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EDITORIAL

It is with profound pleasure, humility and anticipation that we celebrate the launch of Dental Journal of Central India (DJCI) with this inaugural issue. On behalf of the DJCI Editorial Team,I would like to extend a very warm welcome to the readership of DJCI. I take this opportunity to thank our authors, editors and anonymous reviewers, all of whom have volunteered to contribute to the success of the journal.

Dental Journal of Central India (DJCI)is primarily focused on basic research and clinical investigation in dentistry. The topics covered in the journal include but not limited to: epidemiological studies, clinical research, oral mucosal diseases, oral radiology, cariology, oral rehabilitation through prosthodontic and orthodontic care, TMJ disorders, implantology, periodontology, orthodontics, forensic odontology, oral pathology and microbiology, paediatric dental care, dental trauma, geriatric oral health, dental practice management, preventive dentistry, health services research, health education, quality of life, analysis of risk and quality assessment. We welcome contributions that can demonstrate near-term practical usefulness, particularly contributions that take a multidisciplinary/convergent approach because many real world problems are complex in nature. DJCI provides an ideal forum for exchange of information on all of the above topics and more, in various formats: original studies, short communications, systematic and narrative reviews and rare case reports.

The journal's editorial board is strongly convinced this initiative will provide science-driven, peer-reviewed articles conforming to international standards. DJCI is published twice a year. To ensure rapid dissemination of information, we aim at completing the review process of each paper within 2 months of initial submission. DJCI is committed to publishing all manuscripts receiving a high or top priority recommendation during the review process, whereas those receiving medium priority will be considered for publication on a case-by-case basis. In addition, publication of manuscripts receiving the top priority will be fast tracked, that is, they will be published online within a month. This policy reflects my interest in quickly publishing all manuscripts judged to be the most impactful during the peer review process. Further, we will periodically issue special calls for papers to modernize and strengthen areas of research and development showcased in Advanced dentistry and will be published as special issues.

I close this message by inviting everyone to submit their exciting research to DJCI. All papers receiving a high degree of enthusiasm in the peer-review process will find a home in DJCI. Therefore, we are committed to publishing all discoveries, methods, resources, and reviews that significantly advance the field of Dentistry and its applications. Once again I welcome you to this journal – your journal! With your support as authors, reviewers, and editors, I see very bright prospects for DJCI to serve dental science and the scientific community even better in the future. Ultimately, we will improve more lives and, consequently, our communities.

DR. ABHAY DATARKAR
Dean
GDCH,Nagpur

ABOUT THE JOURNAL:
Dental Journal of Central India (DJCI) an official publication of Government Dental College and Hospital Nagpur, is multidisciplinary, peer-reviewed, wide scope and open access semi-annual journal, publishing original contributions describing ideas, basic research and clinical investigation in dentistry. The journal's full text is available online at www.gdcnagpur.edu.in. The journal allows free access (Open Access) to its contents and permits authors to self-archive final accepted version of the articles on any OAI-compliant institutional / subject-based repository. The journal does not charge for submission, processing or publication of manuscripts. DJCI is a peer-reviewed, multidisciplinary, open-access journal intending to impart spirit of research and innovation in dentistry. The journal aims to publish the recent innovations in dental sciences through original studies, short communications, systematic and narrative reviews and rare case reports.

SCOPE OF THE JOURNAL:
This journal provides a platform to all dental professionals including undergraduates, postgraduates, academic and general practitioners. We openly welcome original research, reviews and case reports from across Central India. The journal is concerned with epidemiological studies, clinical research, oral mucosal diseases, oral radiology, cariology, oral rehabilitation through prosthodontic and orthodontic care, TMJ disorders, implantology, periodontology, orthodontics, forensic odontology, oral pathology and microbiology, paediatric dental care, dental trauma, geriatric oral health, dental practice management, preventive dentistry, health services research, health education, quality of life, analysis of risk and quality assessment. It is of interest to healthcare personnel in medicine and dentistry and to other professionals concerned with oral disease prevention, health service planning, ethics and oral health promotion throughout the world aiming to add value to the existing knowledge in the field of dentistry and related Sciences.

