Official Publication
of
Rangpur Dental College

RANGPUR DENTAL COLLEGE JOURNAL

Rangpur Dental College Journal

CONTENTS

3

Editorial

Effective Quality Management in Dental Care Practice

Islam MS

The quality in health care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. The quality can be evaluated based on structure, process, and outcomes. The structure referred to buildings, equipment and drugs available to facilities, the process referred to rendering services to a patient and outputs referred to the parameters of services provided to the patient. Here, structural quality evaluates health system capacities, process quality assesses interactions between clinicians and patients, and outcomes offer evidence about changes in patients' health status. All patients presenting to any health care practice have a right to safe quality care. It is essential to recognize that some practitioners and practices do not provide the necessary level of quality or safety that their patients deserve. They need to provide systems support and act accordingly in the evidence of continuous poor quality or unsafe practice. There is a need for multiple strategies for quality improvement and patient safety that focus on, and are reinforced by macro, meso and micro initiatives. A total health care system quality focus is required because primary care operates within health care systems and it must be integrated. It is generally considered that patients as only users and there is a proposal to expand the model to other stakeholders of health institutions, employees, owners, society and suppliers. Therefore, it becomes the model for excellence of dental care service.

Dental care practice should be safe, effective, patient centered, timely and efficient. Safe — avoiding injuries to patients from the care that is intended to help them. Effective — providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding under use and over use, respectively). Patient centered — providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions. Timely — reduces wait and sometimes harmful delays for both those who receive and those who give care. Efficient — avoids waste, including waste of equipment, supplies, ideas and energy. The presence of specific organizational structures does not necessarily result in better clinical processes and outcomes, organizational aspects are certainly enables of higher performance but assessing and monitoring

the quality of dental care play an important role in quality assurance and quality improvement.

In most health care systems, a variety of quality management (QM) and improvement initiatives have been implemented to enhance health care management and specifically dental health care. It refers to activities that seek to improve care and prevent poor care, most commonly on a continuous basis as part of everyday routine. Quality management is the systematic measurement and monitoring of process, structure and outcome of care and results in a continuous improvement process. There are different quality management systems have become available for health care providers. The quality management systems measure structure and process of care as well as non-clinical outcomes of patients. While such quality management programs are available for dental care, evidence on their impact and effectiveness is sparse. Different indicators are framed within five key conceptual domains: infrastructure, information, finance, quality and safety and people. Some indicators for dental care practices are different to those for general medical care. The domain infrastructure was expanded by dimensions material management and laboratory management; the domain quality and safety by dimensions safety of staff and patients, hygiene, infection control and provisions for emergency situations; and the domain information by dimensions communication with other health care providers and information for patients on practice, practice policy and community resources.

The implementation of a quality management system in dental care practices can be facilitated by the use of quality indicators. Quality indicators should yield positive assessment on a range of attributes such as clarity, feasibility, reliability, validity and transparency and in order to demonstrate sensitivity to change, benchmarking data are required so that health care providers can assess and compare their own quality of care with others. Effective quality management for dental care practices can make an important contribution to the oral health services and also to improving patient outcomes. Therefore, raising awareness regarding the development and continuous measurement of quality in dental care practices is important for dentists and oral health services policy makers. Incentives for improving quality are also increasingly used as part of systems for remuneration of healthcare professionals, therefore need

01

appropriate measures of quality to ensure that patient charges and public sector payments are actually paying for quality and that healthcare professionals are being appropriately remunerated for improving quality.

To implement a national quality management strategy effectively requires clear objectives that make sense at a local level, mechanisms to achieve these objectives, stakeholders who feel ownership of the strategy and resources to deliver the strategy. A dual focus is required between vertical policy implementation and the local dimension and individual practices, which recognizes the specifics of implementation at a local level. Policy in dental care practice that privileges quality management will depend on the interaction between both a national and local level and the necessary resources and strategies to achieve them. This will require both an agenda and an environment for change.

Guidelines for good clinical practice are perhaps the best examples of good effective quality management and their evaluation. Their success is assessed by the level of development and accomplishment of strategies for their implementation, as well as the results achieved in their use. One of the most effective QM techniques is a written consent. This technique is similar to guidelines for good clinical practice, and it is useful in health institutions. It is based on group of experts meetings, and through a panel discussion generating the statement of quality management of a specific service in a dental care. The main characteristic of this technique is to develop and support local good practice, specific for each health institution. Implementation of quality management in dental care practices requires a paradigm shift there cannot longer be a singular focus on technical aspects, but also it is necessary to integrate organizational aspects of service delivery and employ a team approach.

References:

1. Arah OA, Westert GP, Hurst J & Klazinga NS. A conceptual framework for the OECD Health Care Quality Indicators Project. In J Quality in Health Care 2006; 18 Suppl 1(September), 5–13.

2. Brennan SE, Bosch M, Buchan H & Green SE. Measuring organizational and individual factors thought to influence the success of quality improvement in primary care: a systematic review of instruments. Implementation Science 2012; 7(1): 121.

3. Campbell SM, Roland M O, Quayle JA, Buetow SA & Shekelle PG. Quality indicators for general practice: which ones can general practitioners and health authority managers agree are important and how useful are they? J Public Health Med 1998; 20(4): 414–21.

4. Cantrill JA, Sibbald B & Buetow S. Indicators of the appropriateness of long-term prescribing in general practice in the United Kingdom: consensus development, face and content validity, feasibility, and reliability. Quality in Health Care 1998; 7(3): 130–5.

5. Chaix CC, Durand ZI, Jolly D, & Durieux P. Effects of financial incentives on medical practice: results from a systematic review of the literature and methodological issues. Int J Quality in Health Care 2000; 12(2): 133–42.

6. Donabedian A. The quality of care. How can it be assessed? 1988. Arch Patho Lab Med 1997; 121(11): 1145–50.

7. Engels Y, Dautzenberg M, Campbell S, Broge B, Boffin N, Marshall M, Grol R. Testing a European set of indicators for the evaluation of the management of primary care practices. Family Practice 2006; 23(1): 137–47.

8. Goetz K, Campbell SM, Broge B, Brodowski M, Wensing M & Szecsenyi J. Effectiveness of a quality management program in dental care practices. BMC Oral Health 2014; 14(1): 41.

9. Mettes TG, van der Sanden WJM, Bronkhorst E, Grol RPTM, Wensing M & Plasschaert AJ M. Impact of guideline implementation on patient care: a cluster RCT. J Dent Res 2010; 89(1): 71–6.

10. Mills I & Batchelor P. Quality indicators: the rationale behind their use in NHS dentistry. Br Dent J 2011; 211(1): 11–5. doi:10.1038/sj.bdj.2011.521.

11. Minkman M, Ahaus K & Huijsman R. Performance improvement based on integrated quality management models: what evidence do we have? A systematic literature review. Int J Quality in Health Care 2007; 19(2): 90–104.

12. Schouten LMT, Hulscher MEJL, van Everdingen JJE, Huijsman R & Grol RPTM. Evidence for the impact of quality improvement collaboratives: systematic review. BMJ (Clinical Research Ed.) 2008; 336(7659): 1491–4.

13. Szecsenyi J, Campbell S, Broge B, Laux G, Willms S, Wensing M & Goetz K. Effectiveness of a quality-improvement program in improving management of primary care practices. Can Med Assoc J 2011; 183(18): E1326–33.

14. Tekie J, Majstorovic V, Markovic D, Nikodijevic A & Stamenkovic D. Quality management in dental health care: Present and future development. Stomatoloski Glasnik Srbije 2011; 58(1): 35–43.

Correspondence to:
Dr. Md. Shahidul Islam
Assistant Professor & Head
Dept. of Prosthodontics
Rangpur Dental College & Hospital
Rangpur, Bangladesh
E-mail: smshaheen0407@yahoo.com

The Clinical Efficacy of Superior Border of Mandibular Canal and to Avoid Nerve Damage when Installing Endosseous Implants: Comparison between Panoramic Radiograph and Computed Tomography

Nahar K[1], Akemi T[2], Tohru K[3]

Abstract

Background:

Objective: To evaluate the clinical efficacy of the superior borders visibility of mandibular canal for digital panoramic radiography (PR) and dental CT imaging.

Methods: Digital panoramic images and dental CT cross-sectional images by multi-detector row CT of 100 patients were used in this study. On both images, the mandibular canal was divided into equal 4 areas, Areas A, B, C and D, from anterior to posterior. The clinical efficiency of the superior and inferior border of MC in each area was done by using a 5-point visibility score.

Results: CT was significantly better than PR in depicting both borders of the mandibular canal in all areas. For both PR and CT, the mean score of the superior border was significantly lower than that of the inferior border in all areas. Concerning the difference of the visibility of the superior border due to the locations, the results of PR and CT were dissimilar. Namely, Areas A, B and C all showed significantly lower score than Area D for PR, whereas only Area A was lower than Area D for CT.

Conclusions: The superior border clinical efficiency is higher than inferior border of the mandibular canal was poorly depicted regardless of the locations for both PR and CT. In particular, for diagnosis the clinical efficiency depend on the visibility of the superior border, on panoramic images was very poor except for the most posterior area. The use of CT cross-sectional images was considered to remarkably improve such poor visualization.

Key words: PR: Panoramic Radiograph; CT: Computed Tomography; Mandibular Nerve; MC: Mandibular Canal.

Introduction:

One of the major innovative technological break is, computed tomography through in radiology, especially in dental radiology for the diagnosis of the jaw is the preoperative evaluation of a patient about to undergo for dental surgery for producing 2D and 3D cross-sectional images of an object.[1-3] On the other hand, Panoramic radiograph (PR) is also being continuously to offer today's dentist a unique patient view, covering the entire dentition and surrounding structures. However, it has the limitation due to inability to showing the image in buccal-lingual cross-section of jaw and also has image distortion. Furthermore, the ideal imaging technique would depict the density of the cancellous bone, the thickness of the cortices and also detect the anatomical landmarks.[3]

Panoramic radiography is being routinely used for diagnosis, treatment planning and monitoring the progression of treatment as well as the relation of the mandibular canal to neighboring anatomic structures such as tooth root.[4]

As we know that Mandibular Canal (MC), arises from the mandibular foramen up to the mental foramen is one of the important prerequisite for dental surgery, implantation in mandibular posterior region. It runs obliquely downward close to the lingual aspect and forward in the ramus and then horizontally forward in the body and shift buccally before opening into the mental foramen.[5] To avoid injury to the mandibular neurovascular bundle during dental surgery, identifying the MC location is imperative. A well defined radiolucent zone, lined by radioopaque superior and inferior borders is the radiographic appearance of the mandibular canal.[5]

CT scan with reconstructed images including with better contrast resolution and detail bone mineral assay helps in

1. Dr. Kamrun Nahar, Assistant Professor & Head, Dept. of Oral Anatomy with Physiology, Rangpur Dental College, Rangpur, Bangladesh
2. Dr. Akemi Tetsumura, Oral & Maxillofacial Radiology, Graduate School, Tokyo Medical & Dental University, Japan
3. Dr. Tohru Kurabayashi, Oral & Maxillofacial Radiology, Graduate School, Tokyo Medical & Dental University, Japan

diagnosis of exact location and size of the anatomical landmarks and also pathology. So, we use computed tomography scan because it is currently used to demonstrate the bone margins of the canal and also height of the mandible. But in some cases they cannot be sufficiently differentiated the location of superior and inferior walls of MC.

Our aim is to evaluate the advantages of CT and panoramic radiograph (PR) by comparing the visibility of the radio opaque superior and inferior walls of MC which is very important for mandibular surgery and also for pre-implant assessment. There are many researches on mandibular canal identification but still now the visualization of superior and inferior cortical walls of MC in different imaging modalities is limited and also the reason of invisibility of bony cortication of MC in not obvious.

Materials and Methods:
This retrospective study was approved by our institutional review board.

Subjects: 100 patients (44 males and 56 females) were selected for this study those underwent computed tomography followed by panoramic radiography in one month before any kind of dental treatment or implantation at Tokyo Medical and Dental University Hospital in 2011 from January. These patients ages ranging from 14 to 83 years (average 48.18 years) some of them are partially dentate and edentulous. Total 151 sites including with right and left were used and others were excluded due to pathology.

Imaging: All panoramic radiographs were taken by using Super Vera viewepoes (Morita Corp., Kyoto , Japan) Operated at 60-80 kVp and 5-10 mA, with a Photo stimulable phosphor plate (ST III; Fuji Film Medical Co., Ltd, Tokyo, Japan), and the plates were processed with an FCR 7000 system (Fuji Film Medical Co. Ltd., Tokyo Japan). When the foramens were not clearly detected, CT images of the same patient were referred to determine their locations. For evaluating dental CT cross-sectional images, the same range of the mandible, from the mental foramen to the mandibular foramen, was similarly divided into equal 4 areas. Each area had equal number of cross-sectional images (Fig. 2).

The images for visualization of the superior and the inferior border of the mandibular canal in each area using a 5-point visibility score (Table I). The ratio of the visibility and clinical efficiancy on panoramic images was determined on the basis of the length of visible border. The dental CT images was determined by the number of cross-sectional images with visible border as follows:

$$\text{The ratio of visibility on CT in each area} = \frac{\text{number of cross-sectional images with visible border}}{\text{number of all of cross-sectional images}}$$

The CT examinations were performed with a Somatom, Sensation 64 (Siemens Medical Solutions, Forchheim, Germany), which operated with a tube voltage of 120 kV and an effective mA value of 90 or 140 mA. After the examination, contiguous 0.6mm thick axial CT images were reconstructed using H60s sharp or H70h very sharp kernel were reconstructed. These images were examined using Dental CT® formatting imaging software, with 2 mm intervals, and cross- sectional CT images were obtained. The CT images were printed on film with a Fuji Dry Imager (Fuji Film Medical Co. Ltd., Tokyo, Japan) and used for the evaluation.

Landmarks:
Panoramic radiographs of all patients were processed into OsiriX software for measuring the visibility of the superior and inferior wall of mandibular canal. At first we identify the mandibular foramen and the mental foramen both in panorama and CT. If the foramens are not clearly detected on panorama then we use the CT to detect the location of foramen. Then we calculated the percentage of visibility of superior and inferior wall of MC both right and left sides in a 21" Apple Desktop Computer.

A vertical line was drawn perpendicular to the body of the mandible through the center of the mental foramen (MFO) and another vertical line was drawn which is also perpendicular to the mandibular body and passes through the medial border of mandibular foramen (MF) both in panorama and CT. And then the area between these two lines is divided into 4 areas which are equal in size. And they are area A, area B, area C and area D from anterior to posterior respectively. The division was done by the ruler of Osirix software.

Table-I: The score of visibility of the superior and inferior border of the mandibular canal in each area

Score	
4:	The border is wholly visible.
3:	More than 2/3 of the border is visible.
2:	1/3 -2/3 of the border is visible.
1:	Less than 1/3 of the border is visible.
0:	The border is wholly invisible.

Incase of CT total number of Paraxial images between mandibular foramen to mental foramen is also divided into 4 areas.[5] Then each area of paraxial CT consists of equal number of images. The paraxial image of CT the mandible observed the visibility of the superior wall and inferior wall of MC. The CT imaging levels of mandibular canal were visually evaluated on a film viewer and evaluation was done by the 3 raters, the first two are experience dental radiologist.

