5).

Discussion:

OSMF is multifactorial in origin affecting 5 million people in India alone (0.5% of the Indian population) (2). Male predominates with the ratio of 4.9:17 (6). OSMF is poorly understood unsatisfactorily treated disease. However a more complication of this disease is the risk of the development of oral carcinoma. The precancerous nature of OSMF has been observed with development of slowly growing squamous cell carcinoma in one-third of OSMF patients (2,6).

Various treatment modalities like medical, surgical are tried to improve the patient condition (2). Medical treatment is palliative. Submucosal injection (7,8) of various drugs may produce temporary symptomatic relief but can lead to aggravated fibrosis, pronounced trismus and increased morbidity from the mechanical injury secondary to insertion of the needle and chemical irritation from the drug (9). Surgical treatment modality has its own advantages and disadvantages. Surgery has been the main stay of the treatment in this condition (10,11). A variety of surgical modalities have been used for the treatment of advanced oral submucous fibrosis. Simply cutting the fibrotic bands have been reported as generally unsatisfactory or impossible to reduce the trismus because it tends to result in the formation of fibrous tissue and scarring. To overcome this problem many materials have been used to reconstruct the defect created after excision of fibrotic bands from buccal mucosa.

The advantages we have found while using the buccal fat pad flaps are:

- Logical, convenient and reliable option
- Easy to perform
- Could be approached through the same incision.

- Offers ease of surgery
- Can be performed under local anesthesia as day care procedure,
- Shows little post operative morbidity,
- Good patient acceptance.

The disease is irreversible and incurable in nature. The thickened epithelium with rete ridges was obvious as epithelization was completed by five weeks. The microscopic picture after surgery (15 months) revealed more fibroblast cellularity and less hyalinization in the submucosal layer as compared with the preoperative biopsy. This suggests that buccal fat pad graft for oral submucous fibrosis may revert the mucosa to a relatively normal state histologically (1,2).

We found that a pedicled graft of buccal fat enables closure of oral defects with little morbidity at the donor site as compared to local flap. It played important role in gaining functional disease free mouth opening and to detect any developing malignant change at it's earliest (1,3).

Conclusion:

Buccal fat pad technique in the management of OSMF with postoperative exercise played important role in gaining functional disease free mouth opening and to detect any developing malignant change at it's earliest.

References:

1. Pindborg JJ, Mehta FS, Gupta PC, Daftary DK. Prevalence of oral submucous fibrosis among 50,915 Indian villagers. From the Basic Dental Research Unit, Tata Institute of Fundamental Research, Homi Bhabha Road, Bombay India 1968;30.
2. Arakeri G, Brennan PA. Oral submucous fibrosis: An overview of the aetiology, pathogenesis, classification and principles of management. *British Journal of Oral and Maxillofacial Surgery*. 2013;51:587–93.
3. Yeh CJ. Application of the buccal fat pad to the surgical treatment of oral submucous fibrosis. *Int J Oral Maxillofac Surg*. 1996;25:130-3.
4. Dijkstra P.U, Sterken M.W. Exercise therapy for trismus in head and neck cancer. *Oral Oncology* (2007); 43: 389–394.

5. Phuc VL, Gornitsky M. Oral stent as treatment adjunct for oral submucous fibrosis relapse. *Oral surg oral med oral pathol oral radiol endod* 1996;81:148-50
6. Hazarey V. K., Erlewad D. M., Mundhe K. A., Ughade S. N. Oral submucous fibrosis: study of 1000 cases from central India. *J Oral Pathol Med* (2007); 36: 12–7
7. Pillai R, Balaram P, Reddiar KS. Pathogenesis of Oral Submucous Fibrosis, *Cancer*. 1992;69:2011-7.
8. Adwani DG. Histopathological studies before and after Kenacort in oral submucous fibrosis. MDS Thesis: University of Bombay, India;1982.
9. Borle RM, Borle SR. Management of oral submucous fibrosis: A conservative Approach. *J Oral Maxillofac Surg*. 1991;49:788-91.
10. Manjunath KS. Surgical management of oral submucous fibrosis: Our perspective and literature review on various options for reconstruction. *Journal of PearlDent* 2011;2(3):97-100.
11. Faisal M, Rana M, Shaheen A, Warraich R. Reconstructive management of the rare bilateral oral submucous fibrosis using nasolabial flap in comparison with free radial forearm flap - a randomised prospective trial. *Orphanet J Rare Dis*. 2013;8(1):56.
12. Chao CK, Chang LC, Liu SY, Wang JJ. Histologic Examination of Pedicled Buccal Fat Pad Graft in Oral Submucous Fibrosis. *J Oral Maxillofac Surg*. 2002;60:1131-1134.
13. Naphade M.V. Dissertation on major immunoglobulin status and lactate dehydrogenase isozyme profile in oral pre-malignancy and malignancy 1993. Govt. Dental College & Hospital Nagpur. India.

