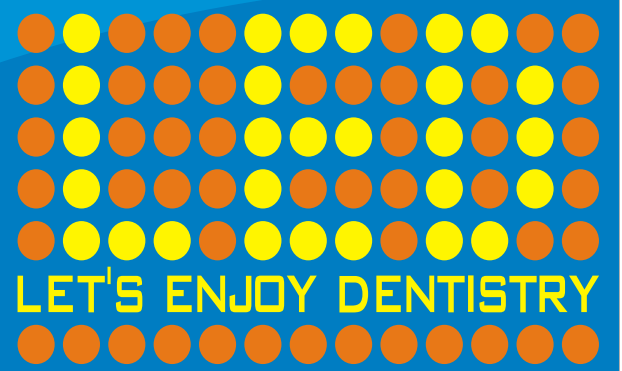




L.E.D.

— LET'S ENJOY DENTISTRY —

The August Voice of Dentiana

March 2016 Vol. 1 Issue 3 **E-JOURNAL** only Pages: 155

An Official Publication of Indian Dental Association, Ludhiana Branch



Contents Index



S. No.	Title	Details	Page No. From-To
1.	Introduction	Welcome	5 – 8
		Basic Info & Contact Us	5 – 7
		Mission & Vision	8
2.	Insight into the Journal	Information	9
3.	Advisory & Editorial Board	The Stalwarts	10 – 11
4.	Feedback	Suggestions	12
5.	From the Editor's Desk	Dr. Bhavdeep Singh Ahuja	13 – 15
6.	Management of Very Deeply Placed Dental Implant With A “Screwmentable” Monolithic Zirconia Crown With Regular Straight Abutment	Dr. Sanjay D. Jamdade & Dr. Jasbrinder Singh Teja	17 – 30
7.	28 Hours a Day – Be the Master of Your Time – Part III	Dr. Gautam Madan	32 – 44
8.	I belong to thee – Denture Labelling – Part I	Dr. Moez Khakiani	46 - 48
9.	A Single Step Apexification of a fractured tooth and Prosthetic restoration using Emax crowns and Veneers – A One year Follow up	Dr. Pratiek Gupta	50 – 64
10.	Full arch implant borne FDPs in clinical situations with limited	Dr. Nigam Buch	66 – 80

	bone height using inclined/tilted implants		
11.	Photodontics – Part III	Dr. Mayur Davda	82 – 88
12.	Anterior Fiber-Reinforced Composite Resin Bridge	Dr. Shaminder Pal Kaur Daihar Dr. Virinder Goyal Dr. Arunima Guru	90 – 98
13.	Conservative Treatment for Keratocystic Odontogenic Tumour – A Case Report of Two Cases and Review	Dr. S.P.S.Sodhi Dr. Gursimrat Kaur Brar Dr. Ritu Bala Dr. Ramandeep Singh Brar Dr. Kamaldeep Kaur Aulakh	100–113
14.	Role of Serratiopeptidase in Post-Operative swelling after third molar removal	Dr. Sameer Kaura & Dr. Sumit Bansal	115–121
15.	Esthetic Closure of Midline Diastema with Direct Composite Resin Restorations – A Case Report	Dr. Bikramjeet Singh	123–130
16.	Managing Better – An Art and a Science – Part III	Dr. Bhavdeep Singh Ahuja	132–137
17.	Feedback	Prize Winning	139
18.	Appendices	E-Journal	140 – 155
	Author Guidelines	For Publishing	141 – 145
	DCI - Revised Code of Ethics	Dental Council of India	146 – 155



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L.E.D. E-JOURNAL

Let's Enjoy Dentistry Ludhiana

The August Voice of DENTIANA

An IDA Ludhiana Branch Initiative

L.E.D. E-Journal

Let's Enjoy Dentistry, Ludhiana

The August Voice of Dentiana

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Mission & Vision: The Mission of **L.E.D. Journal** is to serve as a platform for stimulating, guiding, motivating & support young upcoming dentists to rub shoulder to shoulder with senior professional colleagues & thereby find a footing for themselves in hard working, yet a lot competitive dental world. We wish to promote research & developmental activities in the world of Dentistry manifold. We also intend to increase the scientific contribution & promote development of Dentistry in Punjab especially Ludhiana. through increased exchange of knowledge & ideas. **L.E.D. Journal** will strive to be a high quality medium which aims to increase the understanding of new upcoming dental technologies & revolutions every month, thus with the overall goal of improving dentistry standards in Punjab especially Ludhiana.

Insight into L.E.D. E-Journal

Dear Fellow IDA Members,

Here is an insight into the basic format for the **L.E.D. E-Journal**:

1. The E-Journal is in a safe, secure & encrypted PDF format & all the E-Journal download website links (from IDA Ludhiana and the Editor-in-Chief) are compatible with all the digital devices viz. Desktop, Laptop, Tablets, All Cell Phones (with internet) & i-Phones as well. The encrypted format is to ensure against plagiarism.
2. The E-Journal content has been watermarked and guarded against printing so as the authors can feel safe whilst publishing with us. However, Authors can request the Editor-in-Chief for a printable copy for their record, inspection or any other purposes.
3. The print version of the E-Journal would be available on request and payment (**even for authors**).
4. The size lay out of the E-Journal is around 11" by 20" (A normal A4 paper is 8" by 11") with body text size 20 and font Bookman Old Style with 1.5 line spacing in the text. The body text is justified. For headings, the body text size is 22 (in **Red/Orange** Colour).
5. The colour of the body text in the E-Journal is **Plum** & for headings, images, bullets and numbering, it is **Red/Orange/Pink**. For headings & images, body text with '**Bold**' has been used.
6. The E-Journal will be available on the IDA Ludhiana Websites & Mirror Links and also on the Editor-in-Chief's personal website (**www.drbhavdeep.com**) and across all the member emails (**if provided and on request**). So, if you still haven't updated your email id with Hon. Secretary/Hon. Treasurer, please do so at the earliest.
7. It will be a monthly outing and would release around the first week of every month.
8. Each issue will have around 11 articles - 8 by the crème de la crème (best of the best) of the dentistry (National Authors from India) which includes some of the top notch speakers and 3 from the members of IDA Ludhiana Branch.
9. There will be some special issues in the calendar year (approx. 2-3), in which the volume of scientific content would be huge & rich.
10. A few of the best known names are writing a series of articles as well for the E-Journal.
11. The E-Journal will be available standalone as well as coupled/combined with the E-Newsletter, **PAGE 3 OLD**.

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Your (the reader's) opinion matters to us the most. For striving to improve continuously, we solicit your earnest support in the form of suggestions. The suggestions can be brickbats or bouquets. Both will lapped up in equal measure by us. There might be areas where, in trying to not put a wrong foot forward, we have treaded the safe path/zone, however, in certain other sections; we might have ruffled quite a few feathers. We do request you to just put in a few lines at the Editor's email drbhavdeep@gmail.com regarding what is your opinion about:

1. The design
2. The layout
3. The content
4. Other sections of the Journal
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The suggestions/feedback by the members would be **published with due credits** in the **next issue of the L.E.D. Journal**. However, if the Branch Member wishes to keep his/her identity secret/hidden, the same would be given a respect and the feedback published under the heading **Anonymous**.

Please get going, pick up your finger and type out you feedback/suggestions to the Editor, Dr. Bhavdeep Singh Ahuja at drbhavdeep@gmail.com.

A graphic with the text "Give Us Your Feedback" in a large, bold, olive-green sans-serif font. To the right of the text is a large, olive-green megaphone icon pointing towards the text. A faint, diagonal watermark reading "L.E.D. Journal" is visible across the background.

Give Us Your
Feedback

From the EDITOR's Desk

Dr. Bhavdeep Singh Ahuja graduated in 1998 from DIRDS, Faridkot (Punjabi Univ. Patiala). He has specialized in Implants from BioHorizons Inc. USA in 2004-05 & in Advanced Course from LACE-ICOI, USA in 2006. Apart from Dentistry, he holds a Triple M.B.A. in Hospital Management, Human Resources & Marketing from three premier Institutes/Universities of India viz. the IIMM Pune, IGNOU New Delhi & Annamalai University. He holds Post Graduate Diploma's in various specialties viz. Medical Law & Ethics (NLSIU), Clinical Research, Cyber Law, Disaster Management, Financial Management, Bioinformatics amongst many more from different Universities. He is a Certified Health Care Waste Manager from IGNOU & is qualified in Consumer Law as well. He is an academically oriented dentist & has many Original Scientific Publications to his credit in many International & National journals. Presently, he is into 17th year of Clinical Practice in Ludhiana, Punjab.



Dear Peers in Profession, Colleagues & My Dear Friends,

Warm Greetings from the Editor

JNU has been one of the finest university of India. Its importance to India's intellectual life is well known, widely recognized & undeniable. It has germinated social scientists, highly rated in the world, and its former students have been and are in the higher echelons of the government, bureaucracy, policy institutions and media; many vice chancellors (including the newly appointed vice chancellor of Delhi University), directors of research institutes and chairpersons of important academic institutions are drawn from JNU.

Writing this editorial, my head is hung in despair, rather I am angry and ashamed. The students enjoying an Indian government subsidized University program right in the center of Delhi would chant slogans like: "The war would continue until India is destroyed" and "India should get out".

Should India get out of JNU?

Is JNU a part of Pakistan now?

To say the least simply, this is plain goondaism. The intolerance debate has gone too far this time. As far as I listen to "No death penalty for anyone" or "Afzal Guru was wrongly executed" or similar stuff, I can somehow digest it, albeit with difficulty. I can even grit my teeth & tolerate someone saying "Yakub Memon should not be hung and he is a hero" [like what Rohit Vemula did]. But, when someone is chanting "Death to India" and "We will war India", they are way over the line and should be punished for treason. I always marvel at India's ability

of having a stable democracy despite the cacophony of contrasting voices, opinions and actions. I also find the strange relationship between patriotism and jingoism in India bemusing at best. Just take a step back and look at it objectively!

What happened in JNU is not a new issue but a forever recurring issue which will keep reappearing every now and then. Every time there is a controversial issue every Indian is supposed to dis/prove his/her patriotism by choosing sides. This phenomenon has been gaining prominence since the last few years.

- Afzal Guru's death penalty and hanging
- Yakub Memon's hanging and his hero-funeral
- Dadri lynchings due to suspected beef consumption
- Award returning by artists and writers on alleged intolerance
- Actors saying stupid things and the stupid reaction to that stupidity.
- Rohit Vemula's suicide
- 'Burning' Haryana and now the
- JNU campus row & so on.....

It has just created hot-beds of mental violence rather than solutions to prevent further degradation of society. This is not just an affliction of India but even in US (another powerful democracy). The biggest bugbear of our country is our inability to separate religion/caste/class and the state. I understand that several developed countries too grapple with a similar problem. When members of one religion/caste perceive that the state's policies favour one religion/caste over the other, the disadvantaged group will retaliate in not so nice ways. Often patriotism, religion and Indian-ness are mixed into an ugly potion. All political parties in India are waiting on the sidelines for such issues and jump at it with the help of a biased media narrative. We are literally sitting on a time bomb. We should consider ourselves lucky that we have not degenerated into a banana republic and not involved in civil war like situation like many African nations. The people who have shouted anti-India

slogans should be tried and convicted and given a harsh punishment without a doubt. It is totally reprehensible on part of any citizen to do such things, but, let us not paint the whole of JNU red. The free and open environment and election process of JNU has of course, given a group of people the audacity to do whatever they want. They need to be dealt with harshly and brought to the book.

But, what is disturbing is people calling JNU anti-national and asking to shut it down. We used to have saner voices, not such jingoistic uproar. Just because a section of students, maybe a large section of students, have taken to such inexplicable behavior doesn't mean the whole of JNU is a hub for anti-national activities.

There was a time when Atal Bihari Vajpayee as Leader of Opposition went to Geneva with Salman Khursheed in 1990's to oppose the UN resolution which was against India. Pakistan was shocked seeing both of them as they successfully blocked the resolution. Indian politics have again reached a low ebb when parties are speaking and reacting like Harvey Dent (Two Face) way, speaking on both the sides.

This is a far more important issue and silence here is not going to be taken lightly. This is not some offbeat leader or university saying some random crap. This is a university that dominates the social sciences in India and these students are going to influence Indian schools, colleges and legislative assemblies with their books and articles. If the university doesn't bell this cat and put out hate speech in its campus, Indian government probably will. I never wanted to mix Dentistry with politics, but first JNU & then 'burning' Haryana in February 2016 made me react unlike a sane individual.

I hope you all liked the Endodontic Special Issue of LED E-Journal, Feb. 2016. The Vol. 1 Issue 3 March 2016 of LED E-Journal issue promises to be bigger and better with a wide variety of cases from the big wigs of Dentistry.

Thank You, See you in next issue!!!!

Bhavdeep

<i>Dr. Sanjay D. Jamdade passed his BDS from the Government Dental College in the year 1988 & in his current dental practice since 1990. He incorporated dental implantology in his practice in the year 2007 and went on to do his Post Graduate Certification in Implants and Oral Rehabilitation from the New York University in the year 2009. He incorporated a microscope into his practice in the year 2010 and since, then has a Microscope Enhanced Dentistry and a Dental Implantology and Oral rehabilitation focused dental practice. He was a speaker and demonstrator on dental implantology for about 5 years at the prestigious Smilecare Dental Education Institute Mumbai. He has published 5 papers in an indexed journal on various topics and has been an avid blog writer for quite some time. He was also appointed as an associate editor on the board of "Dental Follicle the E journal of Dentistry".</i>	
<i>Dr. Jasbrinder Singh Teja graduated from Bapuji Dental College, Davangere in 1997. He has successfully completed his M.Sc. in Implantology from the department of Implantology and Maxillo- facial at Johann Wolfgang Goethe university Frankfurt under Professor Georg-H Nentwig (Ankylos implant system). He has been in private Clinical practice since 1998 practicing Implantology, endodontics, restorative, prosthetics and basic oral surgery. He has completed in depth his master's thesis- tomographic contour evaluation of submandibular fossa and the bone height above mylohyoid line at the area of first & second molars. Dr Teja is the Director of the Institute of oral Implantology & dental skills Teaching ORAL IMPLANTOLOGY to Dental practioners of the region.</i>	

Management of Very Deeply Placed Dental Implant With A "Screwmentable" Monolithic Zirconia Crown With Regular Straight Abutment - *A Case Report*

Author: Dr. Sanjay D. Jamdade

Co-Author: Dr. Jasbrinder Singh Teja

ABSTRACT:

Objective: To explore the possibility of restoring in to function excessively deeply placed dental implants with a screw retained CAD CAM milled monolithic zirconia crown pre-cemented on a regular abutment (screwmentable crown).

Materials and Methods: An abutment retrieval screw, Calibrated ratchet, Gingival former (healing post), Teflon, Straight abutment with screw and impression cap, Poly Vinyl Siloxane (PVS) putty and wash, Impression tray with tray adhesive, PVS gingival mask, Die stone plaster, CAD CAM milled Monolithic Zircona block, Air rotor diamond points on an air rotor handpiece and the services of a CAD CAM milling equipped dental laboratory were all used to

successfully restore form, function and esthetics in a deeply placed dental implant in maxillary posterior region.

Results: A well-proportioned emergence profile crown with tight contact points with acceptable esthetics meeting patient's demands and dentist expectations was successfully delivered.

Conclusions: A precemented crown on regular abutment can act as both cementable as well as screw-retained crown and is technically sound, superior, economical and convenient but underutilized option in restorative implantology and must be pursued more often.

KEYWORDS:

Conical connection dental implant, deeply placed dental implant, CAD CAM monolith Zirconia Implant Crown, Screwmentable implant crown, Soft tissue engineering around dental implants

INTRODUCTION

Dental implants have gone through many design and placement and restorative protocol changes over the years. Internal connection implants have sidelined External connection implants. However nowadays internal connection implants have branched out into conical connection internal implants. The USP of conical connection implants is that the implants can be placed sub crestally which will allow bone growth on implant platform and hence avoiding crestal bone loss amongst other advantages like ease of placement of implant abutments and avoidance of screw breakages, Cold welding of abutment to implant body and leak proof cold well seals leading to sterile implant abutment connections.

Having said that implant placement has to be careful as excessively deeply placed implant may not be easy to restore.

Following is a **case report** of a case where an implant was placed

too deep which led to earlier unsuccessful attempts to restore the implant to ideal parameters and patient satisfaction.

CASE REPORT

A young patient arrived with a history of dental implant which was placed in some other practice about 1.5 years earlier. The patient had been unhappy with the prosthetic crown and always had a complaint about food impaction and food lodgment around the same implant related prosthetic crown. The previous 3 dentists each had made implant crowns which were not pleasing to the patient as the food lodgment and food impaction continued in spite of crown changes. No history regarding Sinus lift or grafting could be available from the patient.

On examination an implant crown with contact points that were opened up and chipped ceramic was seen. (Fig. 1)



Fig-1: Chipped Ceramic Crown on the first Molar

An X-ray picture was taken showing a 3.3 diameter 11.5 mm length Equinox Myriad implant placed approximately 7-8 mm sub-gingival to the gingival crest. (Fig. 2)

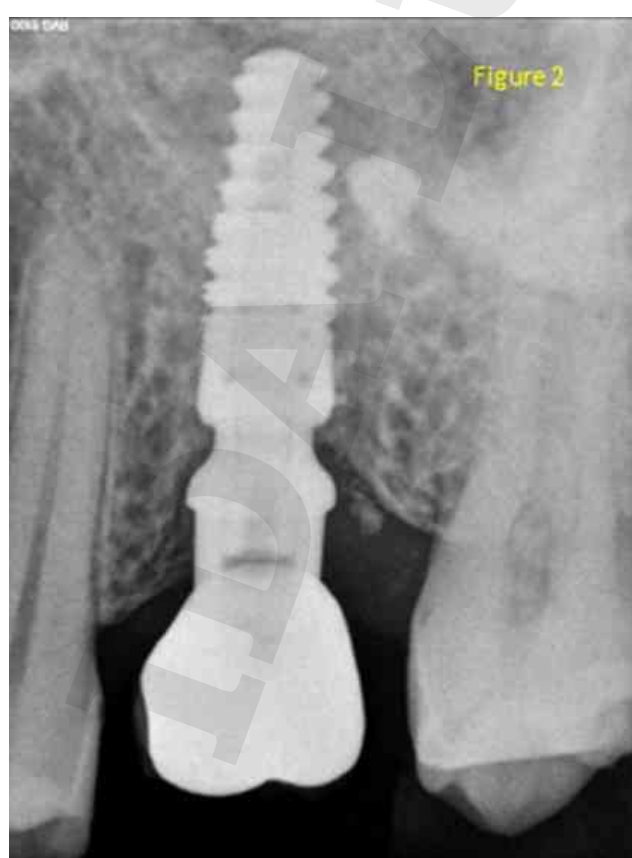


Fig-2: Radiographic View

The patient had an occlusion which took guidance from the distal most teeth i.e. “molar guided occlusion”. As the canine were placed such that canine guidance was impossible. The existing implant crown was short of the implant abutment platform even short of the gingival crest. Even the contact points of the adjacent teeth were flattened. The patient reported that some of the earlier dental work led to the contact points being flattened. The patient was explained that the contact point loss was a loss which is not always satisfactorily addressed though every attempt shall be made to improve the situation.

The situation was explained to the patient and a fresh implant crown was planned. The case was discussed with the laboratory technician and a CAD CAM milled monolithic Zirconia crown cemented on regular abutment was planned.

Under the guidance of Dr. Jasbrinder Singh Teja of Chandigarh, an Equinox Myriad implant abutment retrieval kit, Gingival former, implant level impression transfer posts were procured and the restorative technic and materials were discussed in detail.

On day one, the implant zone was anaesthetized and the ceramo metal crown was penetrated with a metal cutting bur and a screw hole was opened up and the retaining screw was removed. The screw was loose inside. However the abutment was cold-welded and hence removed with a retrieval screw. (Fig. 3)



Fig-3: Retrieval of Abutment from the Implant

Once the abutment was removed an incision was taken and the periphery of the implant platform was explored for any bone overgrowth and fortunately, there was none on the implant platform. Soft tissue on either side was teased aside to create space for a special modified healing abutment. (Fig. 4)

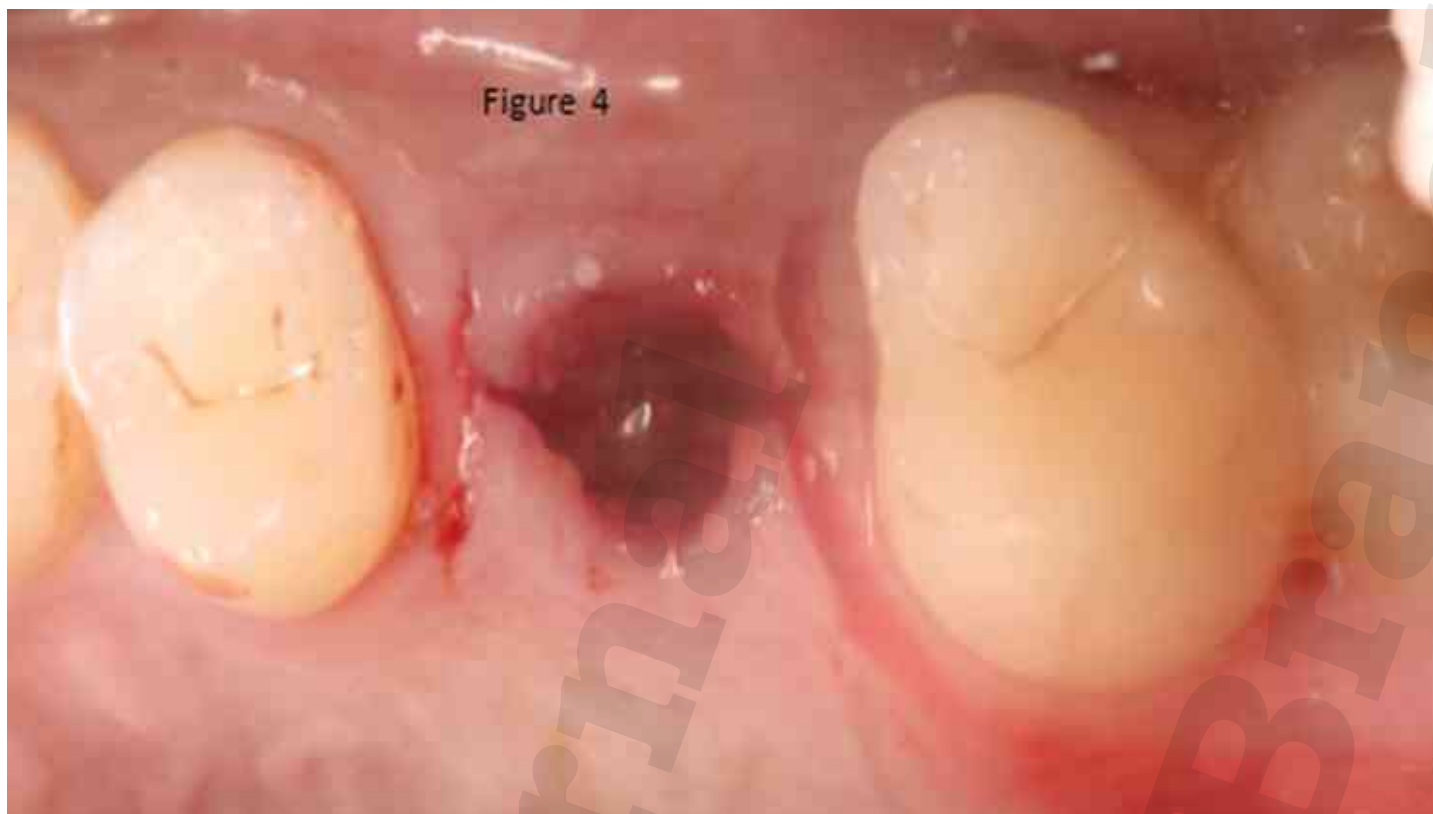


Fig-4: Soft Tissue contouring for placing a ‘Modified’ healing collar

Composite was coated on the side of the Gingival former and placed in the implant however the composite didn’t stay in place. Hence, Teflon tape (Plumber’s tape) was wrapped around the gingival former in multiple turns and placed into the implant and it stay put in place. Patient was prescribed analgesics to alleviate the anticipated pain. (Fig. 5)

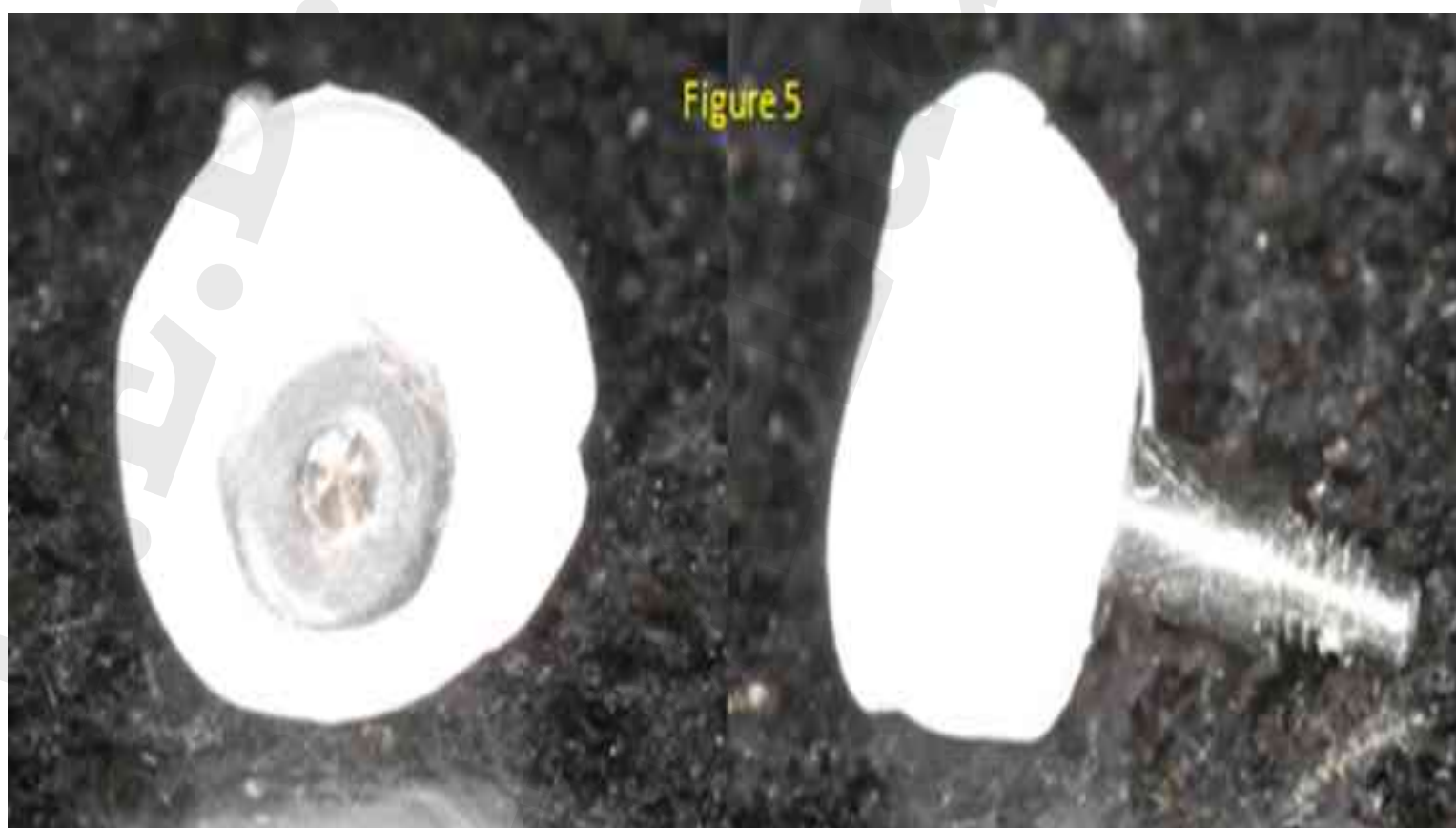


Fig-5: Teflon Tape wrapped around the healing collar for creating the contour to achieve enhanced soft tissue profile

The former was left in place for about 2 weeks and the patient was called weekly to check progress of gingival healing. (Fig. 6)

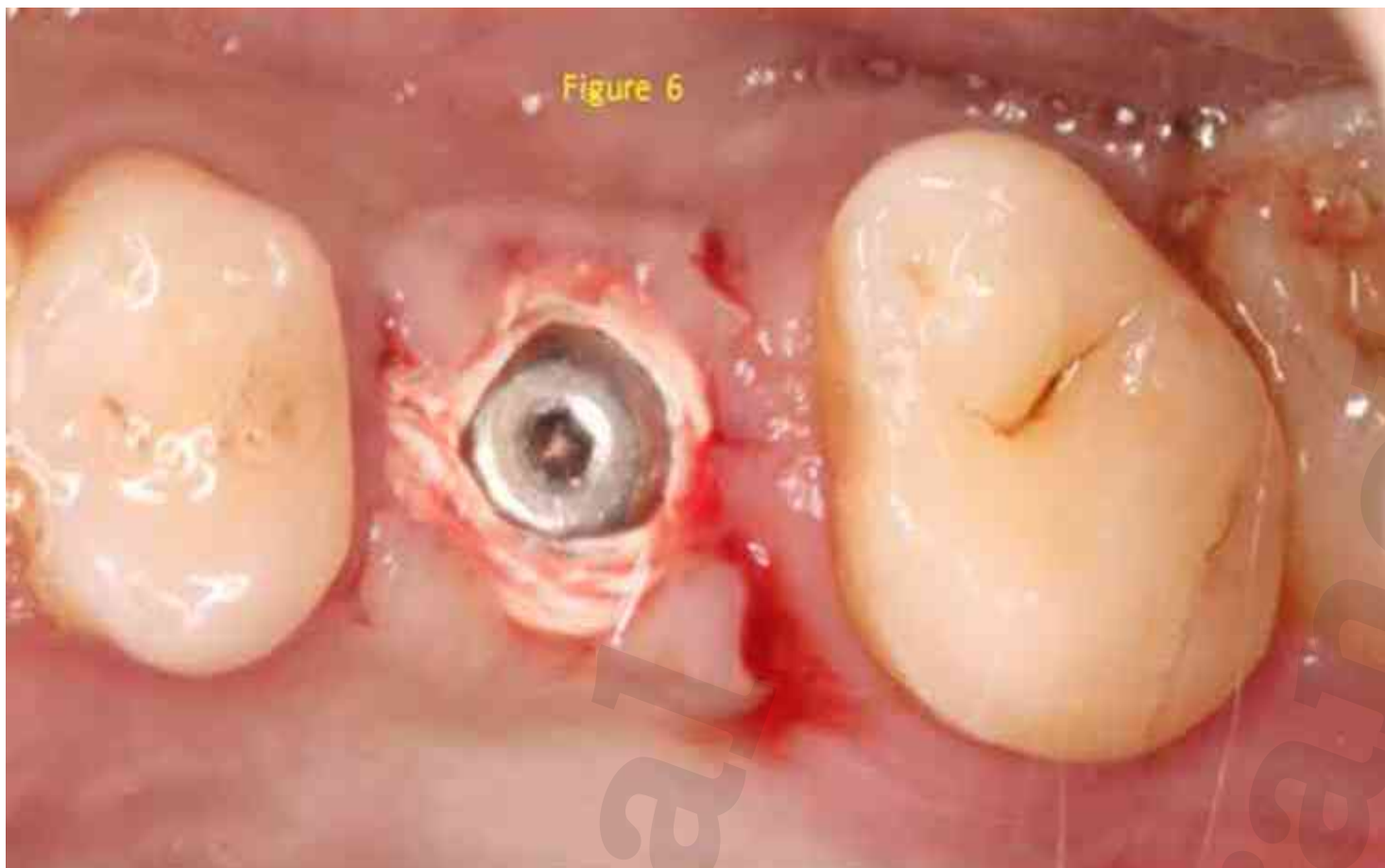


Fig-6: Follow up of the 'Modified' collar

2 weeks later the former with Teflon tape was removed and a very nice gingival trough was seen around the implant platform.

