

ESTHETIC EXPRESSIONS



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The Journal of
The Indian Academy of Aesthetic & Cosmetic Dentistry

Volume XIV - July 2017

ISSN 09748040



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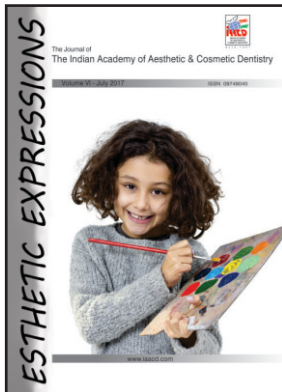
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ESTHETIC EXPRESSIONS

Learning and unlearning, discovering and rediscovering, the fact and science of dentistry is passion for all of us. When finesse is our goal, thrive for excellence persists.

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Editor
Dr. Segin Chandran K.R

Price: ₹ 250/- only
For Private Circulation only

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Esthetic Expression is an official publication of IAACD.
Opinions expressed in the articles are those of the authors
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Designed by : Dr. Segin Chandran K.R.
Printed by : Hasti Digital Prints, Mumbai.
Email : hastidigitalprints@gmail.com
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**EDITOR'S DESK**

Dear Colleagues,

The past decade has been a remarkable time for Cosmetic Dentistry. The profession has advanced on several fronts, including exciting new materials and technologies. Cosmetic Dentistry at large is heading towards a digital revolution, making it speedy yet predictable and easy.

In India, IAACD ignited the spark of aesthetic and cosmetic dentistry in 1991, which spread across the length and breadth of this country. In its 25 years of successful existence, creating stronger bonds between all its members, the IAACD has ushered loads of enthusiasm amongst younger dentists to thrive for excellence in their clinical practice.

As we are in the midst of year 2017 and heading towards our 26th annual conference in Goa, the entire "Team IAACD" is geared up to make this year the most happening for each IAACD member.

TEAM - Together Everyone Achieves More

Finesse in any project comes with dedication and hard work. This journal is not an exception. Under the eminent leadership of Dr. V.S. Mohan, the editorial team has worked hard to bring you this publication. We, at IAACD hope it gives you the pleasure of reading and contributes to the enrichment in knowledge.

A special thanks goes out to all our previous editors for giving me courage to take on this task.

Dr. Segin Chandran K R
Editor
Esthetic Expressions



GREETINGS



FROM THE SECRETARY'S DESK

Dear Colleagues

After a grand Silver Jubilee celebration, "Esthetic Expressions"- Official journal of IAACD is getting published, I wish all my colleagues a vibrant and joyful year ahead.

I Hope this journal provide highest standard and quality of contents in its articles as it always used to be.

As in this world of digital era, we are flooded by information in fingertips. Still the need of a scientific literature portraying different aspects of cosmetic and aesthetic dentistry is no less.

IAACD through this journal gives opportunity for members to publish their studies, case studies, case reports, articles to gain experience and to share their talents with fellow colleagues.

I wish the entire organising team of forthcoming conference in Goa "Aesthetic finesse" a grand Success.

I thank all our previous office bearers for laying this track to run this grand wagon to newer destinations .

Jai Hind

Dr. Pratim Ambekar
Secretary



FROM THE PRESIDENT'S DESK



Embrace the change

Three common phrases come to mind when I think about change: "Change is inevitable", "Change is the only constant", and "Times change".

These adages became common because they are true. While change is inevitable, it is also the driving factor in the dental market-it has been positive and has been the catalyst for new procedures, products, and services that have impacted patient care and that will provide major shifts in how and what patients expect. The dental student graduating today has dramatically different views of and expectations about technology than the dental student of 10, 20, or 30 years ago.

This new perspective will surely have an impact on procedures and technology adoption in the practice. The patient and provider of today and tomorrow place more value on the in-office experience than they have in the past because the patient is more educated than ever before.

These changing paradigm shifts are becoming compulsive to keep a clinical practitioner upto date with the recent trends and update themselves . Technological advancements in the dentistry have made it possible which was thought impossible and unpredictable few years back. The emotional dentistry is becoming a mainstream dentistry which involves active participation of patient in treatment planning .

Making use of softwares, digital photography for treatment planning making it easier for patient to understand the transformation he or she will be undergoing. Having said this the importance of improving clinical skills has no alternative as yet . The clinician has to refine their skills in order to perform better while rendering treatments to the patients. Only having set of gadgets and costly equipment might impress the patient at first glance but the real testimony will come after he / she experiences the professionalism blended with emotions in rendering the perfect treatments .

Refusal to embrace and adapt to the changing environment and expectations of the patients will certainly lead to embarrassment in the clinical practice and also in day today life .

IAACD has always played pioneering role for last 26 years in this regards; helping clinicians to be better clinician than yesterday and will continue to be so of years to come .

Lets continue the process of unlearning and relearning ourselves to evolve as better Human being and of course a Better Aesthetic Dentist ever .

Dr. Adwait Aphale
President



IAACD ACCREDITATION



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The Indian Academy of Aesthetic & Cosmetic Dentistry offers its Life Members an opportunity to become accredited members of the Academy. The accreditation process provides an excellent opportunity for members to enhance their clinical skills as well as their knowledge with respect to Restorative & Aesthetic Dentistry.

Accreditation Criteria & Process

Life Membership to the IAACD is a primary requirement to become an Accredited Member. The validity period of the membership is a minimum of 13 months to allow the candidate to start the Accreditation process. Further, the candidate should have attended at least two national level meets in the past four years. Such a candidate, on completion of the above-mentioned criteria has to pay the Accreditation fee (Rs. 2000/- for Part 1 & Rs. 3000/- for Part 2) and can appear for the Accreditation process.

The accreditation process consists of two parts.

Part 1 of the Accreditation Process:

The candidate must submit before/after photographs of five aesthetic clinical cases - preferably in a Power Point (.pptx) format along with the application to appear for the Part I examination.

The Part I exam is essentially a multiple choice written examination where the candidate has to answer 50 MCQs pertaining to various aspects of Aesthetic & Restorative Dentistry. The time allotted for this is 1 hour. A minimum of 70% marks (35/50) must be obtained to clear the Part I process.

Part 2 of the Accreditation Process

Upon clearing the first part, the candidate is eligible to appear for the Final (Part 2) exam during the subsequent IAACD conference (registration to the conference is compulsory). The Part II Exam consists of a Bench Test, Aesthetic Case Presentation & the Grand Viva.

Bench test: Candidates have to do a direct composite veneer buildup on a prepared natural

central Incisor as well as an esthetic buildup for a large Class 1 cavity prepared on a natural molar. The total time allotted for this is 1.5 hrs. Participants have to bring their working model with neatly mounted (anatomically with a clear gingival profile) 3 extracted anterior teeth (preferably from the same patient) - two upper centrals & one lateral incisor in contact with each other. The molar (upper or lower) should be mounted on the same model too. Please make a preparation for a composite veneer on the middle central incisor & a large Class 1 cavity (involving at least 3/4th of the occlusal surface) on the molar beforehand.

The veneer and the posterior restoration will be judged on various parameters such as the overall form & anatomy, marginal adaptation, contours, line angles, surface texture, internal characterizations, color match, finish & polish etc.

Participants will be provided an air-rotor connection and a micro-motor and light cure unit (if possible, please bring your own micro-motors & light cure units). Participants are required to bring their own air-rotor as well as a micro-motor contra-angle handpiece. Participants are also required to bring all the composite material that they will be using along with all necessary instruments, burs and finishing/polishing kits.

Grand Viva: During the Grand Viva, the candidate will have to present an Anterior Aesthetic case- properly documented from the start to finish. The case presentation will have to be made on a PowerPoint or a Keynote presentation (either on a Laptop or on a screen if logistics permit it). The presentation will be only for 5mins and the candidate will be asked questions on the case in addition to other aspects of Aesthetic & Restorative Dentistry.

Repeat Exam: In case a candidate is unable to clear the exam, there is a provision for a repeat exam. There is no fee for 1st attempt for Part 1 exam if the candidate appears for it at the next conference. Full fee for repeat of Part 2 Bench test. There is no fee for repeat of the Viva.

The candidate, upon clearing the final accreditation exam, will receive the IAACD Accreditation Plaque & Certificate during a special ceremony at the subsequent Annual IAACD Conference and will join a niche group of Accredited Members of the Indian Academy of Aesthetic & Cosmetic Dentistry.



INSIGHT

Membership to the IAACD

The IAACD now offers dentists registered with the Dental Council of India to become life members with a one-time payment of Rs 5,000/- only. The details of the life membership are presented below.

Criteria for application as a Life Member as per the constitution of the IAACD

- a. Any person interested in the Art and Science of Aesthetic & Cosmetic Dentistry and interested in furthering the Goals of the IAACD.
- b. Any dentist on payment of the prescribed entrance and life membership fees as determined by the Board and as his/her application being approved by the board may be permitted to become a life member.
- c. The current Life Member fees has been set as Rs.5,000/- subject to changes on approval of the General Body
- d. The Life Membership would be valid for 15 years
- e. All life Members would be entitled to receive
 - i A Certificate from the Academy with a validity period mentioned
 - ii A discount on all IAACD meetings and conferences
 - iii The IAACD Journal

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Eventful Innings 2016-2017

25th Silver Jubilee Celebrations — Beyond Billion Smiles

This historic event took place in Nehru centre, Worli, Mumbai from 12-14th August 2016. It was a massive event organised by the organising team under the leadership of Dr. Sandesh Mayekar, the founder president of IAACD as organising chairman. This event witnessed an attendance of more than 850 delegates, all came together to learn from masters of aesthetic dentistry across the world. The whole idea of conducting the same in Nehru Centre was to accommodate maximum number of participants with less cost trying to make the presence of Cosmetic Dentistry felt across the country.



The scientific deliberations were conducted in a panel discussion manner which accommodated maximum number of clinicians across the world. The hands on course conducted by the world renowned faculty, Dr. Galip Gurel (Turkey) on ceramic laminates had maximum participation, which closed at 150 numbers. The scientific sessions by international faculties Dr. George Freedman (Canada) on “The latest advances in material science”, Dr. Henriette Lerner (Germany) on “3D micro aesthetics”, Dr. Jesus Ochoa and Dr. Daniel Ochoa (Peru) on “360° Treatment Planning in Esthetic Dentistry”, Dr. Sushil Koirala (Nepal) on “Smile Make-up”, all raised the standards of knowledge sharing to its peak.

National speakers contributed heavily by enlightening the participants, through presentations, symposia and discussions related to various aspects of cosmetic dentistry.



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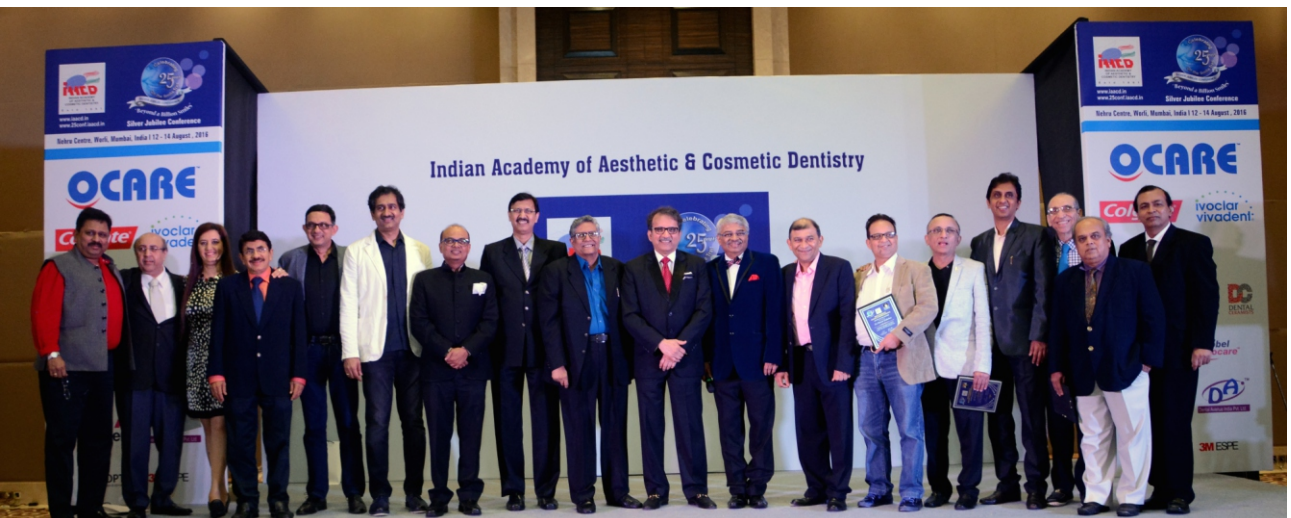
Inaugural ceremony of the conference showed the acceptance of cosmetic dentistry by the dental fraternity at large. Dr. **Dibyendu Mazumder**, the



president of Dental Council of India inaugurated the event in the presence of luminary dignitaries like Dr. Bali (Past DCI President), Dr. Jayaker Shetty (Vice president DCI), **Dr. Dileep Mhaisekar** (Vice-Chancellor, MUHS) and most of dental council members. The dias was welcomed by Dr. Pankaj Maheshwari and thanked by Dr. Pratim Ambekar.

During the inaugural ceremony Dr. Mazumder mentioned the need to start certification and diploma courses in cosmetic dentistry as part of dental curriculum. The same was endorsed by Dr. Dileep Mhaisekar (VC-MUHS).

Founder members and board of directors IAACD raised this event to be a life time memorable one by honouring the previous office bearers.





The curtains were down with a gala dinner at St. Regis hotel as a star studded enjoyment unlimited.



1st Zonal Convention of the IAACD – West Zone, Kolhapur – 26th March 2017

1st zonal convention at Kolhapur. First of its kind event in the Kolhapur inaugurated by Dr. Vikas Patil president IDA Maharashtra State Branch, Dr. Prasad Joshi, Dr. Shail Jaggi and Mr. Mohit Suryavanshi (Dental Ceramist) did splendid job of elaborating recent techniques of inlay, onlay, layering of anterior direct composite & laboratory procedure for inlay and onlay respectively. It was attended by 65 delegates and among them 55 delegates did the hands-on.



Zonal Conventions

IAACD has been the face of cosmetic dentistry in India for the last 26 years. Continuing with the glorious tradition of spreading the knowledge and science of esthetic dentistry, IAACD has initiated a concept of Zonal Conventions to take the science of smile to everyone pan India.



2nd Zonal Convention of the IAACD – North Zone 21st May, 2017

Esthetic Extravaganza, the 1st such event in North India was organised in Chandigarh by IAACD in





association with IDA Mohali branch. A well-attended programme by almost 150 delegates, various lectures on simplifying anterior and posterior composites along with live demo and hands on were taken by Dr. Nikhil Bahuguna and Dr. Deepak Mehta. Adding shine to the event, Dr. Rumpa Wig highlighted the science of various aspects of tooth brightening and whitening which added a glitter to the event.