THE EDITORIAL PROCESS:
Manuscript should be submitted to editordjci@gmail.com. The submitted manuscript will be reviewed for possible publication with the understanding that it is being submitted to Dental Journal of Central India (DJCI) alone at that point in time and has not been published anywhere, simultaneously submitted, or already accepted for publication elsewhere. The journal expects that authors would authorize one of them to correspond with the Journal for all matters related to the manuscript. All manuscripts received are duly acknowledged. On submission, editors review all submitted manuscripts initially for suitability for formal review. Manuscripts with insufficient originality, serious scientific or technical flaws, or lack of a significant message are rejected before proceeding for formal peer-review. Manuscripts that are unlikely to be of interest to the Journal of Oral Research and Review readers are also liable to be rejected at this stage itself. Manuscripts that are found suitable for publication in Dental Journal of Central India (DJCI). The journal follows a double-blind review process, wherein the reviewers and authors are unaware of each other's identity. Every manuscript is also assigned to a member of the editorial team, who based on the comments from the reviewers takes a final decision on the manuscript. The comments and suggestions (acceptance/ rejection/ amendments in manuscript) received from reviewers are conveyed to the corresponding author. If required, the author is requested to provide a point-by-point response to reviewers' comments and submit a revised version of the manuscript. This process is repeated till reviewers and editors are satisfied with the manuscript.

Manuscripts accepted for publication are copy edited for grammar, punctuation, print style, and format. Page proofs are sent to the corresponding author. The corresponding author is expected to return the corrected proofs within three days. It may not be possible to incorporate corrections received after that period. The whole process of submission of the manuscript to final decision and sending and receiving proofs is completed online. To achieve faster and greater dissemination of knowledge and information, the journal publishes articles online as 'Ahead of Print' immediately on acceptance.

AUTHORS GUIDELINES:
Dental Journal of Central India (DJCI) is a peer-reviewed, semi-annual journal. Manuscripts must be prepared in accordance with “uniform requirements for manuscripts submitted to Biomedical Journal developed by International Committee of Medical Journal Editors (December 2013). Submission of a paper is intended to entail that it presents original unpublished work, including the illustrations, which it is not under consideration for publication elsewhere.
Editorial policy: The Editorial board reserves the right to make changes that may clarify or condense papers where this is considered desirable.

Clinical trial registry: Dental Journal of Central India(DJCI) favours registration of clinical trials and would publish clinical trials that have been registered with a clinical trial registry that allows free online access to public. Registration in the following trial registers is acceptable: http://www.ctri.in/; http://www.actr.org.au/; http://www.clinicaltrials.gov/; http://isrctn.org/; http://www.trialregister.nl/trialreg/index.asp; and http://www.umin.ac.jp/ctr. This is applicable to clinical trials that have begun enrolment of subjects on or after June 2008.
Type of submission: Original articles, Case reports, Clinical studies, short communications/Clinical tip, Letters to the editor, Reviews (Including meta and systematic analysis).

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Original **Article**

Prevalence, etiological factors, risk factors and type of traumatic dental injuries among children aged 3 to 14 years in central India: a retrospective study

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ABSTRACT

Background: Pediatric traumatic dental injury is a serious health problem that cannot be overlooked, because of its high prevalence, physical as well as major psychological impacts, and high treatment costs. This study is aimed to determine the distributive etiological and other factors associated with paediatric traumatic dental injuries in children from central India.

Materials and methods: Children aged 3 to 14 years visiting the Government Dental Hospital from June 2017 to June 2021 as a result of dental trauma were investigated. Trauma associated information was recorded and analysed.

Results: Most of the traumas occurred in children aged 8 to 12 years and affected primarily the maxillary incisors. Fall during playing was the main cause for traumatic dental injuries in the children. Simple enamel fractures (39%), followed by complex enamel–dentin–pulp fracture (24%), enamel-dentine fracture (16%), avulsion (6%) and tooth luxation injuries (4%) were evident in the permanent dentition. It was also witnessed that; major population of children visited the hospital due to traumas to the permanent dentition rather than that to the primary dentition which comprised of only 3%.

Conclusion: Based on the information presented in this survey, the research highlighted many predisposing factors for dental trauma that affected the anterior teeth in particular. Based on these results, the implementation of strategic preventive measurements targeting especially the identified risk groups remains crucial.