(Fig. 7)

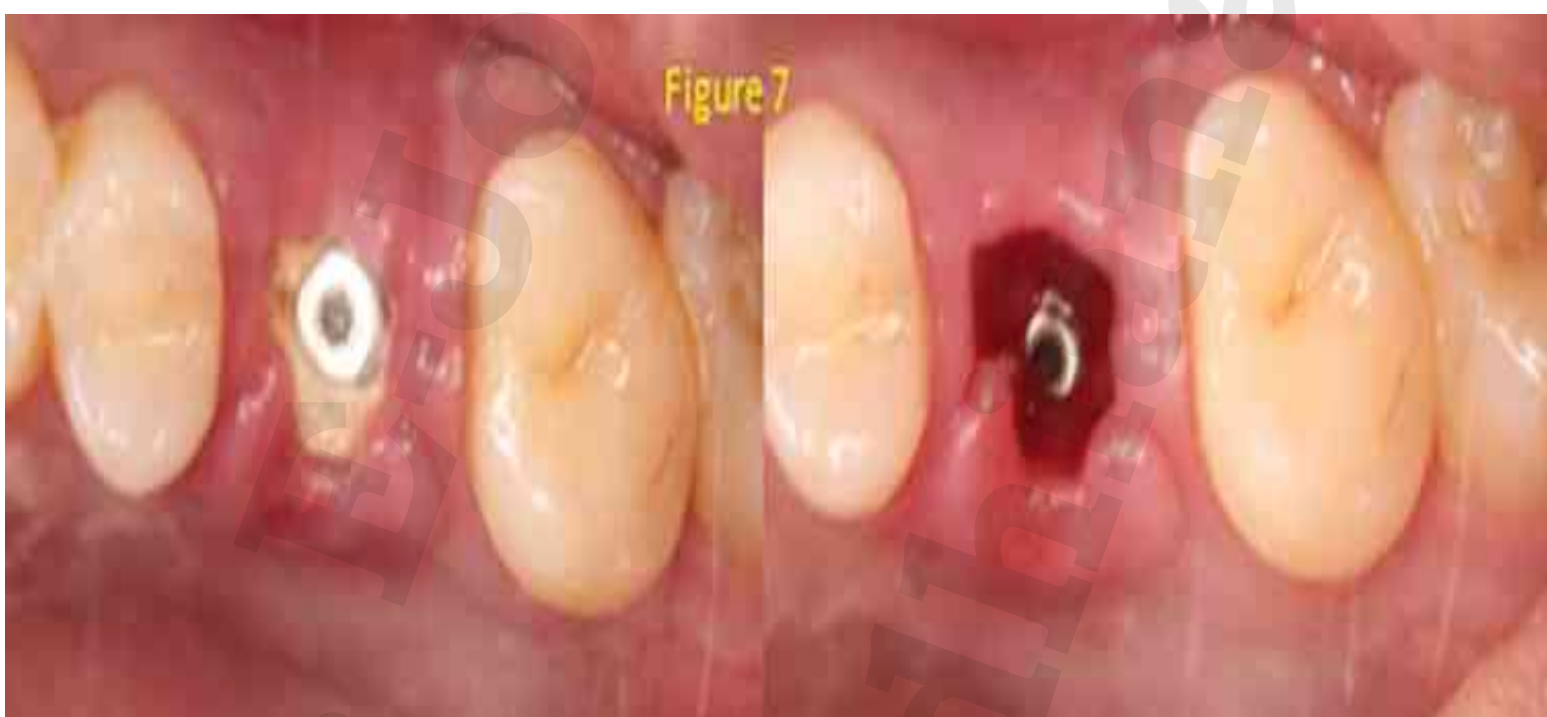


Fig-7: Healthy gingival contour achieved after 15 days

An Impression transfer with plastic impression cap was fitted on top of the impression transfer post and a closed tray impression was taken. Before placing the impression tray a syringeable low viscosity PVS material was syringed into the gingival trough and gentle air was blown into it to ensure complete flow and then the tray loaded with Putty and wash was placed over it. After a 5 minute set the tray was removed with the plastic impression locked in the PVS putty. (Fig. 8)

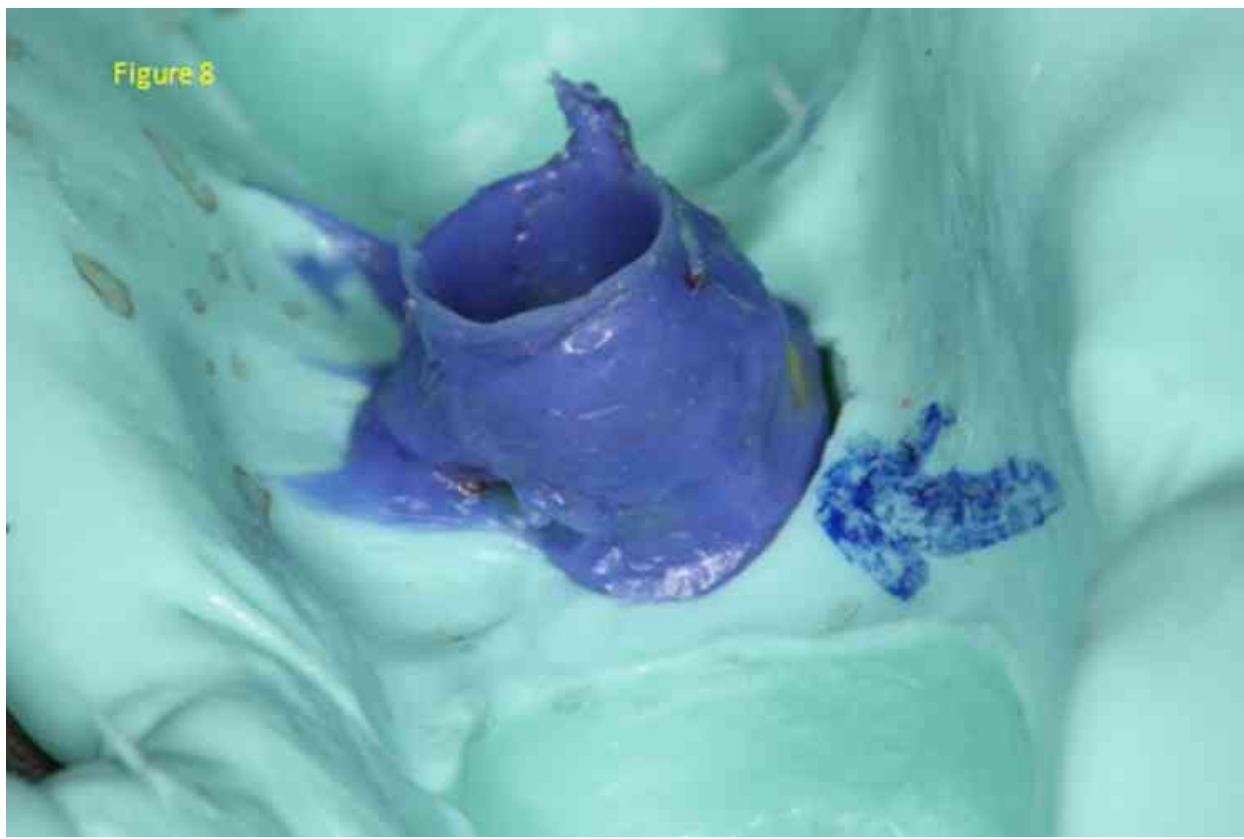


Fig-8: PVS (PolyVinyl Siloxane) Putty Impression

Similarly opposing arch impression was also taken with a PVS putty and wash. The impression trays and the details were submitted to the dental Lab stating the requirements about the contact points and emergence profile etc.

A CAD CAM milled monolith Zirconia (Czar) was fabricated (Fig. 9) and tried in the patient's mouth. (Please note how the entire length of un-prepared abutment is almost hidden inside the gingiva).



Fig-9: Lab Fixtures received – Unprepared Abutment almost inside the gingiva

The shade was found to be lighter and some high points and contact point issues were identified and sent back to the laboratory for correction. (Fig.10)



Fig-10: Crown Try-in & deficiencies notified to the Lab

Few days later a corrected crown was received. The crown was now precemented by the lab and was now a “one-piece pre-cemented screw retained monolith Zirconia crown (“screwmentable crown”). The implant crown was placed into the implant and an X-ray picture was taken to check the fit before torqueing the abutment in at 35 ncm torque. (Fig.11)

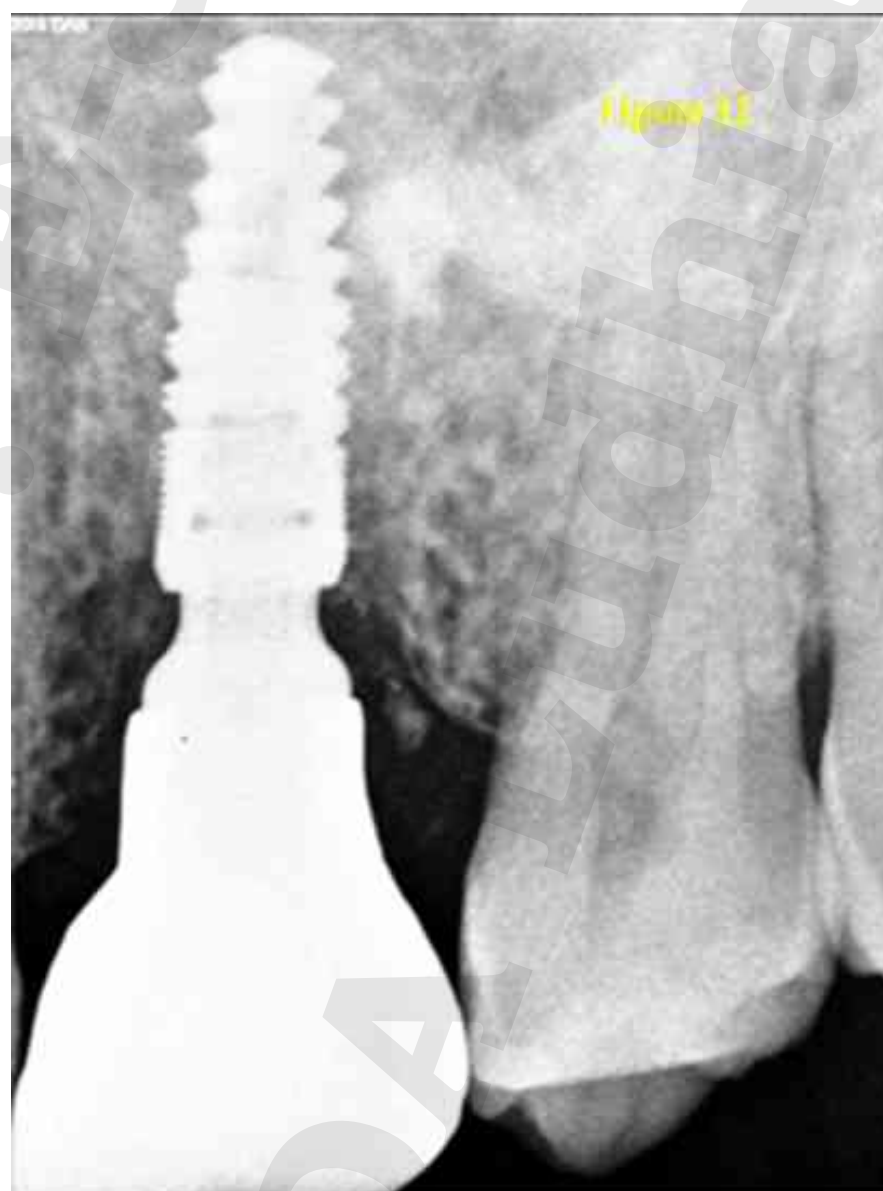


Fig-11: Radiographic View of the Seated Crown Try-in

The screw hole was closed with Teflon tape and white Gutta

Percha and finally covered with composite and cured. The occlusion was once again checked.

In spite of the staining the Zirconia crown was lighter than the neighboring teeth however since the contact points achieved and better emergence profile more than compensated for that deficiency. (Fig.12, 13)



Fig-12: CAD CAM Milled Monolithic Zirconia Crown (Czar) in Place on the Implant



Fig-13: CAD CAM Milled Monolithic Zirconia Crown (Czar) – Side View

The patient subsequently reported that his original issues had gone away and he was very much satisfied with the new crown. The depth of implant placement can be appreciated on the model. (Fig. 14)

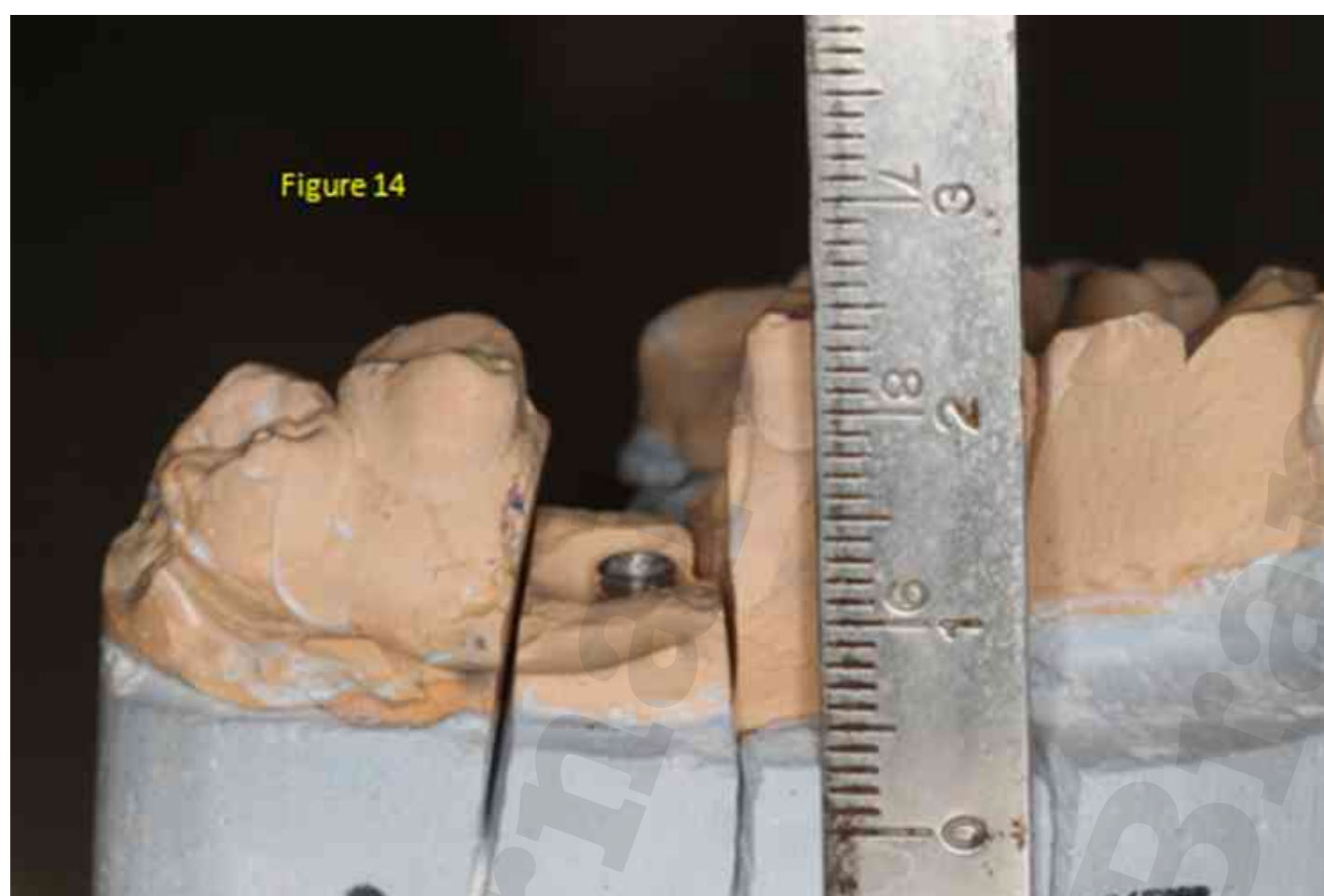


Fig-14: Depth Gauge to check for the New Crown Height from the abutment level

DISCUSSION

- 1.** Platform Switched conical connection dental implants are in vogue today. Platform switching promises increased soft tissue volume due to increased preservation of crestal bone and bone growth above the implant platform and conical connection promises tight seal and higher mechanical strength of connection and prevention of load on implant screw due to zero micro motion solid connection that virtually removes the risk of screw loosening and subsequent breakage. The tight bacteria proof seal minimizes stress induced resorption in the marginal bone by optimally distributing load and ensures a healthy peri-implant soft tissue free of inflammation.
- 2.** In an animal study on sub crestal implant placement, they found that Subcrestal implant placement had a positively influenced the papilla formation and crestal bone remodeling around adjacently placed multiple implants, and the presence of bone growth above the platform of the implants might play a beneficial outcome for esthetic regions.

- 3.** Advantages of conical connection of implants has been clearly studied and highlighted in a Taiwanese study by Hsien-Ching Hong et al and advantages have been highlighted they suggest that Internal cone connection seems to have superior sealing ability and minimal microgap because of the large surface area between the implant fixture and the abutment and that internal cone connections have better mechanical performance under torsional bending force.
- 4.** Biologic width development and apico coronal, mesio distal placement and bucco oral placement consequences have been reviewed at depth by Joumayma Saad Bassil in his post graduate thesis paper. Here he concluded that the implant-abutment connection has a big role in the success of the implant treatment by the preservation of the position and the integrity of the biologic width as the biologic width is directly related to the crestal bone level and gingival recession.
- 5.** In anterior region Wang et al suggest that to achieve an esthetic emergence profile, the implant platform should generally be placed 3 to 4 mm apical to the cemento-enamel junction (CEJ) of the adjacent teeth and should be 1.5 to 2 mm away from the adjacent roots. Clearly in this particular case the implant was positioned far deeper than the ideal depth of placement in the anterior teeth where aesthetics is of far greater importance.
- 6.** M. Handelsman in his paper in the British Dental Journal as well as Kois and Kan in their article have again confirmed the same that ideal depth of placement is about 3-4 mm from the free gingival margin of the deepest concavity on the labial Gingival scallop.
- 7.** However, implants that are too deeply placed may be challenging to restore prosthetically. Hence depth of placement of implants must be made keeping the level of the platform in mind. That was clearly the case here where the depth was far too deeper than ideal.

- 8.** Depending on what the system permits or prescribes operators must go to that depth only. The ideal depth of placement varies according to implant design and abutment design. Platform shifted implants with conical placement implants can and should be placed sub-crestally like in this case yet the depth of placement should be such that prosthetic fittings can be placed inside the implant connection with ease. Implant crowns must be made such that the crown margins reach the abutment chamfer so that soft tissue sculpting emergence profile and papilla creation and embrasure fill with papilla is possible.
- 9.** Such cases can be restored successfully only after purposefully flaring of the soft tissue contours and creating a visible wide trough of gingiva round the implant head. That allows ease of impression and also allows flow of impression materials and gives a great emergence profile
- 10.** Considering that the abutment chamfer to crown margin would be going very deep inside the tissues the risk of post-operative inflammation of Gingiva due to cement would have been higher as such a deep cement line was not cleanable. So also Porcelain fused to non-precious alloy crown when placed so deeply would have accumulated many corrosion products over time again leading to discoloration of Gingiva and inflammation of Gingiva.
- 11.** Hence, a CAD CAM milled Zirconia crown pre cemented on the standard abutment would address the issue of cement line cleaning as well as Bio acceptability and tolerance of crown material.
- 12.** Theodore Kapos et al have suggested that in delayed loading protocols the implant survival rates between CAD/CAM restorations and conventional implant-supported frameworks are quite similar and that in short-term follow up of between 3.5 to 6 years the survival of prostheses fabricated by CAD/CAM and conventional also presented comparable values. That CAD CAM milled Zirconia crowns do well on dental implants is thus established.

13. Castable abutments used in implantology tend to distort mildly. Declan Byrne et al in their paper have stated that the adaptation of abutments to implants was very high for assemblies with premachined abutments than for those with especially casted abutments.

14. Hence use of the manufacturer supplied abutment was thought of as a better choice than a castable abutment in this particular case. A misfit in a cast abutment placed so deeply would result in a misfit as well as loss of cold weld and corrosion product accumulation inside the connection of implant as well as accumulation of bacterial biofilm.

CONCLUSION

Depth of placement is an important parameter. It is common to erroneously place implants supra crestally. It is uncommon error to place implant too deeply. Deeply placed implants can be challenging to restore and technical know how about how to best resolve the issue must be explored with subject experts and technicians. Implant practices demand higher technical knowledge and skills.

Considering the situation the use of a prefabricated abutment with precemented CAD CAM milled Zirconia Screw retained crown “Screwmentable” prosthesis was the best solution for that particular patient and a restoration satisfying all patient expectations was successfully delivered.

ACKNOWLEDGEMENTS

Dentech Laboratory Mumbai

REFERENCES

1. Arthur B. Novaes Jr, DDS, MScD, DSc; Raquel R. M. Barros, DDS, MScD; Valdir A. Muglia, DDS, MScD, DSc; Germana J. Borges, DDS “Influence of Interimplant Distances and Placement Depth on Papilla Formation and Crestal Resorption: A Clinical and Radiographic Study in Dogs” *Journal of Oral Implantology* Vol. XXXV / No. One / 2009

2. Hsien-Ching Hong, Yang-Ming Chang, Yu-Hwa Pan. Taiwan "The Stability of Implant-abutment Complex with Different Implant-abutment Connection Designs –Review of Literature" Taiwan Journal of Oral Maxillofacial Surgery Vol 26: December 2015 page no 281,
3. Joumayma Saad Bassil. "Biologic width and Morse taper implant" Post Graduate exam thesis presentation for MDM degree at Universidade Fernando Pessoa Porto, 2015 page 53
4. Chuan-Yi Su, Jia-Hui Fu, and Hom-Lay Wang "The Role of Implant Position on Long-Term Success" Journal of Periodontology Vol. 4, No. 3, August 2014, Pages 187-193 M. Handelsman. 2006 "Surgical guidelines for dental implant placement" British Dental Journal Volume 201 No. 3 Aug 12 pages **139-152**
5. John C. Kois, DMD, MSD Joseph Y. K. Kan, DDS, MS Practical Procedures & Aesthetic Dentistry Journal 2001;13(9):691-698 "Predictable Peri-Implant Gingival Aesthetics: Surgical And Prosthodontic Rationales"
6. M. Handelsman. "Surgical guidelines for dental implant placement" British Dental Journal Volume 201 No. 3 Aug 12 2006
7. Theodoros Kapos, DMD, MMSc1/Christopher Evans, BDSc Hons (Qld), MDS (Melb)2 - "Cad/Cam Technology for Implant Abutments, Crowns, and Superstructures" The International Journal of Oral & Maxillofacial Implants Quintessence Publishing Co, Inc. 0 Volume 29, Supplement, 2014. -
8. Declan Byrne, Frank Houston, Richard Cleary, Noel Claffey "The fit of cast and premachined implant abutments "Journal Of Prosthetic Dentistry 80(2):184-92 · September 1998

P.S. Any feedback/compliments/queries for the Author/s should be emailed to the Editor-in-Chief, Dr. Bhavdeep Singh Ahuja at his email id: drbhavdeep@gmail.com

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28 Hours a Day

Be the Master of Your time - Part III

Effective Strategies to do more & take control of your life

Author: Dr. Gautam Madan



Continued from Vol. 1 Issue 2

TIME MANAGEMENT IN THE WORKPLACE

It is a sad fact that many employees tend to work longer than 8 hours in a day. The addiction of working continuously even after the clock strikes 5 has become a prevalent scenario in today's fast-paced world. For most employees, working overtime has become a way of life. Many employees admit that they feel obliged to do as much work as possible or to finish their tasks the very same day they're given. Some of the employees even work past midnight in the office just to get things done. This is absolutely absurd. There are much better ways of exceeding the expectations of the boss rather than sacrificing your health and personal life.

In this part of the article, you will learn some terrific tactics to enable you to get home early and achieve a balanced life.

WORK QUALITY HOURS

Some employees have a “happy-go-lucky” attitude; they work slower during work hours, waste time doing other things during office hours like chatting with their co-workers regarding the latest gossips, surfing the internet for personal reasons, and reading joke emails sent by their friends.

Not only will the employee spend less time for rest and relaxation by staying late in the office, but the company would also have to shoulder more overtime pay for work that can be finished within the regular working time.

If you want to maintain a balanced life, then leave your office early. You might think that this is not a logical step to take especially when you're bombarded with piles of assignments and reports that are due soon. But once you get the hang of this, you'll become more focused with your job and you'll spend less time doing unproductive tasks.

The magic word here is ‘Focus’. Tell yourself that you are leaving early by hook or by crook. By doing this, you are imposing a strict deadline on yourself.

When you make up your mind to go home early from work with full determination, your subconscious will help you in achieving such feat.

WORD of ADVICE: start gradually. If you're used to working 15 hours a day, you may start by lessening it to 12 hours, then to 10 hours, then finally to 8 hours. You may also decide which days of the week you'll be leaving work early.

For example, this week you'll go home early on Wednesday. Then next week, it's Wednesday and Thursday. Then the week after that, it's Monday, Wednesday, and Thursday. Keep on decreasing the numbers of hours you have to work for a particular week until you have achieved a normal 8-hour work routine daily.

But please. Don't leave the office early feeling guilty and unproductive. Just think: by achieving balance and getting

enough rest, you'll end up becoming more efficient than if you work countless hours the day before. A better use of your time is to plan on how you are going to handle the work that you will be doing tomorrow.

At the start of every day, always ask yourself, "What must I do to feel satisfied when I go home from work on time today?" Another great way to accomplish more is that during the middle of the day, contemplate on the tasks that you have already done, and then ask yourself "What other things do I need to finish?" You will gain more direction to accomplish whatever needs to be done.

BE EFFICIENT and PRODUCTIVE

Certain factors may negatively affect the employee's performance, the effect of which could be disastrous to both the employee and the company.

Listed below are some of the things you need to pay attention to if you want to become efficient at your job:

- 1. Do not accept more than you can handle:** Sometimes, people want to please their bosses so much that they would be willing to add up more work to their already unending tasks with the hope of being recognized and promoted. What they don't know is that they'll end up being more inefficient, frustrated, and stressed-out just to meet the deadlines. If you think you cannot accommodate an additional workload or a new project, then be honest and tell your boss about it. With a justifiable explanation, your superior would understand your situation and would be glad to assign the task to someone else with less workload.
- 2. Organize your files and office supplies well:** A table with too much clutter can leave you in disarray. Make sure you group identical things together so you won't have to waste time in finding the things you need. (Organization will be discussed in a later part of the article).

- 3. Move it:** Your body, that is. Exercise has been proven to reduce work-related stress and anxiety. Regular exercise can help maintain your body in tip-top condition to handle the challenges of work. If you can, stretch your body or take frequent breaks within your work schedule to revitalize yourself.
- 4. Get enough sleep:** Not getting enough sleep can make you drowsy and weak, thereby impairing your concentration and ability to do the job well. 7 to 8 hours is normal for most people but there is actually no norm. Some could sleep just 4 hours and still be in great working condition. Know the minimum hours of sleep you can take to become productive during the day and make sure you get enough of it daily. Take a short 15 to 30 minute nap during break time if you can. It will give you energy for the rest of the day.
- 5. Use devices or supplies that save time:** Get a stamper with your signature in it so you can minimize your time in signing documents. If you're given a choice, choose a laptop instead of a desktop computer for better accessibility to your work when you're outside the office.
- 6. Eat light lunch:** If you splurge in an eat-all-you-can treat at lunch, there's a big chance you'll get lethargic later on in the afternoon. Stay alert for the rest of the day by limiting your lunch, and by taking a light snack if you go hungry at mid-afternoon.
- 7. Make work fun:** Introducing a bit of fun into your work will make the day easier for you and your customers. Challenge yourself to process one hundred pieces of paper every day for five days. Have a friendly contest with a co-worker to see who can process the most billing statements in an hour with no mistakes. If possible, flip your morning and afternoon schedules for a change of pace.

8. Delegate: During the normal course of your work, you would most likely encounter time killers such as unwanted phone calls and emails, or waiting in line to photocopy some documents. If you could delegate these and other similar tasks to others, you could be freeing a lot of time for more productive pursuits.

GETTING THE MOST OUT of MEETINGS

Meetings can be effective ways of sharing information or reaching a decision. They can, however, be ineffectively run in a way that swallows up your time without giving a sufficient benefit. Just as jobs that you do have a cost, the meetings that you attend have a cost, not only of your time but also that of the other attendees. You should ask yourself whether the benefit of the meeting has been worth the time invested in both the meeting and the preparation for it. Was your contribution worth your investment? This section explains how to run a meeting in the most effective way possible, and then how to get the most out of meetings that you attend.

RUNNING MEETINGS

This section gives a series of recommendations that should help you to run effective meetings:

1. Hold meetings only when trigger events occur: Regular meetings are often little more than a security blanket, where the convenor feels vaguely that 'it is a good thing to communicate' with only vague ideas what to communicate about. Time is routinely made available for discussion, so discussion will expand to fill it whether this is cost-effective or not. In many cases it is much more effective to agree to hold meetings only when specific trigger events show them to be necessary. As an example, a manager may propose a meeting when he or she projects that resource difficulties may be encountered, and needs a decision on how to handle this. By

scheduling meetings to occur on trigger events, you can ensure that time is invested in the solution of a problem only when it is needed.

2. Use the Agenda Effectively: The agenda of the meeting shows the aim of the meeting, and points of discussion in priority order - effectively it is a To Do List for the meeting. Using an agenda helps to focus the meeting, stopping it drifting off-topic. If you circulate it sufficiently far in advance, it allows people to prepare fully for the meeting so the meeting does not stall for lack of information. Where many people are to attend the meeting, it may be beneficial for a small expert subcommittee to meet to prepare the agenda.

3. Setting the time of the meeting: You can usefully change the timing of the meeting depending on the habits of the attendees:

- a.** Where people tend to waffle excessively, you can schedule the meeting just before lunch or going home. This gives people an incentive to be brief.
- b.** Alternatively where other people are time conscious, writing the cost per minute of the meeting on a flip chart can have a focusing effect.
- c.** Where people tend to turn up late, start a meeting at an unusual time, e.g. 19 minutes past the hour. This seems to improve punctuality.
- d.** If possible, ensure that the meeting starts on time - where it starts late, time of all the attendees is being wasted waiting for the start. If late-comers are not critically needed, start without them.

4. Other Useful Techniques: These points can also improve the effectiveness of a meeting:

- a.** You should only bring the minimum number of attendees to a meeting - the more people are present, the more will want to air their views.
- b.** Similarly, bringing people who are not needed to a meeting wastes their time.

- c.** Ensure that decisions taken at previous meetings have been acted on. This ensures that the meeting will not just be seen as a 'talking-shop'.
- d.** At the end of the meeting, summarise the points discussed, and make an action plan out of the decisions taken. This ensures that everyone understands what has been decided, and who will do what.

ATTENDING MEETINGS

When you attend a meeting, ensure that you do not waste other people's time. To this end, you should be:

- 1.** on time, and present only if needed
- 2.** well prepared and briefed on your contribution
- 3.** attentive to the discussion so that your contribution does not repeat someone else's
- 4.** involved in the discussion
- 5.** and brief, relevant, focussed and courteous in your interventions

EXERCISE 5:

- 1.** Starting from today, you will designate one day of the work-week as go home early week. A company I know designated Wednesdays as family Wednesdays and all employees had to leave office at 5pm.
- 2.** Slowly you can add another day of the week and designate it for learning something you wanted to. For example you may designate Friday as the second day of the week you leave early and this time you go to a music or dance class or meeting up with friends or shopping.
- 3.** Everyday you before you start your work write up the tasks you want to accomplish that day and out of this select the task which is most important and urgent and that which will give you a lot of satisfaction of work completed.
- 4.** Keep the task on your table where you can see it or on the monitor of your computer. This works like GPS in a ship and will keep you on track.

5. If you are the one running a meeting, try to incorporate some points mentioned here. If you are not the one calling the meetings, share some of these insights with your boss or colleague if you share a good rapport.

THE ART of DELEGATION

A vast majority of people adopt the philosophy “If you want to do it right, you got to do it yourself,”

But when it comes to effective time management, delegating is a must. Delegation not only involves assigning a task to someone, but more importantly it involves passing responsibility for completion of work to other people. This section examines the reasons you should delegate, how to delegate, failure to delegate and what should not be delegated.

WHY to DELEGATE?

Delegation is useful for the following reasons:

1. **Work for which you have no time:** Once people have learned how to work with you, they can take responsibility for jobs you do not have time to do.
2. **Work which is not cost-effective for you:** You can develop people to look after routine tasks that are not cost-effective for you to carry out. Work for which others have better skills: It transfers work to people whose skills in a particular area are better than yours, saving time.
3. **Sense of Responsibility and Leadership Development in Staff:** Transfer of responsibility develops your staff, and can increase their enjoyment of their jobs.

The ideal position to reach as a manager is one where your staff carries out all the routine activities of your team. This leaves you time to plan, think, and improve the efficiency of what you are doing.

HOW TO DELEGATE?

The following points may help you in delegating jobs:

- 1. Deciding what to delegate:** One way of deciding what to delegate is simply to list the things that you do which could be more effectively done by someone either more skilled in a particular area, or less expensive. Alternatively you may decide to use your activity log as the basis of your decision to delegate: this will show you where you are spending large amounts of time on low yield jobs.
- 2. Select capable, willing people to carry out jobs:** How far you can delegate jobs will depend on the ability, experience and reliability of your assistants. Good people will be able to carry out large jobs with no intervention from you. Inexperienced or unreliable people will need close supervision to get a job done to the correct standard. However if you coach, encourage and give practice to them you may improve their ability to carry out larger and larger tasks unsupervised.
- 3. Delegate complete jobs:** It is much more satisfying to work on a single task than on many fragments of the task. If you delegate a complete task to a capable assistant, you are also more likely to receive a more elegant, tightly integrated solution.
- 4. Explain why the job is done, and what results are expected:** When you delegate a job, explain how it fits into the overall picture of what you are trying to achieve. Ensure that you communicate effectively:
 - a.** the results that are needed
 - b.** the importance of the job
 - c.** the constraints within which it should be carried out
 - d.** the deadlines for completion
 - e.** internal reporting dates when you want information on the progress of the project

Then let go!

Once you have decided to delegate a task, let your assistant get on with it. Review the project on the agreed reporting dates, but do not constantly look over their shoulders. Recognise that your assistants may know a better way of doing something than you do. Accept that there may be different ways of achieving a particular task, and also that one of the best ways of really learning something is through making mistakes. Always accept mistakes that are not caused by idleness, and that are learned from.

- 5. Give help and coach when requested:** It is important to support your subordinates when they are having difficulties, but do not do the job for them. If you do, then they will not develop the confidence to do the job themselves.
- 6. Accept only finished work:** You have delegated a task to take a work load off you. If you accept only partially completed jobs back, then you will have to invest time in completing them, and your assistant will not get the experience he or she needs in completing projects.
- 7. Give credit when a job has been successfully completed:** Public recognition both reinforces the enjoyment of success with the assistant who carried out the task and sets a standard for other employees.

WHY DO PEOPLE FAIL TO DELEGATE?

Despite the many advantages of delegation, some managers do not delegate. This can be for the following reasons:

- 1. Lack of time:** Delegating jobs does take time. In the early stages of taking over a job you may need to invest time in training people to take over tasks. Jobs may take longer to achieve with delegation than they do for you to do by yourself, when coaching and checking are taken into account. In time, with the right people, you will find that the time taken up reduces significantly as your coaching investment pays back.

- 2. Perfectionism - fear of mistakes:** Just as you have to develop staff to do jobs quickly without your involvement, you will have to let people make mistakes, and help them to correct them. Most people will, with time, learn to do jobs properly.
- 3. Enjoying 'getting my hands dirty':** By doing jobs yourself you will probably get them done effectively. If, however, your assistants are standing idle while you do this, then your department will be seriously inefficient. Bear in mind the cost of your time and the cost of your department's time when you are tempted to do a job yourself.
- 4. Fear of surrendering authority:** Whenever you delegate, you surrender some element of authority (but not of responsibility!) This is inevitable. By effective delegation, however, you get the benefits of adequate time to do YOUR job really well.
- 5. Fear of becoming invisible:** Where your department is running smoothly with all routine work effectively delegated, it may appear that you have nothing to do. Now you have the time to think and plan and improve operations (and plan your next career step!)
- 6. Belief that staff 'are not up to the job':** Good people will often under-perform if they are bored. Delegation will often bring the best out of them. People who are not so good will not be effective unless you invest time in them. Even incompetent people can be effective, providing they find their level. The only people who cannot be reliably delegated to are those whose opinions of their own abilities are so inflated that they will not co-operate.