A successfully concluded event had everyone praising the efforts of IAACD to reach out to the masses and take aesthetic dentistry to all in the dental fraternity.

3rd Zonal Convention of the IAACD – East Zone

The Zonal convention is scheduled in the month September 2017 at Gauhati, Assam.

4th Zonal Convention of the IAACD – South Zone

The 4th zonal convention is scheduled in the month on December 2017 at Kanyakumari, Tamilnadu.

Study Circle of IAACD

IAACD study circle in Thiruvananthapuram, conducted many events this year under the guidance of Dr Segin Chandran, accredited member and member board of Directors , gathering members of IAACD in Trivandrum to share new techniques and protocols for upgradation of skills and practice enhancement.





ARTICLE - 1

Smylist Method and Smylist Aesthetic Design Software

Dr. Mária Csillag

Smylist Academy, Budapest, Hungary.

Smylist Method is a complex, revolutionary technique providing perfect pre-planning and realisation of the dental work digitally for both reconstructive or aesthetic works. Selecting the most appropriate smile and proper function individually for the patient's face and individual anatomy has become easier with Smylist Facial Diagnostic and Smylist Midline Concept using Smylist Aesthetic Software as a visualisation technique. The Smylist Method based on clear rules is considering the face, the given individual midline, the smile and the muscles in the same time and makes consideration of the personality as morpho psychology model creating more predictable and reliable outcome of aesthetic and function ever. (Fig. 1)

The Smylist digital workflow allows the smile to be designed in 2-dimensional way very quickly and easily by Smylist Software in the patient's portrait photo and connect to CAD-CAM system by Smylist Lab software. The CAD-CAM device can use the 3-dimensional Smylist tooth toolkit as 'stl' file format produced by Smylist software and can create virtual wax up, mock up and the final dental work on the scanned model with the help of the pictures of designed smile in the patient face using the Smylist midline concept and digital face bow. (Fig. 2-6)

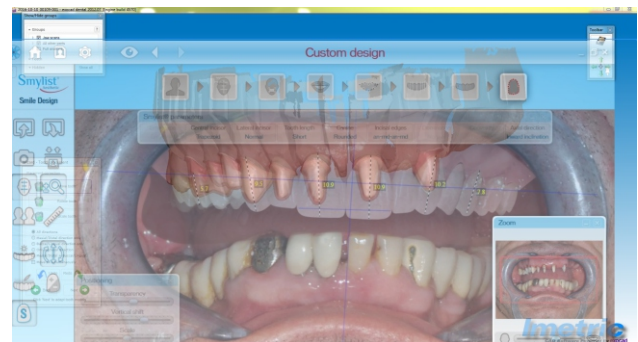


Fig. 2

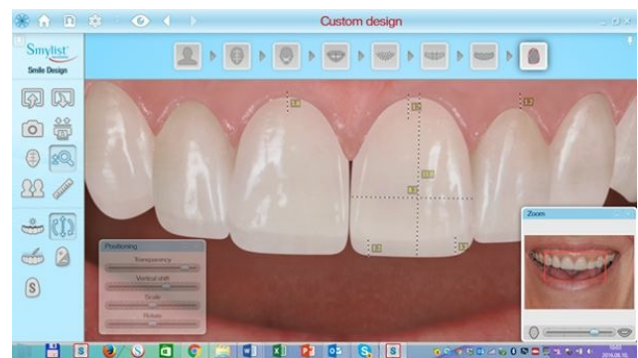


Fig. 3



Fig. 1



Fig. 4

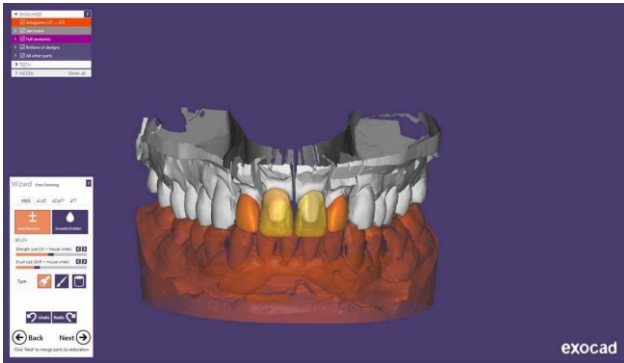


Fig. 5

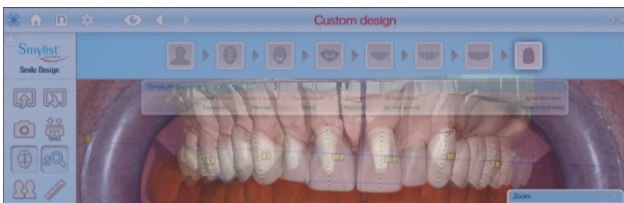


Fig. 6

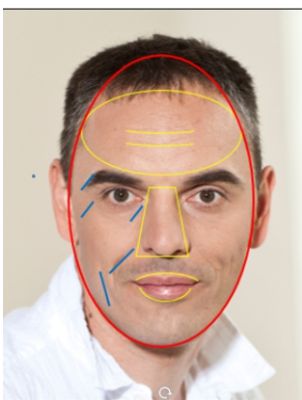


Fig. 7

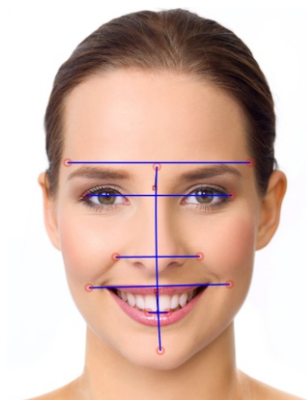


Fig. 8

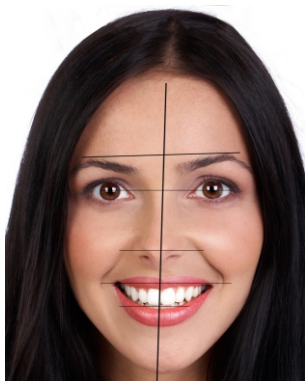


Fig. 9



Fig. 10



Fig. 11



Fig. 12

The step by step Smylist Method concentrates on three main part: aesthetic, function and muscles.

The process starts with Geometrical Face Analysis and setting the individual Midline. Using Smylist 8 aesthetic parameters give us a chance to determine the aesthetic outcome in a very precise way in relation to the patient's face anatomy, character and personality. (Fig. 7)

The method can be used for defining the aesthetic part of any dental work is the W.A.C.P. technique (White Aesthetic Conscious Preplanning). According to this technique harmony can be achieved by creating parallelism between geometrical elements of the face and the 8 parameters describing the smile.

This technique might be the most effective technique which can help you to define the smile fitting to the patient's character and face the most.

After choosing the right parameters from more than 40.000 combinations, smile i.e. teeth must be positioned individually to the patient's anatomy. Well known rule is that midline, bipupillar line or inter commissural line can be used for setting the inter incisal line, incisal line and occlusal plane setting. According to Smylist method midline must be described individually using Glabella, tip of the nose, Philtrum and Pogonion points. Smylist method accepts not only the straight but slope or curved midline, too.

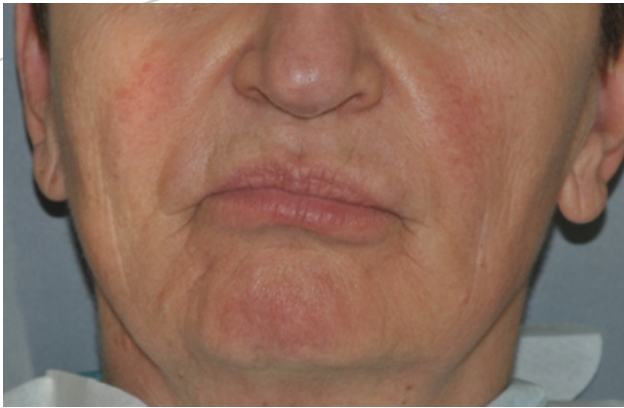


Fig. 13



Fig. 17

Referring to Smylist Midline Concept occlusal plane and the mandible right position can be set digitally by the Smylist software considering the overall individual midline and coordination system. Occlusal plane can be set by using digital face bow. (8-11)

The main aim of Smylist Preplanning method is to find the correct mandible position by proper maxillary teeth position based on face analysis and W.A.C.P technique and Smylist Midline Concept.

Positioning the maxillary teeth in a proper way following the general smile design rules and Smylist midline Concept mandibular teeth can be set in the relation of maxillary teeth digitally using Smylist design software and CAD-CAM. Of course, TMJ measuring data helps the final positioning.

The third main part of the Smylist Method is the face muscle function and proper aging of the face. According to Smylist Method the muscle on the face i.e. mimic muscles and chewing muscle could move in the correct way only if the mandible is in its perfect position. If the mandible position has been changed because of wrong maxillary teeth position, wrong positioned bridge, incorrect protrusion of the front teeth, incorrect length of the canine, incorrect dental work or wrong orthodontic treatment, the muscle on the face cannot move with normotension but hyper- or hypotension only. If the mimic muscles move in an abnormal way it can cause hypo- or hypertrophied muscles, therefore the face (for example cheekbone contour, tip of the mandible, upper lip level, etc.) changes dramatically, make deeper wrinkles and unbecoming effect on the face: flat zygomatic part, stronger tip of the mandible, hypertrophied masseter, deep nasolabial wrinkles, deep Marionette folder and mental folder, etc. (12,13)



Fig. 14

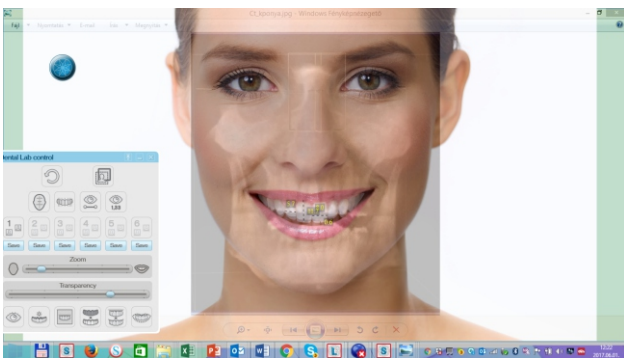


Fig. 15

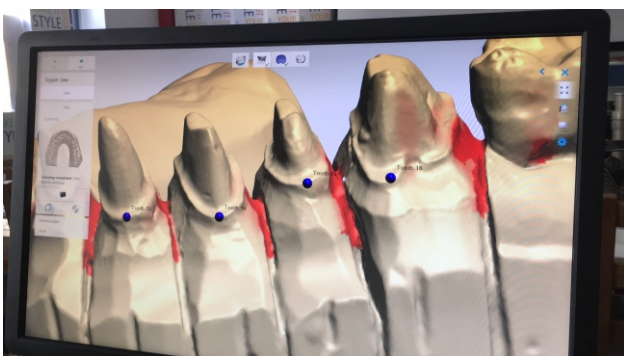


Fig. 16

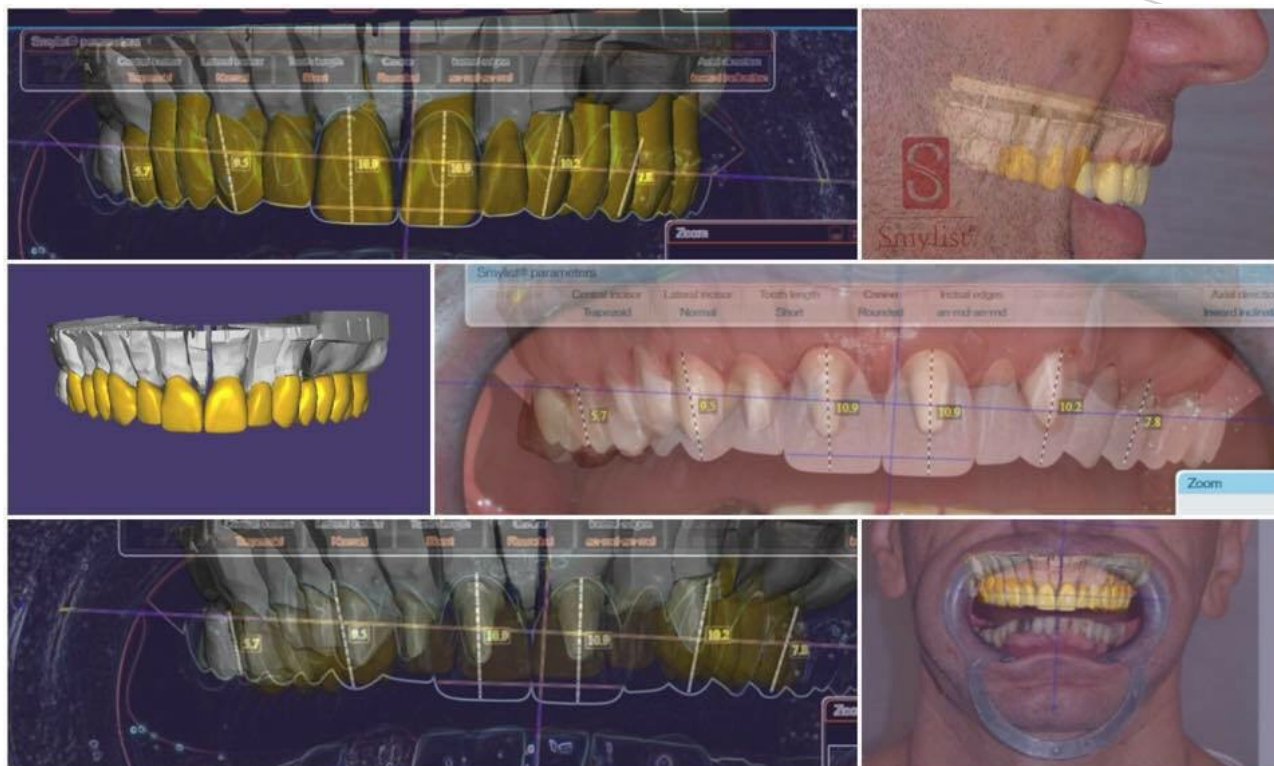


Fig. 18

Knowing Smylist Method the dentist can see the complex, dental work in relation to the patient individual regarding the whole face, the correct position of the mandible and the muscle normofunction which leads finally to nice aesthetic, great function and proper aging of the face.

All the details can be set using Smylist method and software designing, all the parameters can be defined and all the measurements can be performed by Smylist Software visualization before the treatment really starts. It is advisable to finalise the work with CAD-CAM device by using 3 dimensional Smylist teeth toolkit. (14-18)

Using Smylist system will lead to more successful cases being reported in the future and minimalised aesthetic and TMJ problems post-dental work.