Key words: Children, Central India, Dental Education, Epidemiology, Traumatic dental injuries

Introduction

Traumatic dental injury (TDI) is a matter of serious concern, as trauma to the oral cavity accounts for 5% of all the injuries to the body. [1] They are highly prevalent in the younger age group and have a significant impact on the overall quality of life of the children. These injuries prone to affect the development of permanent dentition in them and also results in a negative psychological impact, wherein the children tend to feel embarrassed because of the absent or fractured anterior teeth. [2] Moreover, if these injuries are left untreated, they might result in the deterioration of the functional as well as the esthetic component and lead to a multidisciplinary and more complex treatment plan. [3] Furthermore, it is seen that due the loss of proximal or incisal contacts due to trauma, there might be high chances for the malocclusions to occur subsequently. [4]

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Ritwik et al. (2015) in their study stated that, around 50% of children experience at least one dental injury prior to the age of 18 years. [5] Likewise, a generalized prevalence of the TDIs ranging from 10.2% to 69.2% has been reported by several other studies. [6-8] The huge discrepancy in the prevalence of TDI may be probably attributed to the type and approach of the study, the selected sample size, the sampling technique devised, the type of classification considered and the ethnic background of the population. [9]

Earlier when clinical studies were performed, the age and gender of the population were considered as the major predisposing factors in children. However, later on as the quality of trials evolved, other parameters such as the cause of

trauma, location where the incidences occurred, amount of lip coverage as well as type of malocclusion present were equally considered important. Furthermore, it was also seen that parental negligence to these conditions also evoked several complications in the later stage of life. [10]

Therefore, to establish accurate treatment modalities and create public awareness regarding the potential consequences of these TDIs, it is very important to establish prevalence of the dental trauma and their associated factors starting right from the local premises to the national followed by global level. Moreover, studies of TDIs among the preschool children are of paramount importance, as individuals with previous trauma in the primary dentition are prone to further trauma in the permanent dentition.
The aim of this study is thus, to examine the epidemiological and dental data regarding traumatic injuries to primary and permanent teeth in school children aged 3-14 years from central India who reported to the department of Pediatric and Preventive Dentistry from June 2017 to June 2021.

Materials and Methods

The retrospective study was performed in children aged 1 to 14 years who presented with dental trauma to the Department of Pediatric Dentistry from June 2017 to June 2021. Ethical consent approval from the Institute Ethical Committee was obtained for this research. To assess the prevalence of dental trauma for patients attending the dental hospital between years 2017-2021, out of 68470 patients who reported to the department, records of 721 patients with traumatic dental injuries were reviewed. All patients' charts were evaluated and data was compiled accordingly. Patients' examination and treatment charts were also reviewed. Two independent researchers carefully reviewed the patients' charts in order to minimize possible bias in evaluating the charts.

The trauma cases were identified according to Ellis and Davey's classification as given in Table 1. The occlusion of every child as well as the associated risk factor was recorded to analyse their relationship with the TDIs. All of the previously available data that was compiled, was collected through intraoral examination of eligible children and their guardian's response to a usually used self-administered closed-ended questionnaire including demographic data, etiology, localization, place, time elapsed between injury and treatment, and the treatment provided. In our study the aetiologies of these traumatic dental injuries were classified into 6 categories: 1) Traffic accidents; 2) Sports activity; 3) Collisions; 4) Fall; 5) Violence; 6) Others.

Results

A total of 721 patients aged 3-14 years meeting the inclusion criteria were considered in this study. Data regarding total patients visiting the out-patient department and those involved with TDI are summarized in Table 2. The prevalence of traumatic dental injury was 1.05. The highest frequency of TDI was in the 8 to 12-year-old children (66.8%) with a peak in the age interval of 8-9 years which accounted for about 34.3% of the total included population (Table 3). The distribution of patients by gender showed that males were more often affected (78.2%) than the females (21.8%), (Table 2). When the etiology of TDI was analysed, 20.8% were caused by traffic accidents, 5.4% dental injuries occurred due to involvement in sports related activities, 8.1% by traffic collision incidences, 57.6% due to fall, 2.2% by violence and 5.6% due to other episodes (Table 3). It was seen that major incidents occurred due to fall while either riding a bicycle or while playing or sleeping.

