INDIAN PROSTHODONTIC SOCIETY

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THE JOURNAL OF INDIAN PROSTHODONTIC SOCIETY

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drsuhasini@jips.com • Website : www.jipsindia.com

EDITORIAL COMMITTEE

Edited and published by Dr. (Mrs.) S.J. Nagda Prof. & Head, Dept. of Prosthodontics, Nair Hospital Dental College, Mumbai-400 008. for and on behalf of Indian Prosthodontic Society, and Printed at Streamline Stationers & Printers, 25/27, Modi St, Off GPO, Fort, Mumbai-1. Tel.: 22610585 Telefax: 22657453;

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Editorial

How many times sitting as a prosthodontist in the audience we are made to feel that if we cannot complete any case that comes into our office successfully and if we are not using the high tech gadgets or our collections do not go beyond a few lakhs we are not successful dentists ? We also feel that we want to do all - that we learnt in a CE programme the very next day - that we start after the course. We even want to transform our practice overnight through the purchase of books and CDs. Lest we are not left behind and to be in the race a lot of mindless purchasing of dental products and instruments is done. Anecdotal information changes like a chameleon changing its colour.

Case presentations and the methodology and material presented is an information that we gather but there is no 'one size - fits - all method', 'one material' or 'technique' that suits every patient. So what is success in our practice ? It is not just the monetary gains or showing off to our peers the cases that we have completed. None of us want to face and discuss cases that we are challenged with. So is it peer acceptance that is success or patient appreciation of our so called modern methodologies that can be counted as success ? The saga of a so called successful case is only known to the patient who faces further problems and failures that may be due to our wrong diagnosis and treatment planning.

"One hour - one stage denture stabilization. The definitive solution for loose dentures" does not it sound interesting ? It is rightly said that advertisements can sell even poison today and non advertisement can kill the immortal potion ! As oral health care workers its time that we look into ourselves and nurture our skills to diagnose and treat a patient as a whole with longevity in mind. We have to go beyond the technical excellence and the dependency syndrome for high tech gadgets and materials. Lets sharpen our diagnostic and clinical skills, on our every day practice through our experience. We bear heavy responsibility to be honest and forthright in our practice and give our patients the best as they deserve it.

Dr. (Mrs.) S. J. Nagda
Editor - JIPS
Editorial Office :
Prof. and Head, Dept. of Prosthodontics
Nair Hospital Dental College,
Dr. A. L. Nair Road, Mumbai - 400 008.

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The journal of Indian Prosthodontic Society will publish articles on original research, clinical reports, description of technical procedures, literature reviews, news, comments and letters to the Editor. The article should be written in English and original should not have been submitted for publication elsewhere.

The articles will be reviewed by the Editor and the advisory board. The Editor and the Journal Committee reserves the right to reject any articles without giving any explanations thereof. All published articles will become the property of Journal of Indian Prosthodontic Society.

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Title Page : The title page should include the title of the article, full name of each author, first name, middle, initial and last name of each author with highest academic degrees, position and institutional affiliations. If the article was read before an organized group, the name of the organization and the place the article was read should appear on the title page. The mailing address of the author who will receive correspondence and reprint request should be included. The source of support in form of grants, equipments, drugs or all these should also be included.

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TEXT : Introduction : It should be brief and precise, review the important literature only. Clearly state the purpose and objectives of study and avoid extensive review of literature.

Methods, Material, Case Histories, Samples : Describe your selection and observational or experimental subjects and procedures in detail to allow other workers to reproduce the results. Give references of established methods, including statistical methods, provide references and brief descriptions of methods that have been published but are not well known, describe new or substantially modified methods, give reasons for using them and evaluate their limitations.

Results : The results should be arranged in unified and coherent sequence in the text so that the report develops clearly and logically.

Discussion : It should deal with the interpretations of results without repeating information already presented under results. It should relate the new findings to the already known and include logical deductions. Long rambling discussions should be avoided.

References : Manuscripts in preparation, personal communication and other unpublished information should not be cited in the reference list but must be mentioned in text in parenthesis. The references must be identified in the text by an arabic numerical and numbered in consecutive order as they are mentioned in the text. Only references cited in the text should appear in the list. Include surnames and initials of all authors' complete title of article cited, name of Journal abbreviated, year, volume and page. For books include name of authors, title editions, page number, location and name of publisher and year of publication. The format should confirm to that set forth in "Uniform requirements for manuscripts submitted to Biomedical Journals" (Vancouver Style). Journal titles should confirm to the abbreviations in the cumulated Index Medicus.

Example : Jones ER. Smith JM. Doe JQetal. Occlusion. J Prosthet Dent 1985;53 : 120-9.

Tables : Tables should be typed on separate sheets of paper, double spaced, without any text matter on the page. Table should be self explanatory, should supplement and not duplicate the text, numbered in roman number, according to order in the text. All foot notes should immediately follow the table and all abbreviations used should be defined in the foot note.

Illustrations : All figures must be mentioned sequentially in the text. Each figure must be accomplished with a legend, typed on a separate paper. Figure should be professionally drawn. Illustrations must be of good quality for black and white reproduction. Coloured glossy prints are preferred. Colour photographs will be published at author's expense, where original colour slides are preferable to colour prints. Photographs of radiographs should be sent and not the radiograph. On the back of each print in the upper right corner, write lightly the figure number, authors' name and indicate on top of the photograph with an arrow or word "TOP".