Statistical analysis:
Wilcoxon signed rank test was used to detect statistically significant differences in visibility of the mandibular canal between PR and CT, and between the superior and inferior borders. Kruskal-Wallis test and Scheffé's test were used to

Fig. 1: A panoramic image. The parallel lines separate the MC into equal 4 areas of equal width: area A, area B, area C and area D, from anterior to posterior.
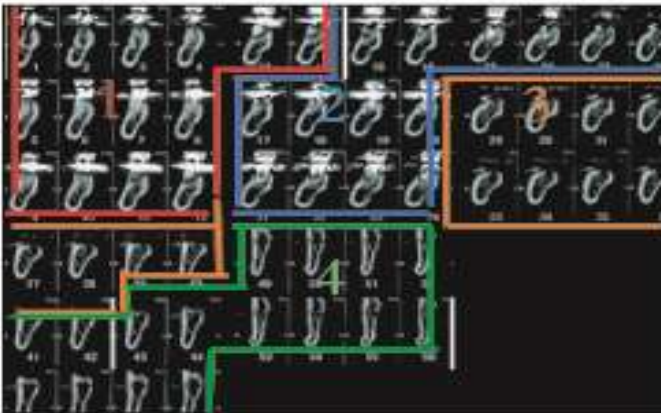
Fig.-2: Cross-sectional CT images between the mental foramen and the mandibular foramen with intervals of 1 mm. The MC is divided into equal 4 areas: area A (No. 1-14), area B (No. 15-28), area C (No. 29-42) and area D (No. 43-56), from anterior to posterior. Each area has an equal number of cross-sectional images.

detect the differences with regard to the area of the mandible. A P value of less than 0.05 was considered as significantly different. Analysis was performed with a statistical software Ekuseru-Toukei 2008 version 1.10 (Social Survey Research Information Co. Ltd., Tokyo, Japan).
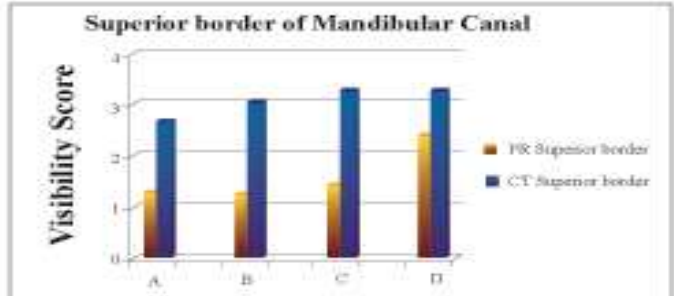
Fig.3: Comparison of PR superior border and CT superior border.
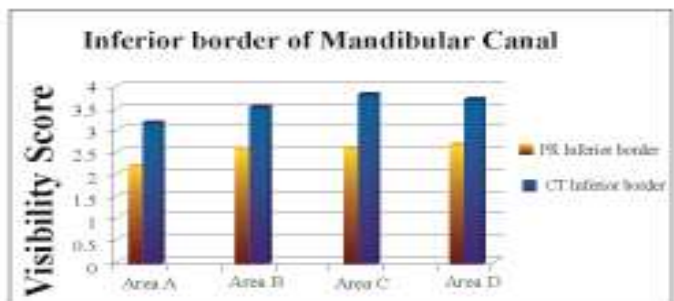
Fig.4: Comparison of PR inferior border and CT inferior border.

Table-II: Mean scores of the visibility of the mandibular canal

Imaging modality	Border	Area A	Area B	Area C	Area D	Differences among Areas
PR	Superior border	1.33	1.26	1.40	2.38	Area 1 < Area 4* Area 2 < Area 4* Area 3 < Area 4*
	Inferior border	2.23	2.57	2.62	2.74	Area 1 < Area 3** Area 1 < Area 4*
CT	Superior border	2.74	3.11	3.33	3.34	Area 1 < Area 2** Area 1 < Area 3* Area 1 < Area 4*
	Inferior border	3.21	3.53	3.75	3.66	Area 1 < Area 2** Area 1 < Area 3* Area 1 < Area 4*

PR, Panoramic Radiography; CT, Computed Tomography; *P<0.01; **P<0.05

Results:

Among 200 sides of the mandible in 100 patients, 49 sides were excluded from the study due to the presence of disease reaching the mandibular canal. Accordingly, the remaining 151 sides of the mandible were used for the evaluation. The scores of the visibility of PR and CT were summarized in table 2. The mean score of CT for borders were all more than 3.0 except for the superior border in area A. On the other hand, PR for both borders were all less than 3.0. In particular, it was less than 1.5 for the superior border in areas A, B and C.

1) Comparison of the visibility between CT and PR

   The mean score of CT was significantly higher than that of PR for both the superior and inferior borders in all areas.

2) Comparison of the visibility between the superior and inferior border in both CT and PR, the mean score of the inferior was significantly higher than that for the superior border in all areas.

3) Comparison of the visibility and clinical efficiency of superior border and inferior border among the areas (Fig. 3 & 4).

In CT, the mean score was lowest in area A for both the superior and inferior borders. Namely, the score in area A was significantly lower than those in areas B, C and D for both borders. However, there was no significant difference among the scores in Area B, C and D. On the other hand, in PR, the mean score for the inferior border in Area A was lower than those in Areas C and D, and there was no significant difference among those in Areas B, C and D, being almost similar to the results in CT. However, for the superior border, the scores of PR in Areas A, B and C were all significantly lower than that in Area D, which was quite different from the results in CT.

Discussion:

This study compared the PR and CT for the well visibility for the improvement of clinical guideline for the diagnosis of superior and inferior border of MC in 100 patients (44 male and 56 female; mean age 48 years, age range 14-83 years). A major obstacle to implementation for our study is the perfect visibility of mandibular canal cortical borders through these imaging modalities for clinical benefit in diagnostic radiology. So, our study was accomplished by having 3 observers (N.K. A.T. and T.K.) individual assess the 151 sites of images with each imaging modalities. by using a 5 point visibility score 0 to 5 in 4 areas of the mandibular canal.

The study results focused on clinical efficacy of superior border of MC in CT than PR. In our study we are interpret the mandibular canal by individual visibility score of the superior and inferior cortical borders, which are radio-opaque in nature surrounding the radiolucent zone. The study emphasized for visualization of superior border in four areas (area A, B, C and D from anterior to posterior) of MC. To avoid surgical trauma or injury to the mandibular

nerve, pre surgical radiological diagnosis is necessary. As for this reason, visibility of superior border which decisively affect on mandibular height in posterior region, is much more important to prevent post surgical complication.

There have been some studies that evaluated the visualization of the mandibular canal on panoramic images. Klinge et al[1] reported that the canal was not visible in 36% (13/36) of the sites in the premolar and molar regions. Similarly, Naitoh et al[12] reported that the canal was entirely invisible in 32% (19/60) of the sites in the molar region. Lindh et al[8] evaluated the visualization of the superior border of the canal in the premolar and molar regions, and reported that it was not visible in 64% (46/72) of all observations. Denio et al[6] indicated that the inferior border of the canal was easier to identify than the superior border on the conventional radiographs of dry mandibles. However, the detailed analysis was not performed. Because our study aimed to evaluate the clinical efficiency on visualization of the mandibular canal in detail, the visibility of each border of the canal was evaluated and compared. As a result, as shown in Table-II, we found that the superior border was poorly visualized compared to the inferior border with significant difference regardless of the locations for both modalities. In particular, in all areas except Area 4, the visibility score of the superior border on panoramic images was 0 or 1 (more than 2/3 invisible) in approximately 60% of the cases, and less than 1.5 on average.[4] Although it may be difficult to compare the results of our study with those of the previous studies because of the difference in the evaluation methods, the very poor visibility of the superior border of the canal on panoramic images shown in this study will clearly confirm the limitation of PR as an imaging modality for dental implant surgery. The resolution of panoramic images may vary dependent on the type of the apparatus and the system of obtaining images. We used digital panoramic images using a storage phosphor system. However, it has been reported that CCD-based digital images showed higher performance than storage phosphor-based images in depicting the mandibular canal.[3] To clarify this issue, further studies will be needed.

Inter-observer agreement of kappa statistics showed that for CT the reliability ranged from substantial to almost perfect but for PR it ranged from moderate to substantial, $p<0.05$.[4] The variability between the two observers was caused due to invisibility of the canal border in different parts of the areas.

The average visibility score showing that for CT both (superior and inferior) borders were all more than 3.0 except the superior border in area A. In the most anterior area A of MC superior border less continuation in visibility. In CT the area A, superior border become invisible due to thin cortical border or some time super impose with other bone structure or perforation of the upper border by the tooth root, whenever shifting to antero-buccal direction before opening into mental foramen. On the other hand, in PR both borders were less than 3.0. In particular areas A, B

and C the superior border's average visibility score was less than 1.5. This results show that in area B, C where PR images fail to visualized the superior border whereas the same areas of CT showed more than 2/3 part of the superior border. Because PR is provide imaging visibility the canal border in antero-posterior view, for that reason imaging resolution cannot perfectly determine the canal cortication due to the superimposition of the outer cortical layer.

The Willcoxon singed rank test showing the statistically significant differences in visibility of the mandibular canal was found in CT higher than PR for both superior and inferior border in all 4 areas. And also statistically significant different was found higher for inferior border than superior incase of CT and PR ($P<0.01$). In this study CT reveals clear perforation of the superior border than PR. Kruskal-Wallis test and Scheffé's test detected the differences with regard to the area of the mandible. In case of CT the superior border is significantly lower different in area A than other areas, and for inferior border was also have same difference.[4] In case of panorama the superior border visibility score were in area A, B and C were all significantly lower than in area D. And for inferior border visibility score was significantly lower in area A than the area C and D and there is no significant difference was found in area B, C and D ($P<0.01$, $P<0.05$) [Table 2].

In this study we evaluate the best visible methods for interpreting the mandibular canal superior and inferior border by using the CT and PR (fig 3 and 4), which are widely used in dental radiology as a basic diagnostic analysis before surgery. PR technique is widely available due to low cost and offers primary information with surrounding structure of upper and lower jaw. But PR has lack of cross-sectional information whereas, the CT has enabled to improve visualization of fine bone detail with uniform magnification and high contrast resolution images but high cost and high radiation exposure. But now a day's, it is available in every country. As we know that full information of canal border and height of mandibular crest is important for pre-surgical diagnosis. But in some cases the radio-opaque cortical border cannot be distinguished by CT and also in panorama. So the aim of this study was to evaluate the clinical efficiency on the basis of visibility score of the mandibular canal superior and inferior borders by comparing to CT and PR images. The better visualization of canal borders must be depended on imaging modalities. To accomplish this study, we accept the null hypothesis. A number of factors may have contributed to this hypothesis. To make the study different and to increase the criteria of diagnostic treatment for preventing the complication in 4 areas. In this study, we found that there has invisibility of canal borders through PR images and also CT images.

Angelopolos et. al[3] reported that Carter (1970) and Werhmann (1981) agreed that not visible mandibular canal may occur because the mandibular canal is not surrounded by cortical border. Stella and Taranon reported that the reliability and accuracy of conventional tomography has a related part of the preimplant evaluation of the posterior

mandibular sites to the visibility of the mandibular canal. They reported that canal was not visible accurate estimations of available bone height could not be detected.[5]

But some time the visibility of mandibular canal cortical border is depending on age.

Christiano Olivera- Santos et. al's[6] study also depict that the identification of the canal structure seems to be more linked to the bone density of its walls. And they also suggested that the mandibular neurovascular bundle in the posterior region is usually in contact with and makes a discrete depression in the lingual cortical plate, which may also account for a better depiction of the mandibular canal radiograph. Several found that it was sometimes difficutl to identify the mandibular canal on panaromic images.[7-10]

During increasing the age the bone undergoes various quantitative and qualitative changes, but bone remodeling appears to be slower with aging. So the radiographic appearance of the MC cortical border becomes become loss due to thinner and porous, and only the radiolucent canal is visible.[11]

In conclusion, we evaluated and compared the clinical efficacy of the mandibular canal borders on panoramic images and dental CT cross-sectional images. The superior border was poorly depicted but the clinical efficiency is high in order to success the endosseous implant installation. In particular, the visibility of the superior border on panoramic images was not satisfactory for the most posterior area, which clearly confirmed the limitation of PR than CT as an imaging modality for treatment planning of dental implant surgery. The poor visualization of the superior border can be improved by CT cross sectional image for improving clinical diagnostic efficiency and provide a uncomplicated endosseous implant installation.

References

1. Klinge B, Petersson A, Maly P. Location of the mandibular canal: comparison of macroscopic findings, conventional radiography, and computed tomography. Int J Oral Maxillofac Implants 1989; 4: 327-332.

2. Tyndall DA and Brooks SL. Selection criteria for dental implant site imaging: A position paper of the American Academy of Oral and Maxillofacial Radiology. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2000; 89: 630-637.

3. Angelopoulos C, Thomas S, Hechler S, Parissis N, Hlavacek M. Comparison between digital panoramic radiography and cone-beam computed tomography for the identification of the mandibular canal as part of presurgical dental implant assessment. J Oral Maxillofac Surg 2008; 66: 2130-2135.

4. Nahar Kamrun, Akemi Tetsumura, Yoshikazu Nomura. Visualization of the superior and inferior borders of the mandibular canal: a comparative study using digital panoramic. Oral Surg Oral Med Oral Pathol Oral Radiol 2013; 115: 550-551.

11

5. Lofthag-Hansen S, Grondahl K, Ekestubbe A. Cone-beam CT for preoperative implant planning in the posterior mandible: visibility of anatomic landmarks. Clinical Implant Dentistry and Related Research 2009; 11: 246-255.

6. Oliveira-Santos C, Cappelozza ALÁ, Dezzoti MSG, Fischer CM, Poleti ML, Rubira-bullen IRF. Visibility of the mandibular canal on CBCT crosssectional images. Journal of Applied Oral Science 2011; 19: 240-243.

7. Ylikontiola L, Moberg K, Huumonen S, Soikkonen K, Oikarinen K. Comparison of three radiographic methods used to locate the mandibular canal in the buccolingual direction before bilateral sagittal split osteotomy. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2002; 93: 736-742.

8. Lindh C, Petersson A, Klinge B. Visualisation of the mandibular canal by different radiographic techniques. Clinical Oral Implant Research 1992; 3: 90-97.

8. Kim EK. Comparison of different radiographic methods for the detection of the mandibular canal. Korean Journal of Oral and Maxillofacial Radiology 2003; 33: 199-205.

10. Kundel HL and Polansky M. Measurement of observer agreement. Radiology 2003; 228: 303-308.

11. White SC and Pharoah MJ. Normal Radiographic Anatomy. In: Oral Radiology: principles and interpretation (6th edn). St. Louis, MO: Mosby Elsevier, 2009, pp 152-174.

12. Naitoh M, Katsumata A, Kubota Y, Hayashi M, Ariji E. Relationship between cancellous bone density and mandibular canal depiction. Implant dent. 2009; 18: 112-118.

Corospondence to :

Dr. Kamrun Nahar

BDS, PhD (Japan)
Assistant Professor & Head
Dept. of Oral Anatomy with Physiology
Rangpur Dental College
Rangpur, Bangladesh
Phone : +88-01986027153
E-mail : nahar0176@yahoo.co.uk

Original Article

Knowledge and Practice on Oral Hygiene among the Diabetic Patient

Zahura MKFT[1], Rahman MM[2], Ahmad MS[3], Chowdhury KN[4], Abrar A[5], Sayeda SK[6]

Abstract:

Background: As diabetes is a chronic disease and it has developed different types of complication in the different parts or organs of the body the more common complications that arise as a result of diabetic patients who do not carefully control their blood glucose levels and will be at high risk of systemic and oral complications.

Objectives: The objectives of the study were to assess the level of knowledge and practice on oral hygiene among the diabetic patients.

Methods: A cross-sectional study conducted at outpatient department of Mohammodpur Swastho Seba Kendra, a branch of Bangladesh Institute of Health Science and Hospital (BIHS). Data was collected with a pretested structured questionnaire and check list was filled in after oral examination.

Results: On analysis of data, tooth decay was found in 75%, missing teeth 69% and 50.3% filling teeth were found. Most of the diabetic patient demonstrated a DMFT score 1, where only 22% demonstrated DMFT score 0 that is free from any form of dental decay missing teeth or dental filling. Daily teeth cleaning were practiced by 75% diabetic patients irrespective of age and socio demographic status. Among the respondents 66% clean their teeth once daily, only 29% respondents clean their teeth twice daily. The study was revealed that 93% respondents clean their teeth before breakfast and only 5% clean their teeth after breakfast. In this study only 22% respondents used mouth wash after taking meal and 1-3 muinuts brushing followed by only 25% respondents. A significant association was noted between age and missing teeth. The level of knowledge with education was also noted significant association in this study.

Conclusion: The study findings recommended for provision of essential dental health services to the diabetic patient for prevention and control of various dental health problems.

Key words: Knowledge of Oral Hygiene, Practice of Oral Hygiene, Diabetic patients.