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INTRODUCING DENTAL CARE SOLUTIONS WITH SMILE



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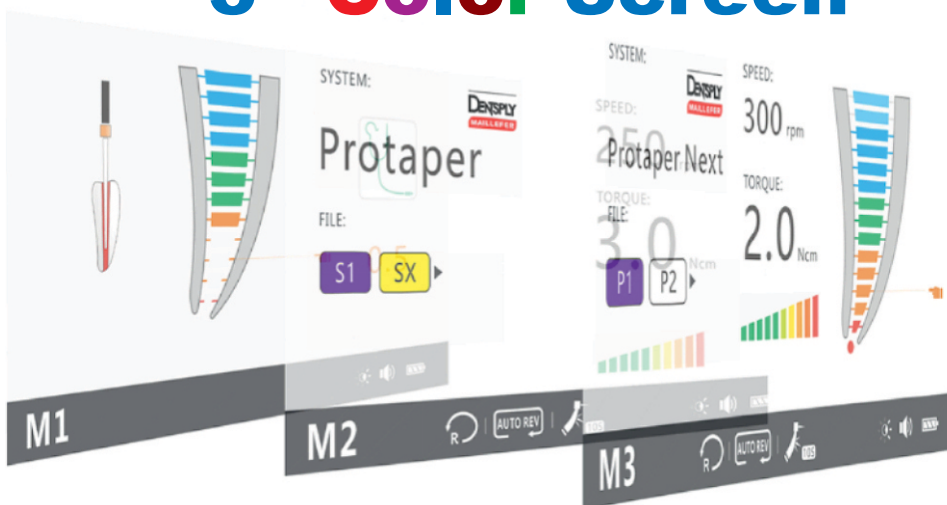
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- M1 : Apex Locator**
- M2 : Endo Motor**
- M3 : Apex Locator + Endo Motor Simultaneously**



ARTICLE - 2

Reconstruct...Restore...Relish A Blend of BioFunction with BioEsthetics

Dr. Stephan Lampl Founder, Edelweiss Dentistry.

Dr. Deepak Mehta Member Board of Directors IAACD (Endodontist).

Dr. Nikhil Bahuguna Member Board of Directors IAACD (Endodontist).

Dr. Rohit Shetty KLE Institute of Dental Sciences (Prosthodontist).

Introduction

Restoration of an endodontically treated tooth always presents a challenge to the clinician. The tooth to be restored has lost out on majority of tooth structure as a part of the endodontic treatment. Depending on the degree of shaping with greater taper instruments, that tooth has lost a significant amount of dentin due to the endodontic access. When assessing an endodontically treated tooth for restorative treatment, the amount of remaining tooth structure is the most important variable apart from the periodontal status of the tooth, and the prognosis of the endodontic treatment itself. The tooth to be restored should exhibit a three dimensional seal, and also exhibit no sensitivity to percussion or palpation, no exudate or fistula, no apical sensitivity, and absence of active inflammation.

The decision to use a post when restoring an endodontically treated tooth should be based on amount of remaining tooth structure after the removal of all caries and old restorations. If the coronal tooth structure is primarily intact, and the tooth has favorable occlusion, a bonded composite restoration without a post is indicated. When significant amount of tooth structure is missing due to caries and/or fracture or the presence of an existing old restoration, there may be a need to use a post to provide retention for the the coronal restoration.

7. While metal posts (custom cast and prefabricated) have been the standard for many years, nonmetallic posts have been introduced to address the need for a more esthetic restoration in the anterior region. In the last several years there have been significant advances in the development of bonded fiber-reinforced esthetic posts to reinforce weakened endodontically treated teeth. 8-12 These fiber posts are improvements on other types of esthetic posts used over the recent past. The presence of a metal post can cause gray shadowing

of the soft tissues adjacent to the root surface, which will adversely affect the esthetic results required of bonded resin and ceramic restorations in the anterior region.

Fiber-reinforced resin posts are not as rigid as metal or ceramic posts. Some of the focus on fiber-reinforced posts has been on their ability to flex like the tooth. When a fiber-reinforced resin post is bonded within the root canal it dissipates functional and parafunctional forces, along the long axis reducing the stress on the root.¹² When catastrophic force is placed on the crown of the tooth, the post or crown will fracture instead of the post transmitting the energy of force down the root, creating a vertical root fracture.

Although wide variety of post-core restoration technologies and materials have been introduced into the dental market, there is no consensus on the most appropriate treatment choice for post core systems. Prefabricated posts have good biomechanical and physical properties; however they cannot be customized for the optimal adaptation to the prepared post space. On the other hand; using composite resins for core material may have a higher failure rate because of the weak bonding between the prefabricated post and composite core.

To overcome all these issues when restoring a badly broken crown endodontically treated tooth, Edelweiss Dentistry presents a unique single piece high strength customizable Composite Post & Core.

The Edelweiss Post & Core system is a simple and a quick solution for all your post-endodontic needs. It is a novel one piece composite post & core which can be customized as per the needs of the tooth with a true monoblock effect. It is an Ideal choice for rebuilding and strengthening broken down teeth.

It offers several advantages over other post systems available in the market:



- prefabricated post & core
- translucent post and opaque core for adequate apical polymerisation
- time and cost efficient
- one session treatment
- reduced treatment time
- novel monoblock single piece
- monoblock avoids wedging effect
- biocompatible
- flexural strength 20 GPa close to dentin (15 - 20 GPa)
- unmatched radiographic visibility
- cuts like dentin
- rough surface from buildup for better retention of the clinical crown
- easy to customize at the chairside

The Edelweiss post & core is easy to work with. Preparation of the canal, surface preparation of the post, adaptation of the post to the root canal, adhesive bonding of the post & core complex and cementation involves a minimal number of steps to achieve the greatest clinical success. The post selected to restore the tooth can be customized to match the diameter of the root canal.

Case Presentation

A 35-year-old female patient reported with a chief complaint of moderate discoloration of her upper front teeth. The patient also feared that she might lose all her upper front teeth in due course of time. The patient wanted to improve her smile and desired for a functional and esthetic makeover. The patient was extremely disappointed with her earlier dental experiences, and she insisted on rehabilitating her maxillary arch in a quick time. The Edelweiss Post and Core along with the Edelweiss Veneers and Occlusion VD's gave us this opportunity to meet patient expectations to provide her a better quality of life in the future.

A thorough clinical examination and OPG revealed leaking old composite restorations in her maxillary anterior teeth with reasonable endodontic treatment (Figure 1a,1b). The treatment planned was to rehabilitate her badly broken down weakened tooth with Edelweiss Post & Core, followed by providing her esthetics using Edelweiss Veneers and Function using Occlusion VD's. Because of the prefabricated nature of all these components along with the ease of

use, we decided to offer this to the patient in one visit only. This was facilitated by the diagnostic wax up which was fabricated in the initial appointment.

After establishing anesthesia, all old composite restorations and secondary caries were removed using a diamond from upper right maxillary second molar to left first molar (Figure 2). The remaining amount of sound tooth substance was then evaluated to plan for post and core or only core restorations. Except for both the maxillary canines and tooth number 16 and 17, all were badly broken down requiring Edelweiss post and core foundation restorations. The tooth number 11,12 and 21 had old prefabricated passive metal posts (Figure 2) responsible for discoloration of teeth due to corrosion. These metal posts were retrieved using a finishing diamond, ultrasonic tips and straight forceps.(Figure 3). The post space was then smoothed and modified using Edelweiss post drill (Figure 4). A check IOPA X-ray was taken to verify the apical seal and the post space (Figure 5). A corresponding Edelweiss post and core (Upper small) was placed in the prepared canal space to verify the fit (Figure 6).



Figure 1a



Figure 1b

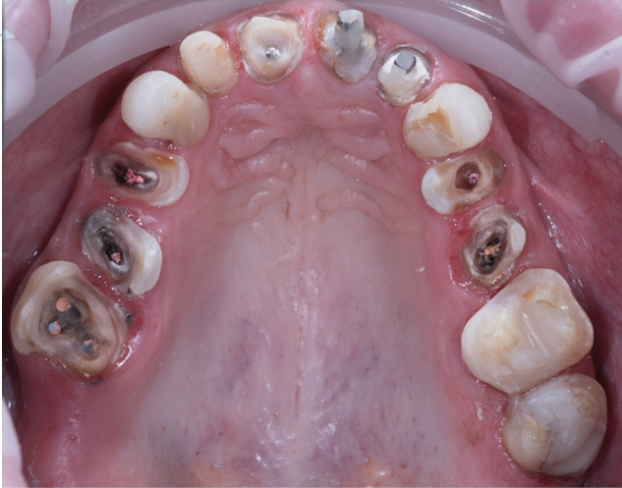


Figure 2

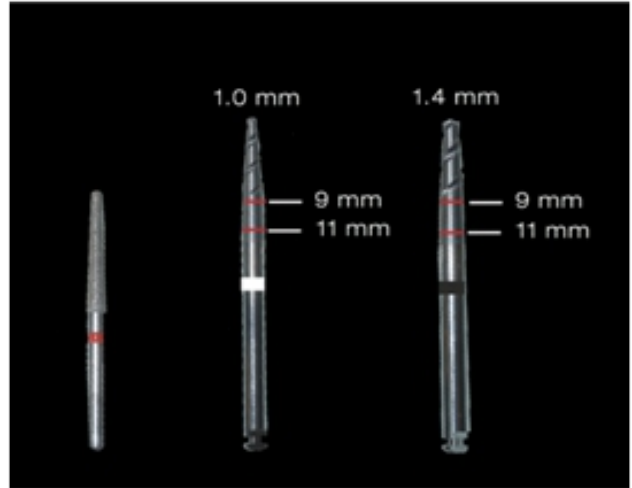


Figure 4a



Figure 3



Figure 5

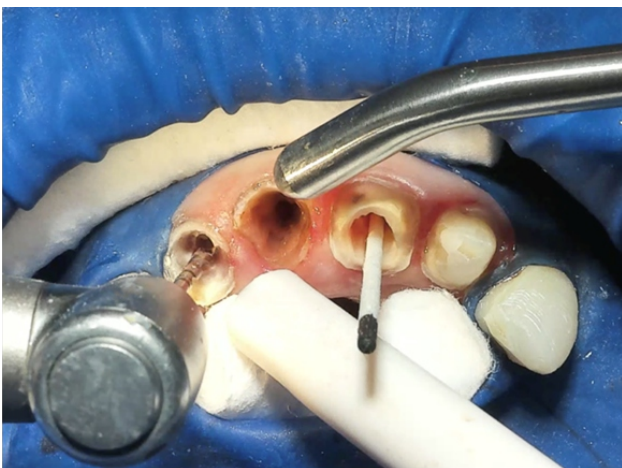


Figure 4



Figure 6



Figure 7



Figure 9

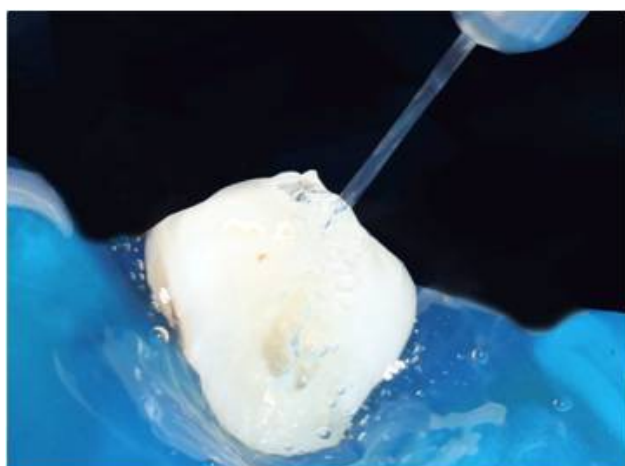


Figure 7a

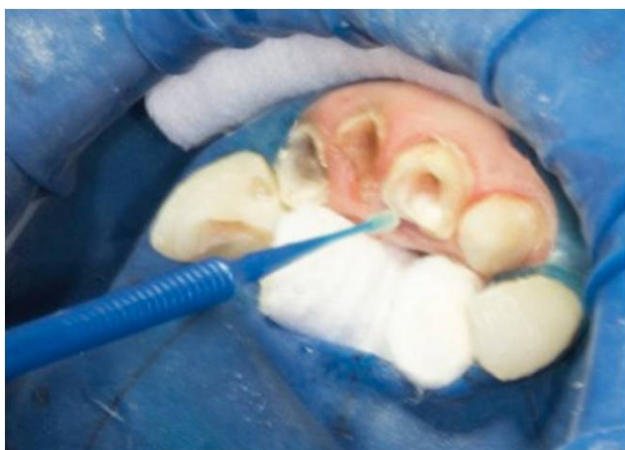


Figure 8

The adhesive protocol for post and core bonding was strictly followed. The canal space & the remaining coronal dentin was etched for 20 seconds using 35% phosphoric. The canal must be thoroughly washed, dried with air aspiration and endodontic paper points before the adhesive technique and cementation (Figure 7). Two coats of universal adhesive is applied using post brush into the canal space and remaining coronal dentin (Figure 8), followed by curing for 20 seconds using Valo. At the same time the Edelweiss post & core surface is treated using veneer bond for 20 seconds and cured.(Figure 9). The post and core was cemented using a total-etch adhesive technique with a dual-cure composite resin cement (Figure 10). The upper four incisors after rehabilitating with Edelweiss post and core restoration (Figure 11). Similarly, tooth number 14, 15, 24, 25 & 26 were restored using Edelweiss post & core (Figure 12). Post treatment IOPA X-rays were taken to confirm the fit and radiopacity of Edelweiss post and core (Figure 13).