The time of occurrence of TDI was fairly well dispersed throughout the months of the years. From a total of 1203 traumatically injured teeth, the maxillary arch (76.6%) was more frequently involved than the mandibular arch (23.3%). The most affected teeth were the maxillary central incisors (39.4%), followed by the maxillary left lateral incisors (31.9%). The mandibular canines were the least affected (3.57%) out of all anterior teeth due to trauma (Table 4). Major risk factors involved in trauma to the anterior teeth were considered and accordingly their distribution was analysed. Forwardly placed anterior teeth was one of the major risk factors leading to traumatic injuries to the tooth (42.3%). Like-wise inadequate lip coverage resulting in direct exposure of the teeth to external environment at the time of traumatic incident was seen in about 27.7% children. Other risk factors such as lack of balance or muscular control deficiency (4%), presence of severe malocclusion (21.6%) and frequent involvement in the sports activities (4.2%) were also witnessed (Table 5).

The most common type of injury was the uncomplicated crown fracture i.e., the fracture of enamel only (Ellis class I) which accounted for about 33.5%. This was followed by complicated crown fracture (Ellis class III) accounting 24.5%. The gender-wise distribution of the epidemiological data according to the Ellis and Davey classification of dental injuries is portrayed in Figure 1. Intra-oral injuries to the tongue, palate, buccal mucosa and gingiva were duly recorded at the time of reporting. Injury to the tongue was majorly witnessed in most of the cases. Likewise, extra - oral soft tissue injuries such as the lacerations of upper and lower lips, chin, cheek and nose were also evident in some of the patients that were included in our study.

Tables

Table 1: Ellis and Davey's classification of traumatic dental injuries

Class I	Fracture of enamel only
Class II	Fracture of enamel dentin and pulp without pulpal involvement
Class III	Fracture of enamel dentin and pulp with pulpal involvement
Class IV	Fracture involving non-vital tooth
Class V	Avulsion
Class VI	Fracture of root with or without crown fracture
Class VII	Displacement of the tooth
Class VIII	Fracture of crown en mass
Class IX	Traumatic dental injury involving the primary teeth.

Table 2: Gender distribution of traumatic dental injuries

	Male	Female	Total	Prevalence
Total reported children in department	34919	33551	68470	1.05
Cases with traumatic dental injuries	564 (78.2%)	157 (21.8%)	721	

Table 3: Age wise distribution of the epidemiological data according to the cause of the traumatic dental injury

Age	TA		SA		Co		Fall						V		Others		Total
							Bicycle		Sleep		Playing						
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	N (%)
3	0				1				2		5				1		9 (1.2)
4	3				1		2		2		4				2		14 (1.9)
5	7				1		3		2		9						22 (3.0)
6	6	2			0		5				20						33 (4.5)
7	4				0		10		1	1	14	9			2	2	43 (5.9)
8	0	3			0		15	8			68	25					119 (16.5)
9	14				11		17	8			44	30			5		129 (17.9)
10	21				0		7		1	1	21	8			6	2	67 (9.2)
11	20	5	10		7	8	9				17	11			5		92 (12.7)
12	21	6	11		10	4	5				10		1		5	2	75 (10.4)
13	14	2	7	2	9	4	10	2			1		5		4		60 (8.3)
14	15	7	6	3	3		4				5		10		3	2	58 (8.0)
Total	125	25	34	5	43	16	87	18	8	2	218	83	16	0	33	8	721
Total	150 (20.8%)		39 (5.4%)		59 (8.2%)		105 (14.55%)		10 (1.3%)		301 (41.75%)		16 (2.2%)		41 (5.7%)		

TA- traffic accident, AS-sport activity, Co- Collisions, V- violence, B-boys, G-girls

Table 4: Distribution of traumatic dental injury according to tooth involved

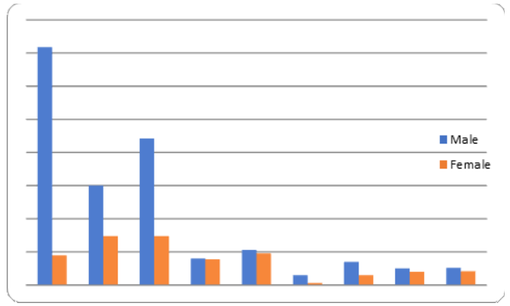
Tooth involved	N (%)
Maxillary right central incisor	251(20.86)
Maxillary right lateral incisor	179 (14.87)
Maxillary right canine	27 92.24)
Maxillary left central incisor	224 (18.6)
Maxillary left lateral incisor	205 (17.0)
Maxillary left canine	36 (2.99)
Mandibular left central incisor	63 (5.23)
Mandibular left lateral incisor	41 (3.4)
Mandibular left canine	26 (2.1)
Mandibular right central incisor	95 (7.8)
Mandibular right lateral incisor	39 (3.2)
Mandibular right canine	17 (1.4)
Total	**1203**