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Contents

History of Denture base Materials

Mrs. S. J. Nagda, M.D.S.*

Availability of a suitable denture base material was the greatest challenge dentists faced right from the 16th century. Necessity being the mother of invention after great struggle and unsuccessful trials with wood, bone, rubber porcelain and vulcanite, resin base materials evolved.

Early prostheses were fashioned by carving denture bases from naturally occurring materials, such as wood, bone and Ivory the introduction and development of casting and forging procedures established metals and metal alloys as viable denture base materials. Subsequently, porcelain was used in the fabrication of denture bases despite these advances, additional improvements in the physical and esthetic properties of denture base materials were sought. The selection of specific materials traditionally has been based on availability, cost, physical properties, esthetic qualities and handling characteristics.

During the middle of the nineteenth century, vulcanized rubber (i.e. vulcanite) was introduced as a denture base material. This marked the introduction of polymers in complete denture prosthetics. Vulcanized rubber eventually was displaced by another polymer, poly (methy/methacrylate) (PMMA) PMMA displayed significant improvements in physical, esthetic and handling properties.

During subsequent years, polysterene polyvinycacrylic and polyamides were used in the fabrication of denture bases. A light activated urethane dimethacrylate also was introduced for denture base applications. None of these materials provided the unique combination of physical and esthetic properties exhibited by PMMA. As a result, PMMA has dominated the denture base arena for more than 50 years.

For years denture bases were fabricated from wood. Wood was chosen because it was available readily, relatively inexpensive and would be carved to desired shapes Denture bases fabricated from wood often warped and cracked in presence of moisture Furthermore wood posed esthetic and hygienic challenges and was subject to degradation during prolonged periods in the oral environment.

Like wood, bone was chosen due to its availability, reasonable cost and carvability. It is reposted that Fauchard fabricated dentures by measuring individual arches with a compass and cutting bone to fit these arches. Esthetics and hygiene were the main concern.

Ivory was also used as denture base material. Denture bases and prosthetic teeth were fashioned by carving these materials to designed shapes. They were relatively stable in oral environments. Furthermore, Ivory bases offered significant esthetic and hygienic advantages in comparison with denture bases carved from wood and bone.

During the later stages of eighteenth century, Dechemont and Duchate introduced porcelain as a denture base material. Secrets of fabrication of process remained well guarded and porcelain denture bases were relatively expensive. During subsequent years, the secrets of dental porcelain became dissemenated more widely. As a result the cost associated with porcelain denture bases decreased and use of ceramic denture bases became more common. Main drawback associated with ceramic was brittleness.

Metals and metal alloys have been used in construction of dental prosthesis for centuries gold, silver, aluminium and base metal alloys have been used in fabrication of bases for complete dentures. Traditionally gold alloys have been the most popular materials for the fabrication of metal denture bases. They are well tolerated by patients and do not corrode in the oral environment. In addition the increased weight provided by such alloys may be advantageous in mandibular complete denture applications the principal drawback of these alloys is related to high cost.

Denture bases also have been fabricated using silver and its alloys unlike gold alloys, silver has its alloy exhibit significant corrosion in the oral environment consequently the use of silver and its alloys is contraindicated for extra oral application.

Aluminium alloys have been used in fabrication of complete denture bases like gold, aluminium denture bases are well tolerated by patients and do not corrode in the oral environment & potential relationship between aluminium and alzheimars diseases has been

* *Professor and Head,* Dept. of Prosthodontics, Nair Hospital Dental College, Mumbai.

reported. Currently base metal alloys are commonly used. These are relatively strong and may be cast rather accurately. The most promising metal for potential denture base applications appears to be commercially pure titanium. This metal is inexpensive light weight strong and displays excellent biocompatibility.

Since the later half of the nineteenth century, polymers have dominated the denture fabrication process. Vulcanized rubber, polystyrene poly (vinyl acrylics), polyamides and polymethyl methacrylate have been used in denture base fabrication.

Vulcanized rubber or valcanite was introduced as a denture base material in 1855. Vulcanite displayed, questionable, esthetics and the fabrication process was particularly demanding.

During subsequent years, the dental profession sought suitable substitutes for vulcanite. In 1937, polymethye methacrylate was introduced and rapidly replaced valcanite as the most commonly used denture base material. Polymethyl methacrylate provided enhanced physical and esthetic properties readily available, inexpensive and easily manipulated.

Since the introduction of polymethyl methacrylate, additional polymers have been tested for denture base applications. Polystyrenes, poly (vinyl acrylic) and polyamides that is nylons have been investigated as potential denture base materials.

A light activated urethane dimethacrylate resin also has been tested. Although each of these materials displays desirable properties, none has proved superior to polymethyl methacrylate. As a result the polymethyl methacrylate remains the material of choice for denture base construction.

31ST IPS WORLD CONGRESS

The world Congress on prosthodontics and 31st Indian Prosthodontic Society Congress was held at Hotel Ashoka, New Delhi between 26th-29th November 2003.