Introduction:

Diabetes mellitus has been increasing at an alarming rate worldwide that recently the World Health Organization (WHO) declared the disease is an epidemic of diabetes was 30 million in 1985 to 135 million in 1995, and is projected to increase to 366 million by the year 2030.[1]

As diabetes is a chronic disease and it has developed different types of complication in the different parts or organs of the body the more common complications that arise as a result of diabetic patients who do not carefully control their blood glucose level and will be at high risk of systemic and oral complications. In terms of its oral complication in diabetes manifests itself in several ways. When diabetes mellitus is left uncontrolled for an extended period, for example, it negatively affects the salivary glands and results in xerostomia or sialosis.[2-6] When not enough

saliva is produced to wash and cleanse the oral cavity, plaque and debris accumulate at a much faster than normal rate. This could be a factor in the increased risk for dental caries often observed in dental patients.[7,8] Furthermore, peridontitis is perhaps the most widely noted oral manifestation of diabetes mellitus.[9,10]

The study strongly supported health education and its importance on oral health status for diabetic patient .That's why this study was done to explore the oral health status of diabetic patient to find out the region of not caring the oral hygiene and dental care.

More studies on different diabetic population in a large scale sample would be suggested to find out the unknown factors which could be related for oral hygiene with diabetes mellitus. The study was conducted to assess the

1. Dr. Mst. Kaniz Fatema Tuz Zahura, District Coordinator, Quality Improvement Centre for Injury Prevention, Health Development and Research, Bangladesh
2. Dr. Md. Mahafuzur Rahman, Asst. Professor, Udayan Dental College, Rajshahi
3. Dr. Mohammad Sayeed Ahmad, Asst. Professor, Rangpur Dental College, Rangpur
4. Dr. Kamran Nahar Chowdhury, Public Health Consultant, NIPSOM, Mohakhali, Dhaka
5. Dr. Ali Abrar, Hospital Coordinator, Lab Aid Hospital, Dhanmondi, Dhaka
6. Dr. Shaikh Kaniz Sayeda, Dental Surgeon, Shahanara Dental Care, 301, Elephent Road, Dhaka

level of knowledge and practice on oral hygiene among the diabetic patients.

Materials and Methods:

It was a descriptive type of cross sectional study and was conducted among the outpatient department of Mohammodpur Swasthiseba Kendro a branch of Bangladesh Institute of Health Science and Hospital (BIHS). The duration of study was six months from January to June 2012. The populations of the study were diabetic patient irrespective of age, sex and willing to participate in study were included. The sample size of the study was 141 diabetic patients irrespective of age & sex. The diabetic patients were selected by using purposive sampling technique. In order to collect data, a structured questionnaire and check list were prepared considering variables and the objectives of the study. Then translated into Bangla version and data was collected in the real fields. Data was collected by face to face interview and by oral examination. Data analysis was done by using statistical package for social science (SPSS-16) program. The descriptive statistics included the frequencies, percentages, mean, median & standard deviation of the findings and inferential statistics.

Results:

The study revealed that out of 141 diabetic patients 66% of the respondents brush teeth once a day, 29.8% brush teeth twice a day, and 4.3% brush teeth more than twice a day, which is depicted in the following [table-I].

Out of all diabetic patients, most (93.6%) of them were clean their tooth before breakfast, (5.7%) after breakfast and rest of them (0.7%) after dinner, which is depicted in the following [figure-1].

Out of all diabetic patients, 77.3% do not use mouth wash and 22.7% of the respondents use mouth wash, which depicted in the following [figure-2].

74.5% do not visit to dentist in last three month, only 25.5% of the respondents visit to dentist in last three month, which depicted in the following [table-II].

Discussion:

Among the respondents with diabetes, 29.8% follow the diabetic diet chart given by the health center and 70.2% do not follow the diabetic diet chart given by the health center.

This study shows that among 141 diabetic patients 66% of the respondents brush teeth once a day, 29.8% brush teeth

Table-I: Distribution of respondents by frequency of tooth cleaning (n=141)

Frequency of tooth cleaning	Frequency	Percent
Once	93	66.0
Twice	42	29.8
More than twice	6	4.3
Total	**141**	**100.0**
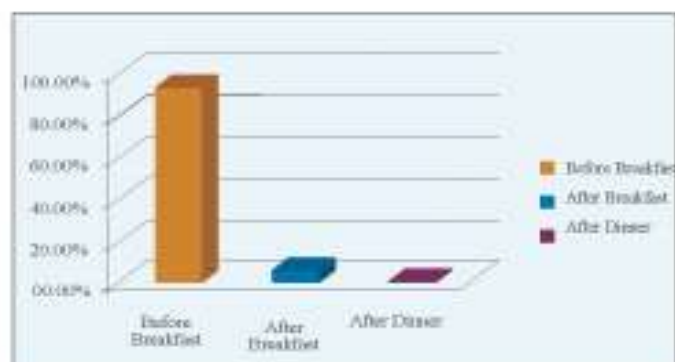
Figure-1: Distribution of respondents about the response of attention given by the doctors on hearing patients complains.

Table-II: Distribution of respondents by visit to a dentist in the last three month

Visit to a dentist in the last three month	Frequency	Percent
Yes	36	25.5
No	105	74.5
Total	141	100.0
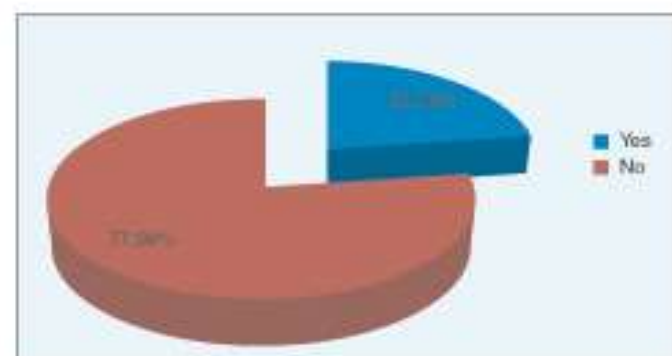
Figure-2 : Distribution of respondents by uses mouth wash.

twice a day, and 4.3% brush teeth more than twice a day (table:I). A study conducted in Sharjah by Azia H Eldarrat shows that 19% of the respondents did not use a brush on a daily basis, 31% brush twice a day and a higher number of respondents 50% brush once a day.[11]

Among the respondents only 5.7% brush their teeth after breakfast, 93.6% brush before breakfast and 0.7% after dinner (figure: 1). In this study the respondents 22.7% used mouth wash and 77.3% do not used (figure: 2). A study conduct in London by Hon K.Yuen and others shows 62.1% of diabetic patients used mouth rinses at least once a day.[12]

The study evidences that 25.5% of the respondents visit to dentist in the last three month where as a mark able number 74.5% do not visit to dentist in the last three month (table: II). A study conduct in London by Hon K.Yuen and others shows 42.7% of dentate particepants reported visiting a dentist for a regular check up (at least once every two years) and 58.6% went to see a dental hygienist last year.[12]

A significant association was noted between the age of 40 below and above 40 for missing teeth (P=0.004) and it also found that missing teeth was not association with sex (P=0.811).

The study revealed that 69.0% has poor knowledge, 27.6% has fair, 3.4% has good knowledge and in literate group 47.3% has fair knowledge, 35.7% has good and 17.0% has poor oral hygiene knowledge.

Conclusion:

This study contributes in making a public policy regarding the knowledge and practice on oral hygiene among the diabetic patients country wide. This could be achieved through strategies that may render integrated oral hygiene practice for diabetic patients, particularly through dissemination of adequate information about knowledge and practice on oral hygiene. Increasing knowledge program in diabetic patients can lead to better oral hygiene practice.

References:

1. Smyth S, Heron A. Diabetes and obesity: the twin epidemics.Nat Med. 2006; 12: 75-80.

2. Sheppard IM. Oral manifestation of diabetes mellitus: a study of one hundred cases. J Am Dent Assoc. 1942; 29: 1188-92.

3. Lamey PJ, Darwazeh AM, Frier BM. Oral disorders associated with diabetes mellitus. Diabet Med. 1992; 9: 410-6.

4. Russotto SB. Asymptomatic parotid gland enlargement in diabetes mellitus. Oral Surg Oral Med Oral Pathol. 1981; 52: 594-8.

5. Murrah VA. Diabetes mellitus and associated oral manifestations: a review. J Oral Pathol. 1985; 14: 271-81.

6. Greenspan D. Xerostomia: diagnosis and management. Oncology. 1996; 10: 7-11.

7. Rees TD. The diabetic dental patient. Dent Clin North Am. 1994; 38: 447-63.

8. Finney LS, Finney MO, Gonzalez-Campoy JM. What the mouth has to say about diabetes. Careful examinations can avert serious complications. Postgrad Med. 1997; 102: 117-26.

9. Bartolucci EG, Parkes RB. Accelerated periodontal breakdown in uncontrolled diabetes. Pathogenesis and treatment. Oral Surg Oral Med Oral Pathol. 1981; 52: 387-90.

10. Ureles SD. Case report: a patient with severe periodontitis in conjunction with adult-onset diabetes. Compend Contin Educ Dent. 1983; 4: 522-8.

11. Aziza HE. Diabetic patients: their knowledge and perception of oral health. Libyan J Med. 2011; 6: doi: 10.3402/ljm.v6i0.5691.

12. Hon KY, Bethany JW, Bandyopadhyay D, Magruder KM, Salinas CF, and Steven D. Oral Health Knowledge and Behavior among Adults with Diabetes. Journal of diabetic research and clinical practice. Oct. 2009; 86(3): 239-246.

Correspondence to:
Dr. Mst. Kaniz Fatema Tuz Zahura
BDS (DU), MPH (NIPSOM-BSMMU)
District Coordinator, Quality Improvement
Centre for Injury Prevention, Health Development & Research Bangladesh
Cell Phone: +8801785850346
E-mail: dr.kanizfatema84@yahoo.com

15

Lipid Profile in Injectable Contraceptives User Women

Yesmin F[1], Maula MG[2], Sarker CR [3], Hossain MS[4]

Abstract:

Background: Injectable contraceptives are the most popular contraceptive method world-wide. 50-60% of women world –wide use these method, and about 80 countries use injectable contraceptive methods.

Objectives: To observe the serum lipid profile in injectable contraceptives user women.

Methods: This cross sectional study was conducted over 60 women selected, among them 30 were injectable contraceptives user women and the rest 30 were apparently healthy non hormonal contraceptives user women. Contraceptives user women were selected from Model Family Planning Clinic, Rangpur Medical College and Hospital, Rangpur. Serum triglyceride, serum HDL and serum LDL level of participant women were measured by colorimetric method. For statistical analysis independent sample 't' test was performed by using SPSS – 15.0 versions for windows.

Result: Mean serum total cholesterol, serum triglyceride, and serum LDL was significantly higher ($P < 0.001$) in DMPA user women increased serum LDL level and significantly decreased serum HDL level than that of control group.

Conclusion: Serum LDL level is significantly increased but serum HDL level is significantly decreased in injectable contraceptives user women.

Key words: Lipid profile, dislipidimia, injectable contraceptive users

Introduction:

Contraception is the prevention of conception by methods other than abstinence from coitus. Contraception provides a better quality of life by helping families to use their resources for good food, clothing, housing, schooling & medical care.[1] Term contraception includes all measures-temporary and permanent designed to coital act. Temporary methods are Barrier methods, Natural contraception, Intrauterine Contraceptive Devices (IUCD) and hormonal contraception. In hormonal contraception most popular methods are oral contraceptives and injectable (DMPA).[2]

In our country, many women use injectable contraceptives (DMPA). But women are usually not aware about health hazards caused by long term use of these contraceptives. In 1990, Depotmedroxy Progesterone Acetate (DMPA) user women changes in plasma lipid levels. Their study reveled that there is a decreases high density lipoprotein-cholesterol (HDL) and increases low density lipoprotein-cholesterol (LDL) level.[3] Again DMPA causes a significantly increases LDL and decreases HDL-cholesterol levels.[4]

The study reported that DMPA user women changes in plasma lipids these changes are increased triglyceride levels after long-term use and insignificant reduction in total serum cholesterol level.[5] Long-term effects of injection Depo-provera on lipid metabolism was studied and report that significantly increase serum cholesterol.[6]

These hazards can be minimizing by increasing awareness about the dyslipidemic effects of long term use of injectable contraceptives. Considering my present work has been designed to study the status of blood lipid by measuring serum total cholesterol, serum triglyceride, serum high density lipoprotein and serum low density lipoprotein.

Methods:

This is a cross sectional analytical study conducted in the Department of Physiology, Rangpur Medical College, Rangpur during July 2010 to June 2011. The study has been designed to study the status of blood lipid by measuring serum total cholesterol, serum triglyceride, serum high density lipoprotein and serum low density lipoprotein of longterm contraceptives users' women. The ethical committee of Rangpur Medical College, Rangpur approved the study protocol. Twenty to forty five years aged 30 women using injectable contraceptives for 1 to 5 years attending in outpatient department in Model Family Planning Clinic, Rangpur Medical College and Hospital were selected purposively and included as experimental group. Age matched 30 women without taking oral and injectable contraceptives were selected from the community by personal contact and included as control group. Subjects suffering from diabetes mellitus, hypertension, kidney diseases, obesity or other chronic diseases and taking other

1. Dr. Forida Yesmin, Assistant Professor and Head, Department of Physiology & Biochemistry, Rangpur Dental College, Rangpur
2. Dr. Md. Golam Maula, Assistant Professor, Department of Physiology & Biochemistry, Barind Medical College, Rajshahi
3. Professor Chandra Rani Sarker, Professor and Head, Department of Physiology & Biochemistry, Rangpur Medical College, Rangpur
4. Dr. Md. Sazzad Hossain, Medical Officer, Kaligonj, Lalmonirhat

steroids were excluded from the study. After selection of the subjects, the objectives and procedures of the study were explained to them and their informed written consent was taken. A standard questionnaire was filled after taking history and through physical examination. The subjects were instructed to be in overnight (8-10 hours) fasting state. Then next day at 8.00AM five (5) ml of blood was collected from antecubital vein from each subject under all aseptic precautions by a disposable syringe. The needle was detached from the nozzle and then blood was immediately transferred into a dry, sterilized and deionized test tube with a gentle push to avoid hemolysis. The test tubes were kept in slanting position till formation of clot. Serum was separated by centrifuging the blood at 3000 rmp for 5 minutes. The clear supernatant was taken and kept in ependorfs. Tests were carried out by enzymatic colorimetric method as early as possible. It was done in the laboratory of the Department of Biochemistry, Rangpur Medical College, Rangpur. Data were expressed as mean ± SD. All the data were recorded systematically in a preformed data sheet and statistical analysis were done by computer based software

SPSS15.0 version for windows. Comparison of serum lipid profiles of injectable contraceptives users' women with control group were done by unpaired 't' test. In the interpretation of results, <0.05 level of probability (P) was accepted as significant.

Results:
Serum total cholesterol and LDL levels were significantly higher (P<0.001) and triglyceride non-significantly increased (p>0.05) but serum HDL level was significantly increased (p<0.001) in oral contraceptives users' women than control group.

Discussion:
The present study was carried out to asses the total serum cholesterol, serum triglyceride, serum high density lipoprotein and low density lipoprotein in injectable contraceptives user women. The parameter was also studied in age mached apparently healthy control for comparison.

In the present study, the finding of the parameter in healthy control group was within normal range and also similar to

Table-I: Mean ± SD of serum totalcholesterol, HDL, LDL and triglyceride incontrol group and experimental group(n=60)

Variables	Control Group (n=30)(mg/dL)	Experimental Group (n=30)(mg/dL)	Significance of difference
Total serum cholesterol	183.53±27.14	262.4333±81.41367	P<0.001
Serum HDL	44.40+5.01	35.0000±10.60579	P<0.001
Serum LDL	124.40+27.79	206.5967±82.16184	P<0.001
Serum triglyceride	92.60+17.63	110.0000±29.80743	P<0.05

LDL – Low Density Lipoprotein, HDL – High Density Lipoprotein, P<0.001 – Highly significant, P>0.05 – Non significant, (Normal level of serum total cholesterol 150 to 220, mg/dL, serum HDL > 40/dL, serum LDL < 180 mg/dL, serum triglyceride < 165 mg/dl)

those reported by the various investigators from different countries.[7,8]

In injectable contraceptives users' women, the serum total cholesterol level was significantly higher than that of control groups. This finding is in agreement with others' reports,[5] observed increased serum total cholesterol in injectable contraceptives user women might be due to increased serum low density lipoprotein which deliver cholesterol to the periphery. And as injectable contraceptives induces lipid metabolism changes that increased serum total cholesterol level.