With the help of a silicone index fabricated using the diagnostic wax up, the lingual plane of all maxillary anteriors were established (Figure 14). After establishing the lingual plane, Edelweiss Veneers are placed individually from canine to canine (Figure 15). Now with the use of posterior transparent silicone index as a positioning device to place occlusion VD's (Figure 16). This technique will guide to place the occlusions precisely and together in both the posterior quadrants. Once it is placed, it is tack cured (Figure 17) individually to stabilize its position, followed by removal of the silicone stent. Then each



Figure 10

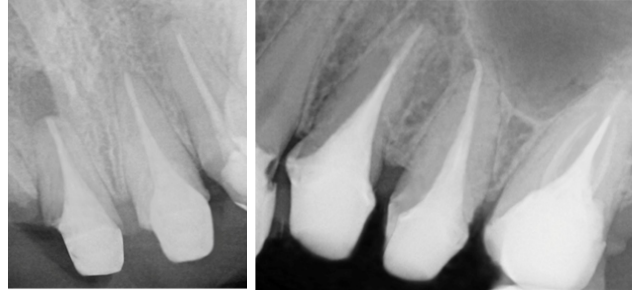


Figure 13



Figure 11

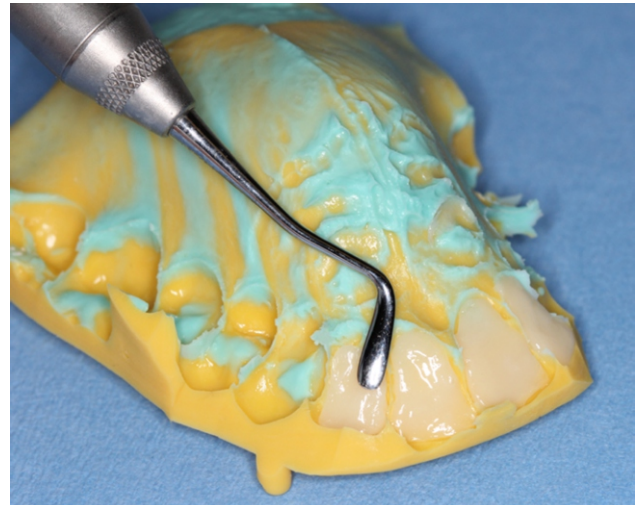


Figure 14



Figure 12



Figure 15



Figure 16

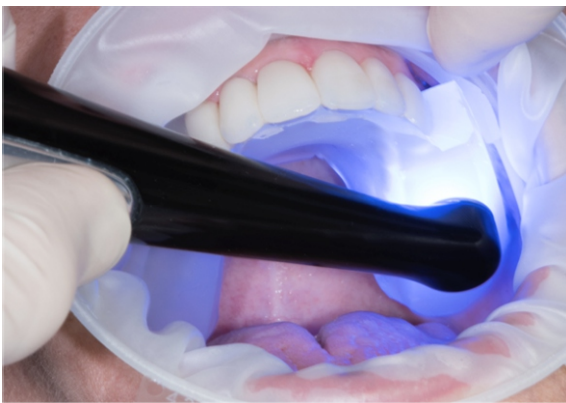


Figure 17



Figure 18



Figure 19



Pre-operative



Post-operative

individual occlusion is contoured using composite resin followed by finishing and polishing (Figure 18). The final outcome results in a bioesthetic and a functional restoration (Figure 19) which the patient desired.

Conclusion

Post & Core have a definite place in a restorative dentist's armamentarium. To achieve good clinical success, the clinician must choose the clinical circumstances where a Edelweiss Post & Core is indicated, choose compatible materials and techniques for cementation, and be assured that the crown preparation for the tooth has an adequate ferrule. By understanding the concepts for clinical success with Edelweiss post/core, followed by Edelweiss Veneers and Occlusion VD's as described in this article, the clinician can provide their patients with an esthetic, long-lasting, predictable and successful restorations.



ARTICLE - 3

Socket Shield Technique

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Introduction

Dental implants are routinely utilized to replace missing teeth and have excellent success rates and several advantages over fixed and removable alternatives for replacement. Implant restorations, however, pose certain challenges in the aesthetic zone since preserving the desired gingival and osseous architecture can be difficult. The framework for aesthetic soft tissue is the osseous tissue, and soft tissue contours are dependent on the supporting alveolar bone. Tooth extraction is accompanied by an inevitable subsequent remodeling process of the alveolar ridge accompanied by soft tissue alterations. The amount of volumetric loss is hardly predictable. Small differences in the pink-white aesthetics are visually perceived and therefore one must strive for complete long-term tissue preservation.

The main expectation of patients regarding implants in the anterior region is aesthetics, low cost-benefit ratio and time efficiency.

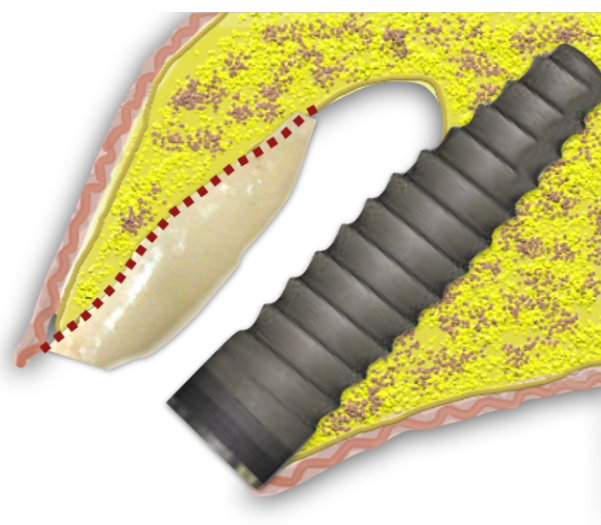
Several studies have shown that immediate implant placement in fresh extraction sockets does not counteract post extraction tissue alterations.

The predictability of the hard and soft tissue appearance after reconstructive surgical interventions is limited because horizontal and vertical bone augmentations are frequently accompanied by subsequent tissue shrinkage. Also soft tissue augmentation with a subepithelial connective tissue graft is accompanied by a volumetric reduction of about 30%. Maintaining the volume after tooth extraction with preservation techniques is not yet possible with the available biomaterials. Buccal overbuilding with bone grafting materials and a collagen barrier can only partly compensate but not avoid the resorption process and therefore a better solution is desirable. To meet the demand of more predictability of the postoperative gingival conditions, an innovative and less invasive method without the use of bone substitute material was developed to avoid the resorption process in

horizontal and vertical dimensions. In 2010, Hürzeler et al introduced the socket shield technique, in which a partial root fragment was retained around an immediately placed implant with the aim of avoiding tissue alterations after tooth extraction. The principle is to prepare the root of a tooth indicated for extraction in such a manner that the buccal / facial root section remains in-situ with its physiologic relation to the buccal plate intact. The tooth root section's periodontal attachment apparatus (periodontal ligament (PDL), attachment fibers, vascularization, root cementum, bundle bone, alveolar bone) is intended to remain vital and undamaged so as to prevent the expected post-extraction socket remodeling and to support the buccal / facial tissues.

This article presents a case report where the socket shield technique was used along with immediate implant placement.

The "socket-shield technique" is depicted diagrammatically in Figure 1.



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Fig 1: The Socket Shield Concept



Fig 2: Fractured tooth 11 needing extraction



Fig 5: Osteotomy for implant placement into the palatal wall of the socket



Fig 3: Post extraction of palatal and apical portion of the root, the labial fragment remains attached to the socket wall.

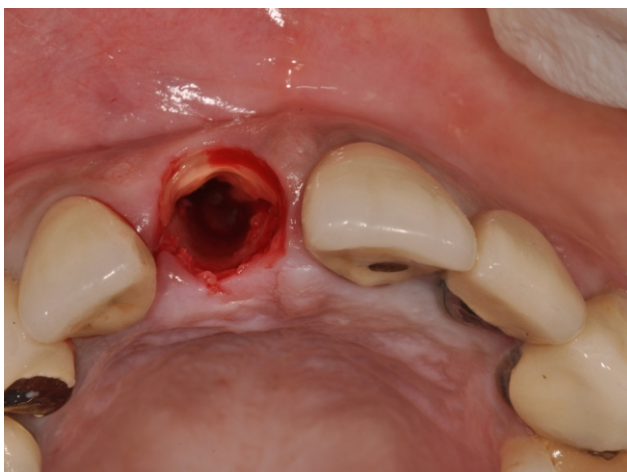


Fig 4: Shaping the labial fragment

Case Report

A 42 year old female patient reported to the practice with fractured 11 (Fig 2). The patient was a non smoker with a non contributory medical history. The treatment plan was extraction of fractured 11 followed by immediate implant placement and use of socket shield technique.

After administration of local anaesthetic, the root was sectioned in a mesio distal direction along its long axis using a long tapered diamond point coupled to a high speed handpiece. This divided the tooth root into facial and palatal parts. The palatal and apical portion of the tooth root was extracted atraumatically using fine tip elevators. The intention was to preserve the facial root section untouched and firmly attached to the tooth socket (Fig 3).

The facial portion was reduced coronally to 1mm above the alveolar crest and thinned to a concave contour (Fig 4). An osteotomy was then prepared in the palatal wall of the socket for implant placement (Fig 5). The osteotomy was sequentially enlarged to place a 3.8x12 tapered internal implant (Biohorizons Implant System) (Fig 6,7). A screw retained provisional crown was fabricated out of the patient's existing PFM crown. (Fig 8,9). Healing was smooth and uneventful. After 3 months, The provisional crown was removed to reveal well healed tissues and good soft tissue contours. (Fig 10).

A closed tray impression coping was used to record the impression for the fabrication of the final restoration. The final restoration was a cement retained Porcelain fused to metal crown on a stock

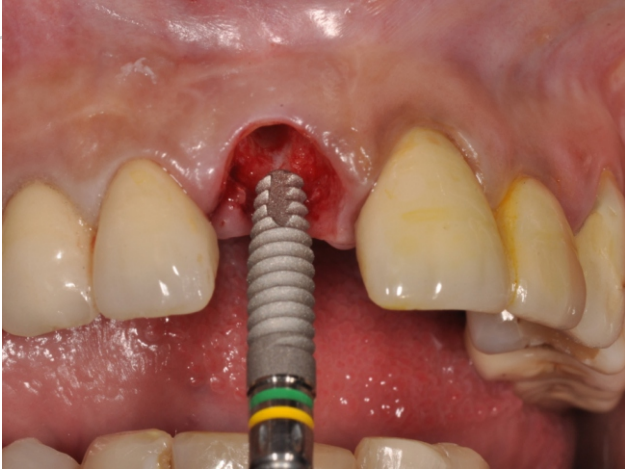


Fig 6: Tapered Implant placement



Fig 9: After fixing provisional crown

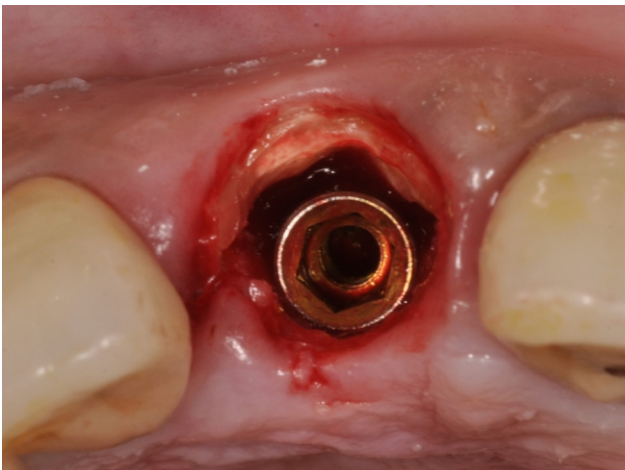


Fig 7: Final implant position

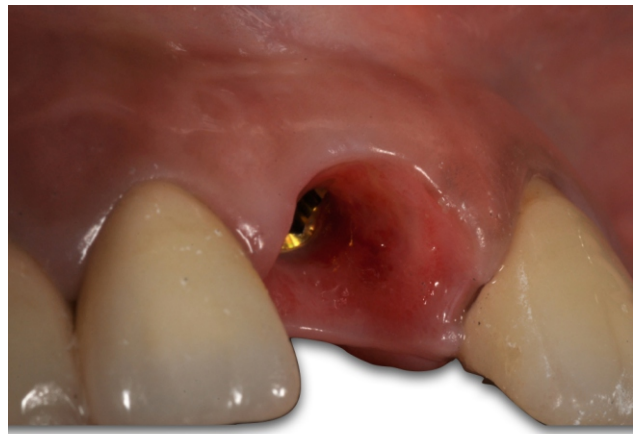


Fig 10: Healing after 3 months



Fig 8: Fabrication of a provisional crown from the patient's existing PFM crown.



Fig 11: Closed tray Impression

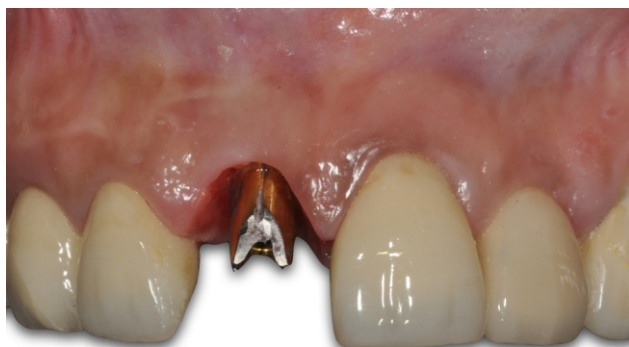


Fig 12: Abutment for cement retained crown



Fig 13: Definitive PFM crown

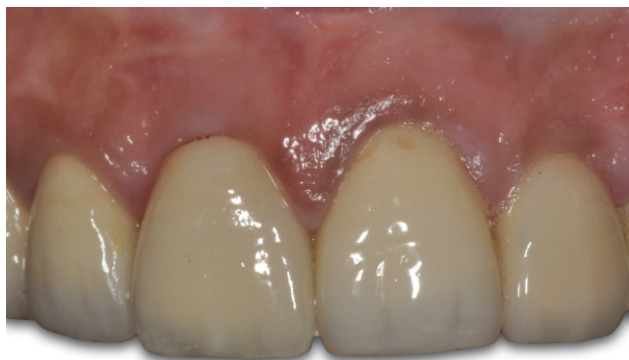


Fig 14: Definitive crown displaying a good emergence profile.

abutment. (Fig 11). On the day of the crown delivery, the abutment was torqued at 30 Ncm over the implant. A resin based temporary cement was used to cement the crown over the abutment. Efforts were made to clean up all excess resin.

Fig 13 and 14 depict the definitive prosthesis 3 months after cementation with excellent maintenance of soft tissue contour.

Conclusion

To manage the inevitable post extraction resorption, different procedures such as guided bone regeneration, connective tissue grafts are adopted as adjuncts to implant therapy. These procedures are associated with additional healing time, expense and co-morbidity. The socket shield technique is minimally invasive, cost effective and does not require additional healing time. This technique is a highly promising addition to clinical implant dentistry. However, it requires considerable skill to extract the palatal and apical portion of the root only while leaving the facial part firmly attached to the socket wall. Long term studies that follow up the use of this technique will validate its use routinely in implant practice.

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ARTICLE - 4

Prosthodontic Rehabilitation of Completely Edentulous Dwarf with Oral Submucous Fibrosis

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ABSTRACT

This article is about the prosthodontic rehabilitation of a completely edentulous dwarf patient who posed with extremely limited mouth opening. Maxillary and mandibular complete dentures were planned and delivered. Primary impressions were made without stock metal tray. Hinge articulator was modified to accept the jaw relation. Non anatomic posterior occlusion was given. Anterior teeth were reshaped to suit jaw size and shape. Number of teeth was reduced to ten per arch. A few modifications in conventional treatment modality helped delivering a functional prosthesis in otherwise difficult case.