It is common for people who are newly promoted to managerial positions to have difficulty delegating. Often they will have been promoted because they were good at what they were doing. This brings the temptation to continue trying to do their previous job, rather than developing their new subordinates to do the job well.

WHAT SHOULD NOT BE DELEGATED?

While you should delegate as many tasks as possible that are not cost effective for you to carry out, ensure that you do not delegate the control of your team. Remember that you bear ultimate responsibility for the success or failure of what you are trying to achieve. Effective delegation involves achieving the correct balance between effective control of work and letting people get on with jobs in their own way.

OUTSOURCING

This is a special type of delegation. In outsourcing, you do not assign the job to your employee or junior, but to an external agency for a mutually decided cost. The external agency takes the responsibility. You have to specify the job, give the time frame and give a limit of the budget. There are many outsourcing firms out there; you can find it on the internet or by asking around. Outsourcing has worked very well for any companies across the world and they have succeeded in decreasing their costs and increasing productivity with lesser number of employees.

EXERCISE 6:

1. Refer to your time diary: the one you made of all your activities for 7 days. This was your exercise for chapter 2.
2. There will be in your diary routine tasks that need to be done that can be done by others.
3. What aspect of your work can you outsource? Start with one task that you will delegate to someone and one task that you can outsource.

Dear Readers: Important Announcement

The above Scientific Article by Dr. Gautam Madan will be published in 5 parts – Part I, II, III, IV & V. **The above is Part III.**

Check out LED Issue Jan. 2016 Vol. 1 Issue 1 for the Ist part of the above Scientific Article.

Check out LED Issue Feb. 2016 Vol. 1 Issue 2 for the IInd part of the above Scientific Article.

Check out LED Issue Apr. 2016 Vol. 1 Issue 4 for the IVth part of the above Scientific Article.

{Dear Readers: The above article is specially adapted from the book titled “28 Hours Hours a Day- Effective Time Management Strategies To Do More and Take Control of your Life” by Dr Gautam Madan and is published here with his permission. The complete ebook is available from amazon and the link is given below:<http://www.amazon.com/Hours-Effective-Management-Strategies-Control-ebook/dp/B00ATO8CY8>}.}

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I belong to thee !!!!!!!

Denture Labelling - Part I

Author: Dr. Moez I. Khakiani

INTRODUCTION

Denture labelling implies giving an identity to a denture; the identity of its owner. It involves marking the denture with a unique identification that directly relates to the denture wearer.

WHY SHOULD DENTURES BE LABELLED?

1. Denture labelling can help facilitate the return of dentures that are lost or misplaced, as occurs frequently in hospitals, nursing homes, and other long-term care institutions.
2. Positive identification through labelled dentures plays a key role in forensic scenarios.
3. Many situations (e.g. loss of memory, traffic accidents, plane crashes, terrorist attacks etc) where the identification of a dead / missing / unconscious / injured person can be made through dentures that are labelled.
4. Following major disasters such as earthquakes, fires, or floods, accurate and early identification of the dead and injured becomes of utmost importance.
5. Denture labelling could serve as a valuable aid in human identification under such circumstances.

A few TRIVIAL FACTS:

1. As a rule, victims of devastation can only be identified by three primary identification characteristics:
 - A. Dental status,
 - B. Fingerprints &
 - C. DNA.
2. After World War II, 3,000 bodies of unidentified soldiers were examined for dental prostheses. From this examination 27.3% of the bodies were found to have a dental prosthesis, but only 0.3% of these could be identified.
3. Following the terrorist attack on the Twin towers on 9/11, among 973 victims identified in the first year, majority of victims were identified using dental records.
4. The Indian Association of Forensic Odontology is an organization of forensic odontologists, whose services may be sought by the government during calamities or for expert opinion in deliverance of justice.
5. Labeled dentures play a vital role in identifying edentulous (partial or complete) individuals.

The Ideal Identification Mark:

American Dental Association (ADA) guidelines for identification specify the following:

1. The strength of the prosthesis must not be jeopardized;
2. It must be easy, efficient, and inexpensive to achieve;
3. The markings must be visible and durable;
4. The identification must withstand humidity and fire;
5. The identification marks should be cosmetically acceptable to the wearer; and

6. For forensic purposes the identification marks should be in the place least likely to receive damage, that is, the most posterior lingual portion of the mandibular denture and the palatal aspect of the second molar region in the maxillary denture.

What Information could be used for Identification?

Any information that is unique and specific to a particular individual could be used. A few of these may be:

1. Patient's Name,
2. Initials,
3. Picture,
4. Driver's license,
5. Pan Card number,
6. Contact details (address, telephone number)
7. Dentist details (Clinic details, Initials, Reg. No.), etc.

Dear Readers: Important Announcement

The above article by Dr. Moez Khakiani will be published in 2 parts - Part I & II. **The above is Part I.**

Check out LED Apr. 2016 Vol. 1 Issue 4 for the IInd part of the above article.

P.S. Any feedback/compliments/queries for the Author should be emailed to the Editor-in-Chief, Dr. Bhavdeep Singh Ahuja at his email id: drbhavdeep@gmail.com



Teesra Gyaan



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A Single Step Apexification of a fractured tooth & Prosthetic restoration using Emax crowns and Veneers

A One Year Follow Up - Case Report

Author: Dr. Pratiek Gupta

ABSTRACT

The completion of root development and closure of the apex occurs up to 3 years after the eruption of the tooth. Traumatic dental injuries during this period result in endodontic complications. While treating a non-vital tooth, with an open apex the prime objective is eliminating bacteria from the root canal system and induction of apical closure to produce favorable conditions and to confine the root canal filling within the canal. Conventionally, multiple dressings of calcium hydroxide medicament were advocated to induce apical barrier formation. Apexification with calcium hydroxide is associated with certain difficulties, such as very long treatment time, possibility of tooth fracture and incomplete calcification of the bridge. Use of an apical plug is an alternative treatment for open apices and this has gained popularity in the recent years, employing Mineral Trioxide Aggregate (MTA) for optimal results.

Here we report the successful treatment of a maxillary central incisor that had an open apex and periapical lesion using MTA plug after root canal was debrided and rinsed with 3% sodium hypochlorite after which the apical portion of the canal (3 to 5mm) was filled with MTA plug. Prosthetically, the tooth was prepared for an E Max Crown and the surrounding teeth received emax veneers. At the one year follow up we can see the apexification and healed lesion and the wonderful response of gingiva to lithum di silicate (E Max). Considering the importance

of a coronal seal and good prosthetics, the use of MTA for apical plugging looks promising.

INTRODUCTION

Cessation of root development caused by trauma or pulpal disease presents both an endodontic and restorative challenge. The divergent apical architecture makes complete debridement and control of the obturation material nearly impossible. Apexification is defined as a method of inducing a calcified barrier in a root with an open apex.

Various materials have been suggested for use in the apexification process, but calcium hydroxide has gained the widest acceptance.

Frank in 1966 first described the apexification using calcium hydroxide. Calcium hydroxide is bactericidal with an alkaline pH that may be responsible for stimulating apical calcification.

Despite its popularity, it has some disadvantages including variability of treatment time, difficulty in patients follow up, delayed treatment and it reduces the fracture resistance of the tooth.

An alternative for multi-appointment apexification procedure has been a single- step technique using an apical barrier.

Shabahang et al advocated MTA as an apexification material because it permits an adequate seal of the canal and prevents bacterial leakage.

Torabinejad et al advocated the use of Mineral trioxide Aggregate (MTA) as a perforation repair material. MTA is a colloidal gel that solidifies to a hard structure and can be used to seal perforations.

Sarkar et al reported the propensity of MTA to release calcium and its ability to form hydroxyapatite and concluded that sealing ability, biocompatibility and dentinogenic activity of MTA is attributed to these physicochemical reactions.

MTA has an ability to form a dentin bridge. Other applications of MTA include direct pulp capping, external root resorption repair and partial pulpotomy.

The initial and final setting time of MTA was found to be 45 minutes and 2 hours 45 minutes respectively.

CASE REPORT

The patient, a 16 year old male child reported to the author's private clinic with a chief complaint of pain in the upper front tooth region and swelling in the gums. The patient gave a history of fall and subsequent tooth fracture almost 3 years back, he was then taken to a nearby dental facility but no treatment was done. Pain recently started spontaneously and there was a swelling since 2 days.



Fig-1a: Pre- Operative Frontal View



Fig-1b: Pre- Operative Upside View

On examination, there was an Ellis Class 2 fracture in 11, 21 and 22. (Fig. 1a & 1b) There was also a swelling in the gingival region of 21, which on probing through the sulcus had pus discharge. Upon heat and cold tests, there was no response w.r.t. tooth no. 21 and 22 whereas tooth 11 was responding WNL. On examining the IOPA X-ray of the teeth, there was an open apex w.r.t. tooth 21 and 22 had a normal apex closure (Fig. 2a & 2b).

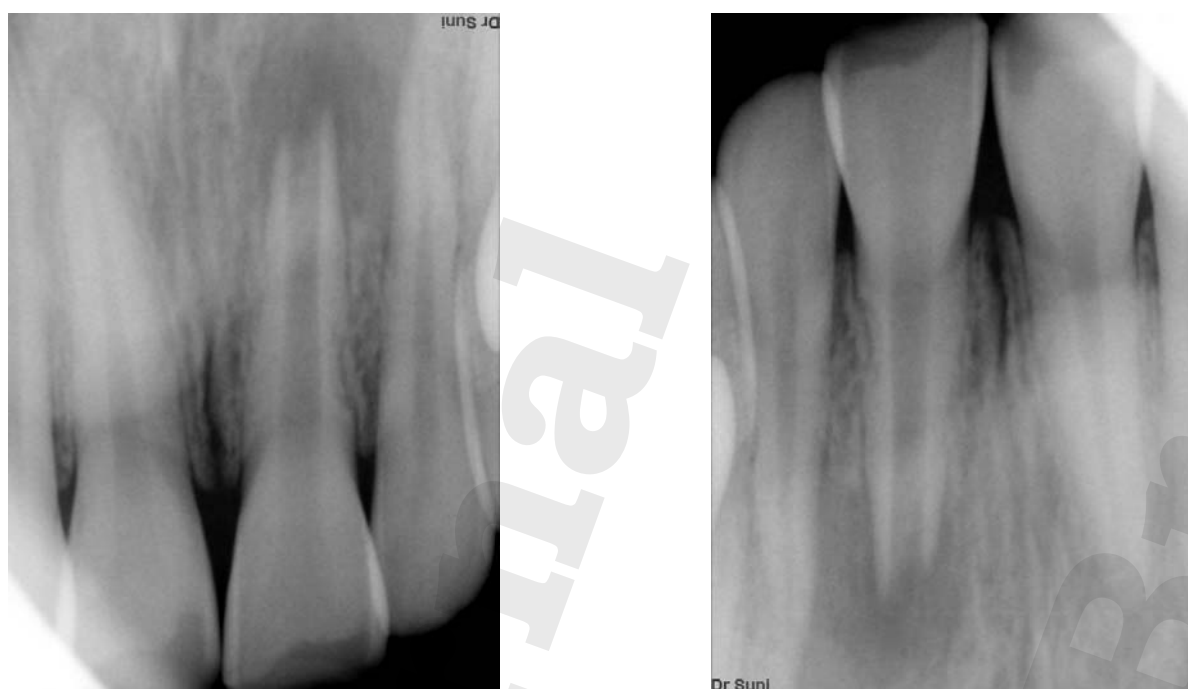


Fig-2a & 2b: Pre- Operative X-ray Front View & Upside View; Open Apex w.r.t. 21 & big lesion

It was decided to root canal treat tooth no 22 in a conventional way using gutta percha and single step apexification using MTA to be done in tooth no. 21.

Prosthetically, it was decided to crown tooth no 21 and use emax veneers on tooth no. 11 and 22 in a minimally invasive protocol.

In the first visit, after rubber dam isolation the access cavity was re-opened with tooth 21. Approximate working length was established within 1 mm of the apex using both radiographic method and the apex locator (Root ZX, J Morita MFQ Corp., Kyoto, Japan) followed by irrigation with 1% Sodium Hypochlorite (NaOCl) and normal saline (Fig. 3a & 3b).

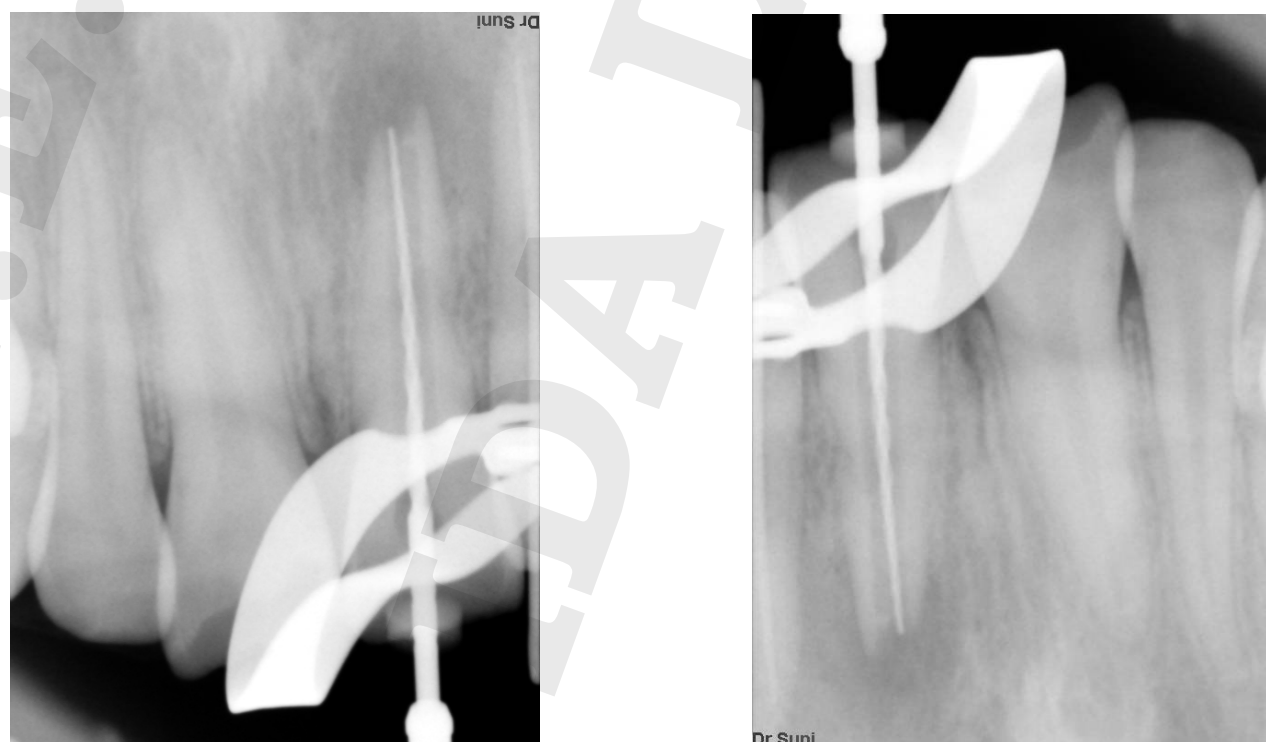


Fig-3a & 3b: Intra- Operative checking length using K Files; Front View & Upside View

After drying the canals using paper points Pro root MTA (Dentsply Tulsa Dental, Johnson city, USA) was mixed according to manufacturer instructions. When it reached a thick creamy consistency, it was placed inside the canal using a plastic instrument. The material was packed with hand plugger into the canal and a wet cotton pellet was used to condense the material for a thickness of 4mm. Moist cotton was placed over MTA. The placement of MTA was verified by taking an X-ray (Fig. 4a & 4b).

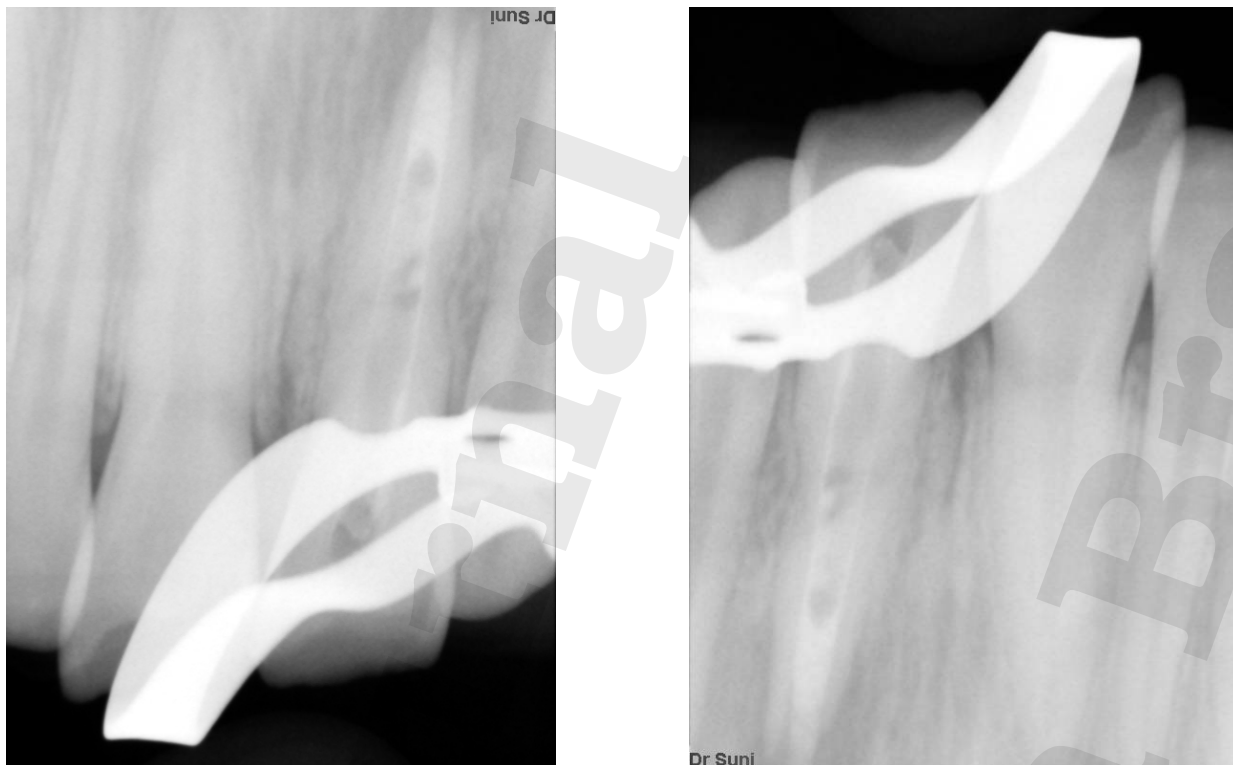


Fig-4a & 4b: Intra- Operative Placement of an Apical Plug of MTA; Front View & Upside View

After 48 hours, the patient was recalled and the cotton pellet removed, after confirming that the MTA was set the remainder of the canal was filled with flowable gp using Elements Obturation Unit (Sybron Endo). Tooth no. 22 was root canal treated in a single visit protocol & was filled with gutta-percha (Fig. 5a & 5b).

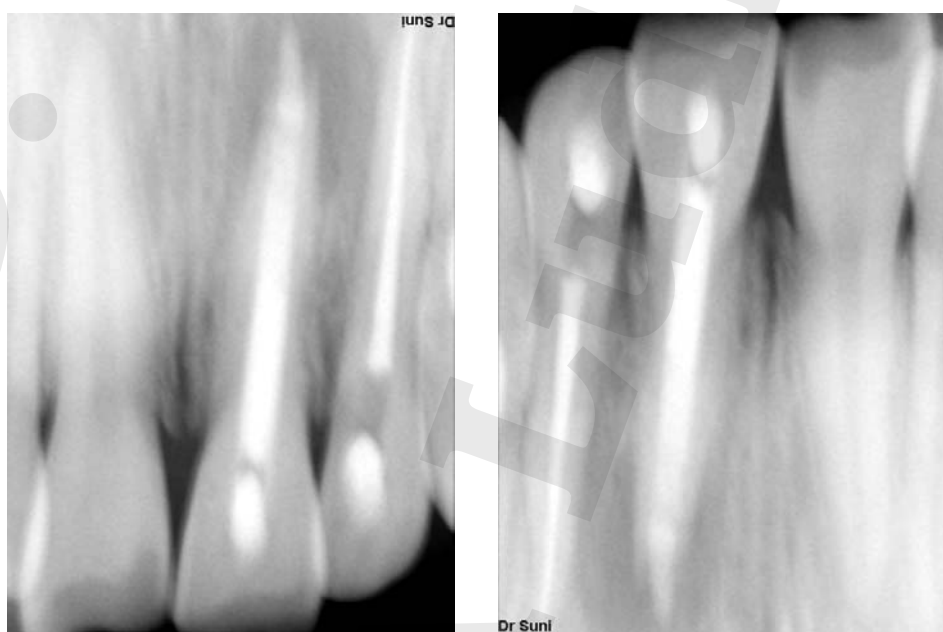


Fig-5a & 5b: Post Operative Sealing of RC Space 21 with GP & RCT of 22; Front View & Upside View

Both the teeth received a definitive coronal restoration using composite material to plug the access. The patient was recalled after 2 weeks, was totally asymptomatic and the swelling had also died down. The teeth were prepared as decided earlier, tooth no. 11 and 22 were prepared to receive a Lithium Di silicate (E-max)

Veneer & tooth No. 21 received a full coverage restoration of E-Max.



Fig-6a: Shade Matching Frontal View



Fig-6b: Shade Matching Upside View

The patient was recalled after 5 days to bond the E-Max veneers using Rely-X Veneer Cement and the crown was luted using Rely-X U 200 cement using the mentioned protocols.

At the one year one month follow up, the patient was asymptomatic and there was no problems seen. The tooth on IOPA shows apex closure and no peri apical pathology. Also we can see an attempt from the body to complete the root closure,

the MTA which accidentally went into the lesion was totally resorbed and whether the tooth substance formed is Cementum or cementum like is a topic of further research.

Sequence of Events:



Fig-7a Preparation for Veneers & Crown, Frontal View



Fig-7b Preparation for Veneers & Crown, Upside View



Fig-8a: Veneers & Crown from Lab, Frontal View



Fig-8b: Veneers & Crown from Lab, Upside View



Fig-9a: Veneers & Crown from Lab, Palatal View

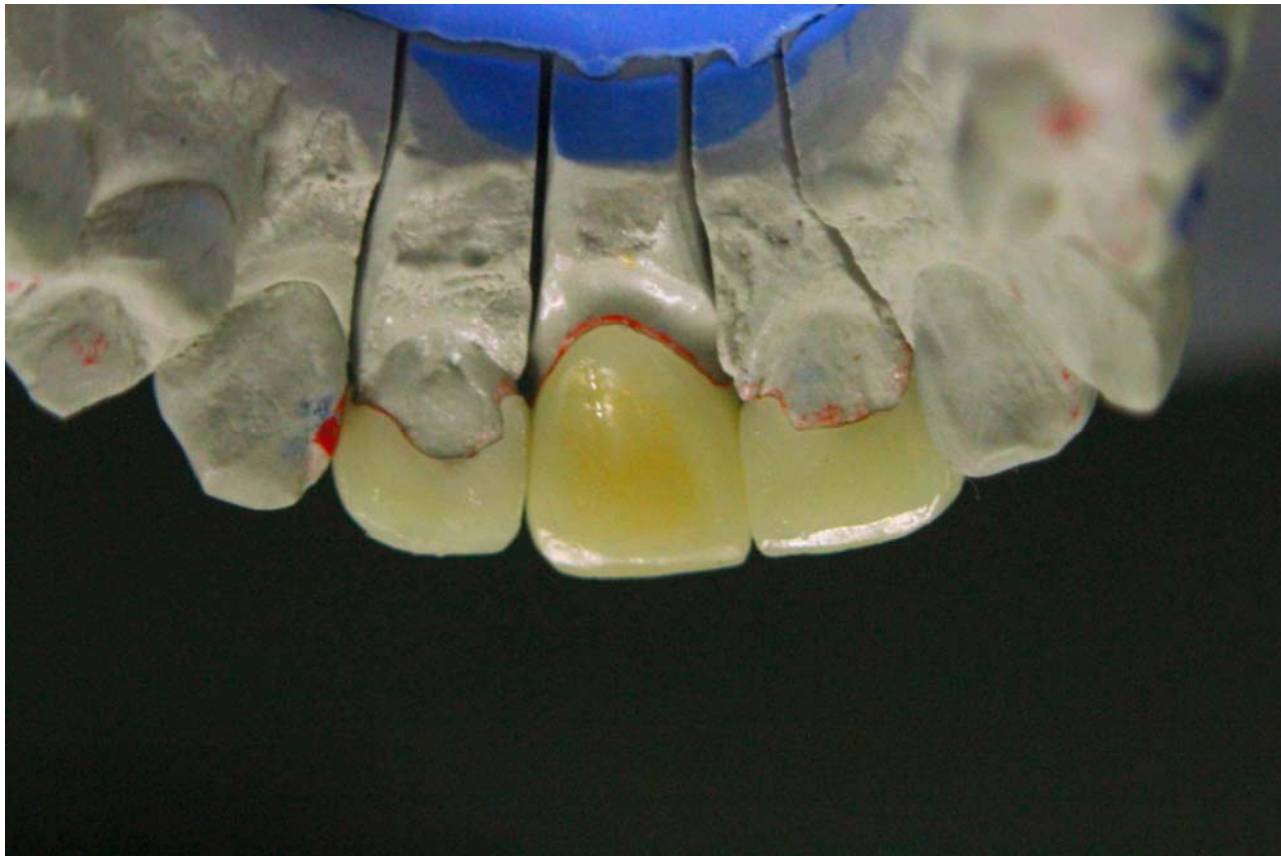


Fig-9b: Veneers & Crown from Lab, Palatal Upside View



Fig-10a: Tissue Control & Fit; Frontal View



Fig-10b: Tissue Control & Fit; Upside View



Fig-11: Papilla Control & Fit; Frontal View



Fig-12a: Immediate Post-Insertion, Frontal View



Fig-12b: Immediate Post-Insertion, Upside View



Fig-13a: Immediate Post-Insertion, Palatal View



Fig-13b: Immediate Post-Insertion, Palatal Upside View



Fig-14: FINAL Fit; Full Frontal View

Follow up after 1 year



Fig-15a: After 1 Year; Frontal View



Fig-15b: After 1 Year; Upside (Gingival) View

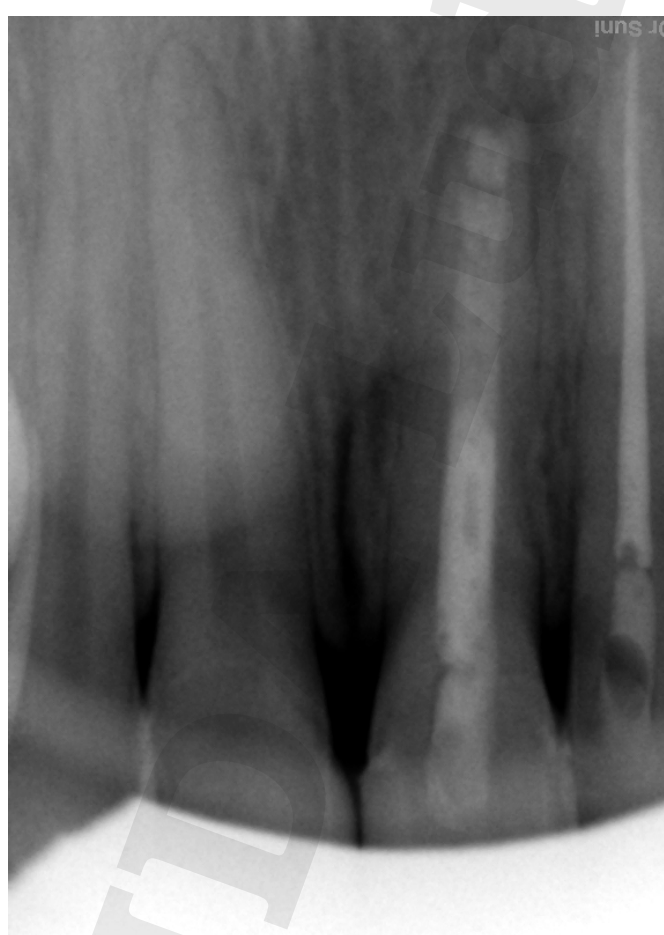


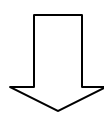
**Fig-15c: After 1 Year; Radiographic View;
Complete Healing & Full Apex Closure**

DISCUSSION

During long apexification procedure, the root canal is susceptible to re-infection and the canal is susceptible to fracture during treatment. Hence, single step apexification was planned for this case. MTA had been proved to show good sealing ability, good marginal adaptation and a high degree of biocompatibility. As observed in radiographs from this case report, periapical radiolucency has been decreased in size. MTA can be placed as an obturating material to promote periapical healing of root canals with open apex.



From Here



Finally There



The use of Lithium Di silicate crowns and veneers offers the potential for improved esthetic results when compared to normal ceramo metal crowns. Silica/ Glass based all ceramic crowns are

also more translucent when compared to zirconia based crowns and therefore have superior optical properties. Also, emax crowns and Veneers provide the opportunity for maximum possible conservation of tooth structure.

CONCLUSION

The single step apexification procedure can potentially eliminate the length protocol followed for apexification, thus saving time and complications. The subsequent restoration with glass ceramics offer better optical properties and improved esthetics in difficult cases.

REFERENCES

1. American Association of Endodontists. Glossary of endodontic terms, 7th edn. Chicago: American Association of Endodontists; 2003.
2. Frank AL. Therapy for the divergent pulpless tooth by continued apical formation. *J Am Dent Assoc* 1966;72:87-93
3. Apexification: a review. *Dent Traumatol* 2005, 21,1-8
4. Finucane D, Kinirons MJ. Non-vital immature permanent incisors: factors that may influence treatment outcome. *Endod Dent Traumatol* 1999;15:27-37.
5. Sheehy EC, Roberts GJ. Use of calcium hydroxide for apical barrier formation and healing in non-vital immature permanent teeth: a review. *Br Dent J* 1997;183:2416.
6. Shabahang S, Torabinejad M, Boyne PP, Abedi H, McMillan P. A comparative study of root-end induction using osteogenic protein-1, calcium hydroxide, and mineraltrioxide aggregate in dogs. *J Endod* 1999, 25, 15.
7. Andreasen JO, Farik B, Munksgaard EC. Long-term calcium hydroxide as a root canal dressing may increase risk of root fracture. *Dental Traum* 2005,18,1347.
8. Torabinejad M, Chivian N. Clinical application of mineral trioxide aggregate. *J Endod* 1999, 25, 197-205.
9. Sarkar NK, Caicedo R, Ritwik P, Moiseyeva R, Kavashima I. Physicochemical basis of the biologic properties of mineral trioxide aggregate. *J Endod* 2005,31,97-100.

10. White C, Bryant N. Combined therapy of mineral trioxide aggregate and guided tissue reeration in the treatment of external root resorption and an associated osseous defect. *J periodont* 2002, 73,1517-21.
11. Nusair KM, Qudeimat MA. A prospective clinical study of mineral trioxide aggregate. For partial pulpotomy in cariously exposed permanent teeth. *J Endod* 2006, 32,731- 5.

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Full arch implant borne FDPs in clinical situations with limited bone height using inclined/tilted implants

A Case Report

Author: Dr. Nigam Buch

INTRODUCTION

A growing number of dental patients aged over 60, who are quite active but nevertheless “older”, are looking for fixed, permanently functional and esthetically attractive dental restorations. However, their care is frequently complicated by remaining teeth that are not worth saving or by fully edentulous arches with an atrophied maxilla and mandible. (Fig.1, 2)



Fig-1: An example of Atrophic Maxilla & Mandible

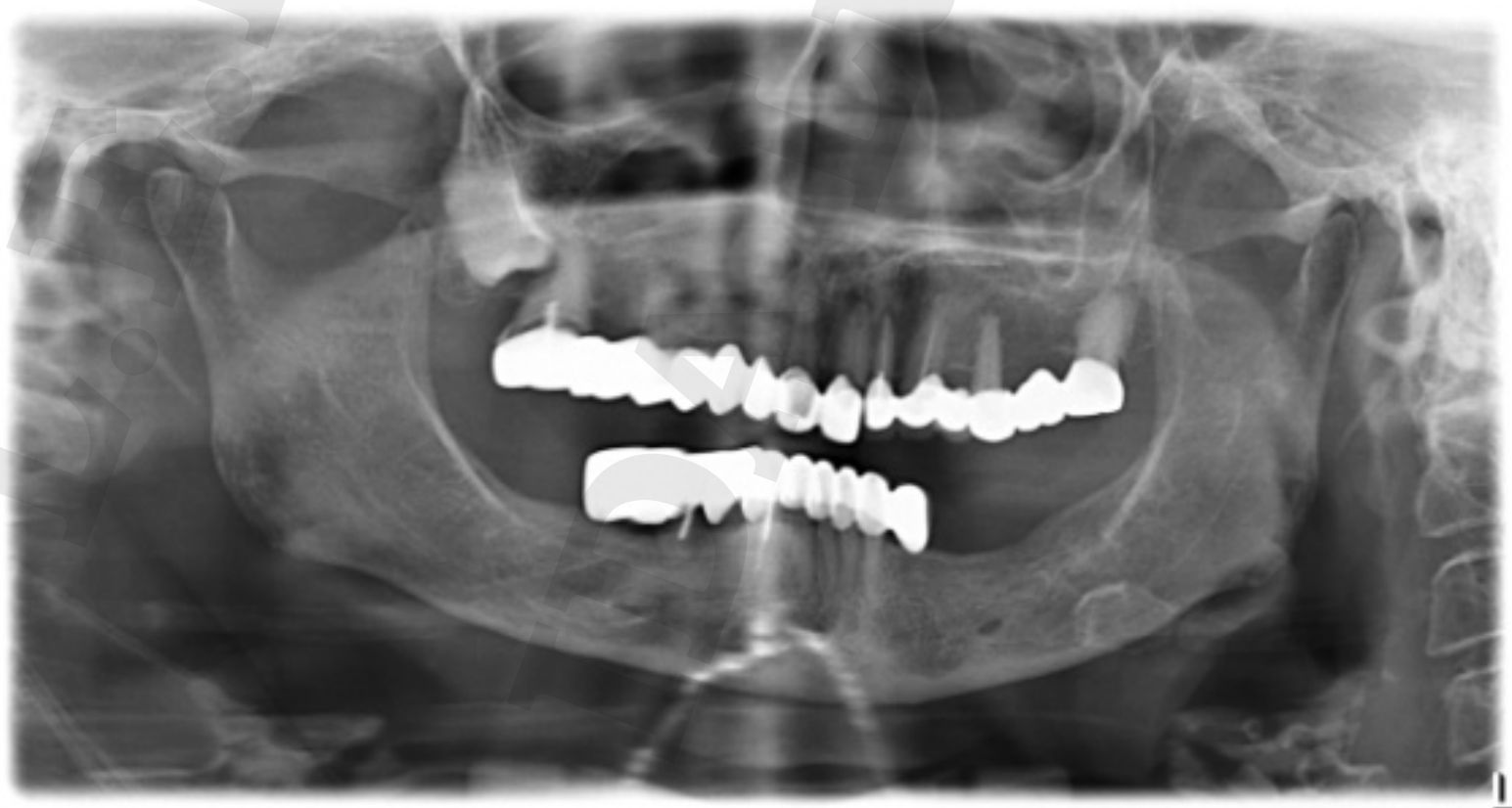


Fig-2: Another example of Atrophic Maxilla & Mandible

The complex augmentative surgeries and longer, multi-session treatments that can become necessary are frequently rejected as a result of patient anxiety about potential complications and high costs.