In this study, the mean serum triglyceride level was significantly higher (p<0.001) in injectable contraceptives user women than that of control group.This is in agreement with those reported by Rooijen MV et al they compared the effects of levonorgestrel or desogestrel on plasma lipoproteins (with same amount of ethinyl-estradiol) and has shown significant rise in plasma triglyceride levels obtained with both preparations but the increase is more pronounced with ethinyl-estradiol/desogestrel.

In this study, the mean serum triglyceride level in injectable

contraceptives user women was significantly higher than those of control groups. This finding is in agreement with others' report.[3-5]

Flores JG et al observed increased serum triglyceride level in DMPA user might be due to endogenus sex steroid hormones. Endogenus sex steroid hormones modify the metabolism of lipids and lipoproteins, it has been the progestational components of the contraceptive formulations are the factors responsible for the alterations of metabolic pathways and the risk of cardiovascular disease. Fajumi JO[4] observed increased serum triglyceride level in injectable contraceptives user women may be due to changes in lipid metabolism and duration of use of these methods (DMPA) more than 1-2 yrs. Berenson AB et al[3] found that higher serum triglyceride level in DMPA user due to duration of use more than 1 yrs.

Rojijen MV et al has compaired the effect of levonorgestrel or desogestrel on plasma lipoproteins (with same amount of ethinyl-estradiol) and has found that HDL concentration increases significantly with treatment with the ethinyl-estradiol/desogestrel when compaired with baseline and treatment with ethinylestradiol/levonorgestrel

In this study, the mean serum LDL level was significantly higher (p<0.001) in injectable contraceptives user women than those of controle groups. This agreement with those reported by Berenson AB, Rahman M and Wilkinson G,[3] Liew DFM et al.[5]

Fahmy K et al observed significantly higher serum low density lipoprotein level in injectable contraceptives user women might be due to oxidised low density lipoprotein receptor, so liver failed to uptake of LDL. Faddah LM et al[5]observed significantly higher serum LDL level than that of control group might be due to arterial endothelial impairement in response to long term use of (over 4 yrs) injectable contraceptives user women.

Berenson AB, Rahman M and Wilkinson[3] reported that significantly higher serum low density lipoprotein in injectable contraceptives user women might be due to progesterone induce body fat. Yadev BK et al observed that significantly higher serum low density lipoprootein level in injectable contraceptives user women than that of control group might be due to DMPA induces metabolism changes that can increase risk of cardiovascular disease.

In injectable contraceptives user women significantly increased serum low density lipoprotein level and significantly decreased serum high density lipoprotein level. In DMPA user women increased LDL level due to its glucocorticoid and diabetogenic effect.

Conclusion:

The injectable contraceptives user women significantly increased serum low density lipoprotein, serum triglyceride and significantly decreased serum high density lipoprotein. In DMPA user women increased LDL level due to its glucocorticoid and diabetogenic effect.

References:

1. Jaffcoate N. Contraception, Combined hormonal contraception. In: Kumar P and Malhotra N. Jaffcoate's Principles of Gynaecology, 7th ed. Jay-pee brothers medical publishers (p) Ltd 2008; 801-803.

2. Dutta DC. Population dynamics and control of contraception, combined oral contraceptives. In: Konar H. Text books of obstetrics, 4th ed. New central book agency (p) Ltd, India 1998; 544-556.

3. Berson AB, Rahman M and Wilkinson G. Effective of injectable and oral contraceptives on serum lipids. Obstel Gynecol. 2009 October; 114 (4) 786-794.

4. Fajumi JO, Alterations in blood lipids and side effects induced by depo-provera in Nigrrian women. Contraception 1983 February; 27 (2): 161-175.

5. Liew DFM, Ng CSA, Chir, Ratnam SS. Long-term effects of depo-provera on carbohydrate and lipid metabolism. Contraception 1985 January; 31 (1): 51-64.

6. David PS, Boatwright AE, Tozer SB, Verma PD, Blair EJ, Mayer PA et al. Hormonal contraception Update. Mayo Clin Proc 2006; 81 (7): 949-955.

7. Melo NR de, Aldrighi JM, Faggion D, Jr, Reyes VROY, Souza JB et al. A prospective open-level study to evaluate the effects of the oral contraceptives harmonet (gestodene 75/EE 20) on body fat contraception-2004; 70 65-71.

8. Santos MCS, Rebelo ACS, Zuttin RS, Cesar MC, Cotai AM and Silva E. Influence of oral contraceptive use on lipid level and cardiorespiratory response among healthy sedentary women. Rev Bras Fisioter. 2008; 12(3): 188-94.

Correspondance to:

Dr. Forida Yesmin
MBBS, MPhil
Assistant Professor and Head
Department of Physiology & Biochemistry
Rangpur Dental College, Rangpur
Cell : +88-01712-144888

Original Article

Pattern of Dental Problems among Female Garment Worker at Selected Garment in Dhaka City, Bangladesh

Sayeda SK[1], Chaklader MA[2], Mamun M A A[3]

Abstract:

Background: Garment workers face a variety of hazards on a daily basis which affect both general and dental health. But there is a lack of awareness of the people the dental problems are increasing day by day. The significant role of socio-behavioural and environmental factors in oral disease and health is evidenced in an extensive number of epidemiological surveys.

Objectives: The present study has been undertaken to assess the pattern of dental problems among female garment worker.

Methods: A descriptive cross sectional study was conducted to find out pattern of dental problems among 250 female garment worker at Dhaka city, Bangladesh. Simple random sampling technique was applied in the current study. A face to face interview and clinical examination were followed as data collection technique by using semi-structured questionnaire. Data was entered in SPSS data view and data analysis was done through SPSS 16.5 and EXCEL for Windows..

Results: Among the respondents 63.2% had dental caries, missing teeth were 16%, attrition/abration/erosion were 58%, calculus were 80%, periodontitis 12%, gingivitis present on 28%.

Conclusion: Among the respondents 72% respondents had dental problems but only 12.70% respondents were visit to dentist.

Key words: Garment worker, oral health, dental problem

Introduction:

1950 was the beginning of RMG in the Western world. In order to control the level of imported RMG products from developing countries into developed countries, the Multi Fibre Agreement (MFA) was made in 1974.[1] In the early 1980s Bangladesh started receiving investment in the RMG sector. In the 1980s, there were only 50 factories employing only a few thousand people. Currently, there are 4490 manufacturing units. Estimated 4.2 million people employed in this sector, about 50 percent of them are women from rural areas.[2] The garment sector is the largest employer of women in Bangladesh.[3] The garment sector has provided employment opportunities to women from the rural areas that previously did not have any opportunity to be part of the formal workforce. This has given women the chance to be financially independent and have a voice in the family because now they contribute financially.[4]

Garment workers face a variety of hazards on a daily basis which affect both general and dental health.[5] Tooth is one of the most important parts of the oral cavity. It maintains the beauty of the face, helps in mastication, chewing and digestion of food and it also helps to speech. But no one can be sure of the real value of the dentition to an individual since different people have different attitudes towards their teeth, both in terms of appearance and function. But there is a lack of awareness of the people the dental problems are increasing day by day. This tasks essentially an individual actions and responsibility. There is a strong association between dental problems and practice of oral hygiene. Those who maintain their oral hygiene,[6] they develop least dental problems. The significant role of socio-behavioural and environmental factors in oral disease and health is evidenced in an extensive number of epidemiological surveys.

We have to think about the health of garments worker as because if garments worker suffering from any dental problems, they will not work smoothly. As a result the

1. Dr. Shaikh Kaniz Sayeda, Dental Surgeon, Shahanara Dental Care, 301, Elephent Road, Dhaka
2. Dr. Mainul Alam Chaklader, Assistant Professor, Department of Public Health, State University of Bangladesh, Dhaka
3. Dr. Md. Abdullah Al Mamun, Assistant Professor, Department of Dental Public Health, Rangpur Dental College, Rangpur

15

production will slow, and then the garments owners will loss their order and governments will loss the big amount of foreign currency. Due to lack of knowledge and economic support, most of them may suffer from various types of dental problems. In past, many studies have conduct on the health problems of garments worker but very few study has been conduct focus on dental problems. So, the present study has been undertaken to asses the pattern of dental problems among female garment worker.

Methodology:

A descriptive cross sectional study was conducted to find out pattern of dental problems among 250 female garments worker at Dhaka city, Bangladesh. Simple random sampling technique was applied in the current study. At first list of the garments industries of Dhaka City collected from Government approve owners association (BGMEA). From the list one industry was selected randomly. Then list of female garments worker was obtained from the selected garment. The respondents were selected from that list using internet random number generating software. Female garments worker who were willing to participate in the study and who were agree to provide informed consent were excluded. Respondents who were severely ill to participate in the study and who were not agree to give informed consent. Semi-structured questionnaire used as a data collection tool. Questionnaire was finalized after pretest. Instruments were used (dental mirror, caries probe, torch light, gloves, antiseptic solution) to asses the dental status of the respondents. A face to face interview and clinical examination were followed as data collection technique by using semi-structured questionnaire. After collection of data, all questionnaires were coded and checked for completeness, correctness and internal consistency to exclude missing or inconsistence data. Data was entered in SPSS data view and Data analysis was done through SPSS 16.5 and EXCEL.

Results:

Total respondents majority 50% (n=125) were in the age group of 20-30 years, the mean age of the respondent were 27.7. Minimum age were 18 years and max age were 50 years. Among the respondents, 96 % were Muslims and 4% were Hindu. Among the respondents, 66% were married, 32% were unmarried and rests were others. Among the respondents, majority 44% complited primary school level, next major part 42% complited high school level of education, 4% complited H.S.C level and 8% respondents were illiterate. Among the respondents, majority 70% had 3-6 family members, 20% had less than 3family members and only 10% had more than 6 family members. Among the respondents majority 46% had the monthly family income of 10001-15000BDT, and 16% had above 20000 BDT monthly family income.

The table shows that among the respondents 63.2% had dental caries, missing teeth were 16%, attrition/ abration/ erosion were 58%, calculus were 80%, periodontitis 12%, gingivitis present on 28%. The above table shows that among the respondents majority 45.3% were take medicine from pharmacy if dental problems were present, 21.5% were take mouth rinsing with salt water and only 12.7% respondents were go to dentist. Among the respondents only 12.7% were visit to dentist and majority 87.3% were not visit to dentist.

Table-1: Distribution of the patients by socio-demographic status　　　　　　　　　　　　　　　(n=250)

Parameter	n	%
Age of the Patients (Years)		
< 20 years	65	26.0
20 to 30 years	125	50.0
30 to 40 years	40	16.0
> 40 years	20	8.0
Total	**250**	**100.0**
Mean±SD 27.7±8.59, Min:18, Max:50		
Marital Status		
Unmarried	80	32.0
Married	165	66.0
Others	5	2.0
Total	**250**	**100.0**
Education of Patients		
Illiterate	20	8.0
Primary school	110	44.0
High school	105	42.0
S.S.C	5	2.0
H.S.C	10	4.0
Total	**250**	**100.0**
No. of Family Members		
< 3 members	50	20.0
3 -6 members	175	70.0
>6 members	25	10.0
Total	**250**	**100.0**
Monthly Family Income		
5000-10000 BDT	45	18.0
10001-15000 BDT	115	46.0
15001-20000 BDT	50	20.0
ABOVE 20000 BDT	40	16.0
Total	**250**	**100.0**

16

Table II: Distribution of respondents by dental problems (n=250)

Oral Examination	n	%
Dental Caries		
No	92	36.8
Yes	158	63.2
Missing Teeth		
No	210	84
Yes	40	16
Filling		
No	230	92
Yes	20	8
Only root are left		
No	185	74
Yes	65	26
Attrition/Abration/Erosion		
No	145	58
Yes	105	42
Mobility		
No	235	94
Yes	15	6
Calculus		
Absent	50	20
Present	200	80
Periodontitis		
Absent	220	88
Present	30	12
Gingivities		
Absent	180	72
Present	70	28

Table III: Distribution of respondents by, if dental problems present. (n=181)

If dental problems present	n	%
Go to a dentist	23	12.7
Mouth rinsing with salt water	39	21.5
Take medicine from pharmecy	82	45.3
Nothing	37	20.5
Total	**181**	**100.0**

Table-IV: Distribution of respondents by visit to dentists. (n=250)

Visit to Dentist	n	%
No	218	87.3
Yes	32	12.7
Total	**250**	**100.0**

Discussion:

On examination we can see that 63.2% respondents had dental caries, 12% respondents had periodontitis, and 58% had attrition, abrasion, erosion. In a study, conducted by Arpin S,[7] about 50% the respondents had periodontitis. Kularatne S[8] found the prevalence of root surface caries was 89.7%. In India (National Commission on Macroeconomics and Health) the prevalence of dental caries is reported to be about 50%-60%.[9] Doifode and associates[10] observed that dental caries (43.2%) and periodontal diseases (34.8) were most common dental disorders among Indian. In Turkey[11] prevalence of dental caries among the elderly people is about 20%. In Slovenia[6] primary root caries occurred in 42% of subjects.

This current study revealed that 16% of respondents had missing teeth, and 26% roots were left. 58% respondents had attrition/abration/erosion. Gingivitis was the commonest dental problem encountered. The gingivitis observed in this study was 28%. This finding is in disagreement with Jose, who found only 15% of gingivitis. A survey on periodontal diseases was conducted in the National Commision on Macroeconomic and Health (NCMH) in India[12] observed that periodontal diseases the projection is alarming with prevalence at present being 45% for 18+ years, and the actual prevalence in lakhs will be 2957.6 (year 2000), 3190.2 (year 2005), 3413.8 (year 2010) and 3624.8 (year 2015).

Conclusion :

On the basis of key findings, it can be concluded that awarness program should be conducted on dental disease and oral hygiene instruction should be given. People should be encoureged for periodic dental checkup.

References:

1. Khondhker BH, Razzaque A, Ahmed N. Exports, Employment and Working Conditions: Emerging Issues in the Post – MFARMG Industry." A Paper Prepared for the International Labour Office July 2005; downloaded from www.helal.net.bd/english/dr.nazneen/Issue-Paper-ILO-July.pdf on 23.06.2014.

2. *Mahfuz M.*Conditions of RMG Sector of Bangladesh. down loaded from http://textilelearner.blogspot.com / 2013/10/ condition-of-ready-made-garment-rmg_9785.html on 23.06.2014.

3. Ahmed FE. The Rise of the Bangladesh Garment Industry: Globalization, Women Workers, and Voice : NWSA Journal 2004; 16(2): 34-45.

doi: 10.1353/nwsa.2004.0042.

17

4. Rahman MM, Islam MR, Abdullah M, Rayhan SJ. Female Workers' Attitudes on Industrial Disputes at RMG Sector. in Bangladesh: An Empirical Analysis. J Economics and Sustainable Dev 2011; 2(3): 76-87.

5. Rukmini JN. Assessment of Oral Health Status and Treatment Needs among Garment Industry Workers in Bangalore City. Dissertation of MDS in Public Health Dentistry 2012, Rajib Gandhi University of Health Sciences, India. Down loaded from www.rguhs.ac.in/cdc/onlinecdc/uploads/02_D032_3688 4.doc on 23.06.2014.

6. Moynihan P, Petersen PE. Diet, nutrition and the prevention of dental diseasesPublic Health Nutrition: 2004; 7(1A), 201–226. DOI: 10.1079/PHN2003589.

7. Arpin S, Brodeur JM, Corbeil P. Dental caries, problems perceived and use of services among institutionalized elderly in 3 regions of Quebec, Canada. J Can Dent Assoc 2008; 74: 807.

8. Kularatne S, Ekanayake L. Root surface caries in older individuals from Sri Lanka. *Caries Res* 2007; 414: 252–256.

9. Patro KP, Kumar BR, Goswami A, Mathur VP, Nongkynrih. Prevalence of dental caries among adults and elderly in an urban resettlement colony of New Delhi. Ind J Dent Res 2008; 19 (2): 95-98.

10. Doifode VV, Ambadekar NN, Lanewar AG. Assessment of oral health status and its association with some epidemiological factors in population of Nagpur, India. Indian J Med Sci. 2000; 54:261–9.

11. Topaloglu A, Eden E, Frencken. Managing dental caries in children in Turkey - a discussion paper.BMC Oral Health.2009; 9: 32.doi: 10.1186/1472-6831-9-32.

12. Naseem Shah. Oral and dental diseases:Causes, prevention and treatment strategies In NCMH Background Papers—Burden of Disease in India (New Delhi, India), September 2005, National Commission on Macroeconomics and Health, Ministry of Health & Family Welfare, Government of India, New Delhi September 2005, 275-298.