Key word: Dwarf dentures, complete dentures for dwarf with OSMF, oral rehabilitation of edentulous dwarf.

INTRODUCTION

Any plant or animal sufficiently less than minimal size standards for any given species is considered a dwarf. Dwarfism, the affecting condition, can result from both genetic and environmental factors. Genetic mutations affecting growth hormones typically result in proportionate dwarfism, while disproportionate dwarfism can be caused by mutations in other growth-related genes^[1].

Oral submucous fibrosis (OSMF) is a chronic, insidious, disabling disease involving oral mucosa, the oropharynx, and rarely, the larynx.^[2] It is exclusively reported in Indian population.^[3] It is most common between 20 to 40 years of age with a female to male ratio of 3:1.^[4] Rigidity of lip, tongue, and palate, leading to reduced mouth opening and tongue movement, and intolerance to spicy food are the major complaints of these patients.^[5]

The presence of both dwarfism and OSMF in a completely edentulous patient makes the treatment difficult. The stock metal trays, face bows and

articulators that would suit the miniature jaw size are not available. Several modifications in the conventional treatment steps are hence needed. One such case with both dwarfism and OSMF treated for complete edentulism is presented in this article.



Fig. 1

Height of the patient as compared to an adult



Fig. 2 Completely edentulous maxillary and mandibular arches



Fig. 3 Primary impressions without stock tray



Fig. 4 Final impressions



Fig. 5 Comparison of size of Customized hinge articulator with incisal pin to Semi-adjustable articulator. Jaw size did not allow use of a face bow.



Fig. 6 Denture insertion

CLINICAL REPORT

A 40 year old, shy, tiny woman reported with the chief complaint of missing teeth and inability to chew. She was only 2' 8" tall but had proportionate body (fig.1). There was no history of parental consanguinity. She had an elder sibling who was not affected by the condition. Her medical history revealed no evidence of disturbance in general health.

Extra oral examination showed an abnormal facial appearance, with a concave profile. Obvious reduction in vertical dimension was noted. On intraoral examination, both her maxillary and mandibular arches were completely edentulous (fig. 2). Owing to the betelnut chewing habit she had developed oral submucous fibrosis and had limited mouth opening. No more than two fingers could be accommodated in her mouth.

Owing to the economic conditions, unpreparedness for implant surgery, and severe limitation in mouth opening of the patient, maxillary and mandibular complete dentures were planned.

PROCEDURE

After evaluation of medical and dental history, facial evaluation was done for symmetry, facial type, muscle tone and complexion. Primary impressions were made with medium fusing impression compound without stock metal trays (fig. 3) and poured in Type II gypsum product (Dental plaster). Custom trays were fabricated. Border moulding was performed with low fusing impression compound. The spacer was then removed and final impression made in light bodied addition silicone impression material (fig.4). Zinc oxide Eugenol impression paste was avoided as it causes intolerable burning sensation in oral submucous fibrosis. The impressions were poured in type III gypsum product (dental stone). Wax occlusal rims were fabricated over a well adapted temporary denture base. Tentative vertical relation was registered using Niswongers method and verified with the method of phonetics. Face bow record could not be made due to smaller face size and limited mouth opening and hence semi-adjustable articulator was not an option (fig.5). Mean value articulator could not be used because her intercondylar distance was almost half of that of an average adult. Hence a hinge articulator was modified to receive an incisal pin that serves as a vertical stop (fig.5).



Fig. 7 Comparison of the dwarf dentures with adult size dentures



Tentative horizontal relation was recorded and verified at the try in stage (fig. 6). Midline, canine lines, lip line and smile line were recorded and non-anatomic posterior teeth were selected. Anterior teeth had to be reshaped to suit her jaw size. Line angles of teeth were rounded to give softer feminine look. Number of teeth was reduced (fig.7). One premolar and one molar were omitted per quadrant. When the operating prosthodontist, the patient and the patient's parents were completely satisfied with the trial denture, the final denture was fabricated in heat cure acrylic resin and delivered. It was only slightly bigger than an Indian two rupee coin. Follow up were done at 1 day, 1 week and biannually. Patient reported no problems during three year follow up.

DISCUSSION

Despite their shortened statures, dwarfs are of normal intelligence. But many a times due to poor social acceptance they have a low self esteem. Such

patients should be treated in a normal manner with a few modifications in conventional treatment modality. Prosthetic rehabilitation not only helps them in speech, chewing and digestion but to a large extent makes them feel good about themselves. (Fig.8)

SUMMARY

A completely edentulous dwarf with severe limitation of mouth opening was rehabilitated with upper and lower complete dentures. The technique did not require additional clinical visits compared to fabrication of a conventional complete denture. Thinking little out of the box while adhering to basic principals can help us provide treatment in otherwise difficult cases.

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Lightweight

Stylish

PRECISE

Adaptive



ERGOPTIX
Magnifying Loupes & LED Headlights



IMPROVED ERGONOMICS. ENHANCED PERFORMANCE.



ARTICLE - 5

Essentials of Dento-facial photography

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Kolhapur, Maharashtra.
President, IAACD.

The importance of record keeping in dental office is of paramount importance since many years.

The digital revolution made this task much more easy and handy. The dental photography is one of the major way of maintaining the patients records.

In the era of film cameras it was very expensive and cumbersome to maintain all the positives and negatives of the patients record in perfect condition.

With the tremendous advancements in the sensor technology and reading complex algorithms of electronic processes involved in making pictures photography per se has evolved into a much larger aspect in day to day life. Dento-facial photography is a minuscule of entire photography applications in everyday life.

Dental photography purpose and uses

Any new technique or technology has its own learning curve. Before venturing into the details of making quality photographs lets jot down its purpose and use in day today clinical practice.

- 1 Dental documentation.
- 2 Examination, Diagnosis & treatment planning.
- 3 Progress & Monitoring.
- 4 Treatment outcomes.
- 5 Communication with patient and staff.
- 6 Academic.
- 7 Communication with Dental technician
- 8 Portfolios as marketing.

BASIC REQUIREMENTS

We will go through all the practical aspects of making a best quality photography. Going into details of all the sensor technologies and understanding the algorithms of pixel activation and RGB conversions creating a data that interprets as an image is beyond the scope of this article .

1 A camera body

The basic and obvious essential tool needed is the camera body. There are thousands of different

variety of cameras available in market in today time. By the time this article is published there will another few additions of newer camera models in to the market.

All camera make an image then what is so special and specific about choosing a right camera for dental photography.

At any point of time the Digital single-lens reflex (DSLR) tops the list of all available camera types The digital camera (point and shoot) has lots of limitation when dental photography is concerned.

Entry level and advanced amateur camera bodies (Nikon D3300, D3400, D5500, D7500, Canon 1200D, 1300D) allow for appropriate photographic image with good resolution and colour depth.

Professional camera bodies (Nikon D5 , D4 , D810, Canon 1Dx, Canon 5D mark II) have outstanding resolutions colour depth , large dynamic range ,detail and sharpness. The tough bodies also provide superior resistance to the dust and humidity.

The mirrorless DSLR (Olympus OMD EM5, EM1)

While the small size of the camera is very appealing, and close up views can be obtained with some of the lenses, the problem comes when lighting the objects. I have found a flash for these cameras that will allow for a well-lit intra- oral photograph without shadows. Recently Olympus has launched its STF8 twin flash system for the mirrorless versions which gives good results .

General camera recommendations

Canon recommendations

The Canon EOS 1300D (Rebel T6) and Canon EOS 1200D (Rebel T5) are the first choice as a DSLR system. They are a substantially smaller and lighter SLR camera compared to other models and offer easy exposure calibration and consistent results. Other Canon camera recommendations are: Canon EOS 100D (Rebel SL1), Canon EOS T5i, T6s or T6i (more expensive option) or Canon Rebel T3 or T3i, and T4i (discontinued models).



Recommended Nikon DSLR's: Some other excellent camera models are the Nikon D3400, D5500, D3300, D5300, and the D7100.

The professional bodies of Nikon Like D4, D4s, D5, D810, are worlds best camera models but and huge investment.

2 Lenses

DSLR has the biggest advantage of it interchanging lenses. One can use the lenses which are meant for specific shooting e.g macro lens for macro shooting, wide angle lens for landscapes, telephoto lenses, super telephoto lenses for wildlife and sports photography.

For dental photography primarily a dedicated macro lens is essential. The lens which has macro function is not a macro lens.

Many interchangeable lenses for DSLR cameras are listed as “macro” however, true macro lenses offer 1:1 magnification or greater. For example, the Tamron 70-300 mm f/4.0-5.6 inter-changeable lens for Canon or Nikon is listed as a “macro zoom”; however, its maximum magnification is 1:2 (the object size captured on the digital sensor is one-half the actual life size).

Dedicated macro lenses (such as the Nikon 105 mm f2.8 or Canon 100 mm f2.8 Tamron 90 mm) are capable of 1:1 magnification, and are better suited for dental use.

The biggest investment of the clinician who is involved in serious dental documentation should be in lens rather than body . The camera body may eventually outdated but the lens keeps on working unless its broken When choosing a lens opt for well established brands to assure its compatibility with future equipment .

General lens recommendation

a) Canon EF 100mm f/2.8 Macro USM Macro lens

Please note: You do NOT need the Canon EF 100mm F2.8 “L IS” USM Macro lens with the VR function which costs more. Vibration reduction is only required if you take photographs in low light and without flash. This model is also heavier than the earlier model USM Macro lens.

b) Canon EF-S 60mm f/2.8 Macro USM Lens

— less expensive and lighter than the 100mm macro lens, however this lens will only work well for close ups no closer than a full mouth view. Closest

recommended view is only the full mouth due to the short working distance. The flash will touch the patient's cheek if close ups of posterior teeth are required. This short working distance will result in slightly barrel shaped, distorted images on both facial and intra oral views.

c) Nikon 85 mm macro lens

— very light but is not capable of achieving extreme close-ups.

d) Nikon 105mm macro lens

— excellent quality, versatile but is very heavy.

Alternative third party lenses

The Tamron 90mm or Sigma 105mm macro lens are some alternatives that can be considered. They are available for both the Canon and Nikon systems and typically are less expensive than the Canon and Nikon lenses.

3 External Flash systems

All digital cameras come with an “on board” flash. This is the flash located either on the top of the camera, or on the left side.

For digital SLR cameras, the flash is usually a “pop up” style, and a button must be pushed to open it. Point and Shoot style cameras usually have a visible flash, which is located on the top or left side of the camera.

While flash systems that come with a camera may be sufficient for recreational use, they are not always adequate for dental photography.

General flash recommendation :

Canon Flash Systems:



Canon Ring Lite MR 14EX II or the previous model, Canon Ring Lite MR-14EX — These Canon flash systems are totally integrated and are, in my opinion, the easiest system to calibrate and standardise for dental photography. Don't try to save money by purchasing a cheap ring flash or ring light. It is always very difficult to calibrate, and it is quite often impossible to get consistent exposures with a sufficient depth of field.



Canon MT-24EX Twin Light Macro Flash — Excellent quality images can be obtained with this flash system, however, it is too cumbersome and time consuming to use. Not recommended for a fast paced work flow.

Third Party Flash Systems for Canon:



Yongnuo — Ring Lite units are produced in the same style as the Canon Ring Lite and at about one quarter of the cost. The light output might vary from exposure to exposure as the flash ages, but a solid option for a good price. Mostly available through online orders or special/mail order.

Nikon Flash system :



Nikon has discontinued their ring flash and replaced it with the Nikon R1 C1 macro flashes which are attached at the front of the lens. The downside of this system is that the positioning of the flashes require a lot of attention to detail to get good photographs and is therefore very cumbersome and heavy to use by a dental team in a fast paced practice. The extended flash brackets make it even more awkward to handle. Also they require Lithium batteries for the two flash units, making this a very expensive operating system.



Mirrorless DSLR and flash system — Olympus OMD EM5 the pioneer mirrorless body along with Olympus 60mm 2.8 macro lens and newly launched STF8 Twin flash system make one more alternative for the intramural photography.

The external flash STF8 from olympus is one of the best flash launched. Its splash proof, weatherproof and pretty small in size as compared to other fish systems. It works well with all nikon camera in manual mode. Gives optimum output of light in all intramural and extra oral photography.

Advantages and disadvantages of point and shoot and DSLR cameras

| POINT AND SHOOT CAMERA | | DSLR CAMERA | |
|-----------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|
| Advantages | Disadvantages | Advantages | Disadvantages |
| Small size | Slow operation Shutter lag | Fast operation, Little or no shutter lag | Larger size |
| Less weight | Possible low image quality due to small sensor, DSLM camera can solve this problem to certain extent | Excellent image quality because of larger sensor | Weighs more |
| Can be less expensive than Dslr set up | Limited lens choice, limited macro capability | Unlimited lens options, Many macro lens choices | Set up including camera lens flash can be expensive |
| Images can be framed in rear LCD screen | Limited flash choices, may or may not have Hot shoe attachment, possible indication for Ring light | Several flash options like ring flash, twin flash, dual point flash | Generally images are framed though lens |



Understanding Depth of field, Exposure, Aperture.

These three factors are key factors to make a good quality photograph. Dental photography is a part of close up photography; wherein understanding of the depth of the field is very essential without which one may fail to get perfect results despite having good equipments.

The depth of the field is important as we photograph the subject as close 12 inches or less at times . More closer you are to the subject the depth of the field becomes very important to get desired subject in complete focus

f2.8 = big hole = more light < depth of field

f22 = small hole = less light > depth of field Aperture - size of the hole letting the light in measurement is the f-Stop f2.8- f32.



Image at F 2.8 Giving background blur and only 15 no in correct focus



Image F5.6 The depth of filed increased making another files come into focus



Image F10 all the files are in focus and background blur reduced indicating depth of filed is increasing .



Image F22 the depth filed has increased making foreground and background in focus

Exposure

Achieving a correctly exposed photograph is quintessential requirement of any photography. This is dependent on two camera settings namely aperture and shutter speed, third parameter called ISO also plays a vital role. But as external lighting is used in most of the dento-facial photography.

Considering most of the camera bodies used for dental photography purpose are entry level or semi pro dslr i will restrict myself recommending using iso in range of 100-200. So the use of good external flash becomes mandatory to get the shutter speed in range of 1/125 - 1/200.

It is necessary to compensate for any hand shake or patient movement at the time of click to get tack sharp image.