Based on the efforts of Paulo Malo and biomechanics expert Bob Rengert, the working group was the first to achieve clinical success with angled implants for restorations with fixed bridges in the maxilla and mandible with avoiding sinus floor augmentation and nerve lateralization in mandible.

THE CONCEPT of ANGLED/ TILTED IMPLANTS

The working group around Paulo Malo and biomechanics expert Bob Rengert was the first to achieve clinical success with angled implants for restoration with fixed bridges in the maxilla and mandible, whilst avoiding sinus floor elevation and nerve lateralization in the mandible. Their publications reveal a high cumulative survival rate of 97.6% and prosthetic survival rate of 100% High BIC value noticed. Definitive abutments are screwed on directly after insertion. The abutments on the two distal implants should not be exchanged even when definitive restoration is later attached

By inserting the implants in the tooth bearing alveolar process at an angle (25 to 45 degrees), longer implant can be used to achieve more stable biomechanical support. The initial reports on angled implants showed an even higher success rate for this method after 5 years. Studies have shown that one year after insertion, bone resorption at the angled implants was less than at implants placed axially. (Fig-3)



Fig-3: Bone Resorption Comparative Studies – Angled Implants vs Implants placed Axially

A retrospective study, for instance, refuted the mechanistic idea that long-term, stable osseointegration can only be achieved and maintained under a load similar to the that exerted by a natural tooth, that is under axial load. The survival rate and peri-implant parameters such as bone loss, pocket depth and tooth health were not affected by the inclination. The angle of abutments did not influence the survival rate over the observation period of 10 years. Long- term investigations reveal success rate of 97%.

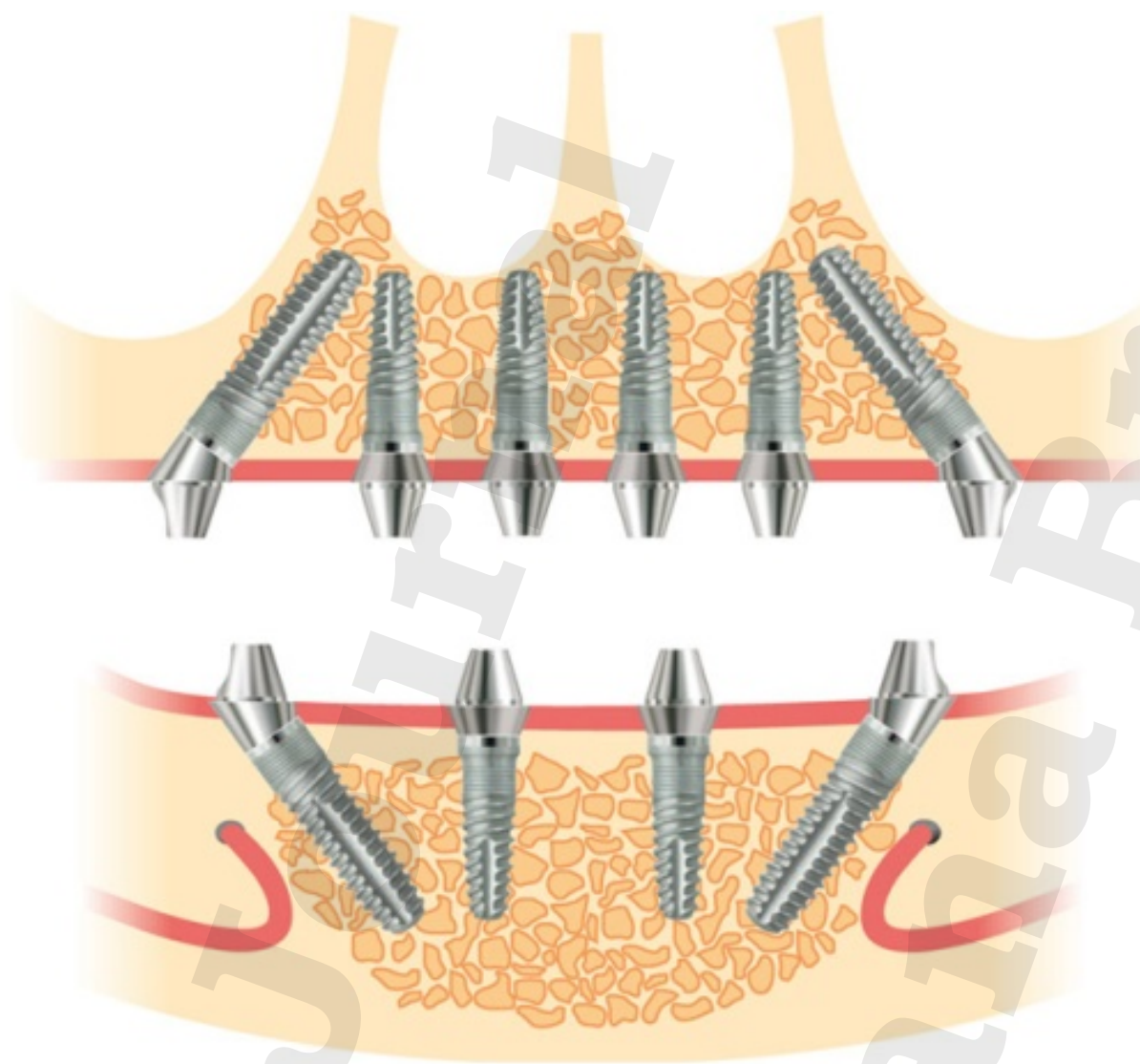


Fig-4: Figurative demonstration of ‘All on 6’ in Maxilla & ‘All on 4’ on Mandible

The Fast & Fixed approach of long-term stable support of restorations using four implants in the mandible or six in the maxilla (Fig.4) is associated with two requirements: preventing loss of hard tissue through the loading of the bone, and enabling this optimal loading through a corresponding static distribution of the abutments. This is achieved by means of a polygonal distribution of the abutment teeth, with sufficient spacing to provide deep anterior-posterior support. In patient with multiple missing teeth and the associated atrophy, this option is generally not available without pre-implantological augmentative measures. However, if implants are placed at a 35 or 45 degree angle instead of vertically, the abutment penetration can be shifted to the posterior to position 5/6 (second premolar/first molar). This

strategy yields broad polygonal support. In addition, the structure of the hard tissue is preserved since loading through angled implants does stabilize the bone as confirmed by finites element method studies.

PROS:

- 1.** By inserting implants in the tooth bearing alveolar process at an angle, longer implants can be used to achieve more stable biomechanical support.
- 2.** Bone resorption at the angled implants found to be less than at implant placed axially (Caladriello, Rangert et al Clin Implant Dent 2005)
- 3.** Definitive abutments and immediate temporary restorations
- 4.** Reduced treatment time
- 5.** Older patients and their needs
- 6.** Quality of life from oral health
- 7.** Predictable immediate restorations and immediate loading

CONS:

- 1.** Operator require certain advance level of training and should have good experience of implant placement and restoring implants
- 2.** Case selection based on CT evaluation
- 3.** High cost of angled abutments and restorative components (comparable)
- 4.** Long term data from all over the world require to establish as modality of treatment (long term data required from all types of implant companies)

REQUIRED FOR ANGLED IMPLANTS:

For angulated placement, the implant must meet the associated biomechanical demand from a material-technical point of view. For an implant to be used in the angulated placement system, it

must be suitable for immediate loading. It should also feature, if possible, internal abutment geometry with minimal residual rotation and high mechanical stability.

INDICATIONS:

- 1.** In situation where a straight implant (>8 mm) cannot be placed parallel to the other anteriorly placed implants without performing bone augmentation procedures.
- 2.** To avoid sinus augmentation procedures (implants can be positioned and tilted anterior to the anterior sinus wall).
- 3.** To avoid augmentation procedures of atrophic mandibles (implants can be positioned and tilted anterior to the mental foramen)
- 4.** In cases where full arch restorations with 4 to 6 dental implants is possible

Precise information about the anatomical structures is required in this therapeutic approach. By means of CBCT or 3D CT and its virtual planning software, precise implant position can be decided and can also be used for transfer this data to make implant guides. Freehand implantation is also an option for implantologists with good surgical experience.

PRIMARY STABILITY, OSSEOINTEGRATION & BONE QUALITY

Complication-free osseointegration requires implant biocompatibility as well as primary stability arising from the stable positioning of the implant in the jaw bone. Otherwise, there is risk of fibrous ensheathment with consequent loss of the implant. In covered healing, primary stability or high torque values are may not necessarily the primary concern. Matters are different, however, in case of immediate restorations and immediate loading, where primary stability is primary concern to load that implant. Another significant parameter for achieving the necessary primary stability is the length of the axial or angled implants. Initially sufficient mechanical anchoring requires a length of 12mm or above.

Osseoconductive implant surfaces can additionally accelerate osteoneogenesis since the formation of new bone also occurs directly along the implant surfaces. With such contact osteogenenesis, high rates of bone growth are achieved and the remodeling of woven bone into lamellar bone is accelerated. (Fig - 5)

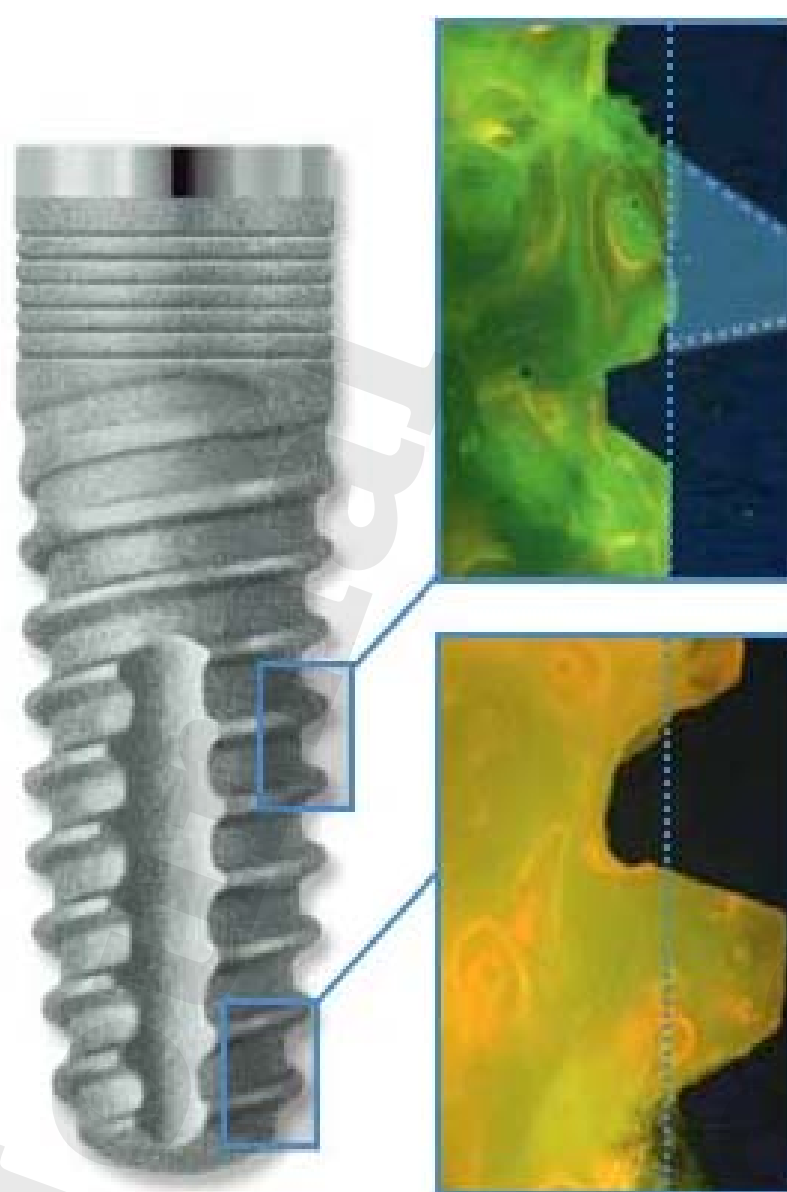


Fig-5: Surface Demonstration of Osseoconductive Implant
Surface aiding in higher Osteogenesis

Additional parameters are the quality of the local bone and the adequate preparation of the implant bed following the surgical protocol according to the bone classes D1/D2/D3/D4. The classes of bone differ in the amount of cortical or cancellous structure: The purely cortical bone of class D1, enables reliable mechanical fixation; the low vascularization of this bone class limits its biological value, however D2 and D3 do not hinder immediate loading given their higher level of vascularization as a result of the greater cancellous bone content. Their adhesion to the implant surface is more favorable than that of bone class D1, where the anchoring is purely mechanical. Successful immediate loading has even been reported of cancellous bone structures; however, this bone type requires special measures to achieve sufficient stabilization.

Definitive abutments & immediate temporary restorations

The definitive abutments are screwed on directly after insertion. The abutments on the two distal implants should not be exchanged, even when the definitive restoration is later attached. This significantly reduces the risk of micro gaps and is an important requirement for the undisturbed development of the circular soft tissue, as well as for the long-term stability of the hard tissue. Also, it is less stressful on the patient.

After implant placement and abutments attached, the next step, is the temporary bridge fabrication, by impression taking and bite check. From the surgical and periodontal perspective, all of the basal surfaces of temporary prosthesis should be convex. The temporary bridge is screwed onto the abutments at 20 Ncm. The screw openings are sealed with light cure resin.

THE DEFINITIVE PROSTHESIS:

After the provisional has been worn for at least 3-4 months, work on the definitive prosthetic restoration can start, depending on the specific wishes of the patient. Before beginning osseointegration must be checked using imaging and possibly resonance frequency analysis.

Various definitive prosthesis options are available to patients depending on their personal wishes which include metal-reinforced acrylic bridges (Acrylic Hybrid prosthesis), full ceramic restorations with ceramic with ceramic veneered bridges made of zirconium dioxide framework, a telescopic prosthesis and also titanium framework with PFM crown cemented on frame work (Malo bridge).

CASE REPORT:

A 62 year old lady patient visited our center for complete rehabilitation of her failing dentition. Her primary concern was ability to chew food and do not wish to undergo extensive procedure with long waiting time.

CLINICAL & RADIOLOGICAL EXAMINATION

1. Fractured upper left central incisor, upper right second premolar and second molar.
2. Fractured lower Premolar right side.
3. Long span bridge joining from 17 up to 21.
4. Long span bridge cantilever on both side in lower arch.
5. Right side chewing since 4 years.
6. No medical h/o of diabetes, osteoporosis or HT.
7. CT scan reveled complete loss of buccal plate in relation to 21, 22.
8. CT scan reveled less bone height less than 8 mm (safe bone level from mandibular nerve) in bilateral lower molar region.

TREATMENT PLANNING & SURGICAL PHASE:

1. OPG & CT scan planning (Fig.2, 6)
2. Lower arch surgical with placement of 4 implants. Two Axial implants in lateral incisor position and two tilted implants in second premolar position. Surgical guide used to decide the 35 degree angulation of distal implants.
3. Immediately after lower implant placement pick up impression made to fabricate temporary prosthesis.
4. Prosthesis delivered within 48 hours (Fig.7)

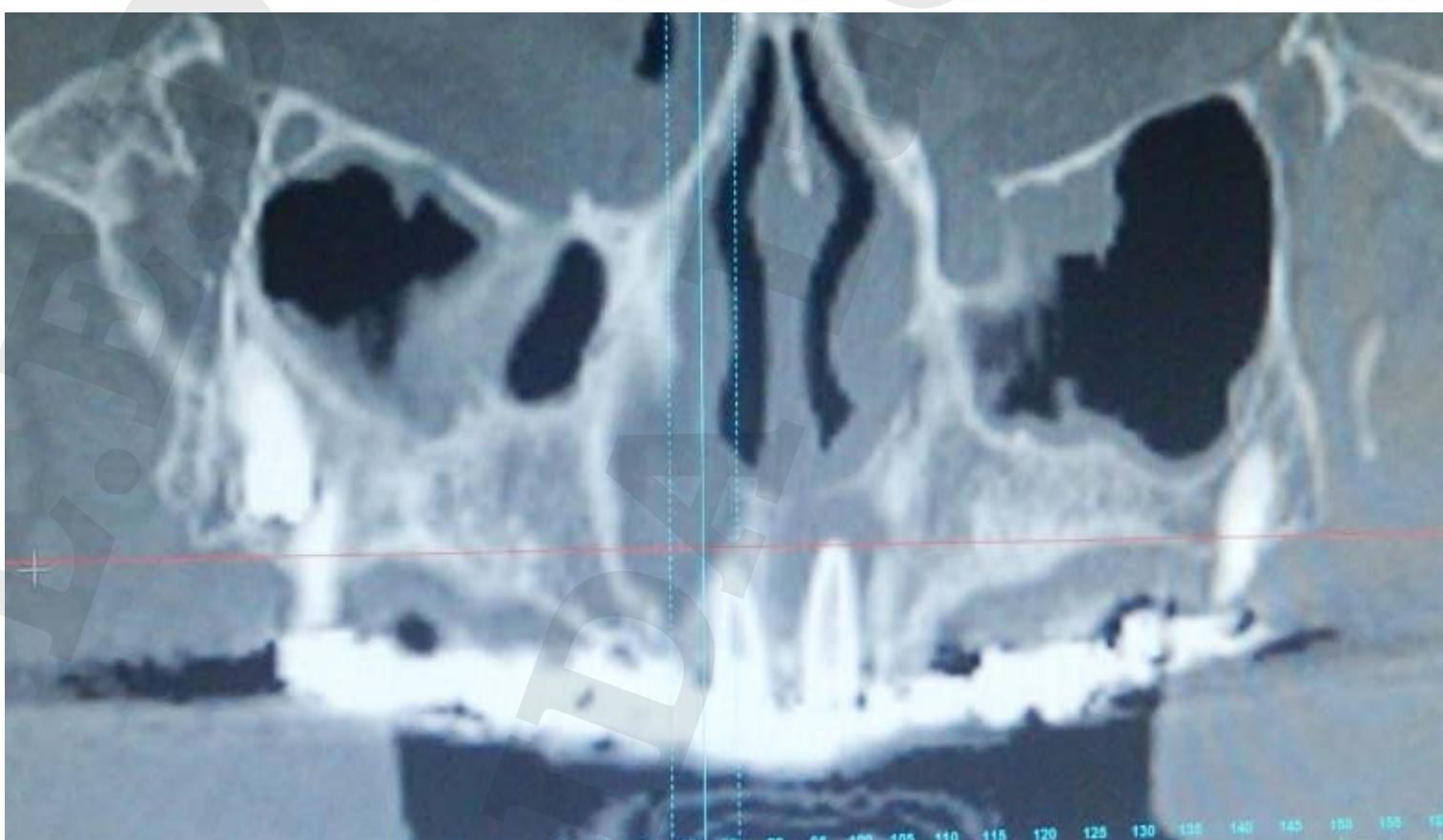


Fig-6: CT Scan Planning



Fig-7: Radiographic View of actual final Insertion of 5 Implants in Maxilla & 4 Implants in Mandible showing the importance of Pre-Planning

5. Upper arch surgical done within 3-4 days apart.
6. In maxilla there were large cystic lesion present in relation to 21 (upper left incisor) and due to that complete loss of buccal bone was observed. So, placement of implant in 21 region was avoided. Total 5 implants placed in maxilla. 3 axial implants placed in 11,13 and 23 region and distal tilted implants placed in second premolar region.
7. Counter augmentation done wherever bone deficiency seen
8. Primary stability achieved with 35-40 Ncm torque value in all implants.
9. Final prosthesis done post operative 1 year apart as patient was not available.
10. For first 3 months patient was instructed have only soft diet with minimum chewing efforts. After 3 months patient was instructed to have semi solid food with little chewing forces.
11. Final prosthesis made with metal-reinforced acrylic bridge with cross arch splinting on both upper and lower implants. Not more than 15 mm cantilever of prosthesis allowed in both arches.

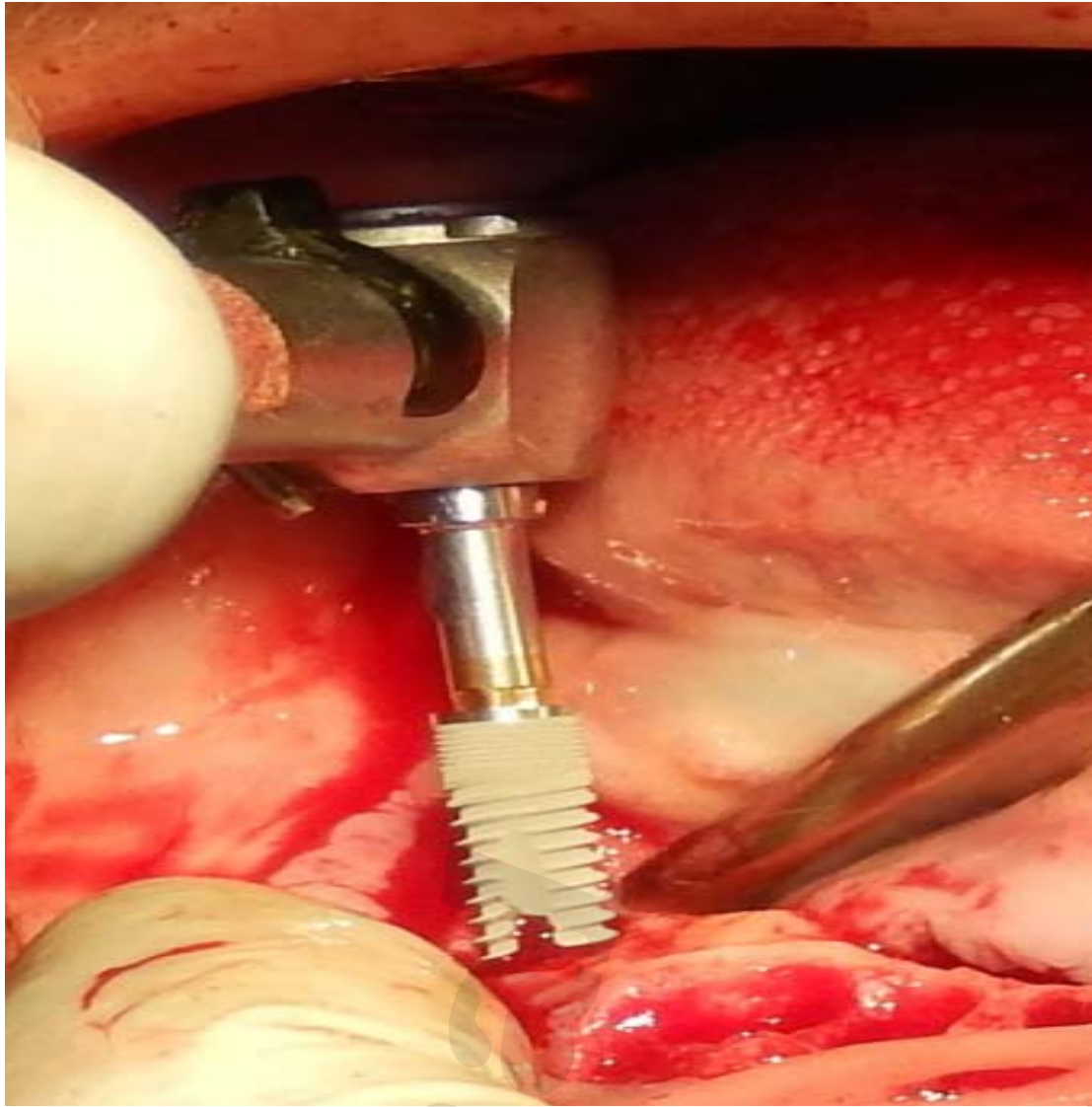


Fig-8: Actual Implant Insertion in Mandible

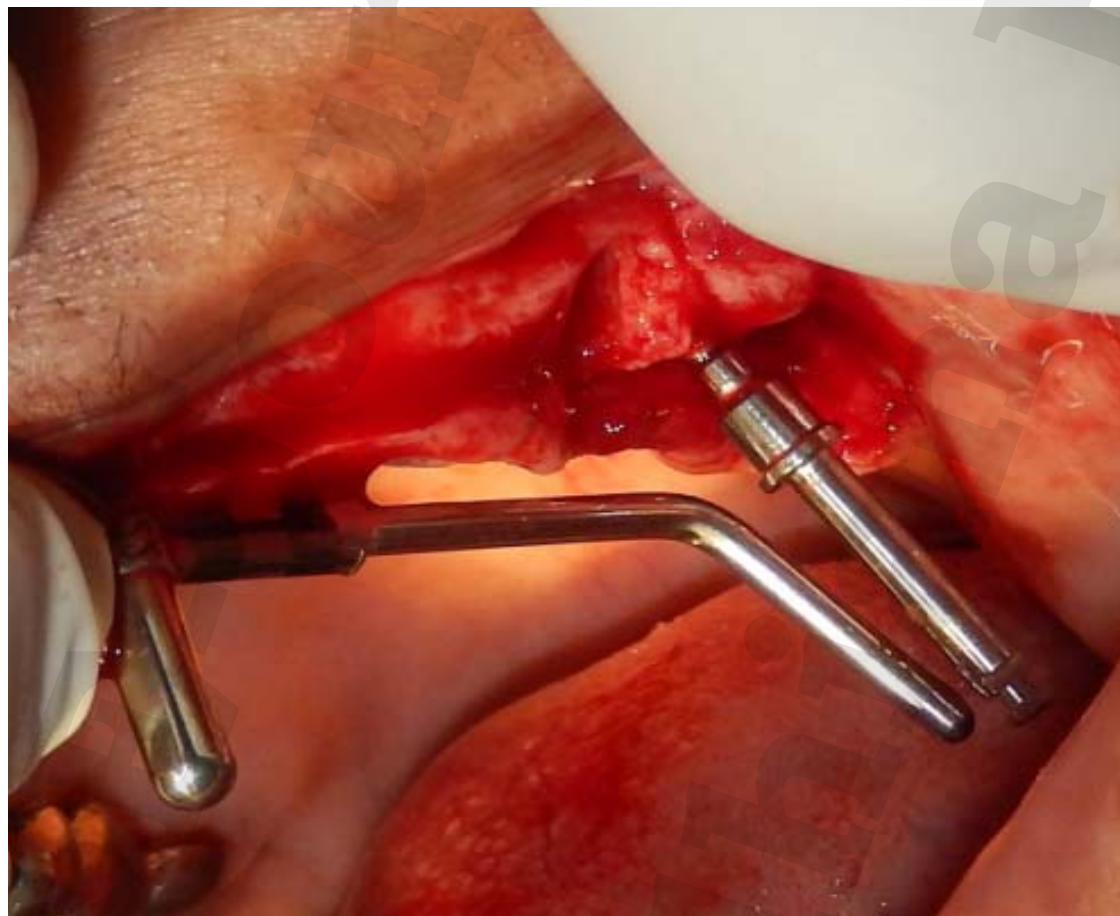


Fig-9: Torqueing in Progress in Maxilla



Fig-10: Final Placement of the 5 Implants in Maxilla



Fig-11: Impression in Progress for Maxilla



Fig-12: Palatal View of the Final Prosthesis



Fig-13: Lingual View of the Final Prosthesis



Fig-14: Pre-Operative View of the Patient's Prosthesis

From Here
to
Here



Fig-15: Final View of the Patient's New Intermediary Prosthesis



Fig-16: A Satisfactory Moment – ‘Happy & Smiling’ Patient



Fig-17: After Final Prosthesis (the Malo Bridge) – Post Operative 1 Year of Functional Loading including Provisional Prosthesis

CONCLUSION

Considering these results, we conclude that overall high level of patient satisfaction results from the advantages of the procedure for the patient:

1. Fixed, palate-free restoration, even in the provisionals
2. No pressure points caused by provisional
3. No second surgery required unless implant is not loaded primarily in rare instances
4. Less strenuous to patient during prosthetic phase
5. Less extensive surgery
6. Reduced overall treatment time

REFERENCES

1. Support for the underlying treatment concept; fully edentulous dental arches (maxilla and mandibles), restored by the use of 4 dental implants. Two implants in the interforaminal region in a straight position, the axis of two posterior implants will be placed tilted distally. The correction of the axis of the posterior tilted implants is reached by the use of special angulated abutments. The prosthetic reconstruction is done immediately

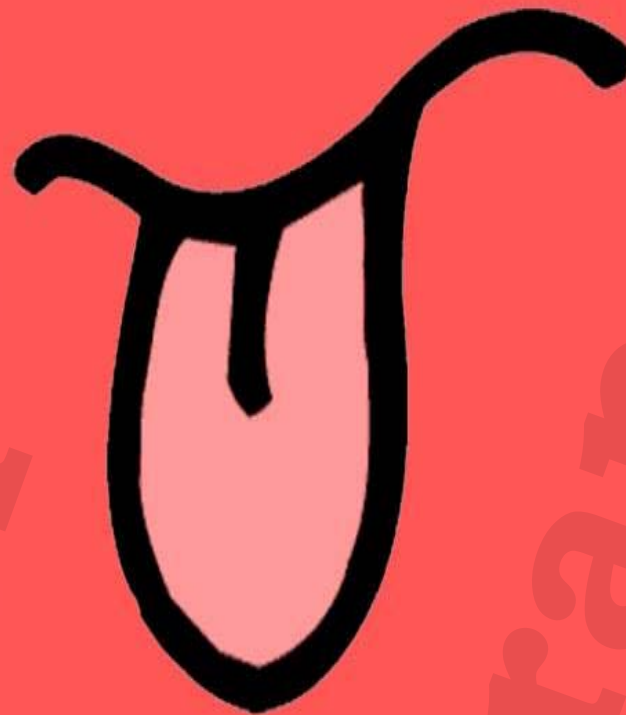
after the implants are placed (Malo et al., 2012; Malo et al., 2011; Malo et al., 2013; Patzelt et al., 2014; Tallarico et al., 2015)

2. *Tilting of Posterior Mandibular and Maxillary Implants for Improved Prosthesis Support* Leonard Krekmanov, DSS, DDS, PhD, Mikael Kahn, DDS, Bo Rangert, PhD, Mech Eng, Håkan Lindström, MSc, Eng Physics
3. *Treatment of the edentulous jaw with 4 to 6 straight positioned Straumann® implants* (Calvo Guirado et al., 2014; Kinsel and Liss, 2007)
4. *Angulation of Straumann® implants* (Piano et al., 2015; ten Bruggenkate et al., 1991; Wismeijer et al., 2010)
5. *Rehabilitation of an edentulous atrophic maxilla with four unsplinted narrow diameter titanium-zirconium implants supporting an overdenture.* Quintessence Int 44(1):37-43. Fischer K, Stenberg T (2011).
6. *Immediate loading of implants with fixed restorations in the completely edentulous mandible: report of 27 patients from a private practice.* Int J Oral Maxillofac Implants 16(3):418-426. Karabuda ZC, Abdel-Haq J, Arisan V (2011).
7. *"All-on-4" immediate function concept for completely edentulous maxillae: a clinical report on the medium (3 years) and long-term (5 years) outcomes.* Clin Implant Dent Relat Res 14 Suppl 1:e139-e150. Malo P, de Araujo NM, Lopes A, Moss SM, Molina GJ (2011).
8. *A longitudinal study of the survival of All-on-4 implants in the mandible with up to 10 years of follow-up.* J Am Dent Assoc 142(3):310-320. Malo P, Nobre M, Lopes A (2013).
9. *Immediate loading of 'All-on-4' maxillary prostheses using trans-sinus tilted implants without sinus bone grafting: a retrospective study reporting the 3-year outcome.* Eur J Oral Implantol 6(3):273-283. Nicolau P, Korostoff J, Ganeles J, Jackowski J, Krafft T, Neves M et al. (2011).

10. Immediate and Early Loading of Chemically Modified Implants in Posterior Jaws: 3-Year Results from a Prospective Randomized Multicenter Study. Clin Implant Dent Relat Res. Patzelt SB, Bahat O, Reynolds MA, Strub JR (2014).
11. The all-on-four treatment concept: a systematic review. Clin Implant Dent Relat Res 16(6):836-855. Piano S, Romeo E, Sbricoli L, Pisoni G, Cea N, Lops D (2015)

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Dr. Mayur Davda is the pioneer of training and research at dental photography school and has extensively lectured on documentation at various dental associations and universities across India. He has a long list of firsts to his credit like, the first dentist to exhibit at India's most prestigious art gallery - The Jehangir, first dentist to exhibit at Kalaghoda art festival, first dentist to be interviewed by Better Photography and Smart Photography magazines & first dentist to be interviewed on national television just to name a few. Considered as one of the finest dental photography experts in the world he has also participated in Portugal dental congress dental photography art exhibition and the only one to represent India. He has won several awards for fine art and wildlife photography and was invited by the Consulate General of Turkey on the National day (2015) for commendable contribution in the field of photography. Famdent Awards has honored him as the highly commended Indian dental talent of the year 2015. He is currently the photommentor for GPS smile design (Las Vegas, USA) and CANON India. To know more about Dr. Mayur Davda you can visit www.mayurdavda.com



PHOTODONTICS - III

Back to Basics

Which is the best LENS for Dental Photography?