Correspondence to:
Dr. Shaikh Kaniz Sayeda
BDS, MPH (SUB)
Shahanara Dental Care
301, Elephant Road, Dhaka
Cell : +88-01680064258
E-mail: otushi_anamika07@yahoo.com

Melanosis of Oral Mucosa in Japanese Population

Yousuf A[1], Sakamoto K[2], Yamaguchi A[3], Takagi M[4]

Abstract:

Background: *Melanin is the commonest of the endogenous pigments in skin and oral mucosa and is produced by melanocytes present in the basal layer of the epithelium.*

Objectives: *To investigate the site and intensity of melanosis in Japanese people.*

Methods: *Tissue samples were collected in Tokyo Medical & Dental University OPD from 2003 to 2004. A total 42 melanosis, 13 pigmented nevus & 5 malignant melanosis were investigated.*

Results: *Highest incidence occurred in the patient from 21 to 60 years of age. Oral melanosis is relatively common in lip, tongue and buccal mucosa. The presence of leukoplakia melanosis of the oral cavity also shows that gingiva, tongue and buccal mucosa are the most common. However, palate, buccal mucosa and are the most common sites for pigmented nevus.*

Conclusion: *Before therapeutic treatment of oral melanosis, it is important to differentiate it with that of the leukoplakia melanosis and pigmented nevus.*

Key words: *Melanin pigmentation, leukoplakia, pigmented nevus, clinical site and intensity, oral cavity*

Introduction:

Recently, peoples are interested in oral health to increase their quality of life. Especially, the numbers of peoples are increasing with the problem of esthetic disorder. Melanin is the commonest of the endogenous pigments in skin and oral mucosa and is produced by melanocytes present in the basal layer of the epithelium. These specialized dendritic cells are of neural crest origin. Melanin is formed in melanosomes with the cytoplasm of melanocytes, the melanin then passing into the dendritic processes to the injected into or ingested by, neighboring keratinocytes.[1,2]

Melanin pigmentation occurs in all the races of man;[3] there are no differences in the number of melanocytes between fair and darked-skinned individuals, the variation in skin and mucosal pigmentation between racial groups being related to differences in activity of the melanocytes. French, Filipino, Arabian, Chinese, Indian, German, Italian, Jewish, Greek, Romanian & other ethnic groups have been reported to display clinical gingival pigmentation.[4] Although melanin pigmentation is the most common, carotene, reduced hemoglobin and oxyhemoglobin have been identified as contributors to the normal color of the integument and are found in the masticatory mucosa.[5]

The intensity and distribution of racial pigmentation of the oral mucosa is very variable not only between races but also between different individuals of the same race and within different areas of the same mouth.[1] Pigment may be found in any part of the mucosa but the gingiva is the most common site. The color of the gingiva is regulated by the degree of keratinization, the thickness of epithelium, the vascular supply and the melanin pigment.[6] Furthermore, there appears to be a positive correlation between gingiva pigmentation and the degree of pigmentation in the skin.[7]

Leukoplakia is defined as a white patch that does not peel off and that cannot be recognized as some other entity. Excessive use of alcohol, including mouthwashes containing 25 percent alcohol, smoking, avitaminosis and poor oral hygiene may induce leukoplakia and all have been implicated to varying degrees as etiologic factors of oral carcinoma.[8]

Malignant melanoma of the mucosal membrane is relatively common in Japan, the oral cavity being one of the most frequent sites.[9,10] Just as the junctional nevus is believed to be the most important area for developing malignant melanoma of the skin, the same kind of mucosal lesion has been assumed to be similarly related to oral malignant melanoma.[11-13]

1. Dr. Anwar Yousuf, Associate Professor & Head, Dept. of Oral Pathology & Periodontology, Rangpur Dental College & Hospital, Rangpur, Bangladesh
2. Dr. Kei Sakamoto, Oral Pathology, Department of Oral Restitution, Graduate School, Tokyo Medical & Dental University, Japan
3. Prof. Akira Yamaguchi, Oral Pathology, Department of Oral Restitution, Graduate School, Tokyo Medical & Dental University, Japan
4. Prof. Minoru Takagi, Oral Pathology, Department of Oral Restitution, Graduate School, Tokyo Medical & Dental University, Japan

The diagnosis of melanin pigmentation is very often misdiagnosed with other esthetic disorders such as leukoplakia, malignant melanoma & pigmented nevus. Because of the pandemic of melanin pigmentation, the topic has assumed current diagnostic & anthropologic significance. Furthermore, among the Japanese people, there are a limited number of reports. Therefore, an attempt has been made to investigate the site & intensity of melanin pigmentation in Japanese nationals.

The purpose of the study was to investigate the incidence, the age, the primary sites & intensity of melanosis was studied among Japanese human peoples. Melanosis from other parts of the body as also analyzed for a comparative study.

Materials and Methods:

Tissue sample collection Tokyo Medical & Dental University OPD. Figure-1 shows the distribution of gingiva tissue used for this study. The specimen was taken from Tokyo Medical & Dental University from the year of 2003 to 2004. A total 42 melanosis, 13 pigment nevus & 5 malignant melanosis were investigated. The distribution & intensity of 33 leukiplakia & 10 epulis were investigated. The distribution & intensity of 33 leukoplakia & 10 epulis were used as control group.
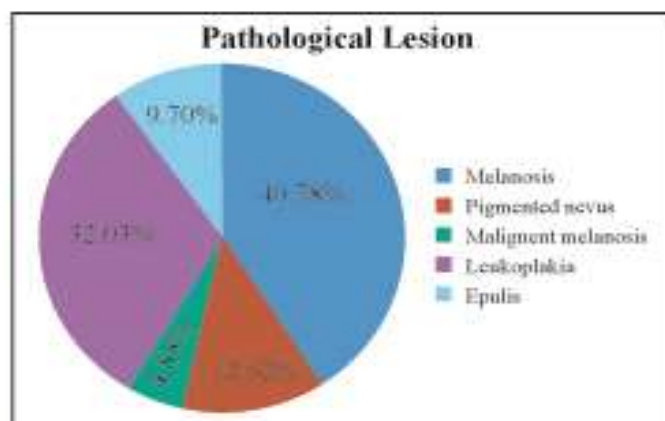

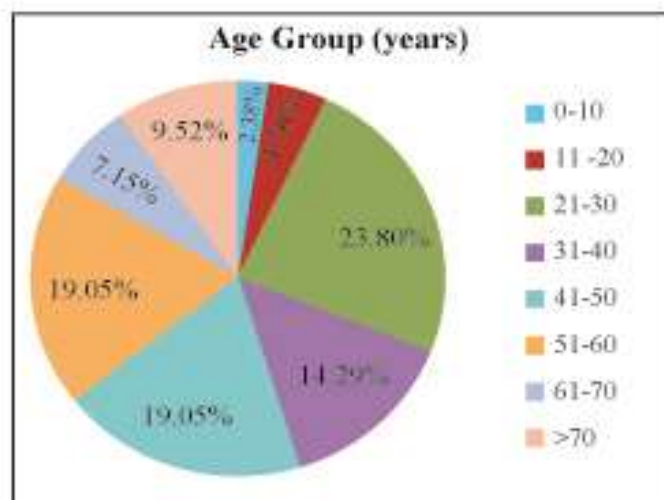Fig.-1: Distribution of specimen

Fig.-2: Age distribution of oral melanosis

Results :

Incidence, Age, Primary sites & of oral melanosis

Figure-2 shows the age of the entire 42 cases. The age of the patient ranged from 0 to 70 years. The highest incident was between 21 & 60 years of age. The primary sites of the melanosis were varied in 42 cases. The lip (40%), gingiva (26%) & buccal mucosa (19%) were the most common area (table-I). There were only two cases of melanosis arising from angle of the mouth & one case from the palate. Furthermore, frequency of melanosis appeared in single site in 28 cases and 14 cases appeared in multiple sites. The highest intensity occurred in only in 8 cases. (28.3%) of single site & 4 cases (28.6%) of multiple sites (table-II).

Intensity of primary site of melanin pigmentation is in the pigment nevus.

The primary sites of our 13 cases of melanin pigmented in the pigment nevus. In the pigment nevus show the palatal site, buccal mucosa & gingiva were the most common area (table-III).

Table-I: Intensity of melanin pigmentation in the oral melanosis   (n=42)

Intensity	Lip n (%)	Gingiva n (%)	Buccal mucosa n (%)	Tongue n (%)	Angle of mouth n (%)	Palate n (%)	Total n (%)
+	6 (14.29)	5 (9.5)	6 (14.29)	2 (4.76)	2 (4.76)	1 (2.38)	22 (52.38)
++	2 (4.76)	3 (7.15)	1 (2.38)	2 (4.76)	0	0	8 (19.05)
+++	8 (19.05)	3 (7.15)	1 (2.38)	0	0	0	12 (28.57)
Total	16 (38.09)	11 (26.19)	8 (19.05)	4 (9.5)	2 (4.76)	1 (2.38)	42 (100)

Table-II : Intensity of melanosis according to single and multiple melanosis   (n=42)

Site	Intensity	+	++	+++
Single site	28	16 (57.1%)	4 (14.3%)	8 (28.3%)
Multiple site	14	6 (42.9%)	4 (28.6 %)	4 (28.6%)

Table-III : Intensity of melanin pigmentation in the pigment nevus according to the sites   (n=13)

Intensity	Palate n (%)	Buccal mucosa n (%)	Gingiva n (%)	Retro molar n (%)	Total n (%)
-	1 (7.69)	2 (15.38)	1 (7.69)	0	4 (30.77)
+	1 (7.69)	0	1 (7.69)	0	2 (15.38)
++	4 (30.77)	1 (7.69)	1 (7.69)	1 (7.69)	7 (53.85)
Total	**6 (46.15)**	**3 (23.75)**	**3 (23.75)**	**1 (7.69)**	**13 (100)**

Table IV: Frequency of leukoplakia melanosis by site and intensity   (n=35)

Intensity	Gingiva n (%)	Tongue n (%)	Buccal mucosa n (%)	Palate n (%)	Lip n (%)	Floor of mouth n (%)	Total n (%)
-	8 (22.86)	4 (11.43)	2 (5.71)	2 (5.71)	1 (2.54)	0	17 (48.57)
+	6 (17.14)	3 (8.57)	2 (5.71)	0	1 (2.54)	0	12 (34.26)
++	1 (2.54)	0	1 (2.54)	2 (5.71)	0	0	4 (11.43)
+++	0	0	1 (2.54)	0	0	1 (2.54)	2 (5.71)
Total	**15 (42.88)**	**7 (20)**	**6 (17.14)**	**4 (11.43)**	**2 (5.71)**	**1 (2.54)**	**35 (100)**

There was only one case of melanin pigmentation in the pigment nevus arising from the retro molar area. Furthermore the intensity was also high on palate, buccal mucosa & gingiva.

Primary site & intensity of leukoplakia melanosis

The primary sites of leukoplakia melanin are varied in 33 cases. The gingiva, tongue & buccal mucosa were most common area of leukoplakia melanosis (table-IV). There were only 4 cases arising from the palate, 2 cases from the lip & one case from the floor of the mouth. However the intensity was low in gingiva & tongue.

Discussion:

Previous studies have reported that melanin pigmentation is normally present in the oral mucous membranes of many people; its incidence & concentration generally varying with the skin coloring.[6,7] It has been reported that melanin pigmentation is very often occurred in the Balkan, Latin, & Near Eastern peoples, in the colored races, & to a lesser degree in the Northern Europeans groups.[4] However, there are no reports on the incidence of melanin pigmentation in Japanese peoples. In the present study, at first, the incidence of melanin pigmentation among the Japanese people was investigated among 42 cases, & then the distribution & intensity were compared with that of the leukoplakia. The methods used for these study is generally based on fantana masson silver methods. Comparing to the HE staining methods, these method has the following advantages; it is easily applicable & it can precisely stain melanin pigmentation. The use of fantana masson silver method has already been clarified by some of the previous studies.

The results found in this present study have corresponded to the previous studies that melanin pigmentation in the oral melanosis is relatively in common in lip, gingiva & buccal mucosa.[6,7] Previous study was reported that the lip & gingiva are the most frequently pigmented intra oral site.[7] Certain exogenous pigments may be deposited in the mucous membrane, as in lead, mercury or bismuth poisoning; iron pigments from blood cells broken down as a result of liver disease may also find their way to the mucous membranes. Other factors such as genetic factors, tobacco smoking have been found to be the major causes of oral melanin pigmentation. However, in the tongue & palate it is rather rare. Furthermore, our results show that the highest incidence of melanin pigmentation occurred in the patients from 21 to 60 years of age. The results found in the present study is correspond to that of the previous studies that melanocytes activity has been found to be reduced in elderly people.

Conclusion:

The presence of leukoplakia melanosis of the oral cavity also shows that gingiva, tongue & buccal mucosa are the most common site fore leukoplakia melanosis. However the primary sites of melanin pigmentation in pigmented nevus show that palate, buccal mucosa & gingiva are the most common sites. Melanin pigmentation is therefore very often misdiagnosed by leukoplakia & pigmented nevus. It can be suggested that before therapeutic treatment of these cases, it is important to differentiated melanin pigmentation with that of the leukoplakia melanosis & pigmented nevus. However, the present study is only based on the site & intensity of melanin pigmentation, further studies should be

21

performed to investigate the structures of melanin pigmentation & need to compare the results with that of other oral soft tissue tumors.

Reference:

1. Soames JV & Southam JC. Miscellaneous disorders of oral mucosa. In: Oral Pathology. Oxford University Press, Oxford. 1985; 177-187.

2. Fermin AC. The tissues of the periodontium. In: Glickman's Clinical Periodontology. 7th edition W.B.Saunders Company, Philadelphia. 1990; 29-31.

3. Dummett CO. Oral pigmentation. In: First Symposium of Oral Pigmentation, C.O. Dummett, Consulting Editor. J Priodontology. 1960; 31:356-360.

4. Monash S. Normal pigmentation of the oral mucosa. Archs Dermatol. 1932; 2:139-147.

5. Goldzieher JA, Roberts JS, Rawls WB, et al. Chemical analysis of the intact skin by reflectance spectrophotometry. Archs Dermatol. 1951; 64:533-548.

6. Carranza FA. Glicksman's Clinical Periodontology. 5th edition. Igaku Shoin Ltd. Tokyo.1979; 19-20.

7. Dummett CO. Oral pigmentation physiologic & pathologic. NY State Den J. 1959; 25:407-412.

8. A. A. Intraoral findings: By Color Changes. In oral diagnosis, oral medicine & treatment planning. W.B. Saunders Company, Philadelphia.1984; 278-279.

9. Mori W. Geohraphic pathology of malignant melanoma in Japan. In: Pigment Cell.Basel, Karger. 1973; 246-254.

10. Mori W. A geo-pathological study of malignant melanoma in Japan. Pathol Microbiol. 1971; 37: 169-180.

11. Allen AC & Spitz, S.Malignant melanoma – A Clinicopathological analysis of the criteria for diagnosis & prognosis. Cancer. 1953; 6:1-45.

12. Green GW, Haynes JW, Dozier M, et al. Primary malignant melanoma of the oral mucosa. Oral Surg 1953; 6:1435-1443.

13. Hansen LS, Silvrman S & Beumer J. Primary malignant melanoma of the oral cavity – Report of two cases. Oral Surg 1968; 26: 352-359.