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Figure Legends:

Figure 1-Pre operative mouth opening

Figure 2-Intra operative mouth opening

Figure 3-Buccal fat pad flap sutured in the defect

Figure 4-Post operative mouth opening exercise

Figure 5-Post operative mouth opening at end of 1 year



Figure 1- Pre operative mouth opening



Figure 2-Intra operative mouth opening

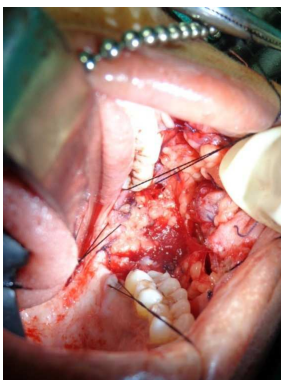


Figure 3 -Buccal fat pad flap sutured in the defect



Figure 4-Post operative mouth opening exercise



Figure 5-Post operative mouth opening at the end of 1 year

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Sanjeevani - A New Hope in Dentistry

Dr. Rahul Gandhi^a, Dr. Sweta Gandhi^b, Dr. Archana Toshniwal^c

Abstract:

Oral diseases have become one of the major public health challenges all over the world and they do influence an individual's overall personality. Due to a rapid increase in the rate of dental infections, extensive use of antibiotics has been advocated. Thus, antibiotic resistance developed in microorganisms and also their potential side effects, lead us to transform from drugs to herbs. Herbal formulations are an attractive proposition for so many reasons amongst which biocompatibility, palatability, safety and environmental friendliness are major considerations. There has been an extensive search for agents with immense medicinal value, wide margin of safety and multiple health benefits. In recent years, natural products are drawing more interest because of their lesser side effects and low resistance in microorganism. This review gives a bird's eye view of prevention and treatment through green dentistry. Sanjeevani- A New Hope in Dentistry

Key Words: Dental caries, Gingivitis, Microorganisms, Streptococcus mutans.

Introduction:

Dental diseases are recognized as major public health problems throughout the world. Numerous epidemiological studies showed that tooth decay is the most common affliction of mankind.^[1] Many years ago, it was shown in animal studies that dental caries is an infectious and transmissible disease. Since that time, acidogenic bacteria especially streptococcus mutans and lactobacillus have been associated with this disease in humans.^[2] Various synthetic chemical agents have been evaluated over the years with respect to their anti microbial effects against dental caries, however all are associated with various side effects thus, patients prefer using herbal preparation ones which are efficient with least possible side effects.^[3] The power to prevent, cure and heal all the diseases lies in the master hands "The Nature." This review gives a bird's eye view on the prevention and treatment of some commonly occurring dental diseases, by means of herbs which cannot replace but, complement existing medicines.

Curry Leaf:

It is grown all over India and other countries for its aromatic leaves. The fresh curry leaves contain 2.6% volatile essential oils.^[4] Chlorophyll has been

proposed as an anti-cariogenic agent and it also helps to reduce halitosis.^[5] According to a study holding curry leaves in mouth for 5-7 minutes is helpful in reducing halitosis.^[6] Chewing 2-4 fresh curry leaves can be of help in keeping good oral hygiene. Also it will be safe and economical to use as mouthwash.

Tea:

It contains catechins like epigallocatechin gallate (EGCg), Epicatechin gallate (ECG), Epigallocatechin (EGC) and Galocatechin (GC).^[7] GC, EGC and EGCg possess strong bactericidal as well as anti-bacterial activity. Acid production from Streptococcus Mutans is inhibited by EGCg.^[8] Study conducted showed that on oral and topical application with a black and green tea mixture leukoplakia had regressed in 37.9% patients.^[9] Oolong teas has oligomeric catechins fraction superior to green tea in caries prevention.^[10] It may inhibit bacterial adherence to tooth by reducing cell surface hydrophobicity of Mutans streptococci by reducing rate of acid production.^[11]

Azadirachta Indica (Neem):

It has a wide range of antimicrobial activity. Neem stick extract has the property of reducing the ability of some streptococci to colonize tooth surfaces.^[12] Extract of Neem leaves has antiviral activity against HSV (HSV1 HSV2).^[13] Antimicrobial

effects of Neem extract have been demonstrated against *S.Mutans*.^[14]

Turmeric:

It is the most extensively used spice. It has potent anti-inflammatory and strong anti-oxidant properties. Anti-oxidant activity is due to *curcumin*.^[15] Studies have shown that it stimulates detoxifying enzymes ie. Glutathione S Transferase and UDP glucuronyl transferase.^[16] Turmeric may act as anti-proliferator and anti-promotor.^[15] It has anti-inflammatory, anti-oxidant, anticarcinogenic, anti-mutagenic anti-bacterial, anti-fungal, anti-viral activities.^[17] Its anti cancer effect is mainly due to induction of apoptosis.^[15] It inhibits *Streptococcus* and *Lactobacillus*.^[17]

Aloe Vera:

Aloe vera is known as **MIRACLE PLANT** as it contains more than 200 vital nutrients. It has been suggested that external application of Aloe Vera gel promotes wound healing.^[18] It has anti-oxidant properties and is effective in treatment of periodontal disease.^[19] Aloe Vera gel has been used to treat gingivitis and is also effective against herpes simplex viruses.^[18] It has also been tried in the treatment of lichen planus.^[18] Aloe Vera extracts has been shown to inhibit *C.Albicans*.^[20]

Triphala Mouthwash:

'*Triphala*' has been described as a classic Ayurveda compounds. There is little literature available on its beneficial effects on oral cavity .A study was conducted to evaluate the efficacy of *Triphala* mouthwash in preventing occurrence of incipient carious lesions. Although there was a reduction in the incipient caries scores, remineralization could not be established, suggesting that *Triphala* mouthwash has a role to play in preventing the development of incipient lesions.^[21]

Guava:

Guaijaverin a flavonoid compound present in guavas inhibits growth of *streptococcus mutans* considered to be a pathogen for dental caries .Guava is also rich in folate which helps fight bad breath

that causes gum disease, gingivitis.^[22] Guava aqueous extract is also attractive for use as a mouthwash which possess anti-oxidant properties attributed to the polyphenols found in the leaves.^[23]

Papaya:

Papacarie is a new formulation of raw papaya and has the main active ingredient papain, an endoprotein with bactericidal, bacteriostatic and anti-inflammatory actions.^[24] There was less marked destruction of dentinal tubules in chemomechanical caries removal by Papacarie gel. Thus, it is recommended as an efficient, easy to perform, less destructive solution for the patient seeking an alternative to the conventional method.^[25]

Anise:

Also known as *sweet fennel*. It has as light green leaves and small yellow-white flowers. The licorice-flavored seeds are used in medicine and as flavoring agent. An anti-inflammatory herb, anise is commonly used in tea form to soothe the gums. Chewing fennel seeds eliminates bad breath.^[26]

Burdock:

A common plant that grows in almost any moist soil. Its roots and seeds contain a variety of chemicals and nutrients, Burdock poultice are excellent for the relief of muscle tension and headaches associated with temporomandibular joint disorders. ^[26]

Catnip:

Catnip is excellent for calming the nervous system and controlling irritability. It contains many chemicals and nutrients, including acetic acid, manganese, phosphorus, PABA, sodium, sulfur, vitamin A, and several B vitamins .Drinking catnip tea helps relax before dental treatment.^[26]

Pomegranate:

Pomegranate components promotes oral health, including reducing the risk of gingivitis. A study examined young adults for the effects of 4 weeks of thrice daily mouth rinsing with the pomegranate extract PomElla[®] dissolved in water. This treatment changed salivary measures relevant to oral health including gingivitis and increased

radical scavenging capacity suggesting the use of pomegranate extracts in oral health products such as toothpaste and mouthwashes^[27]

Syzygium Cumini (Indian Jamun):

It is a fruit consumed by all sections of people in India. It is cheaply available and has certain medicinal properties too. The seeds are claimed by some to contain an alkaloid, *jambosine*, and glycoside, *jambolin* or *antimellin*, which halts the diastatic conversion of starch into sugar. The leaves and bark are used for gingivitis and controlling blood pressure^[28]

Conclusion:

Nature has a solution for all these problems, and thus is the need to explore and utilize these natural products which are readily available in the golden palms of nature which offer a promising remedy for these diseases. These natural products are a new hope to the growing epidemic of common oral diseases and thus, is the need to take advantage of this cost effective, economical oral health care treasure.