The World Congress was inaugurated by the Hon'ble President of India Dr. Abdul Kalam at the prestigious Vigyan Bhavan. The president endeared himself and related to all who had come to attend the conference. The president stressed on bringing a smile to everyones face thus stating that they should take our profession to every nook and corner of the country.

Pre Congress courses were held earlier by esteemed people in the field where both dentists refreshed their knowledge and students benefitted tremendously.

Key note lectures were given. Various integrated subjects were covered such as prostho - perio relationship, EBD to occlusion and maxillo facial prosthodontics.

Students papers and posters were they too and the quality and effort of the presentations was appreciated and prizes were awarded. An extremely good trade fair was organized where all products could be found under one roof.

At the conference there was the installation of the New President and 6 executive members.

On the whole a well attended conference, good organization, wide media coverage was given too. Looking forward to the next World Congress.

Tooth Measurements as Diagnostic Aid for Evaluating Esthetic Prognosis in Fixed Prosthodontics

C. L. Satish Babu *

ABSTRACT

Many factors play an important role in achieving esthetically satisfactory restorations in Fixed Prosthodontics.

Tooth reduction to the recommended depths especially on the Labial and Incisal aspects is one such factor.

Clinical observation shows the difficulty in achieving such depths in many cases due to shorter clinical lengths of the crown and limited Labio-Gingival thickness of the teeth.

Hence a study was undertaken to assess the size of the four maxillary incisors from a clinical point of view and to look into the feasibility of using tooth measurements as a guide for esthetic prognosis.

The results of the study presented in this paper, establishes the size of the teeth as a limiting factor for optimum tooth preparation. The study also suggests the use of tooth measurements as a diagnostic aid to evaluate the esthetic prognosis.

INTRODUCTION

Many factors play an important role in achieving esthetically satisfactory restorations in fixed-Prosthodontics. Tooth preparation to the recommended depths[1, 2] especially on the Labial and Incisal aspect is one such factor. Clinical observation shows the difficulty in achieving such depths in many cases due to shorter clinical length of the crowns and limited labio-lingual thickness of the maxillary incisors.

From the review of the available literature[3, 4, 5, 6, 7] it was realized that the tooth measurements from a clinical point of view particularly the clinical length and the Labio-lingual dimensions at different levels of a tooth were not previously established. Hence the present study was undertaken:

1) To test the clinical observation of tooth size as a limiting factor for adequate tooth preparation of the maxillary incisors.
2) To determine the clinical length and labio-lingual dimensions of the four maxillary incisors.
3) To look into the feasibility of using tooth measurements as a diagnostic aid for evaluating esthetic prognosis.

Key Words : Tooth measurements, Esthetic prognosis, Depth of tooth preparation

* *Professor & Head Department of Prosthodontics,* V. S. Dental College & Hospital, Bangalore, Karnataka, India.

MATERIALS AND METHOD:

MATERIALS

Fifty study casts each of male and female subjects who were in the age group of 15-25 years were selected for the study. Care was taken to see that all the four maxillary incisors were present and that it had normal morphological features without any evidence of abrasion, attrition, facets or any cast restorations.

METHOD:

The length of the tooth was measured on the labial aspect from the crest of the Gingiva to the Incisal edge along the midline for each of the four maxillary incisors using a flexible scale. The measurements were rounded off to the nearest half of a millimeter. Fig-1.

The labio-lingual width of all four maxillary incisors was measured using a crown caliper/ thickness gauge which is sensitive to measure one tenth of a millimeter. The labio-lingual width for each tooth was measured at three levels i.e., 2 mms from the incisal edge, 3.5 mms from the Incisal edge and cervically corresponding to the crest of gingiva along the midline of the tooth. Fig-1.

RESULTS:

The range and mean clinical length of the incisors is presented in Table I. Diagram I represents the same graphically.

The range and mean labio-lingual width of the incisors at 2 mms from Incisal edge, at 3.5 mms from incisal edge and at cervical region is presented in Table

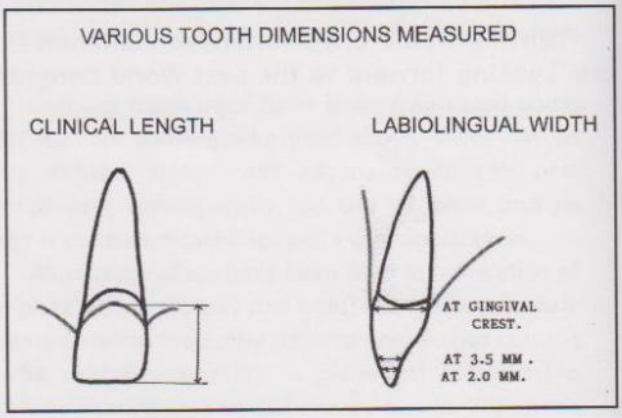
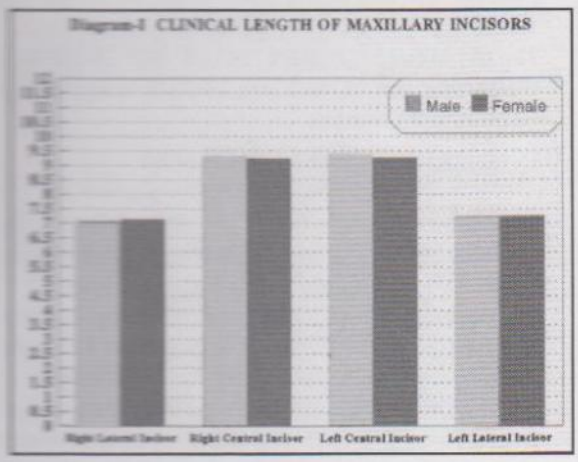