Correspondence to:
Dr. Anwar Yousuf
Associate Professor & Head
Department of Oral Pathology & Periodontology
Rangpur Dental College & Hospital
Rangpur, Bangladesh.
Cell : +88-01817-522338
E-mail: ar-yousuf@ hotmail.com

The Knowledge about Causes of Dental Problems among Patients Attending Dhaka Dental College Hospital

Tanveer SKM[1], Faisal AJ[2]

Abstract:

Background: *Oral health is an integral component of general health. It has also become clear that causative and risk factors in oral diseases are often the same as those implicated in the major general diseases.*

Objective: *To ascertain the knowledge about causes of dental problems among patients attending Dhaka Dental College & Hospital (DDCH) outdoor.*

Methods: *A cross sectional study was carried out among 125 respondents from selected dental colleges of Dhaka city. The study was carried out for four months and a semi-structured questionnaire was used to obtain information from respondents.*

Results: *In our study total 125 respondents were examined, a large percentage of respondent's education level was higher secondary but around 20% respondent had completed their graduation. Among 125 respondents 53.6% were service holders. 90.4% respondents regularly brushes their teeth, most of them are habituated in spicy and oily food or junk foods. 77.6% respondents brush their teeth only once a day. 92% doesn't know either their toothpaste contains fluoride or not. Among all 80% respondents replied that they don't use any other materials such as floss etc. other than toothpaste to brush their teeth. Most of the respondents were suffering from different dental diseases.*

Conclusion: *Although oral health is an important part of life, sometimes people don't care about it. Various oral health awareness campaigns should be promoted to increase people's awareness.*

Key words: *Melanin pigmentation, leukoplakia, pigmented nevus, clinical site and intensity, oral cavity*

Introduction:

Oral health is an integral component of general health. It has also become clear that causative and risk factors in oral diseases are often the same as those implicated in the major general diseases.[1] The overall health, wellbeing, education and development of children, families and communities can be affected by oral health. Though there has been considerable improvement in the oral health of children in the last few decades, dental caries (tooth decay) still remains one of the most commonly occurring oral health problems in the children all over the globe. A considerable population of children in the developing nations is being affected by tooth decay and most of the time their proper treatment is given the last priority owing to limited access to oral health services. The lack of availability and affordability of oral health services not only results in aggravation of the disease but also enhances the cost of treatment and care. There is no single country that claims to have caries free children.[2] Adverse experience during childhood may lead dental phobia, impacting on attitudes to oral health and self-care as well as availing oral health care services for life. Poor oral health in childhood often continues into adulthood, effecting economic productivity and quality of life. Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity.[3] Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene. A healthy mouth enables people to eat, speak and socialize without pain, discomfort or embarrassment. Oral disorders cause difficulties with chewing, swallowing and speech, and can disrupt sleep and productivity. The oral cavity is a portal of entry and the site for microbial infections that affect overall health status. Oral diseases can also affect different aspects of both personal and general life style.[4] Dental treatment can be costly, uncomfortable and time consuming. For those willing to seek treatment, these factors may pose a barrier.

1. Dr. Sharif Kamrul Md. Tanveer, Dental Surgeon, Haterjhill Dental Care, Dhaka, Bangladesh
2. Dr. Abu Jamel Faisal, Project Director, Mayer Hashi and Country Representative (Engender Health)

Researchers indicate that people with periodontal disease are almost twice as likely to suffer from coronary artery disease as those without periodontal disease. Bacteria form in the oral cavity can be aspirated into the lung to cause respiratory diseases such as pneumonia, especially in people with periodontal disease. Empirical evidence suggests that there is mild to moderate association between human periodontal disease and certain systemic disorders such as diabetes mellitus, pneumonia, heart disease and pre-term birth. This is also supported by Oliveira et al. (2010)[5] in a Scottish health survey. Also, the presence of maternal periodontitis has been found to be associated with adverse pregnancy outcomes such as pre-term birth, pre-eclampsia and gestational diabetes, delivery of a small-for-date infant and foetal loss. Oral diseases and conditions are associated with other health problems such as diabetes, cardiovascular diseases, and pre-term/low birth weight births. The availability, affordability and quality of fluoride tooth paste remains a major problem in many developing countries. Only a small proportion of population is using fluoridated toothpaste and moreover because of high concentration of fluoride in drinking water in certain parts of Bangladesh, also has a prohibiting effect as use of fluoride toothpaste .High quality oral health care is an increasingly important aspiration in most parts of the world. The rapid growth in knowledge of oral disease, the change in disease prevention and the continued improvements in world communication make this a challenging time, with increasing life style emphasis, the importance and need for oral health education.[6]

Methods:

This chapter described setting of the study, exclusion and inclusion criteria of the sample and the procedure of data collection. The working approach, study site and sampling procedures, data collection and data analysis of the study are briefly described below.It was a cross-sectional study. The study was carried out for 3 months (from November 2013 to January 2014). The patients attending outdoor of children department of Dhaka Dental College Hospital. Assuming the proportion in the target population estimated to have particular characteristics 0.5, we calculated the sample size by using the following formula. We can estimate the proportion with 5% discrepancy with 95% confidence. Instrument for data collection was structured and semi-structured interview questionnaire. We assessed the knowledge of the patients by asking questions about dental problem and their perception about its cause, different questions were asked to assess their knowledge. In order to obtain relevant information, the questionnaire and other study instruments were carefully designed keeping in mind the objective of the study. The formal survey of each sample was carried out by using the structured questionnaires. The questions were asked in Bengla language but written in English language. By using structured questionnaires, data was collected by direct interview of the respondent. The researcher herself conducted face to face interviews. At the very beginning of the interview the researcher introduced himself with the participants and explained the aim and objectives of the study to them. Data entry into computer was continued along with data collection. After data compilation, plots from the compilation data sheets were sorted carefully to ensure all data sheets are correct. Once the data was having been captured into the SPSS then it was checked again. The surveyed data was converted into frequencies and percentage forms. After collecting information from primary source, data was processed and analyzed by SPSS (statistical package for social sciences) for windows version 16.0. Necessary tabulations and cross-tabulations, charts and diagrams were drawn for summarizing and easy visual presentation of data.

Result:

In our study total 125 respondents were examined, from which around 50% respondent's age was below 30 years old, 37.6% respondents were in between (30-34) years old and only few were above forties. 53.6% were male and other 46.4% respondents were female. 42.4% respondents were Muslim where 38.4% were Hindu, some Christian and Buddhist was also present. A large percentage of respondent's education level was higher secondary but around 20% respondent had completed their graduation. Distribution of respondents according to their parent's education level, 32% secondary 28.8% primary & others. Among 125 respondents 53.6% were service holders. 90.4% respondents regularly brushes their teeth, most of them are habituated in spicy and oily food or junk foods (Fig-1). 53.6% respondent's average monthly family income was in between 10000-20000 taka, while 20% respondent's income was above 20000 taka per month. Only 10.4% respondent's average monthly family income was below 5000 taka.48% respondent was living in residential building, while 8.8 % were living in posh area of the city. 16.8% were living in community colony, while 17.6% were living in semi paka building. Rests 8% were living in slum area. 77.6% respondents brush their teeth only once a day. 92% doesn't know either their toothpaste contains fluoride or not (Table-I). Table states that 73.6% respondent brushes their teeth for less than one minutes, and rests 26.4% brushes their teeth for one to two minutes. Among all 80% respondents replied that they don't use any other materials such as floss.

Distribution of the respondent's according to their knowledge about causes of different oro-dental disease, 69.6% say yes and 30.4% says no (Table-II).

Discussion :

Dental problems are public health problem in Bangladesh, therefore the pattern of these dental diseases need to be identified by valid studies to assess the actual distribution of the problem in the community. Because of lack of awareness of the people the dental diseases are increasing day by day. So it is the crying need of the country to have adequate information on pattern of dental diseases and to take necessary prevention programme to fight against the dental diseases. Since both the initiation and the continuation of our major problems in dental practice, dental diseases are in part nutrient and food in origin, it is logical and necessary that our management should be regarded to deal with these causes.[7]

Research has proved that partial inhibition or arrest of this disease can be attained directly with food factor. We can negate the disease effect by either a decrease in or restriction of the use of deleterious food factors or by promotion of the use of beneficial food with regular maintenance of oral hygiene.[8] Today's concepts of the practice of dentistry are beginning to change. For the last 30
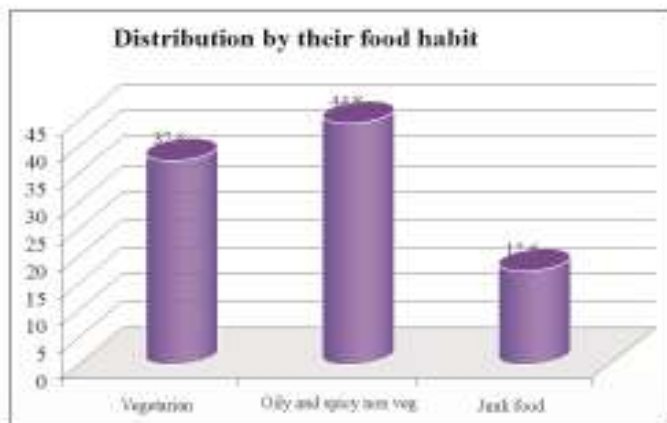
Table-II: Distribution of the respondent's according to their knowledge about causes of different oro-dental disease. (n=125)

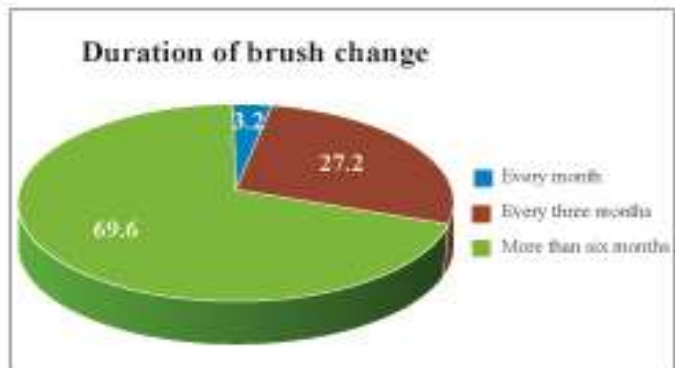| Knowledge about disease	Frequency	Percentage
Yes	87	69.6
No	38	30.4
Total	**125**	**100%**

Fig.-2: Distribution of respondents according to the duration of toothbrush change.

or more years our primary task has been restorating, fabricating arid rehabilitating teeth and mouths. In spite of our laudable contribution, the need keeps outpacing the fulfillment. Because of the increase in population and the corresponding rise in dental needs, we appreciate more and more each day that we are fighting a losing battle by mere emphasis on therapy this is obviously neither adequate nor progressive.[9] Prevention not therapy is today's challenge are hopefully tomorrow's achievement. There are multiple factors which are responsible for the causation of Dental diseases, but dietary factors specially consumption of fermentable carbohydrate plays a major role for the causation of dental diseases. Other factors like oral microbial enzymes, physical and chemical structure of teeth, poor oral hygiene, calcium and vitamin D deficiency in the diet, low fluoride content in drinking water are responsible for dental disease formation.[10] Oro-dental hygiene is the most common accompaniment of dental diseases with other associated factor. WHO suggested three things for better oral health, namely: 1. To clean your mouth preferably after each meal. 2. Use fluoride in drinking water or tooth paste and 3. Eat less sugar.

Though dental caries is chronic progressive disease and not a life endangering disease, but it can sometimes be quite troublesome and is one of the most common problems in our country. It can directly or indirectly be responsible for pain, infection, facial disfigurement, chewing and speech impairment as well as malnutrition. Caries in infants and young children is one of the most frustrating and difficult

Fig.-1: Distribution of respondents according to their food habit.

Table-I: Distribution of the respondent's according to fluoride containing toothpaste use. (n=125)

Fluoride content	Frequency	Percentage
Yes	4	3.2
No	6	4.8
Don't know	115	92
Total	**125**	**100%**

problems, not only for the parents but also for the society, Too many of us have experienced tooth ache that ends up in a sleepless night, time loss from work school, college and university ultimately decrease enjoyment in eating, talking and socializing.[11] Developing countries like Bangladesh there are no institution based dental service and comprehensive health education from which the school or college students can achieve knowledge to practice correct process of tooth brushing and proper timing with appropriate cleaning materials. The highest prevalence of dental disease among the school children and young adults is probably due to inadequate knowledge, ignorance about practice of personal hygiene, etiology, prevention and complication of the disease.[12] Oral Health is an integral component of general health. It has also become clear that causative and risk factors in oral diseases are often the same as those implicated in the major general diseases (WHO, 2003).[5] The overall health, wellbeing, education and development of children, families and communities can be affected by oral health. Though there has been considerable improvement in the oral health of children in the last few decades, dental caries (tooth decay) still remains one of the most commonly occurring oral health problems in the children all over the globe.

Conclusion:

We have high prevalence of dental caries which can be attributed to shift in diet pattern towards more refined food, lack of appropriate knowledge about oral hygiene and causation and prevention of common oro-dental problems. Not knowing the importance's to save the tooth is ignorance and poverty only enhances further and limits any action to be taken till a point the disease has reached the terminal phase. The easiest way to prevent caries is by, imparting health education, Monitoring the progress, immediate attention of disease, recognition & proper management.

References:

1. Al-Shammery AR, Guile EE, El-BacklyM. Prevalence of caries in primary school children in Saudi Arabia. Comm Dent Oral Epidemiol. 1990; 18:320-321

2. Caufield PW. Dental caries. Paediatric Clinics Of North America 2000 Oct;47(5):1001-5.

3. WHO (World Health Organization), "Global data base on child growth", 2005 www.who.int

4. Khan AM, Ahmed SM Why do I have to Clean Teeth Regularly?": Perceptions and State of Oral and Dental Health in a Low-income Rural Community in Bangladesh. Working paper no.20 Research and Evaluation Division, BRAC, 75 Mohakhali, Dhaka 1212, Bangladesh.

5. de Oliveira C1, Watt R, Hamer MToothbrushing, inflammation, and risk of cardiovascular disease: results from Scottish Health Survey. BMJ. 2010 May 27;340:c2451. doi: 10.1136/bmj.c245.

6. Ranjana D. A study to assess the knowledge and practice on dental health among school going children at selected pediatric out patient department, MSc-thesis, Rajibgandhi University of Health Science BANGALOREwww.rguhs.ac.in/cdc/onlinecdc/uploads/05_N031_15473.doc Down loaded on 29/06/2014.

7. Hinds K, Gregory JR. National diet and nutrition survey: Children aged 11/2 to 4 ½ years. Report of dental survey. Vol. 2. London: HMSO; 1995.

8. Finlayson TL, Siefert K, Ismail AI, Sohn W. Maternal self-efficacy and 1-5 year old children's brushing habits. Community Dent Oral Epidemiol. 2007;35:272-81.

9. Park, "Text book to preventive and social medicine", 18th edition, Banarsiar Bhanot Publication, Jobalpur. 2002, P: 382 - 389.

10. Baric L., Binkhorn AS, Macarthur G. A health education approach to nutrition and dental health education. Health Education. 1974; 33: 79-90.

11. Eva Borssen and Christina Steeksen-Blicks, Risk factors for dental caries in 2-year-old children. Swedish Dental Journal. 1998; 22: 9-14.

12. Peterson PE, Hadi R, Al-Zaabi FS, Hussien JM, Behbehani JM, Skougaard MR, Vigild M. Dental knowledge, attitude and behavior among Kuwaiti mothers and school teachers. J Ped 1990; 14:158-164.

Corospondence to
Dr. Sharif Kamrul Md. Tanveer
BDS, MPH
Dental Surgeon
Haterjhill Dental Care
Dhaka, Bangladesh.
Email : dr.tanveersharif@yahoo.com

Case Report

Malignant Fibrous Histiocytoma of Oral & Maxillofacial Region: A Report of Two Cases

IslamMA[1], Siddik ANM[2], Habib MA[3], Yousuf A[4]

Abstract:

Malignant Fibrous Histiocytoma(MFH) is the most common sarcoma in adults. The common site of involvement are the retroperitoneal space & lower limbs. They are very rare in oral & maxillofacial region particularly in young life. Here, two cases are reported of occurrence of MFH in young life & in the oral & maxillofacial region.

Key words: Malignant Fibrous Histiocytoma, Oral & maxillofacial Region, 3DComputed Tomography

Introduction:

Malignant Fibrous Histiocytoma (MFH) is a pleomorphic soft tissue aggressive sarcoma consist of fibroblastic & histiocyticcells. This is usually soft tissue sarcoma of late adult life ranged in age from 5-93 years & had a peak incidence in the 7th decade.[1] Man affected twice more than women & it is rare in children. The extremities especially lower limbs particularly the thigh, arising in deep fascia or skeletal muscle &retro peritoneum are common sites [2] & rare in oral & maxillofacial region. MFH initially described in 1964 by O' Brien & Stout, they considered it to have a histiocytic origin.[3] Weiss[4] divided MFH into different subgroups including Storiform-pleomorphic, myxoid, giant cell, Inflammatory & angiomatoid types for the purpose of description & comparison of behavior.

The purpose of this article is to present two cases of MFH in the oral & maxillofacial region & to discuss their clinical & radiological features with their management & prognosis.