References:

1. Mcdougall HA. Studies on dental plaque. The histology of dental plaque and its attachment. Aust Dent J 1963; 8:261-5.
2. Axelsson P. Diagnosis and risk prediction of dental caries. Vol.2. Quintessence Publishing Co. Ltd; 2002. p. 18-28.
3. Pai R, Ahcarya LD, Leelavati, Udupa N. Evaluation of anti plaque activity of Azadirachta indica leaf extract gel – 6 week clinical study. J Ethnopharm 2004; 90:99-103.
4. Math MV, Balasubramaniam P. Curry leaves. Br Dent J .2004 Nov 13;197(9):519.
5. ShaferWG, HineMK, LevyBM, Tomich CE. Dental caries. In: R Rajendran, B Sivapathasundharam, editor. A textbook of oral pathology.4th ed. New Delhi: Saunders publishers ; 2002. p 262.
6. Math, M. and P. Balasubramaniam, Curry leaves (*Murraya Koenigii spreng*) and halitosis. BMJ South Asia edition 2003;19(3): 211.
7. Hirasawa M, Takada K, Otake S. Inhibition of acid production in dental plaque bacteria by green tea catechins. Caries Res 2006; 40(3):265-70.
8. Okamoto M, Sugimoto A, Leung KP, Nakayama K, Kamaguchi A, Maeda N. Inhibitory effect of green tea catechins on cysteine proteinases in P- gingivalis. Oral Microbiol Immunol 2004 Apr;19(2):118-20.
9. McKay DL, Blumberg JB. The role of tea in human health: an update. J Am Coll Nutr 2002; 21(1):1-13.
10. Hamilton-Miller JM. Anti-cariogenic properties of tea (*Camellia sinensis*). J Med Microbiol 2001;50(4):299-302.
11. MatsumotoM, MinamiT, SasakiH, SobueS, Hamada S, Ocshima. Inhibitory effects of Oolong tea extract on caries inducing properties of mutans Streptococci. Caries Res 1999; 33: 441-5.
12. Wolinsky LE, Mania S, Nachani SD, Ling S. The inhibiting effect of aqueous Azadirachta indica (Neem) extract upon bacterial properties influencing in vitro plaque formation. J Dent Res 1996;75(2):816-22.
13. Jassim SA, Naji MA. Novel antiviral agents: a medicinal plant perspective. J Appl Microbiol 2003;95(3):412-27.
14. Biswas K, Chattopadhyay I, Banerjee RK, Bandyopadhyay U, Biological activities and medicinal properties of neem (*Azadirachta Indica*). Curr Sci 2002; 82(11):1336-45.
15. Craig WJ. Health promoting prop of common Herbs. Am J Clin Nutr 1999 Sep;70(3):491S-499S.
16. Krishnaswamy K. Non Nutrients and cancer Prevention. ICMR Bulletin 2001 Jan; 31(9).
17. Chattopadhyay I, Biswas K, Bandyopadhyay, Banarjee RK. Turmeric and Curcumin: Biological actions and medicinal applications. Curr Sci 2004;87(1):44-53.
18. Wynn RL. Aloe vera gel: Update for dentistry. Gen Dent 2005;53(1): 6-9.
19. Goldie MP. Antioxidants in oral health care: Making the connection. Int J Dent Hyg 2005;3(2):93-5.
20. Agarry O.O, Olaleye M.T, Bello-Michael, C.O. Comparative antimicrobial activities of aloe Vera gels and leaf. Afr. J. Biotechnol 2005;4(12):1413-1.
21. Tandon S, Gupta K, Rao S, Malagi KJ. Effect of Triphala mouthwash on the caries status. Int J Ayurveda Res 2010;1(2):93-9.
22. Internet source Nutriguide Guava-a store house of nutrition feb22, 2011. Available from

nutrresearch.blogspot.com/2011/02/guava-storehouse-of-nutrients.html .

23. Qian H, Nihorimbere V. Antioxidant power of phytochemicals from *Psidium guajava* leaf. J Zhejiang Univ Sci 2004;5(6):676-83.

24. Bussadori SK, Castro LC, Galvão AC. Papain gel: a new chemo-mechanical caries removal agent. J Clin Pediatr Dent 2005 ;30(2):115-9.

25. Jawa D, Singh S, Somani R, Jaidka S, Sirkar K, Jaidka R. Comparative evaluation of the efficacy of chemomechanical caries removal agent (Papacarie) and conventional method of caries removal: an in vitro study. J Indian Soc Pedod Prev Dent 2010 ;28(2):73-7.

26. Flora Parsa Stay, DDS. The complete book of dental remedies. Herbal Therapy in Dentistry Avery publishing 1996. Available from http://www.healthy.net/Health/Article/Herbal_Therapy_in_Dentistry/1472.

27. DiSilvestro RA, DiSilvestro DJ, DiSilvestro DJ. Pomegranate extract mouth rinsing effects on saliva measures relevant to gingivitis risk. Phytother Res 2009 Aug;23(8):1123-7.

28. Alok Ranjan, Akanksha Jaiswal , R. Balaji Raja . Enhancement of *Syzygium cumini* (Indian jamun) active constituents by ultra-violet (UV) irradiation method. Scientific Research and Essays 2011; 6(12): 2457-64.

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