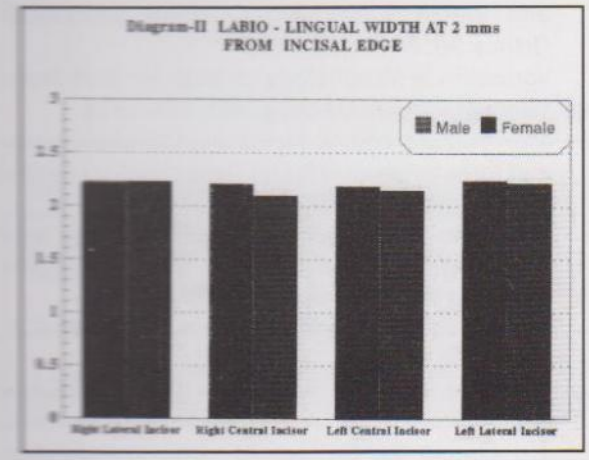
Fig. : 1

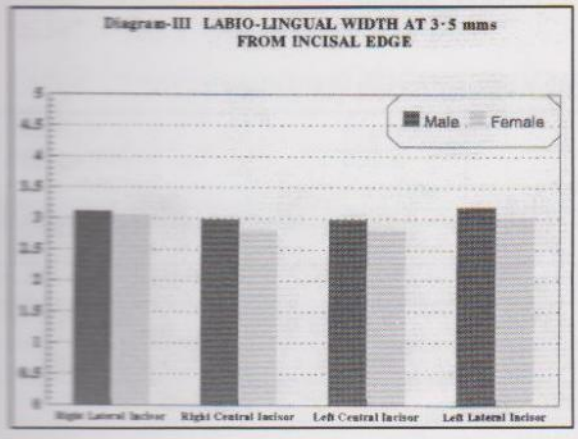
II, III and IV respectively. Diagrams II, III and IV represent the same graphically.

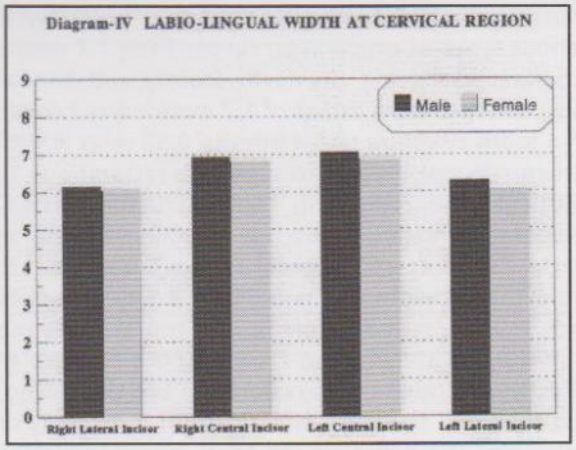
DISCUSSION:

Adequate tooth preparation can be considered as a first step towards creating esthetically satisfactory restorations. The size of the tooth, Pulp chambers and the structural durability of the remaining tooth structure are the limiting factors for tooth









preparation. Of these three factors, the size of the Pulp chamber is patient specific and beyond the control of the operator except in those cases where the teeth are non-vital or it is decided to sacrifice the vitality of the pulp. The structural durability of the remaining tooth structure after the tooth preparation depends upon the size of the tooth and thus the size of the tooth ultimately limits the extent of tooth preparation.

The clinical length of the crown influences the incisal reduction and the labio-lingual width influences the reduction of tooth labially and lingually, both of which will affect the esthetics of a restoration, hence only these two parameters were used to study the size of the tooth from a clinical point of view.

From an anatomical point of view labio-lingual width of the tooth is generally measured at the Cervix and between the most prominent part of Cingulum and a point approximately opposite to it[4, 6]. The Incisal reduction of a tooth normally ranges from 2 mms to a maximum of 3.5 mms (Table - V) and cervically the tooth preparations generally terminate in close relation to the crest of the Gingiva. Therefore these three reference points (i.e. 2 mms form Incisal edge, 3.5 mms from incisal edge and at crest of Gingiva) were selected to determine the labio-lingual width of the teeth at different levels.

The average anatomical length of the crowns of the maxillary central and lateral Incisors is 10.5 mms and 9 mm[6] whereas their mean clinical length (Table I) ranged between 9.3mm to 9.36 mm and 7.09 mm to 7.25 mm respectively. Considering that a minimum of Two-thirds of the clinical length of crown should remain after tooth preparation[8], a maximum reduction of 3.1 mm for the central incisors and 2.4 mm for the laterals is feasible.