Case Reports:

Case-1:

An 18 yrs old male had an intraoral swelling & pain for 20 days & visited Dhaka Dental College Hospital in 2012. On extra oral examination, a diffuse swelling on the right lower face, firm in consistency, non tender with paresthesia on right mental nerve distribution area. Intra oral examination revealed a swelling on right lower jaw extending from right lower 2nd premolar area up to retro molar area with buccolingual expansion measuring 5X3 cm in diameter. An exophytic growth present behind right lower 2nd molar teeth with no ulceration, growth is firm in consistency, nontender with 2nd degree mobility of the 2nd molar tooth. On lymphnode examination, right submandibular & jugulodigastric lymphnode were enlarged, palpable, nontender & free from overlying structure & fixed with underlying structure.

On ortho pentomo graphs showed, bony trabeculler pattern change on right posterior mandible from 1st premolar up to 3rd molar area. Periodontal space of right lower 1st molar was widen with root resorption of right lower 2nd premolar teeth. On computed tomograph with 3D reconstruction revealed, osteolytic area on right lower jaw from right lower 2nd premolar up to half of the ramus with an area of buccolingual bone perforation.

Malignant Fibrous Histiocytoma was diagnosed by incisional biopsy that featured a neoplasm composed of

1. Dr. Md. Amirul Islam, Assistant Professor, Oral & Maxillofacial Surgery Dept., TMSS Medical College Dental Unit, Bogra
2. Dr. ANM Musa Siddik, Assistant Professor, Oral & Maxillofacial Surgery Dept., Rangpur Dental College & Hospital, Rangpur
3. Dr. Md. Ahsan Habib, Assistant Professor, Dept. of Orthodontics & Dentofacial Orthopedics, Rangpur Dental College & Hospital, Rangpur
4. Dr. Anwar Yousuf, Associate Professor, Department of Oral Pathology & Periodontology, Rangpur Dental College & Hospital, Rangpur

31

spindle cells arranged in storiform pattern with presence of occasional giant cells. Wide excision of the tumour with right radical neck dissection was performed with right hemi-mandibulectomy with disarticulation was performed & reconstructed with stainless steel plate. Excisional biopsy

revealed also Malignan Fibrous Histiocytoma. Patient was also treated with adjuvant radiotherapy. Post radiotherapy patient was survived without recurrence & under supervision.
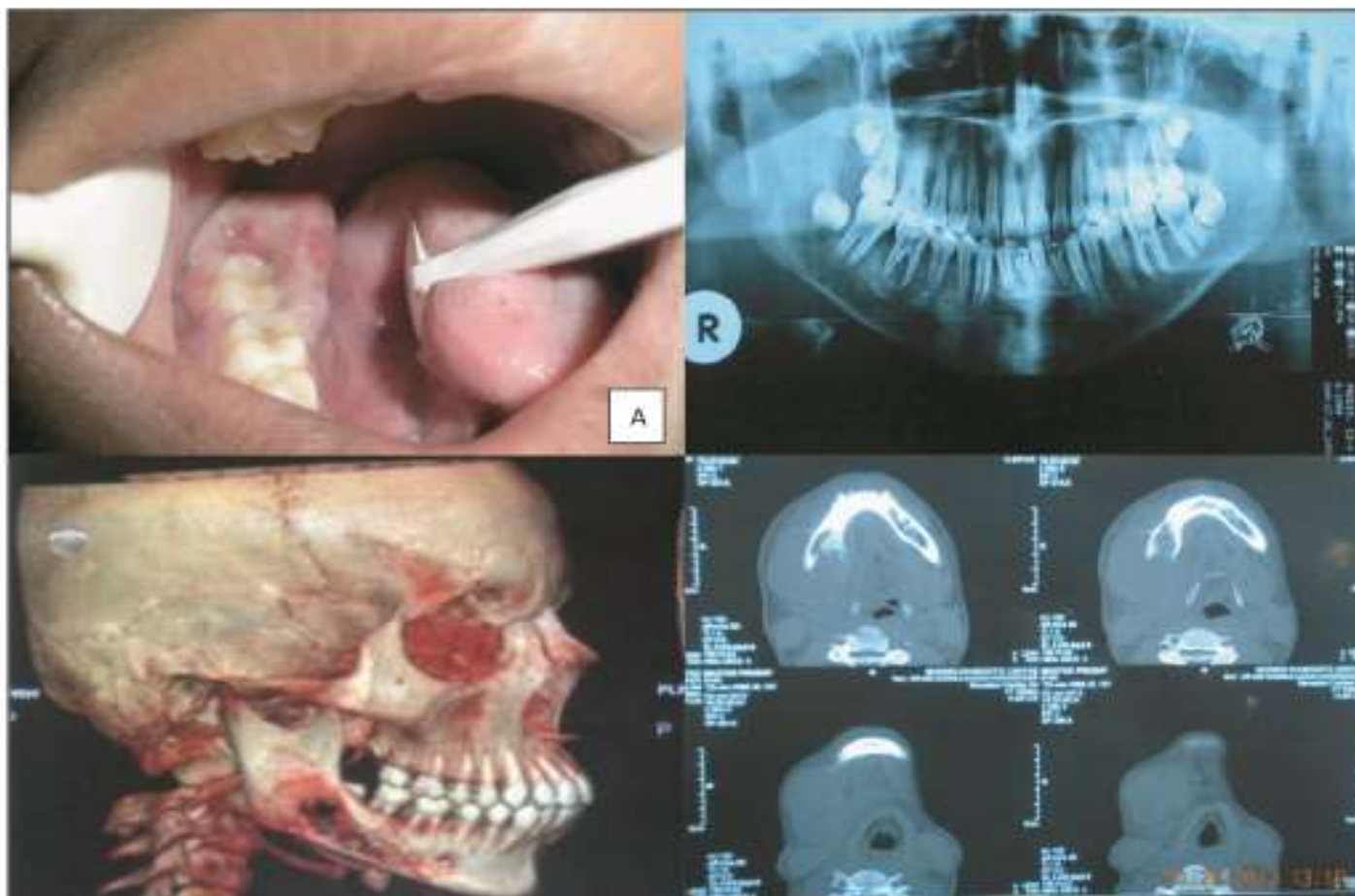

Figure.-1: Showing Clinical, OPG & CT Scan view of MFH.

Case-2:

A 8 years old male left lower face with jaw swelling, mild pain with occasional bleeding for 3 months visited Dhaka Dental College & Hospital in 2009. On extra oral examination, a diffuse swelling from left sided midface to lower border of mandible, firm in consistency, mild tender & paresthesia on lower lip. Left submandibular lymphnode was palpable, nontender, firm & fixed with underlying structure. On intra oral examination revealed, a swelling on left lower jaw extending from the left deciduous canine up to anterior border of ramus & vertically from lower sulcus up to the mid portion of cheek area measuring 6X4 cm in diameter, firm in consistency, tender & overlying mucosa is reddish in color. Lower left 1st molar was 1st degree mobile. On orthopentomograph showed a multilocular radiolucent area on left ramus of mandible with loss of morphology of

condylar & coronoid process. On incisional biopsy revealed Benign Fibrous Histiocytoma.

Excision of the tumour with left partial mandibulectomy with disarticulation was performed. Excisional biopsy revealed as Malignant Fibrous Histiocytoma-storiformtype. Patient was treated with adjuvant radiotherapy.

Discussion:

In 1964, O' Brien & Stout recognized MFH first has continually been reported in the world literature & is considered the most common adult soft tissue sarcoma. MFH in the bone accounted for 5% of all malignant bone tumours. Three quarters of the cases were occurred in the extremities with nearly 50% within the lower limbs.[5] In the head & neck region, it is found only 1-7.2%, among them oral cavity accounts 5-15%.[2] The Intrinsic features arising
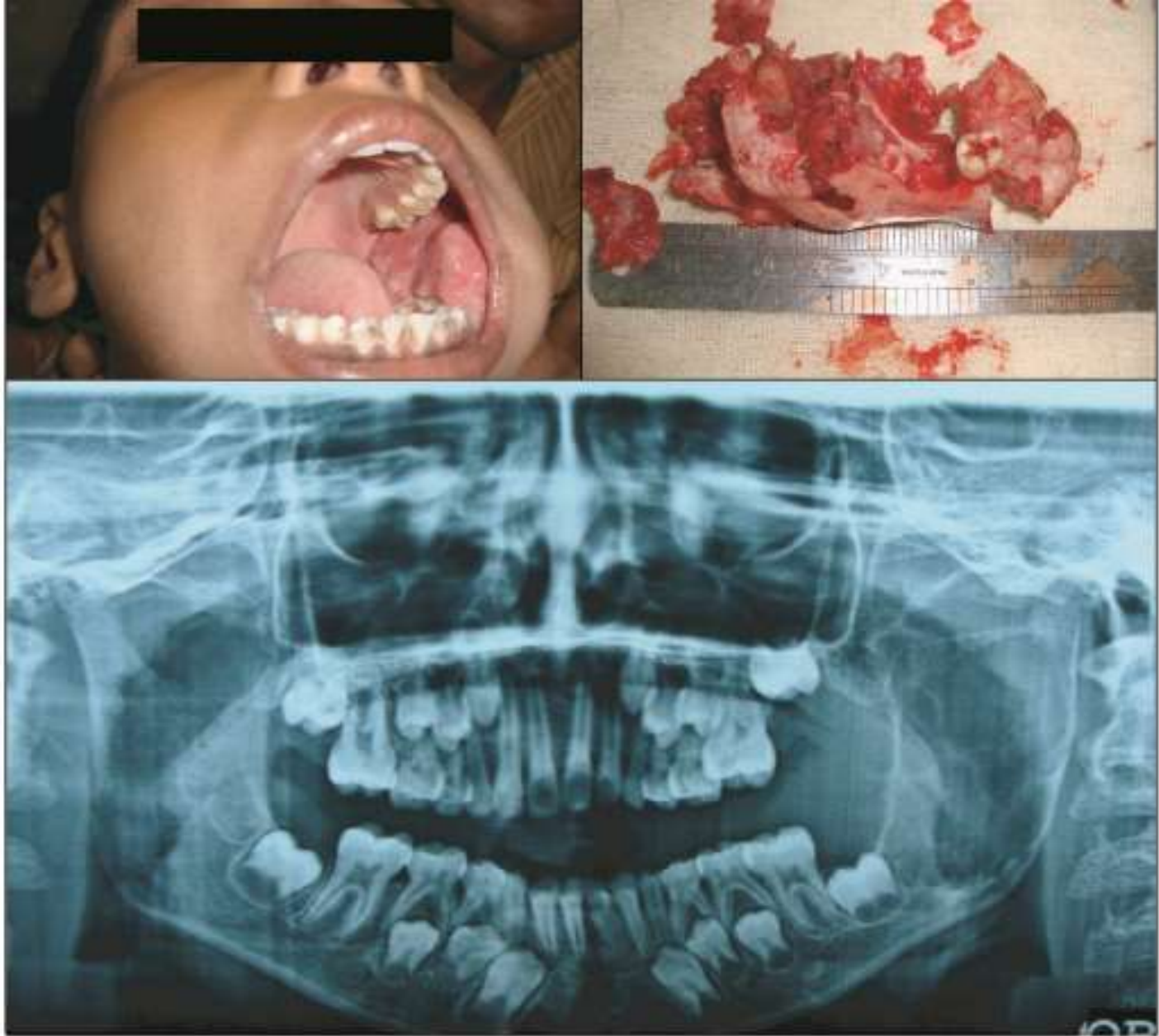
Figure-2: Showing Clinical appearence, exicisional specimen & Ortho pentomograph of MFH.

from different parts of the body might be directly related the different prognosis.[6] In our cases, patients were between 1st -2nd decade & located in the oral cavity involving jaw bone.

Based on cellularity, pleomorphism, necrosis & mitotic activity, MFH is classified as low grade for well differentiated, intermediate grade for moderately differentiated, high grade for poorly differentiated & undifferentiated. Based on histology MFH is classified in 5 types:- storiform-pleomorphic, giant cell, inflammatory, myxoid (myxofibrosarcoma) & angiomatoid.[6] In our cases, both were diagnosed as low grade for well differentiated & storiform-pleomorphic.

In the head & neck region, the site of origin included the paranasal sinuses, the nasal passages, mandible, supraglottic larynges & trachea.[7] In these cases, the site of origin was mandible –one case at right side & another on left. Blitzer et al reported 29 cases of MFH of deep structure of head & neck with a metastatic potential of 22%.[8] In another study, review of the sites of metastasis indicated that the lung is the most frequent initial site, either solitary or multiple occurring in 61.5% of cases.[9] In our cases, there was no evidence of metastasis.

WU xuexi[10] et al reported that the extend of surgery may be defined as radical, wide or local resection. In the treatment protocol, radical surgery with a minimum margin of 3cm is

the choice of treatment followed by the combination with radiotherapy and or chemotherapy is advocated by the most of authors. The mainstay of the treatment was surgical excision when ever possible was often combined with radiotherapy before or after surgery.[11] The surgical excision was at times difficult to achieve when tumour was located adjacent to vital structures, chemotherapy might be employed prior to surgery.[12] In our cases surgery was done with partial or hemimandibulectomy followed radiotherapy as suggestions of few researchers. Some researchers concluded that the prognosis of post radiation sarcoma was generally poor.[13]

Head & Neck MFH tends to be more aggressive than MFH of extremity that may be responsible for the poor prognosis. Factors of prognosis are histological grade, size & site of primary tumour. Lymph node involvement is rare for MFH. Involvement of regional lymph node is reported only 12% of patients.[14] Neck dissection should be done in the presence of clinically positive nodes. In these cases, both were with positive nodes & performed neck dissection.

Five years survival was around 50% for MFH, inadequate initial resection, high incidence of local recurrence & limited anatomical allowance are responsible for treatment failure in head & neck region.[15] Being a locally aggressive tumour, MFH penetrates in the surrounding tissues in multidimensional fashion. The recured site included in the lung, liver, lymph nodes & bone.[16]

Conclusion:

The behavior of Malignant Fibrous Histiocytoma (MFH) of jaws has distinct clinical behavior, being very aggressive with a high rate of occurrences and frequent metastasis with poor prognosis. The behavior is more aggressive than fibrosarcoma & osteosarcoma in this region.[17] Local radical resection with primary reconstruction with adjuvant radiotherapy or neoadjuvent radiotherapy followed surgery is the treatment protocol though some researchers considered radiotherapy as risk factors of malignant changes towards MFH recommended periodical checkup.[18] Patient mentioned in this report were treated by wide resection followed adjuvant radiotherapy. Prognosis of first case is under observation & 2nd case was passed away six months after treatment.

References

1. Weiss SW, Enzinger FM. Malignant fibrous histiocytoma: analysis of zoo cases. Cancer 1978; 41: 2250 – 2266.

2. Barnes L, Kanbour A. Malignant fibrous histiocytoma of the head and neck. A report of 12 cases. Arch Otolaryngol Head Neck Surg. 1988; 114: 1149 – 1156.

3. Merkow LP, Frich JC Jr, Slifkin M, Kyreages CG, Pardo M. Ultrastructure of a fibroxanthosarcoma (malignant fibroxanthoma). Cancer 1971; 28 : 372-83.

4. O'Brien JE, Stout AP. Malignant fibrous xanthomas. Cancer 1964; 17 : 1445-55.

5. Hoekstra HJ, Ham SJ, van der Graaf WT, Kamps WA, Molenaar WM, SchraffordtKoops H. Malignant fibrous histiocytoma of bone: a clinicopathologic study of 81 patients. Cancer 1998; 82 : 993-4.

6. Akhter M, Molla MR, Hossain S, Mondoul SK.A rare case of oral malignant fibrous histiocytoma and short review of the literature. The ORION Medical Journal 2008 Jan;29:535-536.

7. Abdul-Karim FW, Ayala AG, Chawal SP, Jing BS, Goepfert HG. Malignant fibroushistiocytoma of jows. A Clinicopathologic study of 11 cases.Cancer.1985; 56:1590-6.

8. Blitzer A, Lawson W, Zak FG, Biller HF, Som ML. Clinical-pathological determinants in prognosis of fibrous histiocytoma of the head and neck. Laryngoscope. 1981;91;2053-70.

9. Spanier SS, Enneking WF, Enriquez P. Primary malignant fibrous histiocytoma of bone. Cancer. 1975;36:2084-98.

10. WU Xuexi, QI Yongfa, TANG Pingzhang. Chinese Medical Journal, 2000, Vol.113(6):532-535.

11. Murphey MD, Gross TM, Rosenthal HG. Musculoskeletal malignant fibrous histiocytoma: radiologic-pathologic correlation. Radiographics 1994; 14 : 807-26.