Author: Dr. Mayur Davda

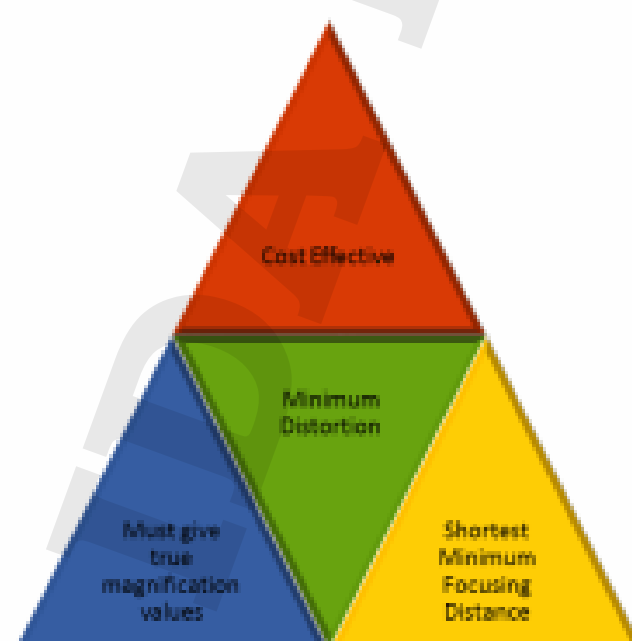
Continued from Vol. 1 Issue 2

Before we begin with lenses it is important to note the best camera for dental photography.

In our last article (PHOTODONTICS - II), we have already discussed about the kinds of cameras available in the market and which is the ideal camera for dental photography. We reached a unanimous conclusion that DSLR cameras are the ideal choice and that buying an entry level (start-up DSLR) gives us satisfactory results with ease of operation rather than going for a high end DSLR which is very bulky and expensive.

MOVING on to the LENSES NOW

An ideal lens for dental photography would be the one which satisfies the following conditions:



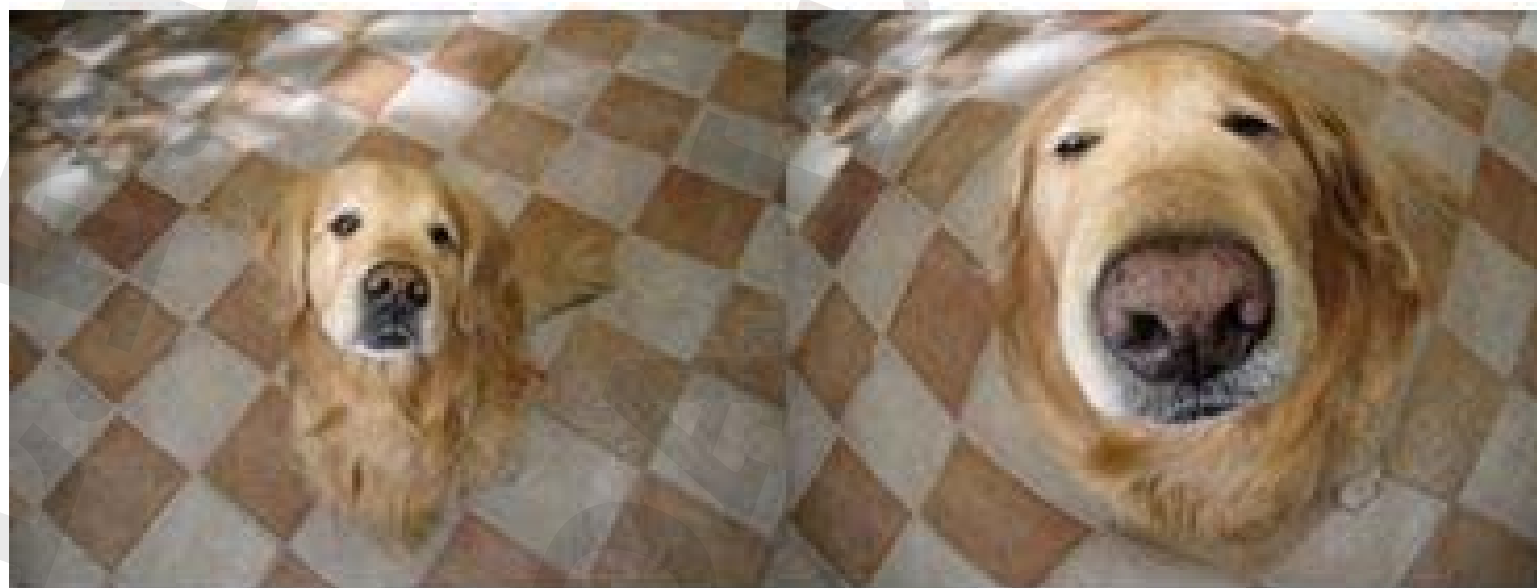
IDEAL REQUIREMENTS for a GOOD LENS in DENTAL PHOTOGRAPHY

Other things to look for in an **Ideal Lens**: Internally Focusing Lens, Minimum Aberrations (Spherical and Chromatic) and diffraction errors, Lens diameter should be ideal & whether Third party lenses are Good choice or bad? Lets take them all one by one:

1. **Cost Effective**: Probably the first thing we look at while buying lenses is how cost effective it is but to be honest you get what you pay for. This is because premium lenses are made up of premium materials and the glass quality is extremely good and refined. When glass quality is good we can expect maximum quality and minimum aberration and errors from the lens and its glass elements.



The **conclusion** for above is to buy the best possible lens for your camera because ultimately the camera will be capturing what the lens is seeing. If the lens is not seeing properly don't expect the camera to give you great results.



2. **Minimum Distortion**: Have you ever wondered why your nose looks bigger in some images that you took with your mobile phone camera? Well the answer to that is Phone cams are

made up of wide angle lenses which give a high degree of distortion when the subject is kept very close to them. No wonder the nose which is closest to the cameras lens looks bigger and the eyes and ears appear smaller. This is also called “**FISH EYE EFFECT**”. This effect is more pronounced in ultra-wide angle and wide angle lenses hence they are best avoided!

So how to avoid fish eye effect and barrel distortion?
Simple switch to the telephoto lenses.

3. Lenses can be placed on a focal length line as follows



It is important to note that telephoto lenses are available in huge focal lengths like 1000 mm or more. It is, however, impractical to use a lens which has a focal length more than 180 mm for dental photography because the greater the focal length of a lens, the greater is the “Minimum Focusing Distance” of the lens which means that we have to stand quite far away from the subject to shoot. In fact using a 180 mm lens for dental photography is quite difficult because it is a very bulky lens. The problem continues even in the manufacturing process of the lens. Since, it is understood that while shooting macro we need a very short minimum focusing distance; macro lenses face a lot of difficulty in manufacturing because they are special lenses with a shorter focusing distance compared to normal lenses as it is a huge challenge in arranging the glass elements.

An ideal lens for dental photography would therefore be between the focal lengths of 50 mm – 180 mm.

The lenses available in this range are:

65 mm macro

85 mm macro

90 mm macro

100 mm macro

105 mm macro

Out of all of these 65 mm macro gives a noticeable distortion when used carelessly.

It is therefore wise to stick to a focal length of 85 mm – 105 mm.

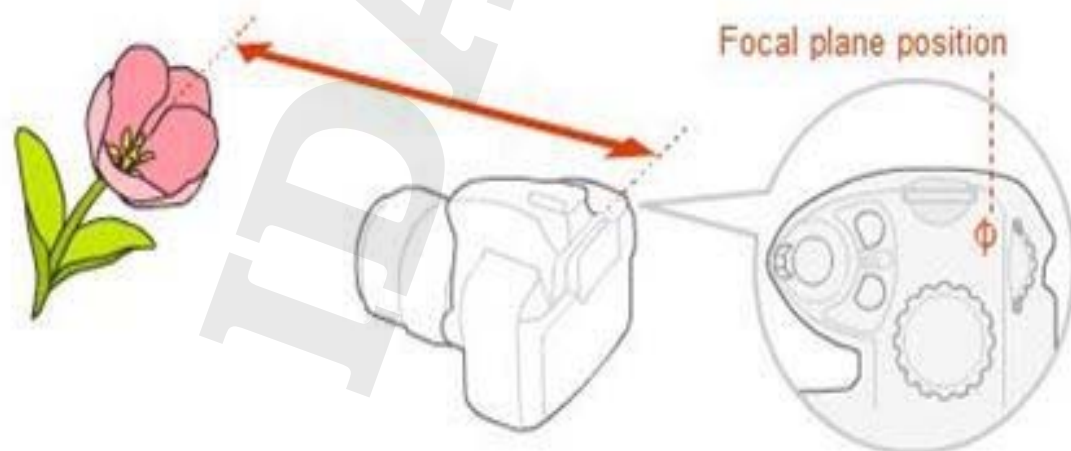
Personally; I feel 100 m is the “**SWEET SPOT**” between achieving minimum distortion and usability in dentistry.

(A thing that might interest people who are already deeper into photography is DoF or depth of field).

It is important to note that a 85 mm lens will give greater DoF as compared to a 105 mm lens; this might be an advantage to dentists who require full arch images on a routine basis as compared to single tooth images. So, the **Conclusion** for above is that a **100 mm lens is a good lens** for dental photography.

4. **Minimum Focusing Distance:** The minimum focus distance is the shortest distance at which a lens can focus. In the case of digital SLR cameras, the distance to the subject is measured from the focal plane mark on the camera body, not from the front of the lens.

Focal plane mark

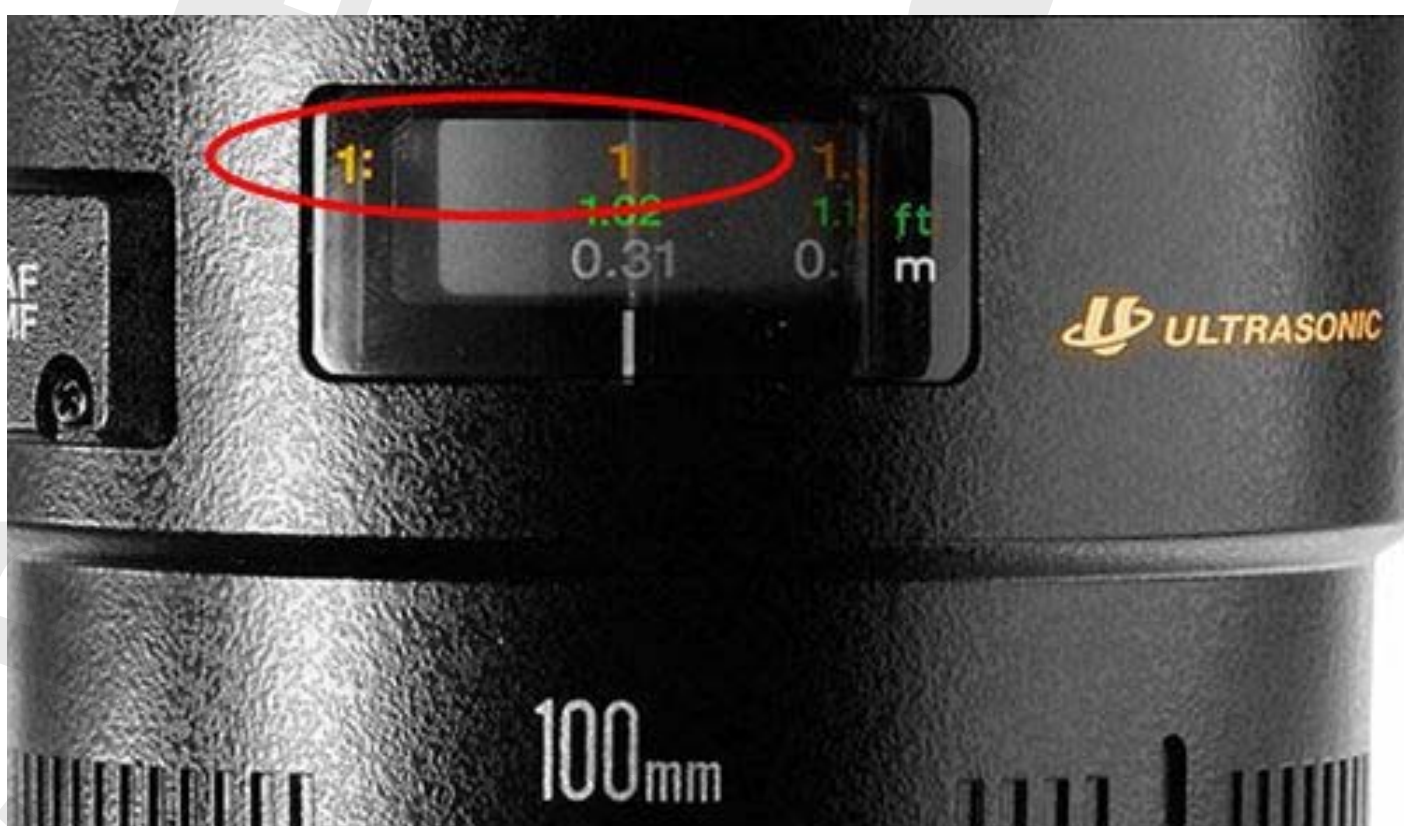


If you try to go closer than this distance the lens will **NOT FOCUS**. This is a **VERY IMPORTANT** property for a Macro Lens; it has to have a **LOW focus distance**. So, the **Conclusion** for above is that, we need a lens which has a short focusing distance as compared to a normal 100 mm lens and this is possible only by a 100 mm MACRO LENS

(NOTE: *It makes more sense to have shorter focusing distance even for our flash systems because shorter the distance more effective is our flash)*

5. True Magnification Values: Probably, the most important use of a macro lens in dental photography is that it provides us with magnification values.

These values can be set even before we start making images of our cases and are extremely important in maintaining standardization in dental photography, especially before and after comparisons where we do not want that before image looks radically different as compared to after image with respect to composition. **Below** is an Image of a 100 mm macro lens set at 1:1 magnification.



Above: A 100 mm macro lens set at 1:1 magnification

So, the **Conclusion** for above is that, **ONLY and ONLY** a macro lens can give you the magnification values as we have no other choice for dental photography.

6. Other Factors:

- A. It is important that the lens is **internally focusing** and **not externally focusing** because in externally focusing lenses, the lens will protrude outside when you rotate the focusing ring. This causes the external flash (like ring or twin flash system) to move along with it, which is not a recommended situation. In internally focusing lenses, the lens remains static from outside even during the rotation of the focusing ring (auto / manual focusing) and hence the attached flash system like the ring or the dual point flash also remains static.



Externally focusing lenses look like the image on top. The dimensions of these lenses change as we change the magnification / focusing and hence a flash attached to the lens also moves inward or outward along with the lens which causes a lot of discomfort to the dentist and the patient also feels scared

- B. Usually premium lenses are the lenses that have extremely good materials in the glass elements and hence they cause minimum distortion/ aberration / errors. It is always wise to go for the best available lens for your camera.

- C. It is always wise to go for a lens which has a suitable diameter for ones flash system (external macro like ring or dual point flash) rather than be worried about premium or non-premium because one cannot compromise on using an adapter which is extremely easy to loose.

For e.g. if the (external macro) flash fits on a lens of diameter 58 mm and one has a lens of 67 mm diameter then one MUST use a step down adapter if they would like to use flash. It is impossible to use a flash on this lens otherwise. In other words without the adapter it is impossible to use the flash system on the lens of a wrong diameter. Now the flash systems have a FIXED diameter to be mounted on. Lenses with different diameters are available. Hence, **the conclusion is that always select the lens based on the flash dimensions and not vice versa.**

The above flash system clearly states that it is meant for a lens having a diameter of 58 mm. It is always best to have a lens of the same diameter to avoid disappointment. In case of canon, there are 2 100 mm macro lenses. One is the premium L series lens with a diameter of 67 mm. One without IS which is of a diameter of 58 mm. It is best to stick to 58 mm diameter lens so that we do not have to purchase a separate step down adapter for the flash because using a step down adapter is highly inconvenient.

- D. Lastly **NEVER** invest on a **third party lens** (Lens make of some other company rather than the same company as your camera) This is because when one shifts from the camera company to other company many features of the lens and the camera are not available for use, meaning that we are not using the lens or the camera to its full capacity!

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Anterior Fiber-Reinforced Composite Resin Bridge

A Case Report

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Co-Author 1: Dr. Virinder Goyal

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ABSTRACT

Fiber-reinforced composite (FRC) bridges can be a good alternative to conventional prosthetic techniques of using implants and Maryland bridges for replacing a traumatically missing anterior tooth. The reinforcement of composite resins by fibers improves their fracture toughness and resistance. The purpose of this article is to present a clinical case of a single tooth replacement by means of a glass FRC bridge. A direct technique was used to fabricate a Maryland-like composite bridge for the replacement of a missing central permanent incisor. This technique offers a conservative, esthetic and noninvasive treatment. Moreover, this technique is economically more acceptable, non irritating, and non iatrogenic. FRC bridges can be considered as a permanent treatment or provisional treatment.

KEYWORDS

Composites, Fiber-reinforced composite (FRC) bridges, Esthetics

INTRODUCTION

Fiber-reinforced composites (FRC) are resin based materials containing fibers aimed at enhancing their physical properties. These were first introduced in the 1960s by Smith when glass fibers were used to reinforce polymethylmethacrylates. The development of the fiber-reinforced composite technology has brought a new material into the realm of metal-free adhesive esthetic dentistry. Different fiber types such as Glass fibers, Carbon fibers, Kevlar fibers, Vectran fibers and Polyethylene fibers have been added to composite materials. Glass fibers, consisting of glass interlaced filaments, improve the impact strength of composite materials. They have excellent esthetic properties, but they do not easily stick to the resinous matrix. Carbon fibers prevent fatigue fracture and strengthen composite materials, but they have a dark color that is esthetically undesirable. Kevlar fibers, made of an aromatic polyamide, increase the impact strength of composites, but they are unaesthetic, hence their use is limited. Vectran fibers are synthetic fibers made of aromatic polyesters. They show a good resistance to abrasion and impact strength, but they are expensive and not easily welded. Polyethylene fibers improve the impact strength, modulus of elasticity and flexural strength of composite materials. They are almost invisible in the resinous matrix.

Different therapeutic options can be considered for the replacement of congenitally or traumatically missing permanent incisors in young children and adolescents. Implants are the treatment of choice and should be considered when general and local conditions are favorable. Their use is generally not intended before the end of the growth period. Their high cost also limits their use. Partial removable dentures are often recommended for very young patients when adjacent teeth are not in their final vertical and horizontal positions. However they are not very comfortable and are frequently subjected to fracture. When an orthodontic treatment is indicated, an artificial tooth can be attached to a removable or fixed orthodontic appliance to solve the esthetic concern. The replacement of a missing tooth can also

be made via a conventional porcelain-fused-metal (PFM) bridge or a resin-bonded fixed partial denture (Maryland bridge). However these treatment approaches are invasive treatment in terms of tooth reduction and could be aesthetically compromised due to the non-esthetic aspect of the metal framework. The fiber-reinforced composite (FRC) bridges represent an interesting alternative to conventional metal bridges. They could be made directly or indirectly using an artificial tooth or the avulsed tooth or by a direct build up composite resin tooth with or without porcelain veneering.

Following report describes a clinical case in which a Fiber-reinforced composites (FRC) bridge was fabricated for the replacement of a traumatically missing left central permanent incisor.

CASE REPORT

A 12 year old male patient reported to the department of Pedodontics and Preventive dentistry with the chief complaint of missing upper left front tooth (**Fig.1**). The tooth got knocked out 2 years before while playing in school. Patient's past medical and family history did not reveal anything significant. Patient had visited a private dentist and had a removable partial denture fabricated for himself one year before.



Fig-1: Pre-operative intraoral photographs of the patient with and without removable prosthesis

Intraoral examination revealed a removable partial denture replacing the missing central incisor. The patient was unsatisfied and asked for a more esthetic and comfortable treatment. After discussing all treatment options with the patient and his parents, it was decided to place a fiber-reinforced composite Maryland-like

bridge. An impression was made with alginate for the FRC bridge fabrication.

The impression was poured with the die stone. A glass fiber system (Interlig-Angelus) was used for the bridge framework fabrication. The length determination was done with thin soft foil. This foil was closely adapted to the working cast. The foil extended to the middle thirds of each abutment and crossed the pontic area directly under the incisal edge. The foil was flattened and used as a pattern, against which the exact length of the ribbon needed was measured.

After isolation of the teeth with rubber dam, all dental surfaces to be bonded were cleaned with a slurry of pumice, rinsed and completely air dried. Enamel surfaces were etched with 37% phosphoric acid (Fusion Flo-Prevest DentPro) for 30 seconds (Fig. 2).



Fig-2: Etchant applied on palatal surfaces of abutments

After rinsing, all surfaces were air dried, visually inspected for proper acid etching, bonding agent was applied. The adhesive layer was air dried and photopolymerized for 20 seconds. The desired layer of fiber was cut and impregnated with bonding agent (Swiss TEC - Coltene). The excess bonding agent was blotted with a gauze. A thin layer of a microhybrid restorative material was placed on the lingual side of the abutment teeth. This composite acted as a glue and held the ribbon during its adaptation. The fiber was adapted on the palatal surface of abutments and photopolymerized (Fig. 3).



Fig-3: Fiber adapted to the palatal surfaces of abutments

The shade of pontic (Premadent acrylic teeth) was selected in natural light and the dimensions were adjusted on the model. Once in place, it was held firmly in position. Composite was placed on its palatal side and it was adapted on to the fiber. Excess composite was removed. The bridge was then light cured for 2 minutes in different directions.

Then, excess composite was removed using bur. The thickness of the composite between the teeth and ribbon was kept as thin as possible.

A small amount of the same restorative composite was placed to cover the wings of the bridge. Occlusion was checked at this time before intraoral finishing and polishing.

The final result was a well-adapted bridge with a natural esthetic result (Fig. 4 & Fig. 5)



Fig-4: Post operative intra oral photograph



**Fig-5: Post operative extra oral photograph
A Happy & a Smiling Patient**

DISCUSSION

Interlig-Angelus is a biocompatible and esthetic material made from a high-strength glass fiber. The various advantages of this material include ease of adaptation to dental contours and ease of manipulation during the bonding process. Because it is a relatively easy and fast technique (no laboratory work is needed), procedures can often be completed in a single appointment. It also has acceptable strength because of good integration of fibers with the composite resin; this leads to good clinical longevity. Because a thinner composite resin is used, the bulk of the retention appliance can be minimized. In addition, in case of fracture during wear, it can be easily repaired. There is no need for removal of significant tooth structure, making the technique reversible and conservative. It also meets the patients' esthetic expectations.

The replacement of a congenitally or traumatically missing permanent anterior tooth could be performed by different therapeutic options. Fixed FRC bridges represent one of these options, with many advantages including bondability, reparability, ease of fabrication and relative longevity. This is considered a noninvasive or minimally invasive procedure with very little or no tooth reduction. Compared to traditional prosthetic options, a fiber-reinforced composite bridge is generally less costly and labor intensive.

A chairside FRC bridge fabrication could be performed easily reducing lab cost and time. Moreover, the FRC bridge fabrication can immediately be undertaken. Compared to metal-framed Maryland bridge, an FRC bridge is easier to bond, more esthetically pleasing with no metal shadow, and does not show through the very translucent dental hard tissues in young permanent teeth. The pontic could be a acrylic tooth or direct fabrication of the missing tooth using composite. Use of acrylic teeth is easier, faster and in some cases, more esthetically acceptable than the direct fabrication of a tooth. The shape and the incisal color of acrylic teeth are, in some cases, however, difficult to match to the adjacent teeth. Moreover, the interface between the restorative composite covering the beam and artificial tooth could weaken the bridge and lead to fracture in this region.

CONCLUSION

FRC bridge fabrication technique presented in this case report has suggested a new treatment option for the replacement of a missing anterior tooth. This technique restores esthetic and function. It is more comfortable than a removable appliance, non irritating and hygienic. Generally, it does not require any tooth reduction and could be repaired, modified, or removed from teeth without any iatrogenic problem. It can be considered a permanent treatment or a long-lasting provisional treatment if implant therapy is used at a later date. In this case, the non invasive characteristic of this treatment render it superior to all other options.

REFERENCES

1. Goldberg AJ, Burstone CJ. The use of continuous fiber reinforcement in dentistry *Dent Mater* 1992;8:197-202.
2. Meiers JC, Kazemi RB, Donadio M. The influence of fiber reinforcement of composites on shear bond strengths to enamel. *J Prosthet Dent* 2003;89:388-393.
3. Vitale MC, Caprioglio C, Martignone A, Marchesi U, Botticelli AR. Combined technique with polyethylene fibers and

composite resins in restoration of traumatized anterior teeth. *Dent Traumatol* 2004;20:172-177.

4. Vallittu PK, Vojtkova H, Lassila VP. Impact strength of denture polymethyl methacrylate reinforced with continuous glass fibers or metal wire. *Acta Odontol Scand* 1995;53:392-396.
5. Uzun G, Hersek N, Tinçer T. Effect of five woven fiber reinforcements on the impact and transverse strength of a denture base resin. *J Prosthet Dent* 1999;81:616-620.
6. DeBoer J, Vermilyea SG, Brady RE. The effect of carbon fiber orientation on the fatigue resistance and bending properties of two denture resins. *J Prosthet Dent* 1984;51:119-121.
7. Berrong JM, Weed RM, Young JM. Fracture resistance of Kevlar-reinforced poly(methyl methacrylate) resin: a preliminary study. *Int J Prosthodont* 1990;3:391-395.
8. Shuman IE. Replacement of a tooth with a fiber-reinforced direct bonded restoration. *Gen Dent* 2000;48:314-318
9. Marinello CP, Meyenberg KH, Zitzmann N, Luthy H, Soom U, Imoberdorf M. Single-tooth replacement: Some clinical aspects. *J Esthet Dent*. 1997;9:169-178.
10. Vallittu PK. Survival rates of resin-bonded, glass fiber-reinforced composite fixed partial dentures with a mean follow-up of 42 months: A pilot study. *J Prosthet Dent*. 2004;3:241-246.
11. Nixon RL, Weinstock A. An immediate-extraction anterior single-tooth replacement utilizing a fiber-reinforced dual-component bridge. *Pract Periodontics Aesthet Dent*. 1998;10:17-26.
12. Belli S, Ozer F. A simple method for single anterior tooth replacement. *J Adhes Dent*. 2000;2:67-70.
13. Karaman AI, Kir N, Belli S. Four applications of reinforced polyethylene fiber material in orthodontic practice. *Am J Orthod Dentofacial Orthop* 2002;121:650-654.
14. Chafaie, A, Portier, R Anterior Fiber-reinforced Composite Resin Bridge: A Case Report. *Pediatric Dentistry* – 26:6, 2004
15. Karaman AI, Kir N, Belli S. Four applications of reinforced polyethylene fiber material in orthodontic practice. *Am J Orthod Dentofacial Orthop*. 2002;121:650-654.

16. Smidt A. *Esthetic provisional replacement of a single anterior tooth during the implant healing phase: A clinical report.* J Prosthet Dent. 2002;6:598-602.

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Conservative Treatment for Keratocystic Odontogenic Tumour

A Case Report of two cases and Review

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ABSTRACT

The keratocystic odontogenic tumor is a benign intraosseous neoplasm derived from remnants of the enamel organ or of dental lamina. Keratocystic odontogenic tumors (KCOT) comprise a unique pathological entity characterized by potentially aggressive/destructive behavior. The treatment of keratocystic odontogenic tumour of the jaw remains controversial. Many

treatment modalities have been advocated for its treatment, but none in particular has been regarded as the best treatment option. Based on a literature review, more aggressive treatment — either resection or enucleation supplemented with Carnoy's solution with or without peripheral ostectomy — results in a lower recurrence rate than enucleation alone or marsupialization. However, the recurrence rate after marsupialization followed by enucleation is not significantly higher than that after aggressive modalities.

KEYWORDS

Keratocysts, odontogenic cysts, jaw cysts, jaw neoplasms

INTRODUCTION

First described by Philipsen in 1956, the odontogenic keratocyst (OKC) is now designated by the World Health Organization (WHO) as a keratocystic odontogenic tumour (KCOT) and is defined as “a benign uni- or multicystic, intraosseous tumour of odontogenic origin, with a characteristic lining of parakeratinized stratified squamous epithelium and potential for aggressive, infiltrative behaviour.

In 2005, the World Health Organization (WHO) classified it as an odontogenic tumor due to a number of features which reflect its neoplastic nature since, in some cases, it may undergo malignant transformation (transformation into a squamous cell carcinoma). Keratocystic odontogenic tumors (KCOTs), are among the most controversial and frequent pathological entities affecting the maxillofacial region. In contrast to other odontogenic cysts, KCOTs have a high recurrence rate, reportedly ranging from 13% to 80% based on the performed treatment. The malignant transformation of KCOTs has also been reported.

The knowledge regarding the treatment of the Keratocystic Odontogenic Tumor (KCOT], has been ever increasing over the past few decades, and yet, the issue is still a debate in oral and maxillofacial surgery. Various treatment modalities have been tried for the successful treatment of the KCOT, ranging from

simple enucleation to resection, but none has been regarded as the ideal treatment. Advocates of conservative treatment suggest that marsupialization yields the results comparable to those obtained with more extensive surgery.

In this present case report, we present two cases of keratocystic odontogenic tumour that were successfully treated with conservative treatment through an intraoral approach and one year follow-up period.

CASE DESCRIPTION AND RESULTS

CASE 1

A 30 year old female patient reported to the department of oral and maxillofacial surgery with the chief complaint of swelling on left lower side of face since 1 and half year. The patient's medical history was not significant. Extra-orally, facial asymmetry was evident on left side of face over body of mandible extending almost 1cm from angle of mouth posteriorly, of size of about 3.5 cm. Intra-orally, A unilateral single ovoid swelling is seen obliterating on the left buccal and labial vestibule in relation to 32-37, of size of about 3.5cm (Fig.1).



Fig-1: Pre-Operative Intra-Oral View

The overlying mucosa appeared normal on colour and texture. There was no lymphadenopathy. The patient was evaluated radiographically by panoramic radiography (Fig.2) and cone beam computed tomography (CBCT) imaging (Fig.3). The imaging revealed a multilocular radiolucency extending from 32 to 37 region. Fine needle aspiration yielded yellowish fluid. Tissue was

obtained from the lesion and submitted for histopathology examination.



Fig-2: Pre-Operative Panoramic View



Fig-3: CBCT section of the Lesion

Microscopic examination revealed cystic lumen lined by parakeratinised, corrugated, stratified squamous epithelial lining of uniform thickness of 6-10 layers having palisaded basal layer. The basal cells were either cuboidal or columnar and the basal cell nuclei were hyperchromatic and arranged in a “picket fence” configuration. The fibrous connective tissue wall contained sparse chronic inflammatory cells which were composed of lymphocyte and plasma cells.

On the basis of these findings, a diagnosis of a KCOT was made. Due to the size of the lesion it was decided to treat it with enucleation followed by open packing (Fig.4). The cystic cavity was curetted followed with the application of Carnoy’s solution (Fig.5). The resulting cavity was then packed with iodoform gauze.

The packing was replaced during the recall visits biweekly for six months following the initial surgery.

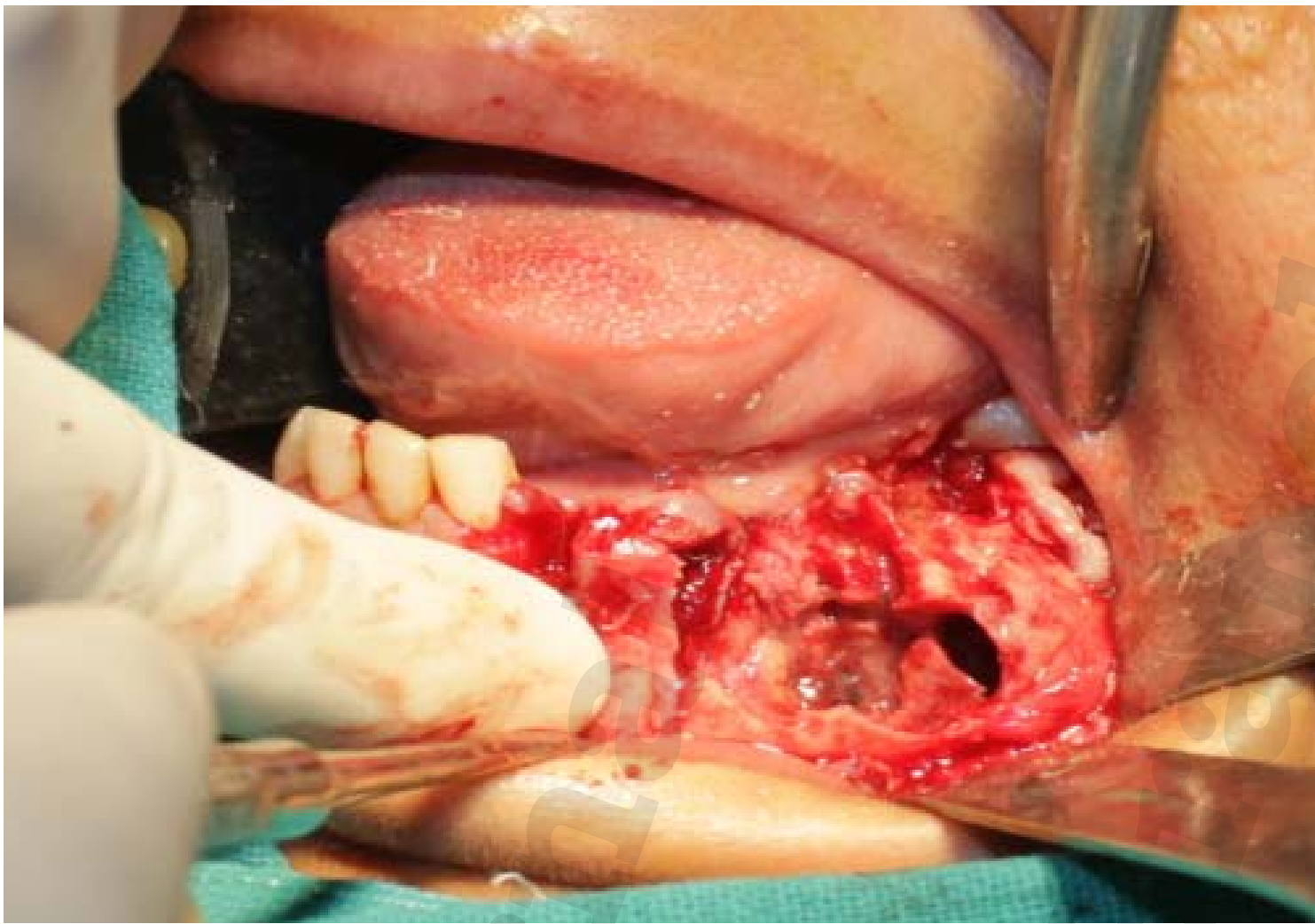


Fig-4: Intra-Operative Picture of the Lesion



Fig-5: Intra-Oral View after Complete Enucleation

The patient was reviewed radiologically every three months during follow-up period (Fig.6). At the end of 1 year follow-up period, no evidence of recurrence was noticed.