Commonly required photographic views



Full face



Profile



Full smile Anterior (Retracted)



Right Buccal



Maxillary occlusal with contrast



Left Buccal



Mandibular occlusal with contrast

The 8 Basic Shots Recommended for an Initial Patient Photographic Series

(ISO should be set at 100 to 200 for all Shots)

| Shot | Approximate magnification | Aperture | Shutter Speed | Point of focus | Cheek retractors | Reflected Image | Horizontal Midline of Photo | Vertical Midline of Photo |
|----------------------|---------------------------|----------|----------------|-----------------------------------|------------------|--------------------------------|-----------------------------|---------------------------|
| Full face (smiling) | 1:10 | F11 | 1/125 1/200 | Eyes | No | No | Patients Nose | Facial Midline |
| Profile | 1:10 | F11 | 1/25 1/200 | Eyebrows | No | No | Patients Nose | Patients eyes |
| Full Smile | 1:2 | F18-F32 | 1/25 1/200 | Centrals/ Laterals | No | No | Occlusal Plane | Facial Midline |
| Anterior (Retracted) | 1:2 | F22-F32 | 1/25 1/200 | Centrals/ Laterals | Yes | No | Occlusal Plane | Anatomic Midline |
| Right Buccal | 1:2 | F22-F32 | 1/25 1/200 | Canine/ Premolar | Yes | Yes/No | Occlusal Plane | Canine / Premolar |
| Left Buccal | 1:2 | F22-F32 | 1/25 1/200 | Canine/ Premolar | Yes | Yes/No | Occlusal Plane | Canine Premolar |
| Maxillary Occlusal | 1:2 | F22-F32 | 1/25 1/200 | Premolars | Yes | Yes | Canine or premolar | Anatomic Midline |
| Mandibular Occlusal | 1:2 | F22-F32 | 1/25 1/200 | Premolars | Yes | Yes | Canine or premolar | Anatomic Midline |
| Close up | 1:1 | F22 | 1/25 1/200 | Contact point of Central Incisors | Yes | No use of Contrast Optional | Incisal Plane | Anatomic Midline |



Accessories

At a bare minimum you need a good set of mirrors and retractors. Basic two categories of the mirrors: Metal or glass.

Metal mirrors are made of polished stainless steel and while that may sound durable they are actually the softest material. They are also the least reflective so metal mirrors will scratch easily and produce a slightly darker image compared to glass mirrors.

Metal mirrors can pose a challenging situation of false TTL metering for the flash resulting into inconsistent results. This especially true about mirrors with bend. Avoid focusing on the bend and that should solve the problem.

Glass mirrors are available in three coatings; chromium, rhodium, and titanium and are all good choices. Compared to metal mirrors they are much harder and much brighter! The best occlusal mirror (and only one in my humble opinion) is the 4xl Adult Occlusal.



The “S” shaped lingual mirror because it is easier to place for lingual views. The smaller end is designed to dip down past the teeth to enable it to be easily placed in the mouth for a good lingual view of the teeth. (thus the name) The round end of the buccal mirror can be used the same way but is a bit larger and can be hard to position in smaller mouths.

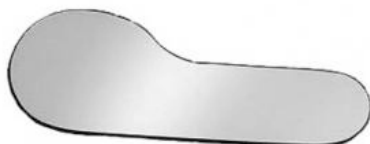
The longer narrow portion of both mirrors is designed to provide a view of the buccal corridor by placing the end of the mirror near the soft tissue behind the molars and gently retracting away from the mouth.

Proper placement of each looks like this:



It is a rhodium coated front surface, double-sided mirror that measures 5 1/2" L x 2 7/8"W. Avoid the smaller versions of this mirror because they are impossible to hold without getting your fingers in the picture. The added length of the 4xl version is very easy for you or the patient to hold while providing a large viewing area.

The other most common shapes are the buccal or lingual.





Cheek retractors

Cheek tractors can be of plastic or metal . Metal retractors being cumbersome while working and they also get locked in frame sometimes distracting attention of the views; metal retractors are nor choice of preference.

Autoclavable cheek retractors are essential.



Avoid using coloured cheek retractors. Transparent retractors are always preferred. Self retracting cheek retractors Adult autoclavable cheek retractor. Adult occlusal lip retractor. Useful for occlusal view. Can be used instead of occlusal contraster.

Contrasters

Contrasters are used to give definite dark background to the teeth. In many instances cheek and lip obscure the complete vision of the vestibule and also adds to the distraction. Contrasters help to stand out the image.

They are mostly preferred while taking 1:1 anterior images to appreciate the translucency. Ideal contrasters are made of solid material or soft material. They come in various sizes.



Post processing guidelines

With regard to manipulation, it is important to remember that dental images are dento-legal documents. Therefore, manipulation should be kept to a minimum, ensuring that the original image is not altered to an extent that hides pathology or alters the clinical situation to camouflage what was present in the oral cavity. Current photo-editing software allows an image to be manipulated beyond recognition, and while this is acceptable for dramatic or artistic purposes, it is inappropriate for dental imagery.

Altering exposure, orientation or cropping extraneous parts is acceptable, and indeed desirable to visualise the clinical situation as it appeared at the time of taking the picture. It is important to mention that image quality is directly related to the degree of manipulation. The greater the manipulation, the poorer the image quality.



5 Fundamental mistakes

- 1 Patient positioning
- 2 Camera positioning
- 3 Camera settings
- 4 Mirror positioning
- 5 No communication

1. Patient positioning

Most times, digital photos are taken while the patient is sitting in the dental operator chair. With the way most dental operator chairs are designed, the patient will always be sitting on an angle that is not parallel to the person taking the digital photos. It is recommended to have both the patient and the photographer sit face to face on the same linear plane. One way to do this is to have the patient sit on an "assistant" chair, while the photographer sits in the "dentist" chair.

2 Camera positioning :

It is critical to always make sure the camera position is the same for every photo taken (except for the occlusal photos). If both the patient and the photographer are correctly positioned, then the camera will also be positioned correctly, thereby eliminating or avoiding this mistake.

3 Camera settings

Use of correct F stop and shutter speed will avoid chances of getting darker or brighter photos. The lens setting is designed to capture images of a certain magnification. These ratio should be consistent if pre and post operative photographer to be compared and appreciated.

4 Mirror Positioning

The most difficult photos to capture are the occlusal shots. Many times we see images that don't show enough teeth, have incorrect angles, or show too much soft tissues (lips). This is due to a number of reasons, but the most common one is mirror positioning. With the patient reclined, make sure they are retracting their lips away from the arch you are capturing. Place the mirror gently, resting directly on the opposite arch, and take your photo. It also helps to take the upper occlusal photo from behind the patient, and the lower one in front of the patient.

5. No Communication

In most cases, patients have not experienced taking so many photos of their mouth in one appointment. Also, due to space limitations, this can

be a very difficult task to complete. It is much easier to take photos after asking your patient to move in the direction needed. This makes them feel more involved in the process and that their efforts have been appreciated.

Conclusion

With this brief practical knowledge of the dental / intra oral photography clinicians should be able to implement this in day to day practise. There are high end equipments and studio lights required to do professional grade facial photography to make it look more appealing and gorgeous. The advances in the digital technology and artistic views will keep on challenging the photographer to excel new heights and set up new benchmarks in the digital dento-facial photography.

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ARTICLE - 6

Pink material selection... Unity and harmony

Mohit Suryavanshi

Dental Technician, Kolhapur.

A patient looks to the dental professional to restore his or her teeth to ideal health, function, and esthetics.

The restorative team consists of the dentist and the dental technician. In order to achieve all expectations, it is important that the team work together and establish optimal communication with the patient.

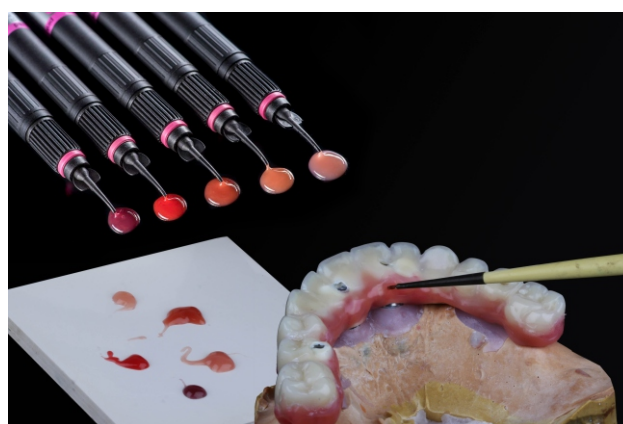
A situation may occur where the dentist may have made an impression, sent it to the dental laboratory, received the restoration, and cemented it in place. But, for whatever reason, he or she is not happy with the result. The dentist may have tried many laboratories and have experienced similar results. He or she begins to question himself or herself and wonders what is wrong.

The preparation guidelines met the materials specifications, so that was not the problem. The instructions on the prescription slip were followed, so that was not the problem. Possibly the dental technician was not involved in the initial steps of treatment planning, and this lack of communication may have been partially to blame. The dentist ultimately finds that it is important to work with the dental technician at the treatment planning step, especially with regard to complex cases. Establishing optimal effective communication and teamwork with the dental laboratory technician helps to build confidence for all cases and helps ensure consistent and successful results.

Communication among the restorative team is imperative and must also include the patient. Often, the patient explains to the dentist what he or she is expecting. The dentist in turn will attempt to communicate this to the dental technician.

Restorations made of different materials or made on different cores, exhibit unique optical properties that are difficult to harmonize. Predictable results for cases begin with a diagnostic wax-up. Through the use of a silicone putty matrix, the diagnostic wax-up is transferred to the patient as a provisional and can be evaluated for form and function. Ideal tissue heights were created on the diagnostic wax-up. Gingival recontouring is necessary to improve gingival symmetry and to improve the length-to-width ratio of the centrals.

It is always a good idea to do a diagnostic wax up especially in the aesthetic zone. It is imperative to know



what the final restoration will look like prior to proceeding so we can work towards the end result. If you do not know where you are heading, any road may take you there.

A unique approach is essential to evaluate the soft tissue loss. Only then the prosthesis is easily fabricated with accurate information provided through a diagnostic evaluation.

Usually, dentists and technicians are well versed when it comes to reconstructing the white aesthetics of a smile, the teeth. However, restoring challenging cases in the aesthetic zone requires a deeper understanding of the pink element of the smile, the gingiva.

Most implant sites by times lose papillae and delicate soft tissue areas which embody the natural artistic cosmetics associated with a full complement of natural teeth. The superstructure design creates this illusion. The key to the illusion is the ceramic tissue augmentation which replaces the delicate tissue areas.

If a particular implant patient has a high smile line and displays significant soft tissue, the acceptance of the sub/super design is much greater.

Gingiva and its structural appearance correlates with support from the teeth and underlying bone architecture.

Assessing these principles is a prerequisite for



prosthodontic and implant treatment planning. The gingival architecture represents the frame for the teeth. If it is not restored correctly, either surgically or prosthetically, it will impair the final three dimensional aesthetic outcome.

Just as any skilled technician learns how to mimic the minute details of the tooth anatomy, shade variations and textures, he or she should do the same with regard to the various types or designs of the soft tissue . Gingival anatomy, shade and texture should be analysed and learned to be restored in the best possible way. If the patient has a high lip line, this problem will be even more noticeable .



However, a growing demand for aesthetic comfort restorations more frequently places the technician in situations that require such harmonization. In this article, we demonstrate the possibility of materials and techniques required to blend restorations made of hybrid materials.

Specific materials have their own shade guides for their assortment of gingival colours. The same photography protocol followed for shade taking of a tooth can be followed with the respective gingival shade guide.



A 1:1 close-up shot can be very useful in mimicking the situation as it gives the technician a vivid array of material selection.

The materials currently available for the replication of artificial soft tissue effects are ceramics, acrylics and composites. Each one has its own pros and cons followed by their specific indications.

For fixed partial restorations, ceramics were usually the material of choice to reproduce not only the white esthetics but also the pink esthetics. As ceramics are a very delicate and are dependent on its supportive metal sub structure, to compensate for its shrinkage during firing. The number of firing cycles make the layered ceramic very unstable.

As far as colour matching and moisture control is concerned, the final appearance of porcelain bridges in the pink zone was usually unsatisfactory. The esthetics were further compromised by the easily noticeable interface between the prosthetic and natural gingiva.



To achieve more flexibility, a hybrid technique was developed in order to make the prosthetic gingival restoration more esthetic and predictable The hybrid technique basically involves a screw-retained partial implant bridge providing the white esthetics and a gingival base made of ceramics, which is covered with a composite overlay to create the final pink contours (using eg Crea.lign Bredent Germany, Nexco SR Ivoclar, and Ceramage Shofu Japan.)



The use of these hybrid materials provide considerable advantages.

Possibility of repair, re-contouring without having to re-fire the ceramic.

- 1) Overall weight of the prosthesis is controlled
- 2) Preservation of the optical and physical properties of the layered ceramic by decreasing the number of bakes

More predictability and control of the factors that determine the pink esthetics, such as shape, colour and texture.

Larger volumes of tissue can be replaced. Spacing between the gingival prosthesis and bridge pontics maybe present. Gingival colour matching may be easier to achieve. Prosthesis can be feathered into transition zone considering periodic soft tissue changes. A new gingival prosthesis can be constructed relatively easily whereas in a fired ceramic restoration scenario if tissue changes occur such as further ridge resorption, modification would be difficult and a new bridge may be required.

The "pink" aesthetics can be built up individually to match the requirements of the patient while the material is still unpolymerized.

In this CAD-CAM world, a skilled hand with an excellent color perception will add the required personal touch to the restorations ultimately getting them closer to nature.

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Dr Sachin Narayan Karande



You made feel everybody around you happy with your happy smiles.

Your untimely exit from this materialistic world has put everyone into shock and tremendous grief.

IAACD will always remember your contribution towards making every event successful.

Its unfortunate that you will not be physically present to receive your accreditation status in Aesthetic dentistry.

Wherever you are we prey to Almighty God to take special care of your soul.

IAACD Family

We will remember you always...



ARTICLE - 7

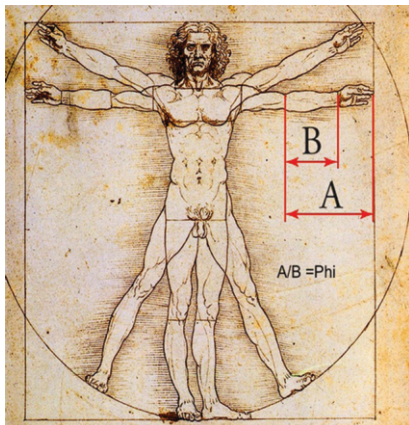
Success code in Facial Makeover Surgeries - Golden Ratio in Orthognathic Surgery

Dr. Segin Chandran K.R.

Oral and Maxillo Facial Surgeon and Oral Implantologist
Member, Board of Directors IAACD.
Thiruvananthapuram, Kerala.

Introduction

Golden ratio or golden mean has always existed in mathematics and in physical universe. Its importance in aesthetics is well written in literatures from the dates of Egyptians and Greek.