The mean labio-lingual width of the teeth at 2 mm from Incisal edge ranged between 2.10 mm to 2.24 mm (Table II). From the Table V we realized that

the total labial and lingual reduction necessary for various types of preparation ranges from 1.7 mms to 3.5 mms. Reducing the teeth labially and lingually even to a minimum extent of 1.7 mms leaves behind a thin tooth structure of 0.4 mms to 0.52 mms which is structurally not durable to support a restoration. The width of the remaining tooth structure incisally increases by carrying out the reduction beyond the Incisal 2 mms as we can observe from Table-III that the labio-lingual width of the teeth at 3.5 mm from the Incisal edge ranged from 2.82 mm to 3.19 mm. However, shortening the crown length reduces the effective retention of the restoration and shortening it less than two thirds its clinical length is certainly not advisable. The width of the tooth corresponding to the crest of the Gingiva (Table IV) closely matched with that of the anatomical width at cingulum[6] which is 7 mm for the central incisors and 6 mm for lateral incisors. The labio-lingual measurement at 3.5 mm for the lateral incisor seemed to be the least useful guide, as this reference point approached half way through the clinical length of the crown.

Though the mean measurements help us in knowing the average size of the teeth, we cannot overlook the fact that many teeth are smaller than the tooth with mean dimensions. The measurements of the tooth made before starting the tooth preparation in such cases will help us in visualizing esthetic prognosis and in explaining the problem to the patient in a rationale way.

Measuring the teeth using a Crown Caliper either directly in the mouth or on a study cast takes only a few minutes and the time thus spent certainly rewards both the operator and the patient with a greater degree of satisfaction.

SUMMARY AND CONCLUSIONS:

Fifty study casts each of male and female subjects who were in the age group 15-25 years were used to establish the tooth dimensions of the four maxillary Incisors from a clinical point of view and to look into a feasibility of using tooth measurements as a guide to evaluate the esthetic prognosis. The following conclusions were drawn from the study :

1) Tooth dimensions of many cases becomes a limiting factor for adequate tooth preparation in fixed Prosthodontics.
2) In general, the size of the teeth in males was found to be slightly larger than that of females.
3) The size of the incisors on the Left side was slightly larger than the size of the corresponding Incisors on the Right side, both in males and females.
4) Tooth measurements could be used as a diagnostic aid to evaluate esthetic prognosis in Fixed Prosthodontics.

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TABLE - I CLINICAL LENGTH OF MAXILLARY INCISORS (in mms)

Sex		2 |	1 |	1 |	2 |
Male	Range	6.0 - 8.0	8.0 - 11.5	7.5 - 11.5	6.0 - 8.5
	Mean	7.094	9.318	9.366	7.248
	S. D.	0.6522	0.9018	0.8909	0.6804
Female	Range	5.0 - 9.0	7.0 - 11.5	7.0 - 12.0	6.0 - 9.0
	Mean	7.15	9.24	9.27	7.25
	S. D.	0.8159	0.9380	0.9594	0.7576

TABLE - II LABIOLINGUAL WIDTH AT 2 mms FROM INCISAL EDGE (in mms)

Sex		2 |	1 |	| 1	| 2
Male	Range	2.0 - 2.5	1.8 - 3.0	1.8 - 2.6	1.9 - 2.9
	Mean	2.23	2.214	2.188	2.24
	S. D.	0.1656	0.222	0.1780	0.2089
Female	Range	1.9 - 2.5	1.7 - 2.5	1.7 - 2.5	1.9 - 2.8
	Mean	2.23	2.102	2.154	2.222
	S. D.	0.1681	0.2133	0.1908	0.2063

TABLE - III LABIOLINGUAL WIDTH AT 3.5 mms FROM INCISAL EDGE (in mms)

Sex		2 |	1 |	| 1	| 2
Male	Range	2.7 - 3.7	2.5 - 3.4	2.5 - 3.5	2.8 - 4.0
	Mean	3.124	2.992	2.998	3.196
	S. D.	0.2495	0.2686	0.2272	0.2618
Female	Range	2.7 - 3.6	2.2 - 3.6	2.2 - 3.4	2.5 - 3.6
	Mean	3.066	2.82	2.834	3.042
	S. D.	0.2308	0.2756	0.2623	0.2650

TABLE - IV LABIOLINGUAL WIDTH AT CERVICAL REGION (in mms)

Sex		2 |	1 |	| 1	| 2
Male	Range	5.2 - 7.4	5.8 - 8.2	6.0 - 8.2	5.0 - 7.6
	Mean	6.168	6.958	7.054	6.298
	S. D.	0.6720	0.5428	0.5006	0.5662
Female	Range	5.2 - 7.0	5.8 - 8.0	5.9 - 8.5	5.2 - 6.8
	Mean	6.048	6.828	6.862	6.048
	S. D.	0.4554	0.4874	0.5046	0.4219

TABLE - V RECOMMENDED TOOTH REDUCTION FOR VARIOUS TYPES OF RESTORATIONS (in mms)

Restoration	Labial Reduction	Lingual Reduction	Total Labial + Lingual Reduction	Incisal Reduction
Metal Ceramic Restoration	1.2 - 1.5	0.7 - 1.0	1.9 - 2.5	1.5 - 2.0
Porcelain Jacket Crown	1.0	1.0	2.0	1.5 - 2.0
Castable or Injectable Ceramics	1.2 - 1.5	1.2 - 1.5	2.4 - 3.0	1.5 - 2.0

Rehabilitation of a Patient with Dentinogenesis Imperfecta with Overdentures - A Case Report

Purvaja Patel *, Dipti Shah **, Darshna Shah ***

ABSTRACT

Dentinogenesis imperfecta is an autosomal Anamoly, which causes partial or complete loss of clinical crowns with healthy roots. Loss of clinical crowns poses lots of functional and psychological problems to the patient. The management of the problem consists of a proper diagnosis, a deep insight into its etiology and treatment planning. Dental treatment is particularly important since oral and dental health are critical for normal mastication, diet, speech and facial appearance and overall personality of the patient. Completion of prosthodontic treatment often has a positive effect on psychological well-being of the patient.