Fig-6: Panoramic View after 1 Year Post-Operative

CASE 2

A 10 year old male child patient reported to the Department of Oral and Maxillofacial Surgery at Dasmesh Institute of Research and Dental Sciences, Faridkot with the chief complaint of swelling in left lower region of face since 2 years. Facial asymmetry evident due to swelling on left side of face. Submandibular lymph nodes were palpable on left side. Intra-orally, swelling present with respect to left buccal mucosa and obliteration of left buccal vestibule evident (Fig.7).



Fig-7 Intra-Oral View Pre-Operative

Radiographically, multilocular radiolucency was evident in relation to 73,74,75 (Fig.8)



Fig-8 Pre-Operative Panoramic View

Under complete aseptic conditions, patient was given intravenous anaesthesia using ketamine and midazolam. Part preparation was done and patient was draped in the usual manner. After achieving local anaesthesia with 2% lignocaine with 1:100000 adrenaline, extraction was done with respect to 73,74,75 to expose the underlying cystic epithelium. The cyst was marsupialised into the oral cavity through the extraction sockets of 73,74,75. After the operation, the bony cavity was packed with iodoform which was replaced in recall visits biweekly for 6 months following the initial surgery. The final histopathological examination confirmed the initial diagnosis of KCOT. Radiological evaluation with barium was done after treatment (Fig.9).



Fig-9 Panoramic View with Barium after marsupialisation

The bony cavity has healed clinically and radiographically approximately 10 months after treatment. There was no evidence

of residual disease on radiographic examination at 1 year clinical follow-up (Fig.10).



Fig-10 Panoramic View after eruption of the involved Canine & Pre-molars

DISCUSSION

The KCOT is one of the most aggressive odontogenic tumours due to its relatively high recurrence rate, its relatively fast growth, and its tendency to invade adjacent tissues; it has even been reported to penetrate the skull base. Among odontogenic tumors, KCOTs are the second most frequently diagnosed lesion, with reported prevalence rates ranging from 19 to 38%.

KCOTs are usually observed in patients aged 10-29 years and show a slight preference for men. Lesions are mostly located in the mandible, especially in the posterior portion of the mandible and in the mandibular ramus, and are generally related with unerupted teeth. Patients with KCOTs may present various symptoms and features, e.g. swelling, pain, discharge, aggressive growth, invasion of adjacent structures, and recurrence. Myoung et al. reviewed 256 cases of KCOT and observed that the most frequent clinical manifestations upon admission were swelling, pain, or a combination of both (82.4% of all cases). Conversely, Boffano et al. reported that 62.8% of patients with KCOTs had no symptoms. It is important to note that KCOTs can be easily mistaken for inflammatory lesions, as patients usually show typically inflammatory symptoms, such as pain, swelling, and

discharge. Conventional radiographic examinations such as panoramic and intraoral periapical radiographs are usually adequate to determine the location and estimate the size of a KCOT.

Radiographically, most KCOTs present as a unilocular or multilocular well-circumscribed radiolucent lesion with smooth or scalloped margins and sclerotic borders. Because these radiological features are non-pathognomonic, differential diagnosis should include dentigerous cysts, ameloblastomas, radicular cysts, simple bone cysts, central giant cell granulomas, arteriovenous malformations, and fibro-osseous lesions. According to Güller et al., one radiographic feature suggestive of KCOT is lesion growth in an anterior-posterior direction within the medullary cavity, with no obvious bone expansion. Besides radiography, computed tomography and nuclear magnetic resonance with contrast are good diagnostic methods. They can be used to assess cortical bone perforation or a possible evolution in soft tissues.

Histologically, KCOTs present the following features: presence of a well defined, often palisaded, basal layer consisting of columnar or cuboidal cells; intensely basophilic nuclei of columnar basal cells oriented away from the basement membrane; parakeratotic layers, often with a corrugated surface; and mitotic figures frequently present in suprabasal layers. Some authors have classified KCOTs into parakeratotic and orthokeratotic subtypes, according to immunohistochemical and histologic features of the lining and the type of keratin produced. The parakeratotic type accounts for the majority of KCOTs (83 to 97%) and has a greater potential for local destruction and extension into adjacent tissues, rapid growth, recurrence, and multiplicity.

The treatments proposed for the resolution of this condition are varied and have changed over time. In the beginning and in the absence of less invasive treatment options, total resection of the lesion was postulated as the treatment of choice, given that the maximum amount of diseased tissue was removed for clinical success. This was associated with high morbidity for the patient,

loss of bone structure, and even nerve damage or weakening of bone bases. For this reason, other alternatives were sought hoping to find an option which would respect the actual anatomical structures, leading to the least damage and the maximum benefit.

New treatment strategies are still being proposed, although they are sometimes controversial. The challenge still lies in reducing the risk of recurrence and morbidity of an extensive resection. Recurrence causes are essentially due to incomplete removal of the cystic membrane and growth from small cysts satellites or epithelial nests left after enucleation. Multiple treatment modalities have been employed in both conservative and radical management of KCOTs. Among conservative treatments, it can be found: marsupialization or decompression, simple enucleation, enucleation with curettage peripheral (mechanical or chemical), decompression followed by enucleation. Radical surgical treatments are more aggressive and may comprise marginal or block resection, and hemimaxillectomy or hemimandibulectomy considering decreased quality of life as a possible complication. To prevent recurrence, the use of adjuvants or chemical curettage like cryotherapy with liquid nitrogen or Carnoy solution has been recommended in order to eliminate possible satellite cysts in the bone limits. The most widely used is the Carnoy solution, which penetrates between the trabecular bones, devitalizing and attaching tumoral cells.

According to multiple studies reported in literature, this disease presents variable recurrence rates which are mostly seen in the first five years after surgery. Higher rates are reported with the single treatment of enucleation (17-56%). If it is assisted with Carnoy solution or decompression prior to enucleation, it decreases from 1 to 8.7%. Finally, resection is reported as a treatment without recurrences, although it is controversial given the benign nature of the disease and the numerous associated complications such as facial deformation, tooth loss, infection of the transplanted graft and sensory alterations due to damaged nervous elements.

CONCLUSION

Treatment of the KCOT varies from enucleation and curettage to osseous resection. Various factors that should be considered in the selection of the appropriate treatment include size and extent, location, presence of perforation or soft tissue involvement, age of individual, and primary or recurrent nature of lesion. Long-term follow-up is suggested because KCOTs have been known to have late recurrences. Though resection is considered to be one of the recent modalities for the management of KCOT; but the extensive surgical operation involved, facial scar and morbidity involved is a big challenge. We are of the opinion that extensive curettage along with peripheral ostectomy and chemical cauterization with carnoy's solution if done properly along with proper follow-up gives good results. In the light of literature, it may be concluded that a conservative treatment modality like enucleation with application of carnoy's solution might be considered as a viable treatment modality for the KCOT.

REFERENCES

1. Philipsen HP. Om keratocystedr (Kolesteratomer) and kaeberne. *Tandlaegebladet* 1956; 60:963–71.
2. Barnes L, Eveson JW, Reichart P, Sidransky D, editors. Pathology and genetics of head and neck tumours. Lyon: IARC Press; 2005. WHO classification of tumours series.
3. Philipsen H. World Health Organization Classification of Tumours. Pathology and Genetics of Head and Neck Tumours. 2005 International Agency for Research on Cancer (IARC), Chapter 6, 306-7.
4. Cadena AJL, Muñiz LG, Tapia PDC, Flores TA, Orozco JME. Queratoquiste odontogénico. Revisión de 20 años en la Unidad Médica de Alta Especialidad, Hospital de Especialidades CMN «La Raza» IMSS 1980- 2000. *Rev Mex Cir Bucal Maxilofac* 2010; 6(1):4-13.
5. da Silva MJ, de Sousa SO, Corrêa L, Carvalhosa AA, De Araújo VC. Immunohistochemical study of the orthokeratinized odontogenic cyst: a comparison with the odontogenic keratocyst.

Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2002;94:732-7.

6. Mendes RA, Carvalho JF, van der Waal I. Characterization and management of the keratocystic odontogenic tumor in relation to its histopathological and biological features. *Oral Oncol.* 2010;46:219-25.
7. Osterne RL, Brito RG, Alves AP, Cavalcante RB, Sousa FB. Odontogenic tumors: a 5-year retrospective study in a Brazilian population and analysis of 3406 cases reported in the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2011;111:474-81.
8. Costa DOP, Maurício AS, Faria PA, Silva LE, Mosqueda-Taylor A, Lourenço SQ. Odontogenic tumors: a retrospective study of four Brazilian diagnostic pathology centers. *Med Oral Patol Oral Cir Bucal.* 2012;17:e389-94.
9. Brannon RB. The odontogenic keratocyst. A clinicopathologic study of 312 cases. Part II. Histologic features. *Oral Surg Oral Med Oral Pathol.* 1977 Feb;43(2):233-55. [Medline: [264648](#)] [doi: [10.1016/0030-4220\(77\)90161-X](#)]
10. Haring JI, Van Dis ML. Odontogenic keratocysts: a clinical, radiographic, and histopathologic study. *Oral Surg Oral Med Oral Pathol.* 1988 Jul;66(1):145-53. [Medline: [2457195](#)] [doi: [10.1016/0030-4220\(88\)90082-5](#)]
11. Verbin RS, Barnes L. Cysts and cystlike lesions of the oral cavity, jaws, and neck. In: Barnes L, ed. *Surgical Pathology of the Head and Neck*, Vol. 2. New York, NY: Marcel Dekker; 1985. p. 1257–63.
12. Yoshiura K, Higuchi Y, Ariji Y, Shinohara M, Yuasa K, Nakayama E, Ban S, Kanda S. Increased attenuation in odontogenic keratocysts with computed tomography: a new finding. *Dentomaxillofac Radiol.* 1994 Aug;23(3):138-42.[Medline: [7530666](#)]
13. Myoung H, Hong SP, Hong SD, Lee JI, Lim CY, Choung PH, Lee JH, Choi JY, Seo BM, Kim MJ. Odontogenic keratocyst: Review of 256 cases for recurrence and clinicopathologic parameters. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2001 Mar;91(3):328-33. [Medline: [11250631](#)] [doi: [10.1067/moe.2001.113109](#)]

14. Godhi S S, Kukreja P. Keratocystic odontogenic tumor: a review. J Maxillofac Oral Surg 8(2):127-131
15. Forssell K, Forssell H, Kahnberg KE. Recurrence of keratocysts. A long-term follow-up study. Int J Oral Maxillofac Surg. 1988 Feb;17(1):25-8. [Medline: [3127485](#)] [doi: [10.1016/S0901-5027\(88\)80224-8](#)]
16. Güler N, Sençift K, Demirkol Ö. Conservative management of keratocystic odontogenic tumors of jaws. ScientificWorldJournal. 2012;2012:680397. doi: 10.1100/2012/680397. Epub 2012 Feb 14.
17. MacDonald-Jankowski DS. Keratocystic odontogenic tumour: systematic review. Dentomaxillofac Radiol. 2011;40:1-23.
18. Boffano P, Ruga E, Gallesio C. Keratocystic odontogenic tumor (odontogenic keratocyst): preliminary retrospective review of epidemiologic, clinical, and radiological features of 261 lesions from university of Turin. J Oral Maxillofac Surg. 2010;68:2994-9.
19. Titinchi F, Nortje CJ. Keratocystic odontogenic tumor: a recurrence analysis of clinical and radiographic parameters. Oral Surg Oral Med Oral Pathol Oral Radiol. 2012;114:136-42.
20. Tsukamoto G, Sasaki A, Akiyama T, Ishikawa T, Kishimoto K, Nishiyama A, Matsumura T. A radiologic analysis of dentigerous cysts and odontogenic keratocysts associated with a mandibular third molar. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2001;91:743-7.
21. Mendes RA, Carvalho JF, van der Waal I. Characterization and management of the keratocystic odontogenic tumor in relation to its histopathological and biological features. Oral Oncol. 2010;46:219-25.
22. Garlock JA, Pringle GA, Hicks ML. The odontogenic keratocyst: a potential endodontic misdiagnosing. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1998;85:452-6.
23. Meara JG, Shah S, Li KK, Cunningham MJ. The odontogenic keratocyst: a 20-year clinicopathologic review. Laryngoscope. 1998;108:280-3.
24. Grasmuck EA, Nelson BL. Keratocystic odontogenic tumor. Head Neck Pathol 2010; 4(1): 94-6.
25. Robles P & Roa I. Keratocystic odontogenic tumor: Clinicopathological aspects and treatment. J Oral Res 2014; 3(4): 249-256.

26. Ayoub MS, Baghdadi HM, El-Kholy M. Immunohistochemical detection of laminin-1 and Ki-67 in radicular cysts and keratocystic odontogenic tumors. BMC Clin Pathol 2011; 11: 4.
27. Tonietto L, Borges HO, Martins CA, Silva DN, Sant'Ana Filho M. Enucleation and liquid nitrogen cryotherapy in the treatment of keratocystic odontogenic tumors: a case series. J Oral Maxillofac Surg 2011; 69(6): e112-7.
28. Kaczmarzyk T, Mojsa I, Stypulkowska J. A systematic review of the recurrence rate for keratocystic odontogenic tumour in relation to treatment modalities. Int J Oral Maxillofac Surg 2012;

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Role of Serratiopeptidase in Post-Operative swelling after third molar removal...!!!!!!

An Investigative Study

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INTRODUCTION

Any surgery on any part of the body can result in swelling, which is normal part of the healing process. Depending on the surgery, the swelling can be excessive and visible. While there is no cure, both doctors and patients take steps to minimize the effects to expedite the overall recovery. When third molars are removed, post surgery is characterized by limitation in the mouth opening, pain, reduced masticatory capability and swelling of variable degree. The latter represents a serious issue as it affects the ability of the patient to interrelate and to return to the routine working life, especially during the first 3 days following oral surgery.

The Post Operative period of a patient treated for impacted third molar is hardly predictable. These Post Operative events are usually treated with pharmacological and /or surgical & /or various strategical interventions.

In our study we wanted to understand the role of serratiopeptidase in postoperative swelling after removal of third molar.

Inflammatory response is mediated by prostaglandins, the synthesis of which is initiated by the release of arachidonic acid from membrane phospholipids. Serratiopeptidase (Serratia E-15 protease, also known as Serralyisin, Serratiapeptase, Serratia peptidase, Serratiopeptidase or Serrapeptidase) is a proteolytic enzyme produced by enterobacterium.

Some alternative medicine proponents claim that serratiopeptidase is beneficial for pain and inflammation. Various publications in the medical databases covered, that addressed the efficacy of serratiopeptidase, of which several were found to be animal experiments, personal letters, uncontrolled trials or those with inadequate or nonexistent randomisation.

AIM & OBJECTIVES

The aim of the present study was to study the Role of Serratiopeptidase in post Operative Swelling after third molar Surgery.

MATERIAL & METHODS

The Protocol of the present study was approved by the institutional Ethics Committee. The subjects were selected from a pool of patients visiting the Department for Surgical Removal of Mandibular third molar. All the participants had signed informed consent form.

The study protocol involved a screening consultation followed by initial therapy to ensure gingival health and to establish the optimal biofilm control, surgical therapy and post surgical control.

50 healthy Non Smoking patient patients (6 Males and 44 Females with mean age 21.3) without contraindications to Oral surgery and not taking any medication who were to undergo surgical removal of bilateral and symmetrically placed Impacted lower third molars were enrolled in the study. Orthopantomographic radiograph were taken to ensure the similarity of the tooth and inclinations according to the winters classification. The

impactions of the teeth were categorized as fully or partially bone impacted.

A single examiner performed all the clinical measurements prior to the surgery (Baseline), then 72 hour post operative and then at one week's interval. Swelling measurements were taken using a 2-0 nylon thread (Ethicon, Johnson and Johnson,) and a mm ruler and trismus measurements were made using a Willey's caliper to evaluate the swelling, markings with permanent marker were made prior to the surgery on the following facial regions:- the angle of mandible, the tragus, the labial commissure, the nasal border, laterally to the external corner of the eye and on the soft pogonion.

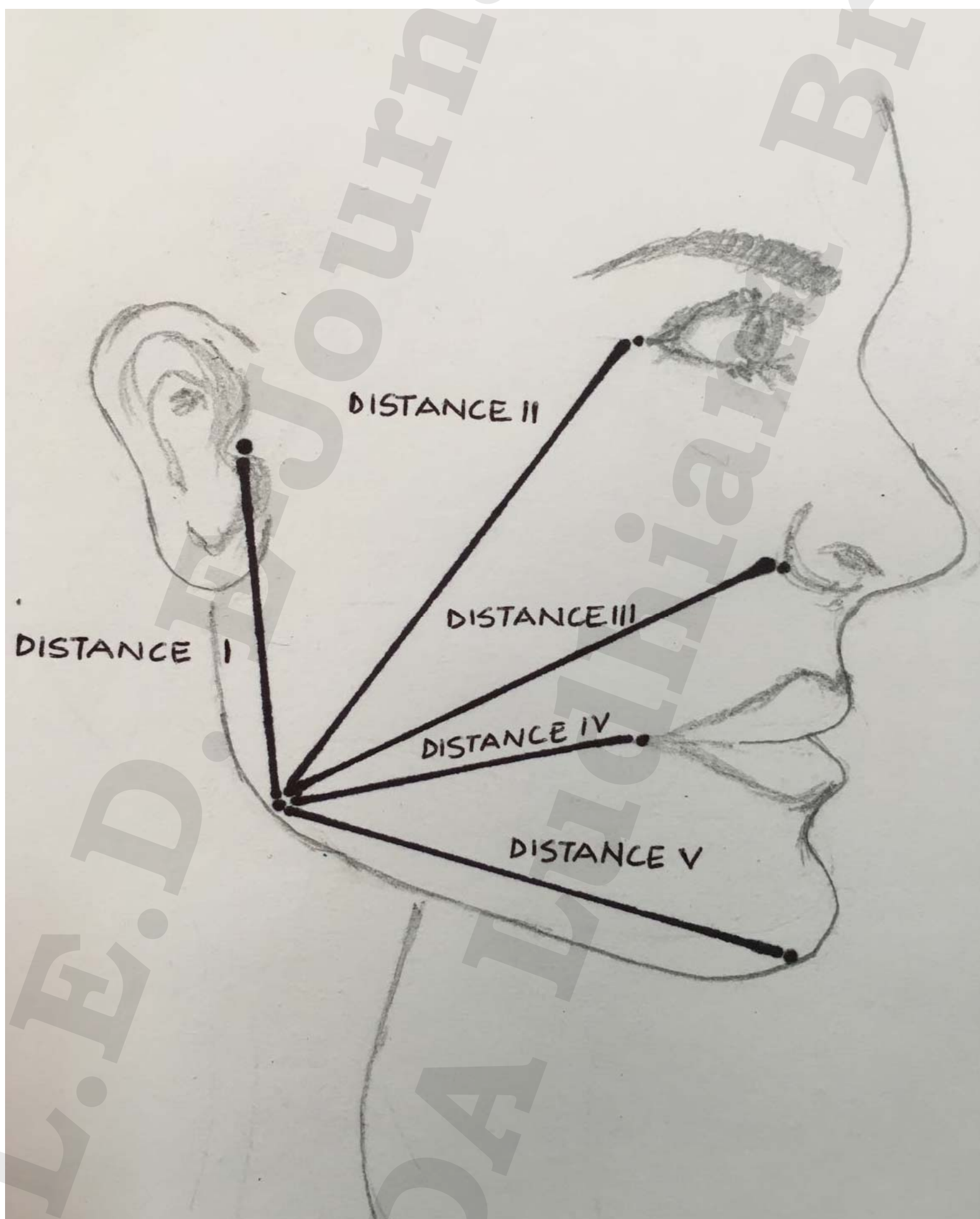


Fig. 1. Distances used for the evaluation of postoperative swelling: from the angle of the mandible to tragus (Distance I); from the angle of the mandible to the external corner of the eye (Distance II); from the angle of the mandible to the nasal border (Distance III); from the angle of the mandible to the labial commissure (Distance IV); and from the angle of the mandible to the soft pogonion (Distance V).

Fig-1: Distances for evaluation of Post-Operative Swelling

The following measurements were taken as: Distance I, Distance II, Distance III, Distance IV, Distance V (Fig.1).

The sensation of pain was evaluated in the periods at 72 hours and at 1 week interval using Verbal rating Scale, in which the patients indicated the intensity of the pain according to 6 descriptive scores (1: No pain, 2 Mild Pain, 3 Moderate Pain, 4; Severe Pain, 5; Very Severe Pain, 6: Extreme pain).

According to the randomized, double blind and cross designed of the study, bilateral molars were assigned randomly by the toss of a coin to either the Group A, or Group B, both drugs, kept in appropriate receptacle with a green or red label, were administered orally 1 hour before the surgery, and then at an interval of 8 hours for 5 consecutive days. Group A were given Capsule Amoxicillin 500 along with tablet having Diclofenac and Paracetamol whereas Group B was given Capsule Amoxicillin 500 mg along with tablet Having Diclofenac Sodium (50 mg) and Paracetamol (500mg) along with Serratiptidase 10 mg. All the medication was given 8 hourly.

Extra oral antisepsis was performed with 2% cholrohexidine solutions and intraoral antisepsis with 0.12% Choloheidine rinse. The nerve block of the inferior Alveolar Nerve, Lingual and Long Buccal Nerve was carried out using 2% Lidocaine with 1:200000 epinephrine. The surgery to remove the lower third molar followed the standardized technique. Modified Wards incision was made and a full thickness muco periosteal flap was elevated, followed by osteotomy and tooth section and removal of the tooth. All procedure were performed under abundant irrigation with sterilized 0.9% Normal Saline. The same technique was performed on the other side with minimal interval of 15 days between the removal of first and second impacted lower third molar.

They were instructed to eat soft food, and to abstain from oral rinsing during the first 24 hours and from brushing and flossing around the surgical area vigorously and until suture removal (7

days post surgery). Patients were instructed to use 0.12% chlorhexidine mouth rinse for 1 minute twice a day for 2 weeks post operatively.

RESULTS

All the patients complied with the study protocol, tolerated the surgical procedures well and completed the follow- up period. Neither Gastrointestinal adverse events nor postoperative complications occurred during the study.

In both the cases, increase in swelling was observed after surgery for all measurements taken.

Of 50 Impactions in each 50 patients mesio angular impactions were 19 , Distoangular were 17, Vertical were 4, and Horizontal were 10 in number in both the Group's. of 50 impactions 31 were Fully Impacted and 19 were partially impacted in both the cases.

In both the treatment groups mean pre operative Average Distance I was 57.4 mm, Distance II was 90.3 mm, Distance III was 97.1 mm, Distance IV was 77.2 mm and Distance V was 95.4 mm.

The patient's were follow up after 72 hours and the Distance were measured again and was found to have increase in swelling, however were the dimensions of Group A and Group B were Compared the increase was not very significant. Post operative Swelling was found to be decreasing after 1 week and the Distance I to V were found to close to the dimensions recorded pre operatively in both the groups.

In Both the groups Maximum Incisal opening was found to be 37.5 mm pre operatively which decreased to 23.3 and 22.2 mm for Group A and Group B respectively and was found to be increasing at 1 weeks interval. No significant Decrease or increase in MIO was found when both the groups were compared after 72 hours and at 1 week's interval.

Pain intensity was significantly higher in Group A and Group B at 72 hours interval however, patients were found to be in less of pain at the end of 1 week. There was no significant difference in Pain Intensity when group A and Group B were compared.

DISCUSSION

The aim of the present study was to evaluate the role of Serratiopeptidase in the postoperative swelling after third molar removal. In the present study, a significant increase in swelling was observed until 72 hours after the removal of third molars.

1. The distance between the angle of the mandible and the labial commissure (Distance IV) was mostly affected by the swelling.
2. Postoperative Swelling was found to be nearly the same in both the groups along with the MIO.
3. Various methods have been used to measure facial swelling. The method employed in this study is not as accurate as computed tomography scans or Magnetic Resonance Imaging but this is non invasive, simple cost effective and time saving method of obtaining numeric values for the determinations of soft tissues contour changes.
4. Postoperative pain was evaluated using a verbal rating scale. Though it was of short duration but reached its maximum intensity by 72 hours, however the patients felt comfortable at the end of 1 week. There was no significant difference between the pain scores obtained in both treatment groups.
5. In the present study, the amount of analgesic used by the patient and post operative pain did not differ between the cases of full or partial bone impactions, or between different inclinations of third molar.
6. It has been suggested that trismus is the result of a protective reflex against inflammatory states of orofacial tissues and avoids maximum mouth opening by the patient due to postoperative pain. In the present study, trismus control was found to be nearly same in both the groups.
7. The authors did not formally evaluate the safety and tolerability of the drugs investigated but the patients did not report any adverse events.

CONCLUSION

In conclusion, the serratiopeptidase did not make any significant difference between the postoperative swelling and trismus following third molar removal. However more studies with larger group may be required to clarify this study.

ETHICAL APPROVAL

The study protocol was approved by the institutional ethics committee.

P.S. Any feedback/compliments/queries for the Author/s should be emailed to the Editor-in-Chief, Dr. Bhavdeep Singh Ahuja at his email id: drbhavdeep@gmail.com

FLAPLESS CRESTAL SINUS FLOOR ELEVATION USING PIEZOELECTRIC HYDRAULIC PRESSURE WITH IMMEDIATE IMPLANT PLACEMENT USING BIO OSS COLLAGEN AS THE SOLE GRAFTING MATERIAL



Dr. Porus Turner

Friday, March 18, 2016 at 15:00 hrs (IST)



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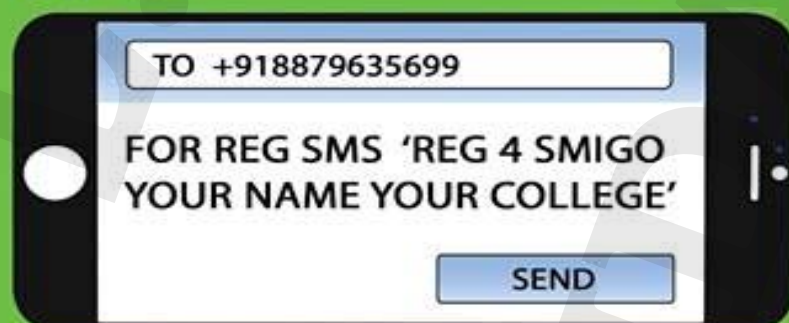
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Dr. Bikramjeet Singh has graduated from GNDC Sunam in 2007. He joined PG in Periodontics in 2009 in NDC Derabassi after securing 19th Rank in Punjab PG Entrance Exam, but left it midway after getting selected in Govt. Job as one of the two Dental surgeons for only two posts for entire Punjab state region under Ministry of Labour & Employment and thus, joined at ESIC Model HSP Ludhiana since Jan. 2010 till date. His keen areas of interest include Oral Surgery & Restorative Dentistry. Inspite of the limited resources in a Govt. Setup, Dr. Bikramjeet has maintained very high standards for the awesome amount of great quality work, he has done in ESIC Hospital and which he keeps regularly posting in the IDA Ludhiana Whatsapp group. He is very active in IDA Ludhiana & has emerged as one of the most dedicated and hard working IDA members till date in the past 3 years.



Esthetic Closure of Midline Diastema with Direct Composite Resin Restorations

A Case Report

Author: Dr. Bikramjeet Singh

ABSTRACT

The presence of a midline diastema in adults is considered as an aesthetic or malocclusion problem. Various treatment modalities are available for diastema closure. While excellent aesthetics are possible with indirect restorations, there may be unnecessary tooth structure removed in order to achieve the desired results. The option of closing midline diastema by using proximal direct composite resin restorations is considered to be more practical and conservative. This case report describes the management of patient with midline diastema, using direct composite resin without any tooth preparation thereby achieving enhanced aesthetics conservatively.

KEYWORDS

Midline diastema, direct composite resins, diastema closure.

INTRODUCTION

The presence of a midline diastema or in appropriate distribution of space in an anterior region of mouth is a major esthetic concern for patients. The incidence of diastema varies greatly with age and race. The space can be normal growth characteristic during the primary and mixed dentition and generally is closed by the time, the maxillary canines erupts (ugly duckling stage). In

adults, the most common factors in the development of diastemas are tooth-size discrepancies and excessive vertical overlap of the incisors. Other less frequent, but important, contributing factors are incisor mesiodistal angulations, generalized spacing, labio-lingual incisor inclination, frenums and pathological conditions. There are various treatment options available for diastema closure in adults like orthodontic movements, restorative and prosthodontic treatments. A careful differential diagnosis allows the practitioner to choose the most effective treatment plan. Diastemas based on tooth-size discrepancy are most amenable to restorative conditions. The restorative closure of diastemas can be achieved by using any of the techniques mentioned: direct composite veneers, indirect composite veneers, porcelain laminate veneers, all ceramic crowns, metal ceramic crowns and composite crowns. When diastema closure is performed, dental midline as well as occlusal relationship and esthetic proportion of an individual tooth, must be considered and should coincide with the midline of the face. This clinical case reports a patient with diastema in between maxillary central incisors region. The patient's esthetic expectations were successfully met through conservative direct composite resin restorations.

CASE REPORT

A 25 year old female patient reported to the department of dental surgery, ESIC Model hospital, Ludhiana, India with chief complaint of midline spacing between her upper central incisors. (Fig. 1)

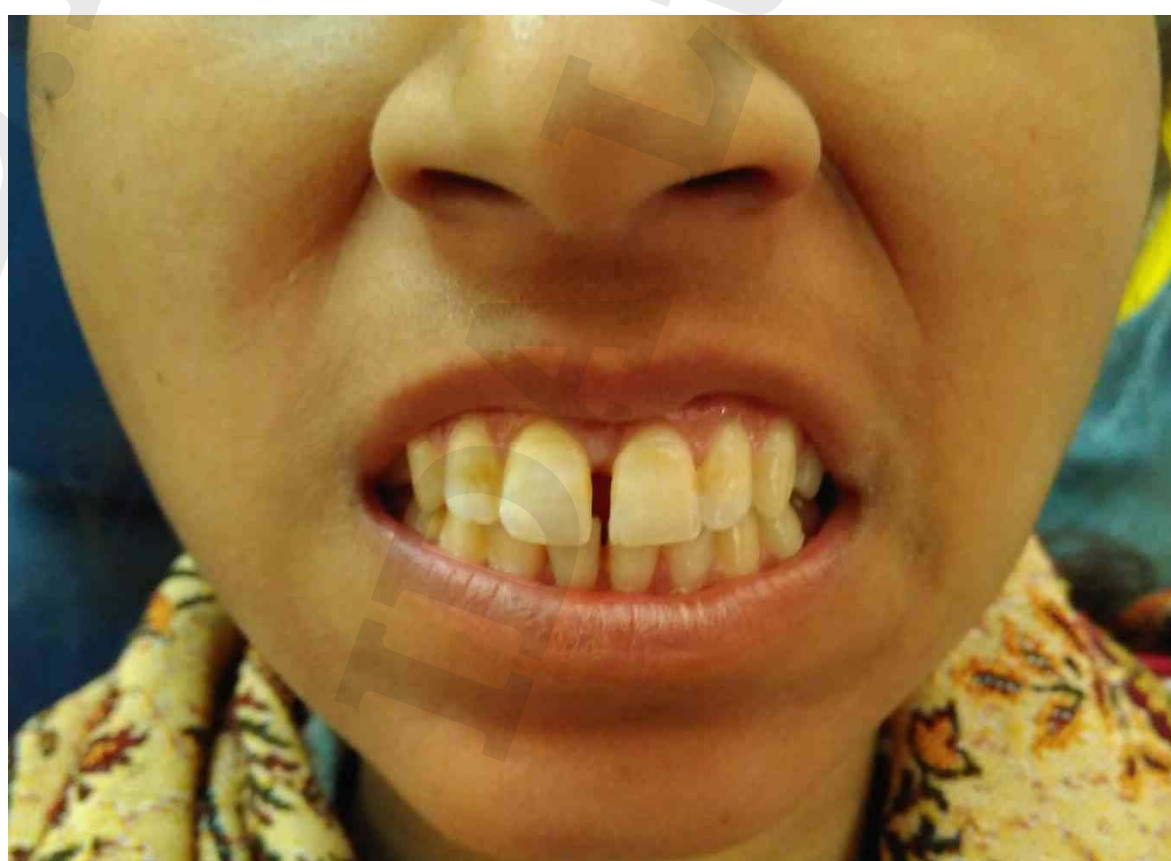


Fig-1: Pre-Operative View

The spacing was a social embarrassment to the patient and was affecting her self-confidence. A thorough clinical examination was then carried out and a space of around 2 mm existed between maxillary central incisors. (Fig. 2 & Fig. 3)



Fig-2: Close up Pre-Operative View 1

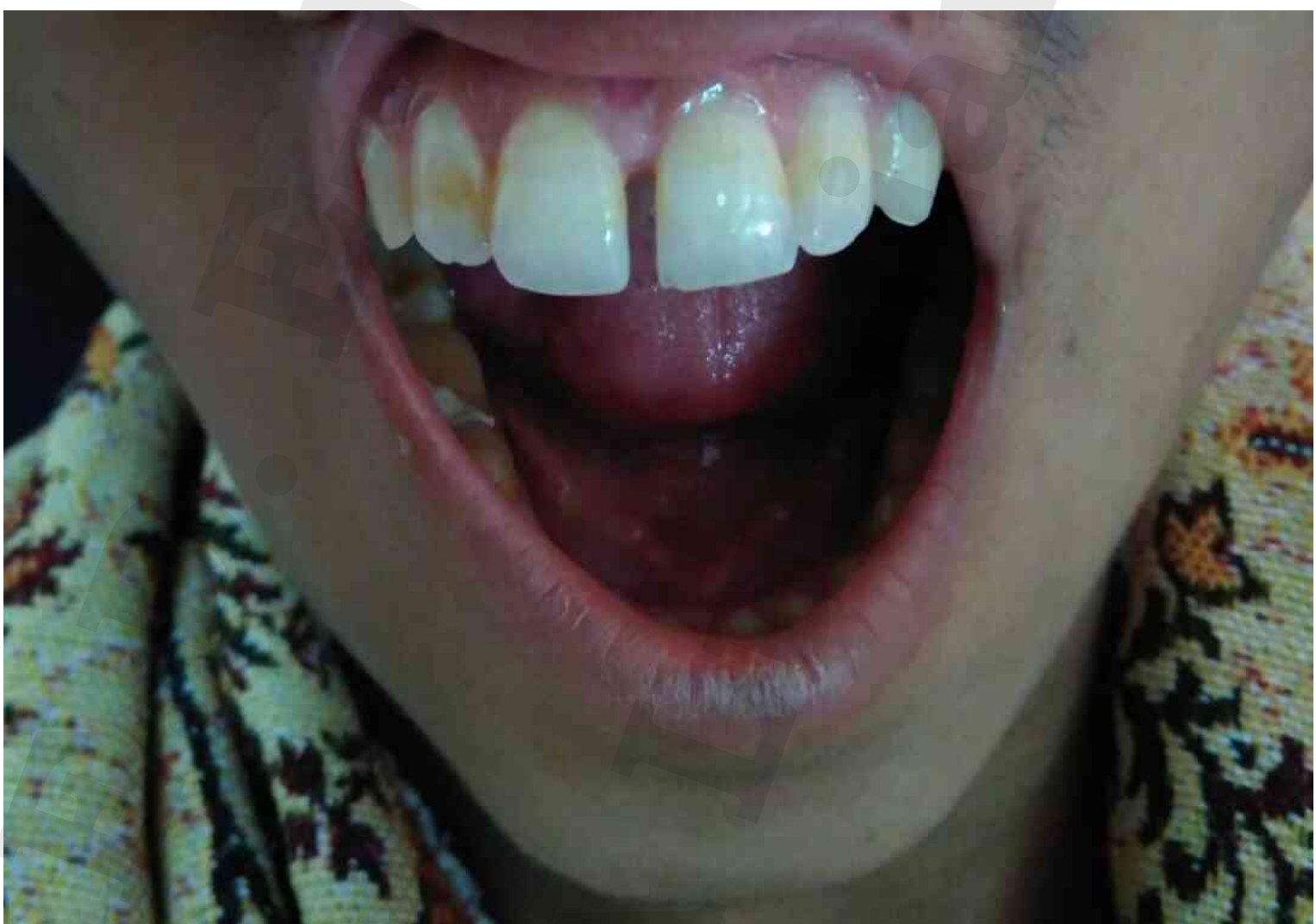


Fig-3: Close up Pre-Operative View 2

Also, an active carious lesion is present in relation to tooth number 46. Overjet and overbite were found to be normal. The dental midline was noted corresponding to the patient's facial midline. After the discussion of the condition and various

treatment modalities with the patient, the direct composite resin restoration treatment plan was formulated. (Fig. 4)



Fig-4: Just before the Start of the Process

For direct composite resin restoration, tooth surfaces of the maxillary central incisors were cleaned with slurry of pumice. Although the space of 2 mm or less can be successfully restored with relatively translucent enamel shade, multiple shades of composite resin were utilized to accurately match the shade. The teeth were restored with a nano composite Filtek Z350 XT (Fig. 5) by a three step etch rinse and bond technique.