Though its unknown exactly when it was discovered and applied to mankind, its prudent to assume that it was discovered and rediscovered throughout history.

The Renaissance artists used the Golden mean extensively in their paintings and sculptures to achieve balance and beauty. Leonardo Da Vinci used the term "Divine Proportion" with mathematical value $\phi = 1.618$.

Trying to get dental and facial parameters back to golden proportion is the fundamental aim of any dental or aesthetic surgical procedures including orthognathic surgery.

Harmony of facial structures is very important, proper balance between the facial structures, the morphology and symmetry of the face are the main factors related to aesthetics.

It's a well accepted fact that most of the times

aesthetic facial makeovers are incomplete without correcting the skeletal discrepancies of jaws and other facial bones.

Awareness and demand to meet such aesthetic surgical corrections are at its peak and or-thognathic surgeries became one of the most popular treatment modalities for the same.

The main goals of orthognathic surgery are to achieve a correct bite, an aesthetic face and an enlarged airway to correct obstructive sleep apnea. The ancient name of it was orthodontic surgery and most common goal for the same remains as aesthetic enhancement.

Skeletal malformations may be isolated to one jaw, both the jaws or they may extend to multiple craniofacial structures. They may occur unilaterally or bilaterally and may be expressed to varying degrees in the vertical, horizontal and transverse facial planes.

Face Evaluation

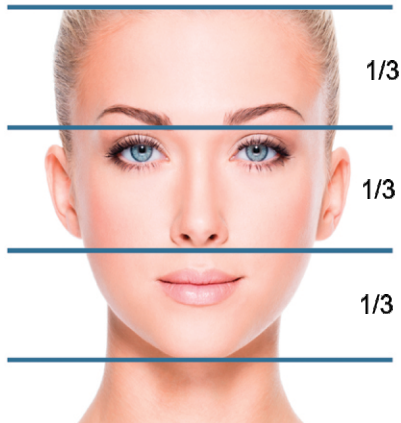
It's our traditional practice to evaluate the face both in frontal and lateral profile to assess symmetry and proportions.

Symmetry





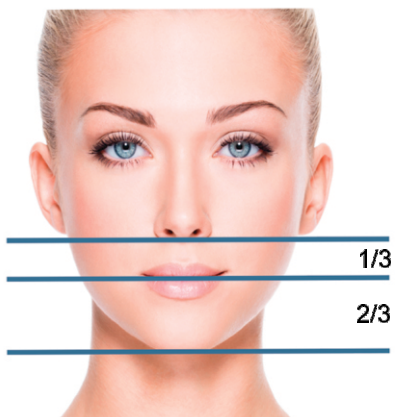
Proportions



Vertically, the face can be divided into equal thirds for assessment. The distance from glabella to subnasale and from subnasale to soft tissue menton should be in a 1:1 ratio.

Lower Face Proportions

The lower third of the face can be divided into thirds with the distance from subnasale to upper lip stomion equalling one third, and lower lip stomion to soft tissue menton equalling two thirds. This ratio provides optimal vertical facial balance in the lower third of the face.

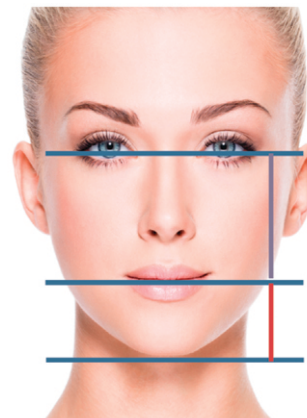


Aesthetically pleasing face will surely have golden proportions maintained in macro as well as micro analysis. We can find golden ratio in many aspects of frontal analysis.

Head height to width



Eyes mouth to chin



Facial width to inner eye





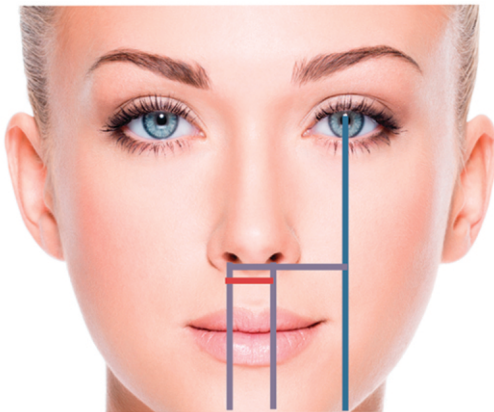
Inner eye to outer eye to side of face



Width of eye and outer canthus to facial outline



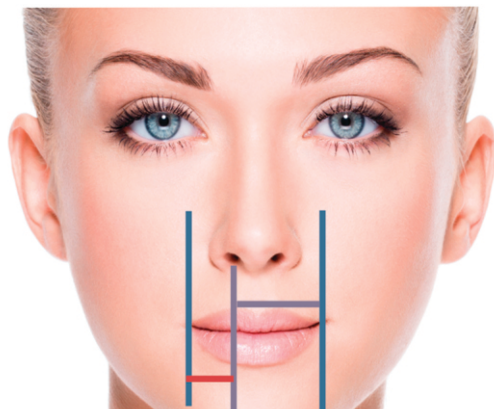
Inter nostril width and nostril to pupil



Half of lip width and ala to corner of lip



Nostril to corner of lip and to contra lateral



The forehead, eyes, orbits, and nose are evaluated for symmetry, size and deformity. Any deviation from normal is taken into account and its corrective measures are sought.

Average values of inter canthal distance , inter pupillary distance, and alar base width, width of nasal dorsum, upper lip length are measured and compared with normal values derived for an ethnic group. Facial midline, nasal midline, Lip midline and dental midline and chin midline are made congruent so that it maintain symmetry and balance.

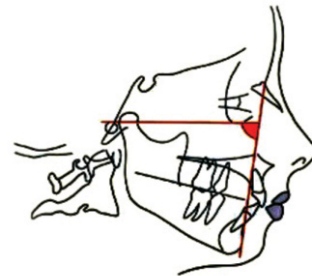
Radiographs taken in antero posterior view will give a fair idea about the transverse discrepancies and will be helpful in asymmetry corrections. Grummons analysis is a regular tool in transverse discrepancy assessment.



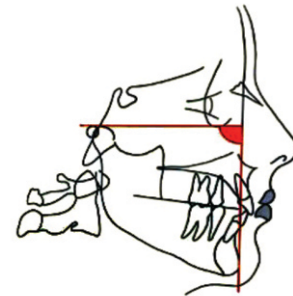
Lateral Facial Analysis



Retrognathic facial type
(recessive chin)



Orthognathic facial type
(Straight profile normal chin)



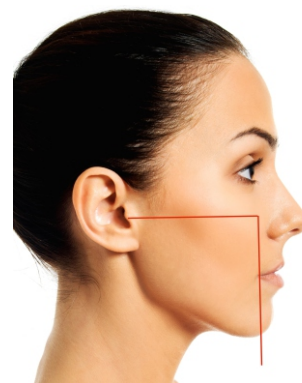
Evaluation of lateral profile is the most valuable assessment in determining vertical and antero posterior problems of jaws. In lateral profile also the face is divided into 3 equal parts .Its best done with radiographs and photos taken with FH plane parallel to the floor. Lateral profile evaluates the morphologic characteristics and relationship of nose, lips, cheeks and chin.

Cephalometric Analysis

Cephalometrics - the fusion of craniometry and radiography, done on the lateral radiographic pictures gives fair idea about the skeletal deformity. Usual Analysis done for assessing the degree of discrepancy is COGS (Cephalometrics for Orthognathic Surgery) by Charles J Burstone in 1978 and soft tissue analysis published in 1980. It considers HP (horizontal plane), surrogate Frankfurts Horizontal plane as its referral plane. Maxilla, mandible and chin are assessed in relation to the same.

Cephalometric cannot be the only factor for considering the treatment choice. Almost all the cephalometric analysis consider cranial land marks as stable points, but its not always true. Building up facial units like maxilla and mandible above this apparently stable platform gives a fair idea about where exactly the problem lies.

Clinical Frankfurt horizontal (CIFH) plane is oriented parallel to the floor. Clinical Frankfort horizontal is a line from the tragus of the ear to bony infra orbitale. A line drawn perpendicular to Frankfurt Horizontal through subnasale should be 3mm ± 3mm.



Esthetic Line E-Line



A line drawn from nose tip to chin to evaluate how the upper and lower lip are related to that line.



Ideally lower lip 2mm behind the line and upper lip 4mm behind E line provide an assessment of whether teeth are predominant in relation to nose and chin.

It was suggested by Dr. Robert Ricketts in 1950 giving guidelines for orthodontic extractions.

Mandibular Angle



In Tweeds analysis Frankfurts Horizontal plane and mandibular plane is considered to get the mandibular angle.

Mandibular angle is considered to know whether the patient is having a vertical or horizontal pattern of mandibular growth.

Normal value is 23°

> 25° is considered high angle with vertical growth

< 23° is considered low angle with horizontal growth

CASE 1

Transverse Discrepancy - Facial Asymmetry

Chief complaint: Face Deviation to left and protruded lower jaw

Cephalometric Analysis: Grummons Analysis and COGS

Cephalometric Analysis result: Maxilla - Occlusal cant 4mm to right side

Mandible - Ramus height 4mm more on right side

Chin: 6mm deviation to left Reverse Overjet -6mm

Treatment Done

Orthodontics: Pre Surgical and Post Surgical

Surgery: Orthodontics

Maxilla: Lefort 1 with differential impaction 6mm on right 2 mm on left side

Mandible: Bilateral Saggital Split Osteotomy (BSSO) and differential set back

Chin: Sliding Genioplasty with reduction on right side



Before Surgery



After Surgery

CASE 2

Vertical Discrepancy

Chief complaint : Gummy Smile after orthodontic treatment

Cephalometric

Analysis: COGS

Cephalometric Analysis result : VME (Vertical Maxillary Excess 6mm

Treatment Done

Orthodontics : Pre Surgical and Post Surgical

Surgery : Lefort 1 with anterior 6mm and posterior 4mm superior impaction



Before Surgery



After Surgery

CASE 3

Vertical and Horizontal Discrepancy

Chief complaint : Small chin and protruded teeth and gummy Smile

Cephalometric Analysis : COGS

Cephalometric Analysis result : Vertical Maxillary Excess 4 mm

Mandibular deficiency 6mm

Treatment Done

Orthodontics : Pre Surgical and Post Surgical Orthodontics



Surgery : Maxilla- Lefort 1 superior impaction 4mm
Mandible - BSSO with advancement of 6 mm
Genioplasty with advancement of 4mm

must to get to know the desired outcome from patient's side and STO (Surgical Treatment Objectives) discussed.

Conclusion:

As famous Canadian writer Robert Davies wrote "The eye sees only what the mind is prepared to comprehend".

If we look at a beautiful face and try to read the golden proportions in it, we will correlate many. When we look at compromised faces to suggest the aesthetic enhancement, our mind should be tuned up to get the golden proportions back.

What we do is not just surgical corrections or dental rehabilitation but psychological and social rehabilitation of an individual.

Surgical cases from

Dr. Segin Chandran K R
Maxillo Facial Surgeon
Thiruvananthapuram, Kerala.



Before Surgery



After Surgery



Before Surgery



After Surgery

Discussion:

Going through these case records, we get to know the importance of meticulous planning and combined treatment decisions from Orthodontist and Maxillofacial surgeon in managing dentofacial skeletal discrepancies. From the initial consultation till the end result the entire team works together in a synchronized manner. Manual or digital cephalometric analysis will give a fair idea about the skeletal discrepancy but soft tissue cover and its probable changes after skeletal rework should be considered in before giving treatment options.

Giving foremost importance to the patient's desires is the way to get self gratified and thankful patients after surgery Respecting the individual desires but not compromising on the treatment plan or giving non surgical and camouflage treatment options. Before starting the work up for model surgery or cephalometric predictions, it's prudent and

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ARTICLE - 8

Conservative Management of Uncomplicated Crown Fracture Using Tooth Fragment Reattachment: A Case Report

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INTRODUCTION

As the life in cities fastens, traumatic incidence are increasing day by day and most of the time, the victims are the anterior teeth, especially maxillary anteriors. Impact during trauma transmits a large amount of energy to a limited area of crown leading to its fracture¹. WHO classified tooth fractures into uncomplicated (involves enamel and dentin) and complicated fractures (with pulpal and periodontal ligament involvement). Fracture of anterior teeth contributes 18-22% of all dental hard tissue injuries, of which 28- 44% are uncomplicated fractures.²

Management strategies for uncomplicated fractures depends on various factors, which include extent of fracture, patient's age, availability of fractured fragment, eruption and root formation of tooth, occlusion, remaining tooth structure, status of pulp and periodontal ligament and esthetic expectations of patient and their choice.³⁻⁵ Treatment options varies from a simple enameloplasty to prosthetic rehabilitation of entire tooth structure. Direct composite restoration is a very common and cost-effective treatment option, but it has certain disadvantages. Bond failure and fracture of composite restoration, marginal discoloration and staining leading to unaesthetic appearance are the most common drawbacks.⁶ Hence, alternative treatment options have been explored.

Reattachment of fractured fragment offers esthetic, functional and psychological component to the patient as well as the most conservative, natural and cost effective way of restoring the lost smile. This article highlights the successful management of a case of uncomplicated crown fracture using fragment reattachment technique with 2 years follow up.

CASE REPORT

A 20 year old female patient reported to the department of conservative dentistry and endodontics with fractured right and left maxillary central incisors (#8 and #9) as a result of trauma sustained 2 hours ago. Patient came with the fractured fragment of #9 wrapped in a towel. Her medical and dental history was non-contributory.

Fractured fragment was thoroughly washed under running water and cleaned of all the debris and stored under normal saline during the clinical examination and preparation of the patient. Clinical and radiographic examination revealed a clean oblique fracture line involving the enamel and dentin and not the pulp and hence diagnosed as uncomplicated fracture of #8 and #9 (Figure 1). Teeth were isolated using rubber dam after performing oral prophylaxis (Figure 2). Fragment approximation was verified and excellent adaptation along the fracture



Figure 1 Pre-operative photograph showing uncomplicated fracture of #8 and #9



Figure 2 – Rubber dam isolation



Figure 3
Repositioning the fractured segment on #9



Figure 4 – Post-operative photograph



Figure 5 – 2 years follow-up photograph

line was observed (Figure 3), and hence the treatment was planned to reattach the fragment of #9 and perform direct composite restoration for #8.