A case report is discussed in which a young patient with Dentinogenesis imperfecta was treated with overdentures and results were highly satisfactory.

INTRODUCTION

Dentinogenesis imperfecta is an autosomal-dominant anamoly that occurs with equal frequency in both sexes. It is classified into three types.

Type-I always associated with Osteogenesis imperfecta
Type-II never associated with Osteogenesis imperfecta
Type-III Brandywine Type

The histologic examination of dentin shows irregular tubules with large areas of uncalcified matrix. Characteristic scalloping at the dentinoenamel junction is lacking. This scalloping is thought to help mechanically lock the two hard tissues together and with its decrease the enamel fractures off easily. So dental treatment in this case should be focused on the protection of the existing teeth at an early stage with full coverage crown which is the ultimate goal.

In cases of extreme abrasion or in older patients, overdentures on vital abutments usually should be the treatment of choice. The treatment goal is preservation of the remaining teeth and restoration of functions and esthetics.

Dental implants can be explored for these patients if Osteogenesis imperfecta has been excluded from the diagnosis. If it is associated with Osteogenesis imperfecta, the inherent brittleness of the bone in this disease becomes a relative contraindication to dental implant treatment.

This case report describes a treatment solution to the problems faced by Dentinogenesis Imperfecta.

CASE REPORT

Case History :

A 21 year old male hindu patient came to Government Dental College and Hospital, Ahmedabad with chief complain of occasional chipping of teeth while eating, hampered looks and speech (Fig : 1 & 2).

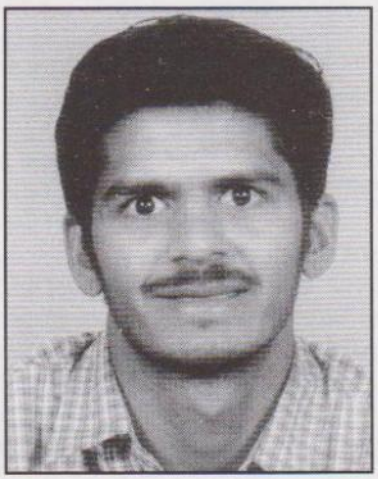

Fig. 1 : Frontal view of the patient.

Fig. 2 : Profile view of the patient.

* *Postgraduate Student, ** Professor and Head, *** Assistant Professor,* Dept. of Prosthodontics, Governmental Dental College and Hospital, Ahmedabad.

Extraoral Examination :

Patient was well built, well nourished with normal gait and short stature. He had no signs of abnormalities of eyes, ear, nose, hair and nails. He had a symmetrical facial pattern with prominent supraorbital margins, hypoplastic maxilla, slightly prognathic mandible and incompetent lips. Temporomandibular joint examination revealed hypermobility and clicking on both sides.

Intraoral Examination :

Intraoral examination revealed presence of all teeth except lower right and upper first molars and lower left third molars. Upper right second molar was found infected and mobile. All teeth were malformed showing complete absence of enamel and were attrited upto cementoenamel junction. Teeth appeared shiny, opalescent and yellowish orange and there was no signs of caries or periodontal disease. Soft tissue examination showed no abnormal findings (Fig. : 3, 4).

Fig. 3 : Intraoral view of upper arch showing complete loss of clinical crowns.

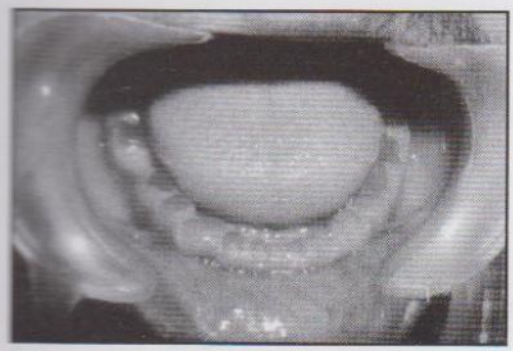

Fig. 4 : Intraoral view of lower arch.

Radiographic Examination :

OPG (Fig. 5) and full mouth IOPA showed severe attrition of all teeth with partial obliteration of the pulp chambers. Lower left second molar was impacted. PA chest, AP hands and legs and PA skull showed no abnormal findings.