Fig-5: Filtek Z350 XT

The enamel on mesial surfaces of central incisors was etched with 37% phosphoric acid for 30 seconds. After rinsing and drying,

bonding agent was applied and cured according to manufacturer's instructions. The adjacent tooth was separated by using Mylar strips. A nano resin composite was used for the composite build ups and polymerized using a layering technique to simulate natural tooth color and translucency. Each layer was light-cured for 40 seconds each from facial and lingual directions. Care was taken to achieve the desired proximal contours. After curing was completed, the extra flash was removed with fine-grit flame shaped diamonds and finishing carbide burs. Final finishing and polishing of the restoration was done with polishing Discs - Compoflex (Fig. 6) in the sequence recommended by manufacturer.



Fig-6: Compoflex Polishing Discs

The final restorations resulted in diastema closure and as well as overall esthetic improvement of the patient, both meeting the patient's expectations. (Fig. 7, 8 & 9)



Fig-7: Post Operative Finished View



Fig-8: Post Operative Finished View

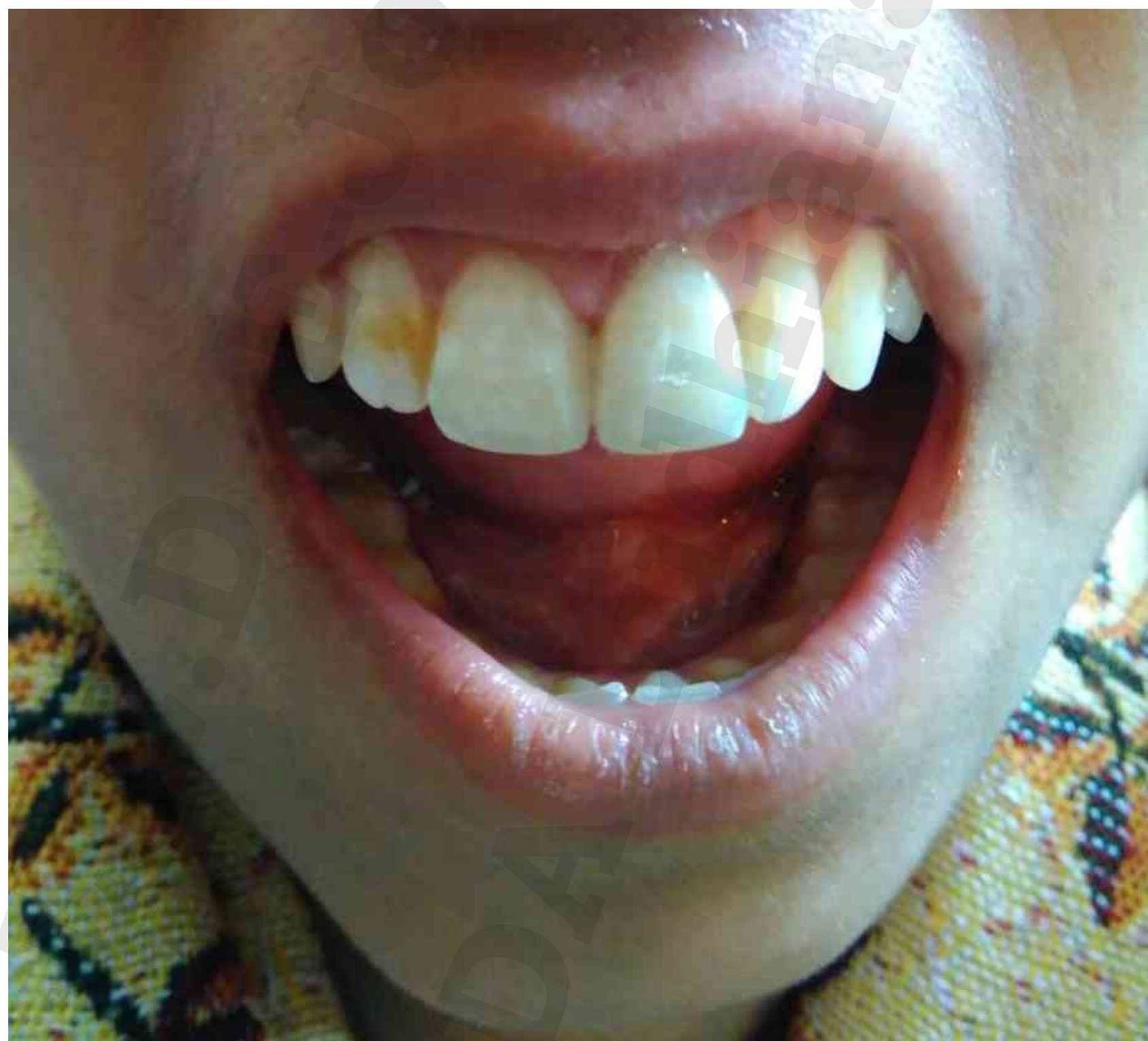


Fig-9: Post Operative Finished View

The fact needs to be appreciated is that the procedure has been done in a Govt. Setup with limited infrastructure & resources.



Fig-10: Pre-Operative View of the Patient's Incisors

From Here
to
Here

↓ ↓



Fig-10: Post-Operative View of the Patient's Incisors

DISCUSSION

With the current trend towards minimally invasive dentistry, direct composite veneering has provided clinician with added advantages of achieving predictable esthetic results with minimized trauma to the teeth. The modern composite restorative materials are remarkable with their improved physical and esthetic properties, if manipulated properly they can be used to create good quality esthetic restorations with sufficient wear resistance providing satisfactory years of service. They are conservative esthetic options of restorative dentistry since minimal or no tooth preparation as compared to ceramics. However, sometimes for better esthetic results, an

interdisciplinary approach is often required. In this case, the use of conservative direct composite resins provided the symmetrical and harmonious arrangement of teeth.

CONCLUSION

Direct resin veneering can be a valuable treatment option in treatment of midline diastemas due to tooth-size discrepancies. This painless conservative approach results in complete patient satisfaction leading to a successful outcome.

REFERENCES

1. Bhoyar AG- *Esthetic closure of diastema by Porcelain Laminate Veneers: A case Report. People's journal of Scientific Research* 2011; 4(1):47-50.
2. Dr. Rohit Sabnis, Dr. Gilsa K Vasunni, Dr. Priyanka Mahale, Dr. Ganesh T Kamble: *Esthetic conservative management of interdental spaces using direct composite resin restorations-A case report. IOSR-JDMS vol 13, issue 6 Ver. I(Jun 2014),PP 109-112.*
3. Lal SM, Jagadish S: *Direct Composite Veneering technique producing a smile design with a customized matrix. J Conserv Dent* 2006; 9:87-92.
4. Syed Mukhtar-Un-Nisar Andrabi, Afaf Zia, Ashok Kumar, Sharique: *closure of midline diastema by direct composite resin build-up using a customized matrix technique- A case report. International journal of oral health Dentistry, Jan-March, 2015; 1(1):46-49.*

P.S. Any feedback/compliments/queries for the Author should be emailed to the Editor-in-Chief, Dr. Bhavdeep Singh Ahuja at his email id: drbhavdeep@gmail.com



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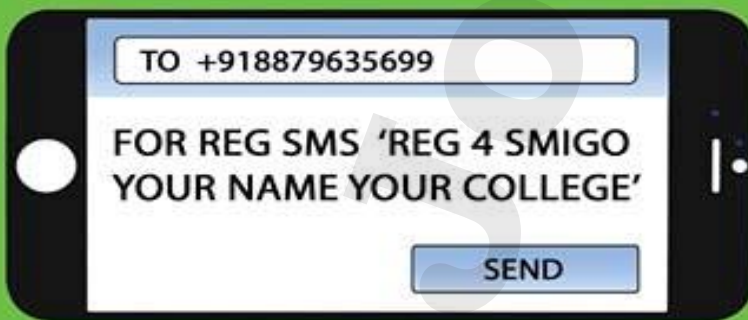
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Dr. Bhavdeep Singh Ahuja graduated in 1998 from DIRDS, Faridkot (Punjabi Univ. Patiala). He has specialized in Implants from BioHorizons Inc. USA in 2004-05 & in Advanced Course from LACE-ICOI, USA in 2006. Apart from Dentistry, he holds a Triple M.B.A. in Hospital Management, Human Resources & Marketing from three premier Institutes/Universities of India viz. the IIMM Pune, IGNOU New Delhi & Annamalai University. He holds Post Graduate Diploma's in various specialties viz. Medical Law & Ethics (NLSIU), Clinical Research, Cyber Law, Disaster Management, Financial Management, Bioinformatics amongst many more from different Universities. He is a Certified Health Care Waste Manager from IGNOU & is qualified in Consumer Law as well. He is an academically oriented dentist & has many Original Scientific Publications to his credit in many International & National journals. Presently, he is into 17th year of Clinical Practice in Ludhiana, Punjab.



Managing Better - An Art & a Science - III

A few Rules - None too Many

Author: Dr. Bhavdeep Singh Ahuja

Continued from Vol. 1 Issue 2

5. Rule 5: Choose and pick the problem you want to solve.

No Offence, but everybody in our country claims to be a genius with plenty of ideas up their sleeve always; the only problem is that we have more ideas but lesser resources to implement those ideas. One can't be a James Bond and solve all problems in a day, but, important is that first of all, we should know what our problems are; hence, priority is the first key.

Implementing it in the clinical practice, we would like to do everything to make our practice successful. Unfortunately, the cold and hard fact is that there isn't enough time, money, people or other resources all together at the same time.

Ask yourself a very simple question; "If you can only do one thing - what would it be?" That answer is your priority. It sets the context for evaluating other options; the option which will help you reach your objective.

- Faster?
- For less money?
- With better results?

Prioritization doesn't have to be complicated and doesn't have to take a lot of time. Try following these following simple steps next time you're faced with a difficult prioritization challenge:

- a. Brainstorm a list of everything you'd like to accomplish in order to achieve your objectives.
- b. Outline the potential impact of each activity on the objective.
- c. Estimate the cost of each activity (time, money and resources).
- d. Evaluate the likelihood of success.
- e. Identify the activities that provide the biggest return on investment (ROI).
- f. Prioritize the activities according to their ROI.

Can you think back to a situation where prioritization would have helped you more effectively achieve your objective?

I know I can.

6. **Rule 6: Get to know your patients or the Target Audience.**

It is commonly understood among marketers that, in order to develop a message that will be heard by clients, you have to be able to describe who your customers are. Unfortunately, it isn't always common practice to do the work required to really understand your patients in our field.

"Patient - centric" "Patient - driven" "Patient - focused"

All of these phrases have been used to describe different approaches to understanding patients. There is an important distinction between describing your patients and "getting to know" your patients. Following are the three golden rules of getting to know your patients to help you keep your edge in the market:

- a. **Know what they want:** The biggest golden rule is to carefully identify what your patients need and want, and then to show them that you can provide them with the service that will meet those needs. You need to have a direct connection with your target market to get the best return on investment from your marketing spend. The cornerstone of an effective marketing program is to have a current and accurate understanding of your patients' needs. Once you know what people expect of you, you can tailor your business objectives to meet their needs, and develop a

marketing plan that clearly outlines the specific initiatives required to achieve your own marketing objectives and business goals.

- b. **Communicate clearly:** Direct engagement, either by social media, email or face-to-face contact, creates a good rapport with your patients and allows you to remain competitive in your industry. The more honest and direct you are with your patients, the more trust you will build in your brand. It is much easier to exude a patients-driven business focus if you have already established a reputation of honesty and integrity. An unspoken rule of marketing says "Clients appreciate direct and honest engagement". Keeping your patients informed, and communicating clearly and honestly, creates positive word-of-mouth and referrals.
- c. **Use your reputation to your advantage:** Small practices often grow from referrals. Word-of-mouth is one of the most successful ways a practice can quickly reach potential patients. If a patient has a good experience with your clinic/practice, not only will they come back to you in the future, they are also likely to tell their friends. Patients who value your service and the way you provide your service will support you by passing on their praise – and these referrals have a strong correlation to action. Think about the last great restaurant you ate at. You probably told a number of people about the excellent food, service and atmosphere and recommended they try it for themselves – and it's very likely that some of them followed your advice. So, it is a written that all patients want to have a good service experience. If you treat them with honesty and respect, while staying attentive to their needs, then you'll create valuable repeat business for life. And nothing can promote your business better than happy patients.

7. **Rule 7: Target your messages.**

The old saying in the real estate business goes "The three most important things in real estate are location, location, location". In marketing the three most important things are targeting,

targeting and targeting. To create targeted messages, you first have to identify your audience - who are you talking to? Using targeting improves your focus and impact of your marketing activities. Understanding how different groups of customers perceive their problems helps you define your messages more clearly. Understanding behavior helps you to select the right marketing activities to reach your customers. For example, let's say you are advising/convincing routinely for Metal Free Crowns to middle class patients. In each of these types of patients, there are several people in their family you need to get messages to in order to make this convincing a success. There is the head of the family who cares about the costing of the same; there is the Mother of that family who cares about the longevity and technicality of the Metal Free Crowns and there is the patients' immediate close (Husband/wife) who is really focused on its durability and esthetics. Your message to the patient or his family should be consistent.

The individual communications to each target audience should be tailored to its unique needs, perceptions and business challenges. Technology also allows you to target your messages in ways we couldn't even dream of before we had the Internet. With marketing automation tools today, you can directly "tag" your patients to indicate what work you have done in your clinic (cases), what you have recently bought (upgradation), what changes you made on your website, and so on. With this information you can specifically target your communications to them. You can communicate to your patients in ways that matter to them. And your messages are more effective at breaking through because your patients are actually interested in what you have to say. Targeting can significantly increase your ability to 'close the deal' (convince a patient). It helps you increase revenue and profitability. You can sell more efficiently because you are targeting the right patient with the right product, with the right message in the right way.

After all, isn't that the bottom line of marketing?

Clearly defining your audience makes all the difference when you're creating content. If you're writing a piece about social media management tools, how do you frame it correctly? The answer, of course, all depends on who you're writing for.

Why audience matters:

Creating a content strategy without a clear understanding of your audience is a bit like setting a boat adrift without navigational tools. You're out there and you're taking action, but you're not working toward a specific goal. These are the situations that marketers dread: huge amounts of time and money, without a clear potential for good ROI.

Let's start with goals. It's easy to think about goals in terms of SEO and content strategy in different ways.

"I want my website to rank at the top of Google for the keyword "Dentist in Ludhiana."

"I want to get 60 new patients a month through inbound marketing."

"I want to double my website visitors 100% each month through my website updates and guest blogging."

What these goals don't articulate though, the truth lying right beneath the surface and driving every content effort is a desire to reach people; specific people that your brand will resonate with and who will take action to visit you and promote your clinical practice & services.

If you've just launched a startup practice, you must have likely spent a lot of time planning and building your plan. Part of that planning process involves or should involve deciding who will be on the receiving end of your marketing efforts. Your services might appeal to a large group of people, but it doesn't make sense to try to market everyone. Beginning every campaign with a strong understanding of your audience is one of the best ways to ensure your success. Having a well-defined target market is more important. No one can afford to target everyone. Small practices/clinics can effectively compete with large practices/clinics by targeting a niche market. Many businesses

say they target "anyone interested in their services." Some say they target Lower Middle class.

All of these targets are too general. Targeting a specific market does not mean that you are excluding people who do not fit your criteria. Rather, target marketing allows you to focus your marketing and brand message on a specific market that is more likely to buy from you than other markets. This is a much more affordable, efficient, and effective way to reach potential patients and generate work for you. Defining a target audience might feel constraining to you, but just remember that you're not excluding anyone; you're choosing where to spend your time and money. Selecting a target audience will help save you resources. Focusing on a portion of the people who might be interested in your products will allow you to communicate and engage with that segment more deeply.

(To be continued)

REFERENCES

1. Phillip Kotler, Gary Armstrong, John Saunders, Veronica Wrong et al. *Principles of Marketing, 2nd European Edition*
2. Phillip Kotler, Kevin Lane Keller et al. *Marketing Management, Twelfth Edition*
3. Laura Lowell; *42 rules of marketing*
4. *The Expert Guide to Affiliate Marketing;*
<http://Rags2RichesSystem.biz>
5. Wikipedia; <https://en.wikipedia.org/wiki/>

Dear Readers: Important Announcement

The above article by Dr. Bhavdeep S. Ahuja will be published in many parts.

The above is Part III.

Check out L.E.D. Issue Jan. 2016 Vol. 1 Issue 1 & Feb. 2016 Vol. 1 Issue 2 for the Ist & the IInd part of the above article.

Check out L.E.D. Issue Mar. 2016 Vol. 1 Issue 4 for the IVth part of the above article.

P.S. Any feedback/compliments/queries for the Author should be emailed to the Editor-in-Chief, Dr. Bhavdeep Singh Ahuja at his email id: drbhavdeep@gmail.com.



*Wishing you all a
Happy Women's Day !*

*"Your perfect smile is
someone's heartbeat!
Keep your smile perfect."*

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International Women's Day

March 8



for



Your honest opinion is of immense value to us. For encouraging the same, we are starting an award for 'Best Feedback Series' every month. Send your feedback to the **Editor in-Chief**, Dr. Bhavdeep Singh Ahuja's email at **drbhavdeep@gmail.com** regarding what is your overall opinion on E-Journal **L.E.D.** (Let's Enjoy Dentistry) or on the current issue or any particular section of it. The feedback can be like a performance appraisal, critique review, criticism, applause, appreciation etc. In short both, bouquets and brickbats are welcome in equal measure by us. We would be happy to **publish with due credits** (both critique review and admiration), the award winning feedbacks in the **next issue of the Publication**. However, if the Branch Member wishes to keep his/her identity secret/hidden, the feedback would be published under the heading **Anonymous**. The best feedback (every month) stands to win a surprise gift at the next CDE/GBM of IDA Ludhiana Branch. So, if you want to win a prize, get going, type out your honest feedback and send it to the **Editor-in-Chief**, Dr. Bhavdeep Singh Ahuja's email at **drbhavdeep@gmail.com**.



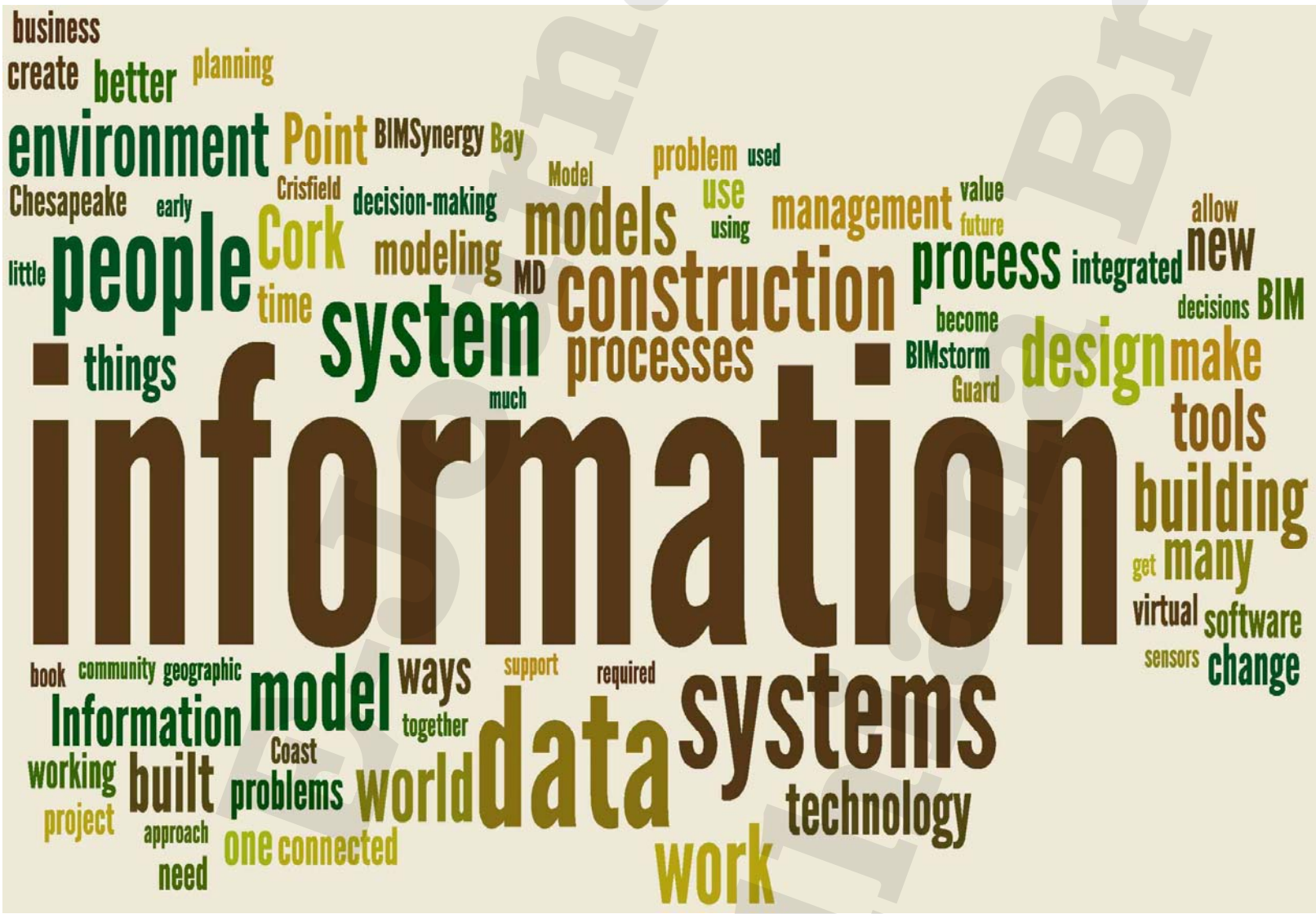


Appendices

E-Journal

- 1. Author Guidelines
- 2. Dental Council of India – Revised Code of Ethics

* New from this Issue



L.E.D. E-Journal March 2016 Vol. 1 Issue 3

APPENDICES Index

S. No.	Title	Details	Page No. From – To
1.	Author Guidelines	For Publishing	141 – 150
2.	DCI - Revised Code of Ethics	Dental Council of India	151 – 155



Author Guidelines

The Editor invites contributions for the IDA Ludhiana Branch E-Journal:

1. Systemized Review articles
2. Original Research articles
3. Short Communications
4. Clinical Case Reports

Review articles: These provide an in-depth review of a specific topic by systematic critical assessments of literature and data sources. Appropriate use of tables and figures is encouraged. Where relevant, key messages and salient features may be provided up to 4000 words excluding references and abstract.

Research articles: These scientific reports give results of original research. These should have a structured abstract (consisting of Background, Aims, Methods, Results & Conclusions) and should follow the IMRAD (Introduction, Methods, Results and Discussion) format (upto 2500 words).

Short Communications: These are brief reports on research (approx. 1200 to 1500 words). A short report may include up to 3 tables or figures and 15 to 20 references.

Clinical case reports: Previously undocumented disease process, a unique unreported manifestation or treatment of a known disease condition. (approx. 700 to 1200 words) will be given priority.

Covering Letter

The covering letter should outline the importance of the paper and its appropriateness for publication in the Journal. It should specify the section of the Journal for which the submitted article is to be considered. It should also explain, with reasons, if there is any deviation from the IMRAD format. If the work has been previously published in part or whole (e.g. as an abstract or proceedings of a conference), this must be stated. Any conflicts of interest, or their absence, must be stated in writing.

Title Page

This should contain the title, running title, 3-5 Keywords, names of all the authors (without degrees or diplomas), names and full location of the departments and institutions where the work was performed, name of the corresponding author, acknowledgement of financial support and abbreviations used. Superscripted numbers should be used after each authors name and the department and institution corresponding to each number should be specified on the page. Names of authors should appear in the order of authorship

The title should be brief but complete and should represent the major theme of the manuscript. It should include the animal species if appropriate. A subtitle can be added if necessary. Abbreviations should not be used. The short title should not exceed 60 characters (including inter-word spaces). It will be used as a running head. The name, telephone and fax numbers, and complete e-mail and postal addresses of the author to whom communications and requests for off prints are to be sent should be mentioned in the title page. In general, the use of abbreviations is discouraged unless they help in improving the readability of the text. The expanded form of each abbreviation should precede its first use in the text unless it is a standard unit of measurement.

Abstract

The abstract (250 words) should be structured and a concise and accurate summary of the article and should not contain abbreviations, tables, figures, footnotes or references. It should not draw conclusions stronger or more expansive than those in the body of the paper. Briefly, the background should explain why the study was done, the methods provide how the study was done, the results provide the salient results along with important data and the conclusions briefly highlight the message of the study.

Introduction

The introduction should state why the study was carried out and what the specific aims of the study were. It should describe the background for the study (the available knowledge), its importance and its goals. It should be brief but complete enough for the reader to understand the reasons for the study without having to read previous publications on the subject.

Methods

The validity of a study is judged by the methods used. These should be described in sufficient detail to permit evaluation and duplication of the work by others. The following should be described in this section:

- Study design
- Setting
- Selection of participants (Sampling Technique)
- Interventions (Randomization & blinding, if applicable)
- Methods of measurement
- Data collection and processing
- Loss of data such as dropouts or patients lost to follow up
- Statistical methods used
- Ethical guidelines followed by the investigators
- Consort guidelines in cases of randomized control trials

Results

These should be concise and include only the tables and figures necessary to enhance understanding of the text. Suitable labels referring to the specific tables and figures must be mentioned in the text. Results should be presented in a logical, sequential order that parallels the organization of the methods section. The text should be used to highlight the most important aspects of the figures and tables, and to convey unique information. Data presented in tables and figures should not be duplicated in the text. Drug names, wherever used, should be generic. If the use of proprietary names is deemed a must for the study, generic names should be mentioned in parentheses. Units of Measurement SI units should be used. Temperature should be expressed in degrees Celsius and blood pressure in mmHg.

Discussion

The discussion should summarize how the study findings add to the current knowledge, provide explanations for the findings, compare the study's findings with available studies, discuss the limitations of the study and the implications for future research. Only those published articles directly relevant to interpreting the results and placing them in context should be referenced. Do not repeat the results in the discussion. This section should conclude with a brief summary statement. The conclusion should be based on and justified by the results of the study. The particular relevance of the results to healthcare in India should be stressed. Conclusions regarding cost-benefit should be drawn only if a specific economic analysis formed a part of the study design.

References

References should be numbered in the order in which they appear in the text and these numbers should be inserted above the lines (superscripted) on each occasion the reference is cited (e.g. Sinha¹² confirmed other reports^{13,14}...). References included at the end of a sentence or part of a sentence should be placed after the punctuation mark. (Superscripting of the references is excusable/can be done away in some cases) References cited only in tables or in legends to figures should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. Avoid using abstracts as references. For papers accepted but not yet published mention the name of the journal, the year of publication and add in press in parentheses. Information from papers submitted for publication but not accepted should be cited in the text as unpublished observations with written permission from the source. Avoid citing a personal communication unless it is essential; such citations must list in parentheses in the text the name of the person and date of communication. Written permission, obtained from the author of such communications for their use in the manuscript, must be submitted to the Journal. Do not include personal communications in the list of references. At the end of the article, the full list of references should include the names of authors, the full title of the journal article or book chapters; the title of journals abbreviated according to the Index Medicus style (www.nlm.nih.gov/bsd/uniform_requirements.html) the year of publication, the volume number and the first and final page numbers of the article or chapter. If there are six or fewer authors in the study being cited, the names of all the authors should be given. If there are more than six authors, the names of the first six authors should be given followed by *et al.* The authors should check that the references are accurate; lack of accuracy may result in the rejection of an otherwise adequate manuscript.

Tables

These should be typed in double space, each table on a separate page with the table number (in Roman numerals) and title above the table, and explanatory notes below the table. Tables should be so arranged that comparisons of interest are horizontal (across columns) and from left-to-right. The numbers of observations for each column or row (n) and marginal totals should be provided where appropriate. All abbreviations and symbols in the table must be explained in the footnote(s) to the table, even if the expanded forms have already been mentioned in the text. The units of measure must be mentioned.

Figures

Each image should be less than 400 kb in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to 1024x760 pixels or 5 inches). All image formats (jpeg, tiff, gif, bmp, png, eps, etc.) are acceptable; jpeg is most suitable. Do not zip the files.

Legends to figures

These should be typed in double space on a separate sheet and figure numbers (in Arabic numerals), should correspond with the order in which the figures are presented in the text. The legend must include enough information to permit interpretation of the figure without reference to the text. Any labels or abbreviations within the figure must be explained in the legend.

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All authors should have participated sufficiently in the work to take public responsibility for the content. All authors must sign an undertaking accepting responsibility for the submitted manuscript.

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DENTAL COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 27th June, 2014

No. DE-97-2014.—In exercise of the powers conferred by Section 20 read with Section 17A of the Dentists Act, 1948 (16 of 1948), the Dental Council of India with the previous sanction of the Central Government, in supersession of the Dentists (Code of Ethics) Regulations 1976, except as respects things done or omitted to be done before such supersession, hereby makes the following Dental Council of India (Code of Ethics) Regulations :—

1. Short title and Commencement :

- 1.1 These regulations may be called the Revised Dentists (Code of Ethics) Regulations, 2014.
- 1.2 They shall come into force on the date of their publication in the Official Gazette of India.

2. Definitions :

In these regulations, unless the context otherwise requires;

- 2.1 'Act' means the Dentists Act, 1948 (16 of 1948);
- 2.2 'Council' means the Dental Council of India;
- 2.3 Dentist means any person with a register able dental degree (in Part A or Part B of the State Dental Register) either by virtue of a prior registration with the Council or one who has been conferred a Bachelor of Dental Surgery (BDS) from any university recognized by the Council and shall be referred to as a Dentist or Dental Surgeon;
- 2.4 Post graduate dental degree refers to any postgraduate qualification such as M.D.S. in any discipline of dentistry received by convocation from a University recognized by the Dental Council of India or any other post graduate qualification equivalent to MDS that is recognized by the Council;
- 2.5 All expressions used and not defined in these regulations shall have the meanings assigned to them in the Act and the regulations made there under from time to time.

CHAPTER I

3. Code of Dental Ethics

A. Declaration :

Every dentist who has been registered (either on Part A or Part B of the State Dentists Register) shall, within a period of thirty days from the date of commencement of these regulations, and every dentist who gets himself registered after the commencement of these regulations shall, within a period of thirty days from such registration, make, before the Registrar of the State Dental Council, a declaration in the form set out for the purpose in the Schedule to these regulations and shall agree to have read, understood and thence to abide by the same.