12. Bacci G, Springfield D, Capanna R, Picci P, Bertoni F, Campanacci M. Adjuvant chemotherapy for malignant fibrous histiocytoma in the femur and tibia. J Bone Joint Surg Am 1985; 67 : 620-5.

13. Sukontapatipark A. Malignant fibrous histiocytoma. J Dent Assoc Thai. 1991; 41: 134 – 140.

14. Ko JY, Chen CL, Lui LT, Hsu MM. Radiation-induced malignant fibrous histiocytoma in patients with nasopharyngeal carcinoma. Arch Otolaryngol Head NeckSurg. 1996; 122: 535 – 538.

15. Pezzei CM, Rawlings MS Jr, Esgro JJ, et al. Prognosis factors in 227 patients with malignant fibrous histiocytoma. Cancer 1992;69:2098-2103.

16. Munik PL, Salloml DF, Janzen DL, Lee MJ, Connell DG, O'Connell JX, et al. Malignant fibrous histiocytoma of soft tissue imaging with emphasis on MRI. J Comput Assist Tomogr 1998; 22 : 819-26.

17. Senel FC, Bektas D, Caylan R, Onder E, Gunhan O. Malignant fibrous histiocytoma of the mandible. DentomaxillofacRadiol. 2006; 35: 125 – 128.

18. Shields J, Hisson M, Shields C, Krema H, Eagle R, Singh A. Orbital malignant fibrous histiocytoma following irradiation for retinoblastoma. Ophthal Plast Reconstr Surg. 2001; 17: 58 – 61.

Correspondence to:
Dr. Md. Amirul Islam
Assistant Professor
Oral & Maxillofacial Surgery Dept.
TMSS Medical College Dental Unit, Bogra
Email: amirshaheenbd@yahoo.com
Phone: +88-01714-219496

Case Report

Orthodontic Treatment of Class II division 2 Malocclusion in an Adult Female : A Case Report

Habib MA[1], Mahamud AMS[2], Leena LR[3], Hossain MZ[4]

Abstract

This case report describes the management of a 15 years old female patient having Class II division 2 malocclusion with traumatic bite. The patient was treated by non-extraction procedure with standard edgewise technique.

Key words: Class II division 2 malocclusion, traumatic bite, edgewise orthodontic therapy.

Introduction:

In 1899, Edward angle classified malocclusion based on the mesiodistal relation of the teeth, dental arches and jaws. In class-II malocclusion, the mandibular dental arch and body are in distal relation to the maxillary arch. The mesio-buccal cusp of the maxillary first permanent molar occludes in the space between the mesiobuccal cusp of the mandibular first permanent molar and the distal aspect of the mandibular second premolar. At the beginning of the 20th century, Edward H. Angle[1-3] differentiated between the first and second divisions of his Class II type of malocclusion. In Class II division 2 the molar relationship is Class II. Upper central incisors are retroclined and overlapped by the lateral incisors. Common clinical features of class II division 2 malocclusion are squarish face, straight to mildly convex profile and shallow mento-labial sulcus. Upper lip is invariably short and positioned high and lower lip is thick flabby covering the upper incisors.[1] The objectives of orthodontic treatment of this patient were to relief of traumatic bite, establish normal overjet and overbite, establish normal interincisal angle, maintain occlusal harmony and interdigitation.

Case Report:

A 15 year old female came to the department of orthodontics and dentofacial orthopedics, Dhaka Dental College & Hospital with the chief compliant of soft tissue impingement of palate due to traumatic bite and unpleasant esthetics due to retroclined upper central incisors. The patient was in the permanent dentition. She had no relevant dental, medical or family history and had no history of previous orthodontic treatment. On extraoral examination

we found that she had a symmetric face with a convex profile. Lips are competent. Her TMJ was alright and had a normal path of closure [Fig: 1].

Intraoral examination showed that upper central incisors are retroclined and lateral incisors are proclined. In occlusion she had a 1 mm over jet and 5 mm overbite. There was class I molar and canine relation, except left canine which was class II. Her mandibular midline was shifted 2 mm to the left. There was no premature contact or any other pathology [fig. 2]. On model analysis, the arch length deficiencies were (-1.5) mm in the maxillary arch and (-9 mm) in the mandibular arch. Panoramic radiographs revealed that all the permanent teeth were present except third molars [Fig: 3A]. Cephalometric evaluation showed that she had a skeletal class II relationship [Fig: 4A].

The patient refuses to receive any treatment on the lower jaw. So, our treatment is confined to the upper jaw. Non-extraction treatment plan was decided and treatment started

Figure-1: Extraoral photograph (Before treatment).

1. Dr. Md. Ahsan Habib Assist. Professor, Dept. of Orthodontics & Dentofacial Orthopedic, Rangpur Dental College & Hospital, Rangpur
2. Dr. A.M. Sohal Mahamud, Assist. Professor, Dept. of Orthodontics & Dentofacial Orthopedic, Sapporo Dental College, Uttara, Dhaka
3. Dr. Layla Rahman Leena, Dental Surgeon, Saturia Upazilla Health Complex, Manikgonj
4. Prof. Dr. Md. Zakir Hossain, Head, Dept. of Orthodontics & Dentofacial Orthopedic, Dhaka Dental College & Hospital, Dhaka

35

Figure-2: Intraoral photograph (before treatment).

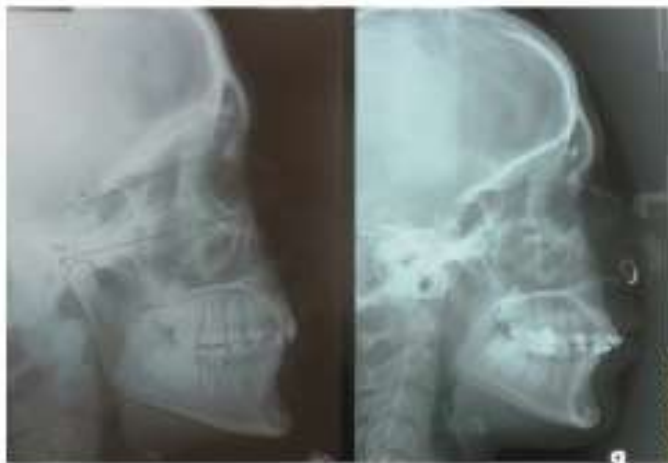Figure-3: Panoramic Radiograph before (A) and after treatment (B).

Figure-4: Cephalogram before (A) and after treatment (B).

Figure-5: Extraoral photograph after treatment.

Figure-6: Intraoral photograph after treatment.

with fixed appliance. At first bite opening was done by inserting upper removable appliance with anterior bite plane. Then leveling and alignment was done with the use of 0.014 multilooparch wires. For retension upper Hawley retainer was given.

Results and Discussion:

The Class I molar and canine relationship were maintained with satisfactory interdigitation. The overjet and the overbite were improved. The mandibular dental midline was improved. The dentition and the periodontal tissues remained healthy. Except moderate gingival recession over upper left canine, this was present before treatment remains after treatment. Treatment of class-II division 2 malocclusion in adults is always challenging. Relapse is quite common if we ignore incisor inclination and interincisal angle. Applying proper knowledge of biomechanical principles to execute the mechanical plan/ protocol is the key to achieve predictable results with minimal side effects.

Conclusion:

Analysis of final records indicated that all treatment objectives were achieved. The teeth were placed in good alignment, and good occlusion was maintained. A satisfactory esthetic result had been achieved. The parent & patients psychological satisfaction was also achieved.

References:

1. Angle EH. Classification of malocclusion. Dent Cosmos 1899; 41: 248-64.

2. Angle EH. Treatment of malocclusion the teeth and fractures of the maxillae. 6th ed. Philadelphia: S. S. White Dental Manufacturing CO; 1900. p. 37-40.

3. Angle EH. Treatment of malocclusion the teeth. Angle's system. 6th ed. Philadelphia: S. S. White Dental Manufacturing CO; 1907. p. 50-1.

4. Singh G. Etiology and management of Class II malocclusion: Textbook of Orthodontics. 2nd ed. 570-574, 2007.

Correspondence to:

Dr. Md. Ahsan Habib
BDS, FCPS
Assist. Professor
Dept. of Orthodontics and Dentofacial Orthopedic
Rangpur Dental College and Hospital
Medical East Gate, Rangpur.
Phone :+88-01715-843890
E-mail: ahabib @ymail.com

REVIEWERS OF ARTICLES IN THIS ISSUE

(Alphabetically)
Dr. Anwar Yousuf
Dr. Golam Rubby
Dr. Md. Abdullah Al Mamun
Dr. Md. Saiful Azam
Dr. Mohammad Sayeed Ahmad
Dr. Morshed Asadullah Shikder
Dr. Syed Atiqur Rahman
Prof. Dr. Wadud Mostafa

The *Rangpur Dental College Journal* agrees to accept manuscript prepared in accordance with the 'Uniform Requirements Submitted to the Biomedical Journals' published in the New England Journal of Medicine 1991; 324: 424-8.

Aims and scope: Rangpur Dental College publishes half-yearly journal based in clinical and laboratory study. It features the best clinical and laboratory based study on various disciplines of medical and dental science to provide a place for medical and dental professionals to relate experiences which will help others to render better patient care.

Conditions for submission of manuscript:

- All manuscripts are subject to peer-review.
- Manuscripts are received with the explicit understanding that they are not under simultaneous consideration by any other publication.
- Submission of a manuscript for publication implies the transfer of the copyright from the author to the publisher upon acceptance. Accepted manuscripts become the permanent property of the *Rangpur Dental College Journal* and may not be reproduced by any means in whole or in part without the written consent of the publisher.
- It is the author's responsibility to obtain permission to reproduce illustrations, tables etc. from other publications.

Ethical aspects:

- Ethical aspect of the study will be very carefully considered at the time of assessment of the manuscript.
- Any manuscript that includes table, illustration or photograph that have been published earlier should accompany a letter of permission for re-publication from the author(s) of the publication and editor/publisher of the Journal where it was published earlier.
- Permission of the patients and/or their families to reproduce photographs of the patients where identity is not disguised should be sent with the manuscript. Otherwise the identity will be blackened out.

Preparation and criteria of manuscript:

Information provided in the manuscript is important and likely to be of interest to an international readership.

Preparation:

1. Manuscript should be written in English and typed on one side of A4 (290 x 210cm) size white paper.
2. Double spacing should be used throughout.
3. Margin should be 5 cm for the header and 2.5 cm for the remainder.
4. Style should be that of modified Vancouver.
5. Each of the following section should begin on separate page:
   - Title page
   - Summary/abstract
   - Text
   - Acknowledgement
   - References
   - Tables and legends.

6. Pages should be numbered consecutively at the upper right hand corner of each page beginning with the title page.

Title Page: The title page should contain:
- Title of the article (should be concise, informative and self-explanatory).
- Name of each author with highest academic degree
- Name of the department and institute where the work was carried out
- Name and address of the author to whom correspondence regarding manuscript to be made
- Name and address of the author to whom request for reprint should be addressed

Summary/Abstract: The summary/abstract of the manuscript-
- Should be informative
- Should be limited to less than 250 words
- Should be suitable for use by abstracting journals and include data on the problem, materials and method, results and conclusion.
- Should emphasize mainly on new and important aspects of the study
- Should contain only approved abbreviations

Introduction: The introduction will acquaint the readers with the problem and it should include:
- Nature and purpose of the study
- Rationale of the study/observation
- Strictly pertinent references
- Brief review of the subject excepting data and conclusion

Materials and Methods: This section of the study should be very clear and describe:
- The selection criteria of the study population including controls (if any).
- The methods and the apparatus used in the research.
- The procedure of the study in such a detail so that other worker can reproduce the results.
- Previously published methods (if applicable) with appropriate citations

Results: The findings of the research should be described here and it should be:
- Presented in logical sequence in the text, tables and illustrations.
- Described without comment.
- Supplemented by concise textual description of the data presented in tables and figures where it is necessary

Tables: During preparation of tables following principles should be followed:
- Tables should be simple, self-explanatory and supplement, not duplicate the text.
- Each table should have a tittle and typed in double space in separate sheet.
- They should be numbered consecutively with roman numerical in order of text. Page number should be in the upper right corner.
- If abbreviations are to be used, they should be explained in footnotes.

Illustrations: Only those illustrations that clarify and increase the understanding of the text should be used and:
- All illustrations must be numbered and cited in the text.
- Print photograph of each illustration should be submitted.
- Figure number, tittle of manuscript, name of corresponding author and arrow indicating the top should be typed on a sticky label and affixed on the back of each illustration.
- Original drawings, graphs, charts and lettering should be prepared on an illustration board or high-grade white drawing paper by an experienced medical illustrator.

Figures and photographs: The figures and photographs:
- Should be used only where data can not be expressed in any other form
- Should be unmounted glossy print in sharp focus, 12.7 x 17.3 cms in size.
- Should bear number, tittle of manuscript, name of corresponding author and arrow indicating the top on a sticky label and affixed on the back of each illustration.

Legend: The legend-
- Must be typed in a separate sheet of paper.
- Photomicrographs should indicate the magnification, internal scale and the method of staining.

Units:
- All scientific units should be expressed in System International (SI) units.
- All drugs should be mentioned in their generic form. The commercial name may however be used within brackets.

Discussion: The discussion section should reflect:
- The authors' comment on the results and to relate them to those of other authors.
- The relevance to experimental research or clinical practice.
- Well founded arguments.

References: This section of the manuscript-
- Should be numbered consecutively in the order in which they are mentioned in the text.
- Should be identified in the text by superscript in Arabic numerical.
- Should use the form of references adopted by US National Library of Medicine and used in Index Medicus.

Acknowledgements: Individuals, organizations or bodies may be acknowledged in the article and may include:
- Name (or a list) of funding bodies.
- Name of the organization(s) and individual(s) with their consent.

Manuscript submission: Manuscript should be submitted to the Editor or via e-mail: rdcjournal@gmail.com and must be accompanied by a covering letter and following inclusions:
- A statement regarding the type of article being submitted.
- A statement that the work has not been published or submitted for publication elsewhere.
- A statement of financial or other relationships that might lead to a conflict of interests.
- A statement that the manuscript has been read, approved and signed by all authors.

- A letter from the head of the institution where the work has been carried out stating that the work has been carried out in that institute and there is no objection to its publication in this journal.
- If the article is a whole or part of the dissertation or thesis submitted for diploma/degree, it should be mentioned in detail and in this case the name of the investigator and guide must be specifically mentioned.
- Submissions must be in triplicates with three sets of illustrations. The article must be additionally submitted in CD.

Editing and peer review: All submitted manuscripts are subject to scrutiny by the Editor in-chief or any member of the Editorial Board. Manuscripts containing materials without sufficient scientific value and of a priority issue, or not fulfilling the requirement for publication may be rejected or it may be sent back to the author(s) for resubmission with necessary modifications to suit one of the submission categories. Manuscripts fulfilling the requirements and found suitable for consideration are sent for peer review. Submissions, found suitable for publication by the reviewer, may need revision/ modifications before being finally accepted. Editorial Board finally decides upon the publishability of the reviewed and revised/modified submission. Proof of accepted manuscript may be sent to the authors, and should be corrected and returned to the editorial office within one week. No addition to the manuscript at this stage will be accepted. All accepted manuscripts are edited according to the Journal's style.

Reprints for the author(s): Copies of each published article will be provided to the corresponding author free of cost. Additional reprints may be obtained by prior request and only on necessary payment.

Subscription information: The *Rangpur Dental College Journal* is published by the Editor twice a year in January and July. *Annual Subscription:* Local BDT 300.00 and Overseas US$ 30.00. Subscription request should be sent to The Editor, The *Rangpur Dental College Journal*, Rangpur Dental College, Medical East-gate, Dhap, Rangpur-5400, Bangladesh. Any change in address of the subscriber should be notified at least 6-8 weeks before the subsequent issue is published mentioning both old and new addresses.

Communication for manuscript submission: Communication information for all correspondence is always printed in the title page of the journal. Any additional information or any other inquiry relating to submission of the article the Editor or the Journal office may be contacted.

Copyright: No part of the materials published in this journal may be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the publisher. Reprints of any article in the Journal will be available from the publisher.

Rangpur Dental College