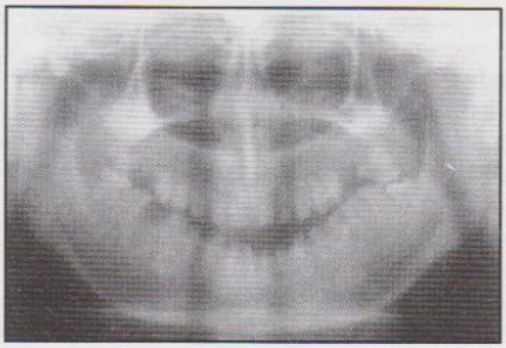

Fig. 5 : OPG showing severe attrition of all teeth.

Diagnosis :

Thus from the clinical and radiographic findings, diagnosis of Dentinogenesis imperfecta (Type-II) was made and Osteogenesis imperfecta was ruled out from the differential diagnosis. Histology findings confirmed the diagnosis.

Treatment Procedure :

Based on the above findings it was planned to construct overdentures for this patient as all the teeth were attrited upto cementoenamel junction. Before proceeding for the overdenture construction, infected and mobile upper right second molar was extracted and specimens were sent for histological examination. At this stage patient was motivated for proper home oral hygiene care. Fluoridated toothpaste and mouthwash was advised. This is an important step to accustom the patient for the maintenance of oral hygiene as overdentures would tend to isolate supporting teeth covered by the dentures from normal salivary contact, thus lessening the protective and remineralizing capacity of saliva.

After proper socket healing, the procedure of overdenture construction was implemented. Preliminary impressions of upper and lower arches were taken with the help of medium fusing impression compound. Primary casts were obtained. All undercut areas were blocked. Wax spacer is placed on the primary casts before constructing custom tray of self-cure acrylic resin. To develop an effective peripheral seal, border moulding was done with the help of low fusing green stick compound. Final impressions were made with zinc-oxide eugenol paste (Fig : 6 & 7). Recording bases were made on the final casts (Fig : 8 & 9) over which wax occlusion rims are made to record jaw relation. Face bow was used to orient patient's maxilla on semiadjustable articulator and lower cast was mounted with the help of jaw relation record.

As it occurs in the case of Dentinogenesis imperfecta, in this patient also, there was insufficient inter arch space for the proper arrangement of teeth.

Teeth of proper size, shape and shade were selected to fulfill aesthetic and functional requirements. As the vertical dimension is very less, denture teeth were reduced greatly occluso-cervically to accommodate in available space to maintain vertical dimension of occlusion. Normal class-I relationship was given with minimum overbite and overjet. Final trial was approved. Dentures were invested, flasked and cured in heat cure acrylic resin (Leucitone). Dentures were properly finished and polished and delivered to the patient (Fig : 10 & 11). Patient was kept on regular follow up. Patient's chewing efficiency was greatly improved and he was highly satisfied with the improvement in his appearance and personality (Fig : 12 & 13).

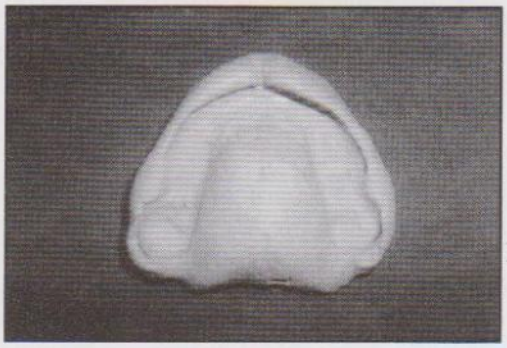

Fig. 6 : Final impression of upper arch.

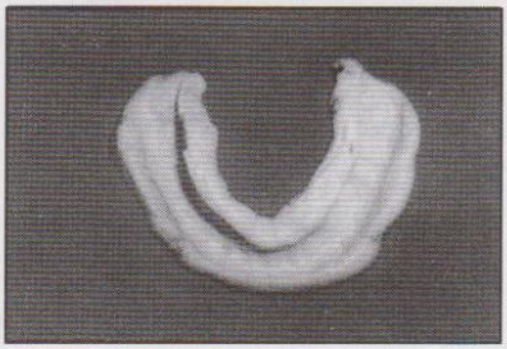

Fig. 7 : Final impression of lower arch.

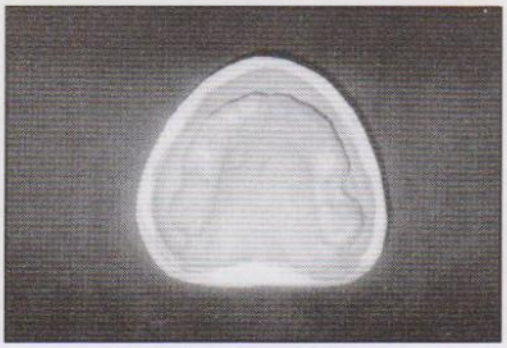

Fig. 8 : Final cast of upper arch.

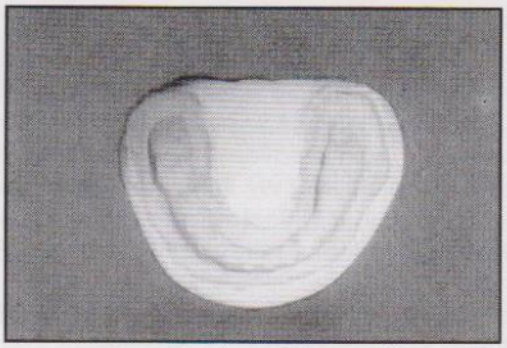

Fig. 9 : Final cast of lower arch.