B. Duties and Obligation of Dentists in General**3.1 Character of Dentist / Dental Surgeon**

In view of the important role of a Dentist/ Dental Surgeon as a health professional educated and trained in surgical and medical treatment of diseases of the Oral cavity, he shall:

- (3.1.1) Be mindful of the high character of his mission and the responsibilities he holds in the discharge of his duties as an independent health-care professional and shall always remember that care of the patient and treatment of the disease depends upon the skill and prompt attention shown by him and always remembering that his personal reputation, professional ability and fidelity remain his best recommendations;
- (3.1.2) Treat the welfare of the patients as paramount to all other considerations and shall conserve it to the utmost of his ability;
- (3.1.3) Be courteous, sympathetic, friendly and helpful to, and always ready to respond to, the call of his patients, and that under all conditions his behaviour towards his patients and the public shall be polite and dignified;

3.2 Maintaining good Clinical Practices :

The Principal objective of the Dental profession is to render service to humanity with full respect for the dignity of profession and man. Dental Surgeons should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion. They should try continuously to improve medical knowledge and skills and should make available to their patients and colleagues the benefits of their professional attainments. The Dentist/ Dental Surgeon should practice methods of healing founded on scientific basis and should not associate professionally with anyone who violates this principle. The honoured ideals of the dental profession imply that the responsibilities of the Dental Professionals extend not only to individuals but also to Society.

- (3.2.1) The Principal objective of the Dental profession is to render service to humanity with full respect for the dignity of profession and man. Dental Surgeons should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion. They should try continuously to improve medical knowledge and skills and should make available to their patients and colleagues the benefits of their professional attainments. The Dentist/ Dental Surgeon should practice methods of healing founded on scientific basis and should not associate professionally with anyone who violates this principle. The honoured ideals of the dental profession imply that the responsibilities of the Dental Professionals extend not only to individuals but also to Society.
- (3.2.2) Membership in Dental and Medical Associations and Societies: For the advancement of his/her profession, a Dental Surgeon should be encouraged to affiliate with associations and societies of dental, oral and allied medical professionals and play a proactive role in the promotion of oral health in particular and health of an individual in general.
- (3.2.3) A Dentist/Dental Surgeon should enrich his professional knowledge by participating in professional meetings as part of Continuing Dental and Medical Education programs/Scientific Seminars/Workshops as stipulated by the regulations made by the statutory bodies from time to time and should register any mandatory requirements with the state registration bodies or any other body as stipulated.

3.3 Maintenance of Dental/Medical records :

- (3.3.1) Every Dental surgeon shall maintain the relevant records pertaining to his out- patients and inpatients (wherever applicable). These records must be preserved for a minimum period of three years from the date of commencement of the treatment in a format determined by the Council or accepted as a standard mode of documentation.
- (3.3.2) If any request is made for medical or dental records either by the patients/authorized attendant or legal authorities involved, the same may be issued to the competent authority within 72 hours after having obtained a valid receipt for all documents. It is prudent to keep certified photocopies / carbon copies of such submissions.
- (3.3.3) A Registered Dental practitioner shall maintain a Register of Medical Certificates giving full details of certificates issued. When issuing a medical certificate he shall always enter the identification marks of the patient and keep a copy of the certificate. He shall not omit to record the signature and/ or thumb mark, address and at least one identification mark of the patient on the medical certificates or report. The medical certificate shall be prepared as in Appendix 2 of this document, Revised Dentists Code of Ethics Regulations, 2012.
- (3.3.4) Efforts shall be made to digitalize dental/ medical records for quick retrieval.

3.4 Display of Registration Numbers :

- (3.4.1) Every Dental practitioner shall display the registration number accorded to him by the State Dental Council in his clinic and in all his prescriptions, certificates and money receipts given to his patients.
- (3.4.2) Dental Surgeons shall display as suffix to their names only recognized Dental degrees which are recognized by the Council or other qualifications such as certificates/diplomas and memberships/

honours/ fellowships which are conferred by recognized Universities/ recognized bodies approved by the Council and obtained by convocation in person or in absentia. Any other qualifications such as medical degrees, doctorates, post-doctoral degrees or any degree that has bearing on the person's knowledge or exemplary qualification may be used as suffix in a manner that does not convey to the observer or patient a false impression regarding the practitioner's knowledge or ability as a dental professional. Abbreviations of memberships in association or organizations of professionals should not be used as abbreviations in a manner that is misleading to the public [refer to Article 8.9.3 of this document, Revised Dentists Code of Ethics Regulations, 2012 for relevant details].

3.5 Prescription of Drugs :

Every dental surgeon should take care to prescribe and administer drugs in a responsible manner and ensure safe and rational use of drugs. He should as far as possible, prescribe drugs in a generic form.

3.6 Highest Quality Assurance in patient care :

Every Dental practitioner should ensure quality treatment that does not compromise the outcome of treatment. He must be vigilant about malpractice by other practitioners that may jeopardize the lives of others and which are likely to cause harm to the public. All practitioners should be aware of unethical practices and practices by unqualified persons. Dentists/ Dental Surgeons shall not employ in connection with their professional practice any attendant who is neither registered nor enlisted under the Dentists Act and shall not permit such persons to attend, treat or perform operations upon patients wherever professional discretion or skill is required.

3.7 Exposure of Unethical Conduct :

A Dental Surgeon should expose, without fear or favour, incompetent or corrupt, dishonest or unethical conduct on the part of members of the profession. It is the responsibility of the dental surgeon to report to the competent authorities' instances of quackery and any kind of abuse including doctor-patient sexual misconduct, misuse of fiduciary relationship, child abuse and other social evils that may come to their attention.

3.8 Payment of Professional Services :

The Dental Surgeon, engaged in the practice of his profession shall give priority to the interests of patients. The personal financial interests of a dental surgeon should not conflict with the medical interests of patients. A dental practitioner should announce his fees before rendering service and not after the operation or treatment is under way. Remuneration received for such services should be in the form and amount specifically announced to the patient at the time the service is rendered. It is unethical to enter into a contract of "no cure - no payment". Dental Surgeons rendering service on behalf of the State shall refrain from anticipating or accepting any consideration. While it is not mandatory to offer free consultations to fellow dental or medical professionals and their immediate family, it will be deemed a courtesy to offer free or subsidized consultations and treatment to them in situations where no significant expenses are incurred.

3.9 Observation of Statutes :

The Dental Surgeon shall observe the laws of the country in regulating the practice of his profession including the Dentists' Act 1948 and its amendments and shall also not assist others to evade such laws. He should be cooperative in observance and enforcement of sanitary laws and regulations in the interest of public health. He should observe the provisions of the State Acts like Drugs and Cosmetics Act, 1940; Pharmacy Act, 1948; Narcotic Drugs and Psychotropic substances Act, 1985; Environmental Protection Act, 1986; Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954; Persons with Disabilities (Equal Opportunities and Full Participation) Act, 1995 and Bio-Medical Waste (Management and Handling) Rules, 1998 and such other Acts, Rules, Regulations made by the Central/State Governments or local Administrative Bodies or any other relevant Act relating to the protection and promotion of public health.

3.10 Signing Professional Certificates, Reports and other Documents :

A Registered Dental Surgeon involved independently in the treatment of dental and oral surgical problems may be called upon to sign certificates, notifications, reports etc. He is bound to issue such certificates and to sign them. Documents relating to disability, injury in the oral and maxillofacial region and deaths occurring while under the care of such dental surgeons should be signed by them in their professional capacity for subsequent use in the courts or for administrative purposes etc. Such documents, among others, include the ones given at Appendix 4. Any registered dental surgeon who is shown to have signed or given under his name and authority any such certificate, notification, report or document of a similar character which is untrue, misleading or improper, is liable to have his name deleted from the Register.

CHAPTER 2

4 DUTIES OF DENTAL PRACTITIONERS TO THEIR PATIENTS

4.1 Obligations to Patients

(4.1.1) Though a Dental Surgeon is not bound to treat each and every person asking his services, he should attend emergencies reporting to the clinic and should be mindful of the high character of

his/her mission and the responsibility he discharges in the course of his professional duties. The Dental Surgeon should see patients at their hour of appointment as far as possible unless he is unable to do so due to unforeseen delays. He should never forget that the health and the lives of those entrusted to his care depend on his skill and attention. A Dental Surgeon should endeavour to add to the comfort of the sick by making his visits at the hour indicated to the patients. A Dental surgeon advising a patient to seek service of another Dental Surgeon or physician is acceptable. However in the case of medical emergency a Dental Surgeon must institute standard care including resuscitation in case of cardiac episodes, for which all dental surgeons must be adequately trained in basic life support.

- (4.1.2) A Dental Surgeon can refuse treatment using his discretion but it should not be on the basis of any discrimination of colour, caste, religion, nationality or the presence of ailments such as HIV or other contagious diseases. However in keeping with the dictum of medical care, the dental surgeon must 'continue to treat' if he/she has accepted the patient for treatment. Treatment can be terminated on the wishes of the patient or with the resolution of the complaint for which the patient sought treatment. Treatment can also be terminated if the patient is in need of additional or expert care for which the Dental surgeon is not equipped to treat or if it falls outside the range of his expertise. In such instances, the patient should be referred to such specialists or higher centres where treatment is possible.
- (4.1.3) A Dental Practitioner having any incapacity detrimental to the patient or which can affect his performance vis-a-vis the patient is not permitted to practice his profession.

4.2 **Confidentiality :**

Confidences concerning individual or domestic life entrusted by patients to a Dental Surgeon and defects in the disposition or character of patients observed during professionally attending to a patient should never be revealed unless such a revelation is required by the laws of the State. Sometimes, however, a clinician must determine whether his duty to society requires him to employ knowledge, obtained through confidence as a health care provider to protect a healthy person against a communicable disease to which he is about to be exposed. In such instance, the Dental Surgeon should act as he would wish another to act toward one of his own family in like circumstances.

4.3 **Prognosis :**

The Dental Surgeon should neither exaggerate nor minimize the gravity of a patient's disease. He should ensure himself that the patient, his relatives or his responsible friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

4.4 **The Patient must not be neglected :**

A Dental surgeon is free to choose whom he will serve. He should, however, respond to any request for his assistance in an emergency. Once having undertaken a case, the Dental Surgeon should not neglect the patient, nor should he withdraw from the case without giving adequate notice to the patient and his family. He shall not wilfully commit an act of negligence that may deprive his patient or patients from necessary Dental/Medical care.

CHAPTER 3

5 **DUTIES OF DENTAL SURGEONS AND SPECIALISTS IN CONSULTATIONS**

5.1 **Consultation Etiquettes:**

- (5.1.1) A Dental Surgeon should ordinarily be able to deal with all common diseases of the Oral cavity by virtue of his qualification and training. However, if the patient requires expert care of a specialist, appropriate references to Dental or Medical specialists may be made according to the nature of the problem. It is the duty of a specialist to refer the patient back to the patient's original dentist after the treatment for which the referral was made. While the specialist can collect his or her fees it would be unethical to pay commissions or any kind of gratuity to the referring dental surgeon.
- (5.1.2) A Dental Surgeon shall not receive from the radiologist, laboratory or dispensing chemist any kind of commission in the form of money, gifts or gratuity for referrals. All referrals for investigation should be judicious, justifiable and done in the best interests of the patient to arrive at a diagnosis.

5.2 **Consultation for Patient's Benefit:**

In every consultation, the benefit to the patient is of foremost importance. All Dental Surgeons engaged in the case should be frank with the patient and his attendants.

5.3 **Punctuality in Consultation:**

Punctuality for consultations should be observed by a Dental Surgeon except in the case of unavoidable professional delays which are justifiable.

5.4 **Opinions and Disclosure:**

- (5.4.1) All statements to the patient or his representatives made by any Consulting Healthcare Professional and/or the paramedical staff(nurses, etc.,) should take place in the presence of the Dental Surgeon, except as otherwise agreed. The disclosure of the opinion to the patient or his relatives or friends shall rest with the Dental Surgeon.

(5.4.2) Differences of opinion should not be divulged to the patient unnecessarily but when there is irreconcilable difference of opinion the circumstances should be frankly and impartially explained to the patient or his relatives or friends. It would be up to them to seek further advice, if they so desire.

5.5 Treatment after Consultation:

No decision should restrain the attending Dental Surgeon from making such subsequent variations in the treatment if any unexpected change occurs, but at the next consultation, reasons for the variations should be discussed/ explained. The same privilege, with its obligations, belongs to the consultant when sent for in an emergency during the absence of attending Dental surgeon. The attending Dental Surgeon may prescribe medicine at any time for the patient, whereas the consultant may prescribe only in case of emergency or as an expert when called for.

5.6 Patients Referred to Specialists:

When a patient is referred to a specialist by the attending Dental surgeon, a case summary of the patient should be given to the specialist, who should communicate his opinion in writing to the attending Dental surgeon.

5.7 Fees and other charges:

(5.7.1) A Dental Surgeon or the Clinic run by him shall clearly indicate the cost of treatment for the procedure and make an estimate of all costs likely to be incurred. Any increase in subsequent cost should be justified by the Dental surgeon. There is no bar on the display of fees and other charges in the Dental Clinic. Prescription should also make it clear if the Dental Surgeon himself dispensed any medicine.

(5.7.2) A Dental Surgeon shall write his name and designation in full along with the recognized dental degrees and the registration particulars in his prescription letter head.

Note: In Government hospitals where the patient-load is heavy, the name of the prescribing doctor must be written below his signature.

CHAPTER 4

6 RESPONSIBILITIES OF DENTAL SURGEONS TO ONE ANOTHER

6.1 Dependence of Dental Surgeons to each other:

A Dental Surgeon should consider it as a pleasure and privilege to render gratuitous service to other dentists, physicians and their immediate family dependants. However there is no mandatory bar on one accepting fees particularly when it involves expensive materials and time.

6.2 Conduct in Consultation:

In consultations, no insincerity, rivalry or envy should be indulged in. All due respect should be observed towards the Dental Surgeon/physician in-charge of the case and no statement or remark be made, which would impair the confidence reposed in him. For this purpose no discussion should be carried on in the presence of the patient or his representatives.

6.3 Consultant not to take charge of the case:

When a specialist Dental Surgeon has been called for consultation, the Consultant should normally not take charge of the case, especially on the solicitation of the patient or friends. The Consultant shall not criticize the referring Dental Surgeon. He shall discuss the diagnosis treatment plan with the referring Dental Surgeon.

6.4 Appointment of Substitute:

Whenever a Dental Surgeon requests another Dental Surgeon to attend his patients during his temporary absence from his practice, professional courtesy requires the acceptance of such appointment only when he has the capacity to discharge the additional responsibility along with his other duties. The Dental Surgeon acting under such an appointment should give the utmost consideration to the interests and reputation of the absent Dental Surgeon and all such patients should be restored to the care of the latter upon his return.

6.5 Visiting another Case:

When it becomes the duty of a Dental Surgeon occupying an official position to see and report upon a condition and appropriate treatment, he should communicate to the Dental Surgeon in attendance so as to give him an option of being present. The Medical Officer/Dental Surgeon occupying an official position should avoid remarks upon the diagnosis or the treatment that has been adopted.

CHAPTER 5

7 DUTIES OF DENTAL SURGEONS TO THE PUBLIC AND TO THE PARAMEDICAL PROFESSION

7.1 Dental Surgeons as Citizens:

Dental Surgeons, as good citizens, possessed of special training should disseminate advice on public health issues. They should play their part in enforcing the laws of the community and in sustaining the institutions that advance the interests of humanity. They should particularly co-operate with the authorities in the administration of sanitary/public health laws and regulations.

7.2 Public and Community Health:

Dental Surgeons, especially those engaged in public health dentistry, should enlighten the public concerning oral health and prevention of oral diseases such as dental caries, periodontal health, precancerous lesions and oral cancer. At all times the dental surgeons should notify the constituted public health authorities or hospitals of every case of communicable disease under his care, in accordance with the laws, rules and regulations of the health authorities.

7.3 Pharmacists /Nurses:

Dental Surgeons should recognize and promote the practice of different paramedical services such as Dental Hygienist, Dental Mechanic, Pharmacy and Nursing as professions and should seek their cooperation wherever required.

CHAPTER 6**8 UNETHICAL ACTS:**

A Dental Surgeon shall not aid or abet or commit any of the following acts which shall be construed as unethical. For the purpose of these regulations a dental surgeon refers to all registered practitioners whether they are in individual private practice, attached to hospitals, teaching hospitals or employed by others whether they are corporate or otherwise:

8.1 Advertisement:

The global position on the issue of Ethics of Advertisement by Dental/Medical professionals has drastically changed over the last few decades. A Dentist or a group of Dentists may advertise provided that they maintain decorum, keeping in mind the high moral obligations and the value that society places on the important nature of their work and the moral character and integrity expected of them. Dental Surgeons are expected to exhibit integrity, honesty, fidelity and selfless service. Monetary commitments can only be secondary to the welfare of his patients. Under these circumstances it is unethical:

- (8.1.1) To indulge in demeaning solicitation and false promises through advertisements or direct marketing of individuals, clinics or hospitals in contravention of the National Advertising Council or any other body regulating advertising in the country;
- (8.1.2) To advertise, whether directly or indirectly or being associated or employed with any organization or company including corporate bodies that indulges in such activities in a manner which gives unfair professional advantage by cold targeting vulnerable groups and conducting camps and other promotional activity in schools, colleges, old age homes and distributing handbills, claim vouchers and other business promotional activities. Registered charitable organizations including registered body of Dental or Medical persons which provide fully free dental care and treatment out of altruism are however exempted;
- (8.1.3) To be associated with or employed by those who procure or sanction such false and misleading advertisements or publication through press reports that promise inducements, rebates and false benefits;
- (8.1.4) To employ any agent or canvasser for the purpose of obtaining patients in a manner that is commercial; or being associated with or employed by those who procure or sanction of such employment;
- (8.1.5) To use or exhibit any disproportionately large sign, other than a sign which in its character, position, size and wording is merely such as may reasonably be required to indicate to persons seeking the exact location of, and entrance to, the premises at which the dental practice is carried on, and nowhere else;
- (8.1.6) To allow the Dental Surgeon's name to be used to designate commercial articles such as tooth paste, tooth brush, tooth powder, mouth washes liquid cleaners, or the like except if such articles are fabricated in the dental clinic e.g. dentures, crowns, bridges, etc.;
- (8.1.7) To permit publication of the Dental Surgeon's opinion on any procedure, equipment, in the general or lay papers or lay journals except when validated or supported by evidence based studies;
- (8.1.8) To indulge in surrogate advertisements in the garb of educating the public through TV programs, magazines or periodicals. Any public information disseminated to the public in good faith and intention should not carry addresses telephone numbers, e-mail addresses etc., of the Dental Surgeon or the clinic employing him to attract patients to their establishment;
- (8.1.9) To advertise in the electronic media, such as in television programs, that display names, addresses and telephone number of dentists as on-screen 'scrollers', or, of the clinics employing such dentists, etc.

8.2 Soliciting:

Soliciting of patients, directly or indirectly, by a Dental Surgeon, by a group of Dental Surgeons or by institutions or organizations is unethical except when permitted under the provisions mentioned later (vide 8.2.1 to 8.2.10 of this document, Revised Dentists Code of Ethics Regulations, 2012). A Dental Surgeon shall

not make use of himself (or his name) as subject of any form or manner of advertising or publicity through any mode either alone or in conjunction with others which is of such a character as to invite attention to him or to his professional position, skill, qualification, achievements, attainments, specialties, appointments, associations, affiliations or honors and/or of such character as would ordinarily result in his self-aggrandizement. A Dental Surgeon shall not give to any person, whether for compensation or otherwise, any approval, recommendation, endorsement, certificate, report or statement with respect of any drug, medicine, nostrum remedy, surgical, or therapeutic article, apparatus or appliance or any commercial product or article with respect of any property, quality or use thereof or any test, demonstration or trial thereof, for use in connection with his name, signature, or photograph in any form or manner of advertising through any mode nor shall he boast of cases, operations, cures or remedies or permit the publication of report thereof through any mode. A Dental Surgeon is however permitted as an ethically acceptable practice to make a formal announcement in press regarding the following:

- (8.2.1) On starting practice.
- (8.2.2) On change of type of practice.
- (8.2.3) On changing address.
- (8.2.4) On temporary absence from duty for a prolonged period of time.
- (8.2.5) On resumption of practice after a break a prolonged period.
- (8.2.6) On succeeding to another practice.
- (8.2.7) About the availability of new equipment or services without boastful claims of being the 'best' or 'first' especially if such services are already available in other facilities.
- (8.2.8) Through insertion in Telephone directories, Yellow pages or on the internet is permissible and will only serve as public information. However any claim to superiority or special skills over others will be construed as unethical practice.
- (8.2.9) Through maintenance of websites about dentists or dental clinics where all information is factual will not be construed as unethical practice. Websites can also carry details of treatment facilities available and the fees for the same. This will in fact help patients to make informed choices through a transparent system. However websites should not make claims or statements that are not factual and therefore misleading to the public.

8.3 **Publicity and Signage:**

- (8.3.1) Printing of self-photograph, or any such material of publicity in the letter head or on sign board of the consulting room or any such clinical establishment shall be regarded as acts of self-advertisement and unethical conduct on the part of the physician. However, printing of sketches, diagrams, picture of human system shall not be treated as unethical;
- (8.3.2) Using or exhibition of any sign, other than a sign which in its character, position, size and wording is merely such as may reasonably be required to indicate to persons seeking the exact location of, and entrance to, the premises at which the dental practice is carried on is considered unethical. These include:
 - (8.3.2.1) Use of sign-board with the use of such words which trivialize the dignity of the profession or notices in regard to practice on premises other than those in which a practice is actually carried on, or show cases, or flickering light signs and the use of any sign showing any matter other than his name and qualifications as defined under Clause (j) of Section 2 of the Act;
 - (8.3.2.2) Affixing a sign-board on a Chemist's shop or in places where the dentist does not reside or work.
- (8.3.3) A Dental Surgeon shall not claim to be a specialist either through displayed signs on the name board and / or the office stationary (visiting cards, letterheads, etc.,) unless he has a special qualification (which is recognized by the Council) in that Specialty. A Dental Surgeon can however practice all branches of Dentistry provided he shows adequate qualification, competence and bona fide training in the concerned branch or branches.

8.4 **Patent and Copyrights:**

A Dental Surgeon may patent surgical instruments, appliances and medicine or Copyright applications, methods and procedures. However, it shall be unethical if the benefits of such patents or copyrights are not made available in situations where the interest of large population is involved.

8.5 **Running an Open Shop (Dispensing of Drugs and Appliances by Physicians):**

A Dental Surgeon should not run an open shop for sale of medicine for dispensing prescriptions prescribed by doctors other than him or for sale of dental medical or surgical appliances. It is not unethical for a Dental Surgeon to prescribe, supply or sell drugs, remedies or dental appliances in his clinic as long as there is no exploitation of the patients. Drugs prescribed by a Dental Surgeon or brought from the market for a patient should explicitly state the proprietary formulae as well as generic name of the drug.

8.6 Rebates and Commission:

- (8.6.1) A Dental Surgeon shall not give, solicit, or receive nor shall he offer to give solicit or receive, any gift, gratuity, commission or bonus in consideration of or return for the referring, recommending or procuring of any patient for dental, medical, surgical or other treatment. A Dental Surgeon shall not directly or indirectly, participate in or be a party to act of division, transference, assignment, subordination, rebating, splitting or refunding of any fee for medical, surgical or other treatment.
- (8.6.2) Provisions of Section 8.6.1 (of this document, Revised Dentists Code of Ethics Regulations, 2012) shall apply with equal force to the referring, recommending or procuring by a physician or any person, specimen or material for diagnostic purposes or other study / work. Nothing in this section, however, shall prohibit payment of salaries by a qualified physician to other duly qualified person rendering medical care under his supervision.

8.7 Secret Remedies:

The prescribing or dispensing by a physician of secret remedial agents of which he does not know the composition, or the manufacture or promotion of their use is unethical and as such prohibited. All the drugs prescribed by a dental surgeon should always carry a proprietary formula and clear name.

8.8 Human Rights:

The physician shall not aid or abet torture nor shall he be a party to either infliction of mental or physical trauma or concealment of torture inflicted by some other person or agency in clear violation of human rights.

8.9 Unethical Practices:

The following shall also be the unethical practices for a Dentist:

- (8.9.1) A Dental Surgeon shall not employ a Dentist / Dental Surgeon in the professional practice or any other professional assistant (not being a registered dental hygienist or a registered dental mechanic) whose name is not registered in the State Dentists Register, to practice Dentistry as defined in Clause (d) of Section 2 of the Act. He may however retain the services of a medical practitioner or anaesthetist as necessary;
- (8.9.2) Signing under his name and authority any certificate which is untrue, misleading or improper, or giving false certificates or testimonials directly or indirectly to any person or persons;
- (8.9.3) Use of abbreviations after the Dental Surgeon's name except those indicating dental qualifications as earned by him during his academic career in dentistry and which conform to the definition of 'recognized dental qualification' as defined in Clause (j) of Section 2 of the Act, or any other academic qualifications from a recognized university obtained through a convocation indicating exemplary achievement. Any degree conferred on an honorary basis should be suffixed with the words "Honoris Causa". Such unacceptable abbreviations include, but not necessarily restricted to the following which are not academic qualifications:
 - (8.9.3.1) R.D.P. for Registered Dental Practitioner;
 - (8.9.3.2) M.I.D.A. for Member, Indian Dental Association;
 - (8.9.3.3) F.I.C.D. for Fellow of International College of Dentists;
 - (8.9.3.4) M.I.C.D. for Master of International College of Dentists;
 - (8.9.3.5) F.A.C.D. for Fellow or American College of Dentists;
 - (8.9.3.6) M.R.S.H. for Member of Royal Society of Hygiene;
 - (8.9.3.7) F.A.G.E. for Fellow of Academy of General Education, etc.;
- (8.9.4) Submission of false information in declaration form at the time of assessment of Dental College.
- (8.9.5) Serving as (Duplicate faculty) i.e. working simultaneously in two/more Dental Colleges.
- (8.9.6) Conviction for any crime by any court will constitute unethical act.

8.10 Naming and Styling of Dental Establishments:

A Dental Surgeon or a group of Dentists/ Dental Surgeons shall refer to their establishment as a dental clinic. It may however be referred to as a dental hospital if the practice involves surgical treatment of oral and dental diseases under local or general anaesthesia and if the patients need to be maintained as an in-patient for part of a day or for several days for post-operative care provided the hospital fulfils the statutory requirements for such hospitals or establishments in the respective States.

8.11 Contravention of Statutory Provisions:

A Dental Surgeon shall not contravene any of the acts referred to in Article 3.9 of this document, Revised Dentists Code of Ethics Regulations, 2014, and named in Annexure 3 of the same document and the rules made there under as amended from time to time, involving an abuse of privileges conferred there under upon a dentist, whether such contravention has been the subject of criminal proceedings or not.

8.12 Signing of Certificates:

A Registered Dental Surgeon is bound by law to give, or may from time to time be called upon or requested to give certain certificates, notification, reports and other documents of similar character signed by them in

their professional capacity for subsequent use in the courts, or elsewhere for administrative purposes, etc. Such documents, among others, include the ones given at Appendix 4 of this document, Revised Dentists Code of Ethics Regulations, 2014. A Dental Surgeon shall not sign under his name and authority any certificate which is untrue, misleading or improper, or give false certificates or testimonials directly or indirectly to any person or persons. He shall however deem it his duty to sign all necessary certificates relating to health of the patients.

8.13 Doctor-Patient Sexual Misconduct:

A Dental Surgeon shall not be involved in immorality involving abuse of professional relationship and involve in sexual misconduct with a patient by misusing fiduciary relationship.

8.14 Abiding by all Laws of the Land:

A Dental Surgeon shall not aid or abet in any violation of the laws of the land or be involved in any matter that is against public policy. He shall not be convicted by a court of law for offences involving moral turpitude/ criminal acts.

8.15 Relationship with Pharmaceutical Companies and Medical and Dental Industry:

8.15.1 Gifts, Travel, Hospitality, Monetary Grants:

A Dental Surgeon shall not receive any gift from any pharmaceutical or allied health care industry and their sales people or representatives. A Dental Surgeon shall not accept any travel facility inside the country or outside, including rail, air, ship, cruise tickets, paid vacations etc. from any pharmaceutical or allied healthcare industry or their representatives for self and family members for vacation or for attending conferences, seminars, workshops, CDE/CME program etc., as a delegate. A Dental Surgeon shall not receive any cash or monetary grants from any pharmaceutical and allied healthcare industry for individual purpose in individual capacity under any pretext. Funding for medical research, study etc. can only be received through approved institutions and Professional Organizations by modalities laid down by law / rules / guidelines adopted by such approved institutions, in a transparent manner. It shall always be fully disclosed.

8.15.2 Dental / Medical Research:

A Dental Surgeon may carry out, participate in, and work in research projects funded by pharmaceutical and allied healthcare industries. A Dental Surgeon is obliged to know that the fulfillment of the following items [8.15.2.1 to 8.15.2.7 of this document, Revised Dentists Code of Ethics Regulations, 2012] will be an imperative for undertaking any research assignment / project funded by industry - for being proper and ethical. Thus, in accepting such a position a Dental surgeon shall:

(8.15.2.1) Ensure that the particular research proposal(s) has the due permission from the competent concerned authorities.

(8.15.2.2) Ensure that such a research project(s) has the clearance of national/state/ institutional ethics committees/bodies.

(8.15.2.3) Ensure that it fulfils all the legal requirements prescribed for medical research.

(8.15.2.4) Ensure that the source and amount of funding is publicly disclosed at the beginning itself.

(8.15.2.5) Ensure that proper care and facilities are provided to human volunteers, if they are necessary for the research project.

(8.15.2.6) Ensure that undue animal experimentations are not done and when these are necessary they are done in a scientific and a humane way.

(8.15.2.7) Ensure that while accepting such an assignment a Dental Surgeon shall have the freedom to publish the results of the research in the greater interest of the society by inserting such a clause in the MOU (Memorandum of Understanding) or any other document / agreement for any such assignment.

8.15.3 Maintaining Professional Autonomy:

In dealing with pharmaceutical and allied healthcare industry, a Dental Surgeon shall always ensure that there shall never be any compromise either with his/her own professional autonomy and / or with the autonomy and freedom of the medical institution.

8.15.4 Affiliation:

A Dental Surgeon may work for pharmaceutical and allied healthcare industries in advisory capacities, as consultants, as researchers, as treating doctors or in any other professional capacity. In doing so, a medical practitioner shall always:

(8.15.4.1) Ensure that his professional integrity and freedom are maintained.

(8.15.4.2) Ensure that patients' interest is not compromised in any way.

(8.15.4.3) Ensure that such affiliations are within the law.

(8.15.4.4) Ensure that such affiliations/employments are fully transparent and disclosed.

8.15.5 Endorsement:

A Dental surgeon shall not endorse any drug or product of the industry publically. Any study conducted on the efficacy or otherwise of such products shall be presented to and / or through appropriate scientific bodies or published in appropriate scientific journals in a proper way.

CHAPTER 7

9 PUNISHMENTS AND DISCIPLINARY ACTIONS:

A Dental Surgeon shall not aid or abet or commit any acts which shall be construed as unethical.

- 9.1 It must be clearly understood that the instances of offences and unethical conducts which are given above do not constitute and are not intended to constitute a complete list of the infamous acts which calls for disciplinary action, and that by issuing this notice the Dental Council of India and or State Dental Councils are in no way precluded from considering and dealing with any other form of professional misconduct on the part of a registered practitioner. Circumstances may and do arise from time to time in relation to which there may occur questions of professional misconduct which do not come within any of these categories. Every care should be taken that the code is not violated in letter or spirit. In such instances as in all others, the Dental Council of India and/or State Dental Councils have to consider and decide upon the facts brought before the Dental Council of India and/or State Dental Councils.
- 9.2 It is made clear that any complaint with regard to professional misconduct can be brought before the appropriate Dental Council for Disciplinary action. Upon receipt of any complaint of professional misconduct, the appropriate Dental Council would hold an enquiry and give opportunity to the registered Dental practitioner to be heard in person or by pleader. If the Dentist/ Dental Surgeon is found to be guilty of committing professional misconduct, the appropriate Dental Council may award such punishment as deemed necessary or may direct the removal altogether or for a specified period, from the register the name of the delinquent registered practitioner. Deletion from the Register shall be widely publicized in local press as well as in the publications of different Medical and Dental Associations/ Societies/Bodies.
- 9.3 In case the punishment of removal from the register is for a limited period, the appropriate Council may also direct that the name so removed shall be restored in the register after the expiry of the period for which the name was ordered to be removed.
- 9.4 Decision on complaint against delinquent Dental Surgeons shall be taken within a time limit of 6 months.
- 9.5 During the pendency of the complaint the appropriate Council may restrain the Dental Surgeon from performing the procedure or practice which is under scrutiny.
- 9.6 Professional incompetence shall be judged by peer group as per guidelines prescribed by State Dental Council. For this purpose the State Dental Council shall institute an Ethics Committee consisting of qualified persons of integrity and good name from amongst prominent registered Dental Surgeons in the State.
- 9.7 Where either on a request or otherwise the State Government or any competent authority is informed that any complaint against a delinquent practitioner has not been decided by a State Dental Council within a period of six months from the date of receipt of complaint by it and further the State Government or any competent authority has reason to believe that there is no justified reason for not deciding the complaint within the said prescribed period, the State Government or any competent authority may.
 - (9.7.1) Impress upon the concerned State Dental Council to conclude and decide the complaint within a time bound schedule.
 - (9.7.2) May decide to refer the said complaint pending with the concerned State Dental Council straightaway or after the expiry of the period which had been stipulated by the Regulation in accordance with para (9.7.1 of this document, Revised Dentists Code of Ethics Regulations, 2012) above, to itself and refer the same to the Ethical Committee of the State Dental Council for its expeditious disposal in a period of not more than six months from the receipt of the complaint with the State Government.
- 9.8 Any person aggrieved by the decision of the State Dental Council on any complaint against a delinquent Dental Surgeon, shall have the right to file an appeal to the State Government within a period of 60 days from the date of receipt of the order passed by the said State Dental Council. Provided that the State Government may, if it is satisfied that the appellant was prevented by sufficient cause from presenting the appeal within the aforesaid period of 60 days, allow it to be presented within a further period of 60 days.

Col. (Retd.) Dr. S.K. OJHA, Officiating Secy.
[ADVT. III/4/Ext./98/14]

Foot Note : The Principal Regulations, namely, the “Dentists (Code of Ethics) Regulations, 2014”, were published in Part II, Section 3, Sub-sec (1) of the Gazette of India, Extraordinary, on 21.08.1976.