Fragment and the fractured surface of #9 was etched with 37% phosphoric acid (Coltene Whaledent, Switzerland) for 15 seconds and rinsed thoroughly with water. Enamel was air dried and adhesive coat (Adper Single bond 2, 3M ESPE, St. Paul, USA) was applied along the fracture line and fragment with an applicator tip, air thinned and light cured for 10 seconds. Flowable composite (Ivoclar Vivadent, Schann, Liechtenstein) was applied along the fractured fragment and the fractured surface and adapted along the fracture line. The tooth fragment was held in position under mild pressure and cured for 40 seconds each in different angles, buccally and palatally. Direct composite resin restoration was performed on #8. Both teeth were finished and polished with sofex polishing discs (3M ESPE, St. Paul, USA) (Figure 4). Occlusion was evaluated and postoperative instructions were given. Patient has been reviewed at 6 months intervals. Two years follow up showed excellent aesthetic and functional results with maintenance of pulp vitality in relation to both the teeth (Figure 5).

DISCUSSION

Reattachment of a fractured incisor fragment in a complicated crown fracture was reported by Chosack and Eidelman in 1964 by endodontic therapy followed by a cast post and core.⁷ Reattachment in uncomplicated fracture using acid etch technique was first reported by Tennery.⁸ Reattachment of fractured fragment offers long lasting esthetic results as the original tooth is being reattached, there by preserving the natural appearance as well as original form, color, contour and surface texture.⁹ It is a relatively easy, simple and economical procedure with minimal sacrifice of remaining tooth structure.¹⁰ None of the synthetic restorative materials can replace the esthetic characteristics of the natural tooth. Moreover, fragment reattachment restores the functional and emotional outlook of the patient.

Major concerns is directed towards the strength of fractured fragment¹¹ and the lighter shade of the fragment after dehydration for long time and break down of collagen fibres.¹² Preparation of both tooth and fragment which include bevel designs, chamfers, and grooves prior to bonding have been proposed, with an estimated recovery of fracture resistance up to



97%.¹³ To avoid discolouration and debonding, patient should be instructed to store the fractured fragment in a suitable storage media. The recommended storage medium is sterile saline at 37 °C which helps to prevent dehydration and collapse of the collagen in the fractured segment and helps in preventing any dimensional changes.¹⁴

Fragment reattachment technique has been described in most cases as an intermediate treatment or an alternative in selected cases, and reports of long-term follow-up are very few.¹⁵ Considering the necessity for long-term follow-up of tooth fragment reattachments, the case presented here has been placed on periodic recalls at 6 months intervals.

CONCLUSION

Reattachment of fractured fragment is always considered as a biological and natural treatment option for uncomplicated crown fractures before going for artificial substitutes such as composite resin restoration. In this case, excellent esthetic and functional result was achieved even after 2 years of follow up.

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ARTICLE - 9

Direct Composite Restoration In 16

Dr. Leena Rawal

'Root to Restoration', Mohali, Punjab.

INTRODUCTION

Every tooth in mouth is priceless, whether its an anterior or posterior. Esthetics is a word, we correlate with anterior teeth always, but posterior teeth do also deserve equal esthetics along with form and function.

More important than esthetics, form and function is maintaining vitality of any teeth.

Presenting a case where patient came with complain of sensitivity to cold and pain during chewing.

On diagnostic IOPA caries were deep approximating to pulp in 16. Cold test was normal. So we have decide to go for direct composite restoration. Patient was informed that if sensitivity did not subside and pain persist then he may need a root canal treatment later on.

MATERIALS & METHODS

Local anesthesia was given and rubberdam was placed to isolate tooth from saliva. All caries were removed starting from periphery to center, so that if any pulp exposure occur then it will be in a sterile field, free from microorganisms, leaving hard affected dentine at base.

Enamel was selectively etched for 30 secs, followed by 5 sec dentine etching to remove smear layer.

Tooth was suction dry and washed with 2% chlorhexidine for 5 min. Again suction dry, keep in mind that we need moist dentine for proper bonding and enamel should be dry. So avoid over drying of tooth.

Tokuyama palfique bond was taken on an applicator top and rubbed for 20 secs to ensure its penetraton into spaces created by etching and hence result in a good hybrid layer after curing. Remove excess monomer by high vaccum suction, cure for 10 sec.

A layer of bulkfloe from tokuyama was placed as the first layer, so that to will fill all the voids and undercuts in cavity, cure it for 10 sec.

Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5





Tokuyama palfique LX5 composites was used for further cusp to cusp build ups.

Its mandatory to isolate atleast 4-5 teeth to know the marginal ridge height and shape of cusps and fossa of adjacent teeth.

Last layer was cured under KY JELLY(water based jelly), to inhibit formation of oxygen inhibition layer.

Gross finishing and polishing was done with 3M sofleflex discs.

Rubberdam was removed, occlusion was checked and final finishing and polishing done by sofleflex spirals 3M.

Patient was recalled after a week, he was absolutely fine with no sensitivity and pain anymore.

CONCLUSION

If tooth is isolated perfectly and all bonding protocols follow well, and tooth is restored in appropriate form and function then we can preserve vitality of tooth by direct biomimetic composite restorations as well. Because its not a composite material which is causing sensitivity, rather its operator skills to handle any material and follow basic principles of isolation and bonding.

DIRECT COMPOSITE RESTORATION IN 16

Patient came with problem of food lodgement and sensitivity to cold from past 1 week.

- 1) On examination there was caries present in 16 as seen in pic 1.
- 2) Rubberdam was placed and all caries removed leaving only affected denting in the floor of cavity. (pic 2)
- 3) Selective etching was performed on enamel for 30 seconds. (pic 3)
- 4 After rinsing and drying the tooth post etching, A seventh generation bonding agent (palfique bond from tokuyama) was applied and rubbed in cavity for 20 seconds, air dried and cured for 10 seconds. (pic 4)
- 5) Chromatic dentine shade A5 (tokuyama palfique LX5) is used as first base layer of composite and cured for 10 seconds. (pic 5)
- 6) Palfique LX5 A2 shade of composite is used for cusp to cusp build up & cured there. (pic 6)
- 7) Gross finishing and polishing was done and rubber dam was removed. (pic7)

8) Occlusion was checked, final finishing and polishing was done and a black and white picture was taken to see the value of restoration (pic 8)

9) Post-op view (pic 9)

Fig. 6



Fig. 7



Fig. 8

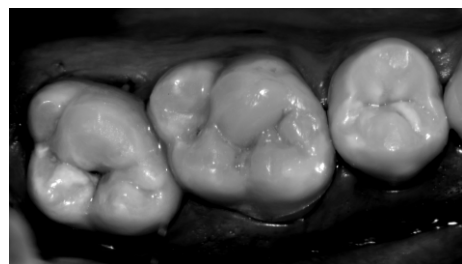


Fig. 9





ARTICLE - 10

Aesthetic Smile Makeover Within A Week – A Case report

Dr. Lakshmi. A

Kamala Dental, Thiruvananthapuram, Kerala.

Smile is a curve that sets everything straight. Correction of malpositioned anterior dentition is highly demanding these days. Rising upto the expectation in terms of esthetic and function that too in short time is a challenge. This case represents the importance of putting in principles of esthetics, smile designing and multidisciplinary approach giving results above expectation.

Introduction

Goal of an esthetic makeover is to develop a socially acceptable and self upraised smile for an individual. Harmonizing an esthetic smile requires a perfect integration of facial composition and dental composition. Schematic framework of esthetic parameters should be used as a reference guide into which the smile designer should be free to introduce elements. Key elements of macro and micro esthetics of face and teeth bringing life to human smile should never be ignored.

ESTHETIC PRINCIPLES

Composition

The relationship between objects made visible by contrast is called composition¹. The increase of visibility is proportionate to increase in contrast.

Dental composition, Facial composition and Dentofacial composition² are the key elements taken care before final results are planned.

Dental composition refers to the relationship between individual teeth in anterior visible zone in terms of smile designing. Facial composition refers to the interplay between facial structures like eyes, nose lips and ears. Dentofacial composition refers to the relationship between the designed smile and facial structures.

Symmetry

One of the primary concerns in esthetics is symmetry. It refers to the regular arrangements of forms and objects.

We can differentiate between 2 kinds of symmetry

1. Horizontal or running symmetry
2. Radiating symmetry

Horizontal symmetry occurs when a design contains similar elements from left to right in regular sequence

Radiating symmetry is a result of the design of objects extending from central point to right and left sides like mirror images

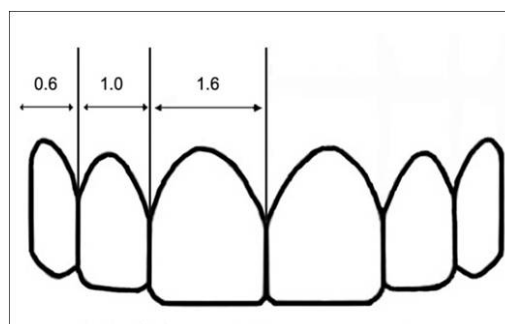
Symmetry must be introduced in dentofacial composition to create positive psychologic response

Proportion

The concept of beauty has most often corresponded to a harmony in proportion. The elaboration of a formula assessing a ratio in the harmonious relationship between two parts, attributed to Pythagoras and called golden number.

Golden proportion:

The golden proportion³ is a mathematically constant ratio between the larger and the smaller length. The ratio is approximately 1.618 : 1. In terms of proportion, the smaller tooth is about 62% the size of larger tooth. The same concept applies in smile designing when we design the visible width of central and lateral incisor.



Balance

The individual proportions of teeth reworked to golden ratio with symmetry maintained gives a balanced look to the beholders eyes. Balance is not



only essential in establishing midline, but is also required in establishing the direction of teeth on either side of the midline.⁴

Dominance

Colour shape and lines are factors that can create dominance. The stronger the subsequent element, the stronger the dominating element and more vigorous the composition will be. In the entire smile evaluation going through the problem listing, the recessive parameters are made dominant or dominant parameters are made recessive to achieve a balanced free flow of smile

Case Report

A 41 year old female patient reported to us with the chief complaint of malaligned fractured and discoloured anterior teeth which she was not liking at all. On examination the patient had Ellis class II fracture in 11, Ellis class I fracture in 21, palatally placed and grossly decayed 22 with blunt labial tissues, non proportionate clinical crown height, 11 showing passive eruption and with pseudo pocketing

Treatment

After clinical and radiographic examination proposed smile designing was done with the help of photographs taken in printouts and the problem listing was made and pencil drawings were done to mimic the possible outcome. A team of doctors including Cosmetic dental specialist, Endodontist and Laser dental specialist evaluated and made possible suggestions to a faster but long lasting solution. The treatment and cost was discussed and finalised with the patient and lab support to do the same in fastest way was confirmed

Problem listing

- Discolouration of teeth
- Right lateral incisor with height width ratio not in proportion
- Ellis class II fracture in upper right central incisor
- Ellis class I fracture in upper left central incisor
- Palatally placed and grossly decayes left lateral incisors





Treatment done

1. Oral prophylaxis
2. Single visit endodontic treatment for 11 21 23
3. Extraction of 22
4. Gingivectomy and pontic seat creation for 22
5. Laser assisted crown lengthening and esthetic recontouring 13 12 11 21 22 23
6. Crown preparation to receive metal free ceramic crown and bridge for 11 21 and 23
7. Crown preparation for wrap around laminates for 13 and 12
8. Upper and lower elastomeric impressions taken
9. Lithium disilicate Emax crowns⁵ for 11 and a bridge 21 22 23.
10. Lithium disilicate laminates⁶ for 12 and 13

Discussion

The treatment choices were to give esthetically pleasing smile in shorter period that is within a week time. So single visit endodontics and crown lengthening using Waterlase Er:Cr:YSGG laser (Biolase USA) and extraction of 22 was done in the first visit itself.

In the second visit within 2 days time, pontic seat preparation was done in 22 region with Waterlase Er:Cr:YSGG laser. Crown preparation was done from 13 to 23 and elastomeric impressions were taken. Shade mapping was done with Vita-3D master and called for wax trial in white wax.

Keeping the esthetic principles in mind the wax carvings were done. The end result was made a try in

in the third visit and was much satisfactory to us as well as to the patient.

After glazing to a medium glaze the ceramic laminates and crowns were delivered in the fourth visit ie on the 7th day.

Conclusion

An organized and systematic approach is required to evaluate, diagnose and resolve esthetic problems predictably keeping the principles of esthetic makeover in mind. Multidisciplinary and faster treatment protocols were followed and we could finish the entire process in 7 days time because of the support from the lab.

Team Involved

Dr. Lakshmi A (Cosmetic Dental Specialist)

Dr. Shanthini Jyothish (Endodontist)

Dr. Segin Chandran (Maxillo Facial Surgeon)

Lab Support: Dentcare, Muvattupuzha.

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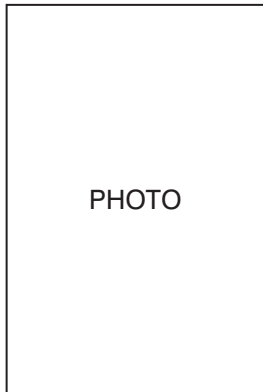
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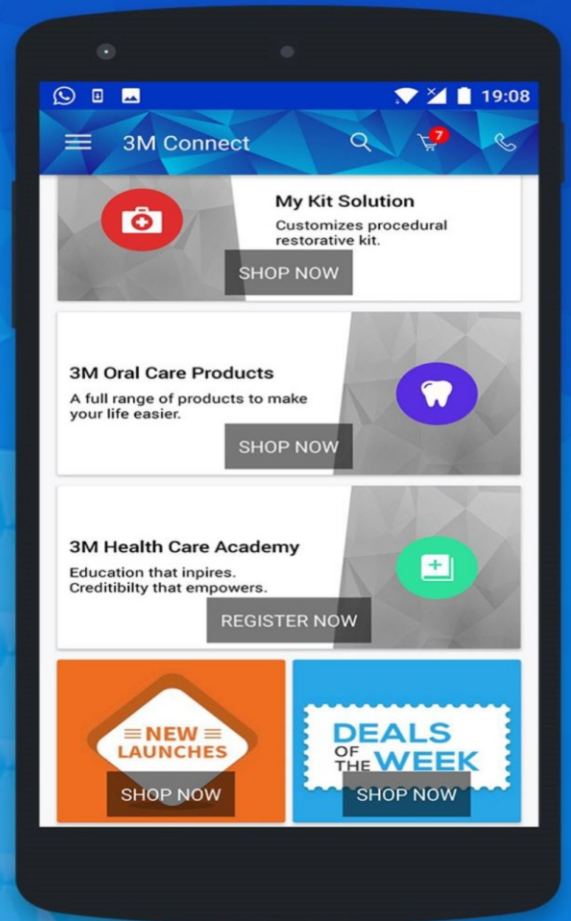
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* For the full text of the Cochrane Review, please visit:
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010514.pub2/abstract?sessionid=217E52E32B87ADA7C2AD66C3244DF12.F01103>

1. Oral Care Professional Brand Recommendation Study conducted by IPSOS in 2014

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