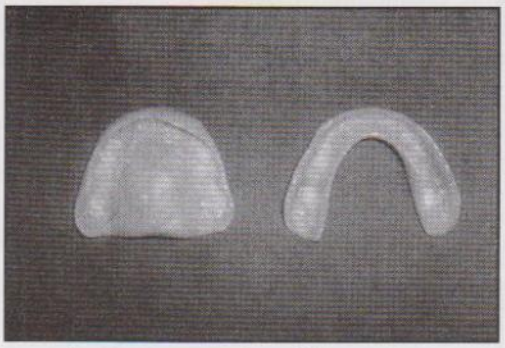

Fig. 10 : Tissue surface of the prosthesis.

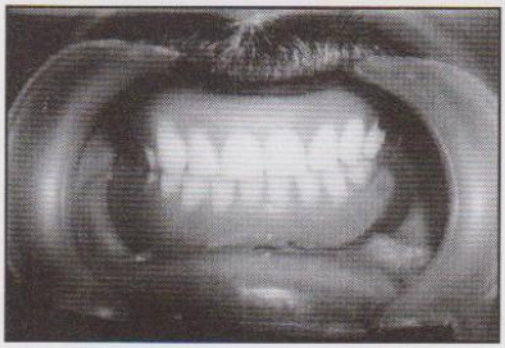

Fig. 11 : Intraoral view of prosthesis in place.

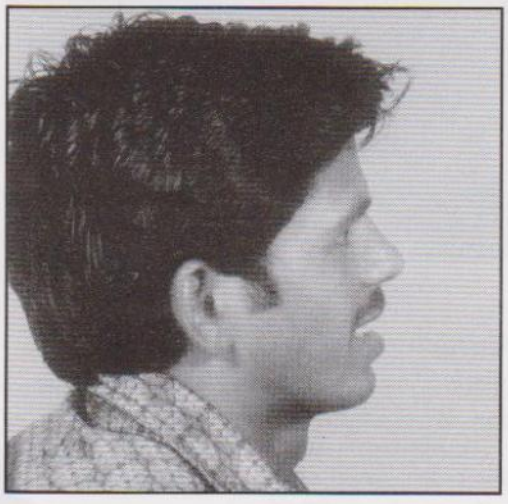

Fig. 12 : Profile view of patient with prosthesis.

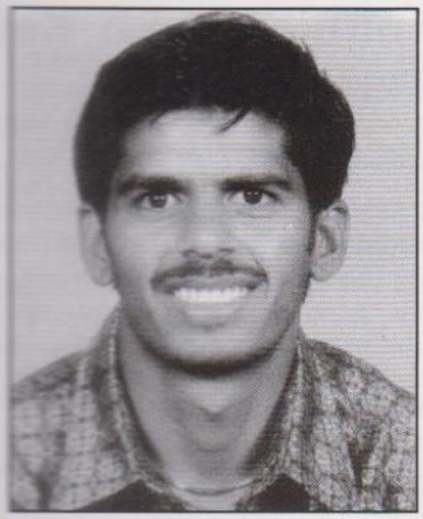

Fig. 13 : Frontal view of patient with prosthesis.

Discussion :

This clinical report illustrates solutionto the problems encountered when restoring patient with a congential abnormality such as Dentinogenesis imperfecta. This patient had full complement of teeth without any associated pathology that necessitates preservation of all the teeth. This can be done best by the overdenture as it maintains proprioception, preserve bone, improve stability and support, provide superior restoration of the vital oral functions of speech, swallowing and chewing with improved comforts and increase sense of security.

Summary and Conclusion :

Unrehabilitated Dentinogenesis imperfecta can make a person appear older even in a very young age. Prosthodontic rehabilitation of this kind greatly improves functions, aesthetics and proves to be great psychological boost to the patient's well-being.

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Abstract

THE OVATE PONTIC DESIGN : A HISTOLOGIC OBSERVATION IN HUMANS

The tissue surface of ovate pontic was designed to create a soft tissue concavity in the alveolar ridge mucosa. This study investigated the clinical & histologic characteristics of the alveolar mucosa in prostheses with ovate pontics. Twelve individual with either implant or tooth supported FPDs with pontic sites in the premolar or molar area were included in this study. All pontics had an ovate design and were adapted to the under lying mucosa with compression - free high contact.

Patients were instructed to use superfloss daily to clean the infrapontic area. After 1 year, soft - tissue biopsy specimens were obtained from the mucosa in contact with the pontic (test) and from adjacent uncovered mucosal area (control). The thickness of the epithelium and keratin layer and the height of the connective tissue papillae were studied histologically. The relative proportions occupied by collagen, fibroblasts, vascular structure, inflammatory cells and residual tissues were calculated. Three test sites (pontics) showed clinical signs of mild inflammation but other test and control sites were healthy. A thinner keratin layer was observed in pontic sites (8 um vs 22 um) & larger tissue fractions of inflammatory cells were found in pontic sites. Mucosal health could be maintained with ovate pontic design, under regular hygiene maintenance. Ovate pontic may be viable alternative to other pontic designs.

- Zitzmann NU Marinello CP, Berglundh T.
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