Table 5: Gender distribution of traumatic dental injuries

Risk Factors	N (%)
Proclined anteriors	305 (42.3)
Inadequate lip coverage	200 (28.09)
Malocclusion	156 (21.91)
Involvement in sports activity	31 (4.35)
Balance/muscular control deficiency	29 (4.07)

Figures:

Figure 1: Gender distribution of the epidemiological data according to the Ellis and Davey Classification of dental injuries



Discussion:

Traumatic dental injuries occur very commonly in children and accounts for 18% of all the facial injuries. [11] Glendor U in his literature review further stated that, almost 25% of all school going children and 33% pre-schoolers suffered from traumatic dental injuries. [12] It is generally seen that, the epidemiological knowledge regarding traumatic dental injuries proves essential in the public health sectors, especially when they are associated with observations and clinical trials. Thus, many studies in the past have investigated the prevalence of traumatic dental injuries and have associated them with the cause and type of trauma, gender, age, treatment modality provided and risk factors associated. [13-15] Our investigations found that, the commonly affected age group was 8-9 years, which showed agreement with some studies in the past. [16-17] Few other studies stated that the common age group encountering traumatic dental injuries was 9-10 years. [18-20] On the other hand, Yassen et al. in their prevalence study stated that, the highest frequency of TDIs in the permanent dentition was among 12-year-old. [21] The occurrence of peak dental trauma around the age of 9 as stated in ours as well as most of the studies can be attributed to the fact that children of younger age have less sense of fear, which makes them more susceptible to dental injuries.[22]

It was seen in our study that; boys had a very high predilection for traumatic dental injuries when compared with girls. The result of the current study was in accordance

with several studies in the past. [15,23-24] This prevalence can be explained by the fact that boys tend to be involved in more vigorous outdoor sport activities when compared to girls. [23] Also irrespective of the age it was found that men are usually the main victims of traumatic dental injuries as they are more frequently engaged in stronger physical activities, like physical contact sports, usually without wearing adequate protection, aggressive plays like fights and use of different kinds of equipment and devices with risk of causing dental trauma. [25] Fall on the ground due to various reasons such as while playing, riding a bicycle, etc; was the major cause of traumatic dental injuries in our study. This was in accordance with most of the studies in the literature. [26-28] Road traffic accident was the next common reason for the occurrence of dental injuries. This cause should be heeded particularly and preventive measures should be taken to avoid them as these traumatic maxillofacial are associated with high fatality, disability, and morbidity rates along with causing serious dental injuries. Our results were consistent with the literature regarding violence being a minor reason for causing dental injuries. This might be attributed to the fact of misguided information provided at the time of reporting to the hospital. Nevertheless, we cannot overlook the possibility of domestic violence or any other form of violence being an alarming and distressing etiological factor of dental injuries. In this perspective, more awareness by means of public health campaigns should be conducted for getting the victims out of shadows. [29]

Our study showed that maxillary arch was more frequently involved in dental injury cases when compared to the mandibular arch. This was supported by almost all the previous studies in the literature, the major reason being the upper teeth's prominent and open position leading to frequent involvement in fractures than the lower teeth. [15,23] In accordance with the previous studies [30,31] our survey also demonstrated that the anterior teeth, especially the maxillary central incisors, were the most likely locations for trauma, whether in the primary or in the permanent dentition. The vulnerable position of this tooth sometimes with inadequate labial coverage, may explain this reason. The maxillary lateral incisor was the second most commonly involved tooth in our study and the same results were verified by a study conducted by Rocha M et al. [32] Researches in the past furthermore demonstrated a higher risk for children with an overjet > 3 mm to experience more TDIs in either primary or permanent dentition. [33,34] The exact same results were portrayed in our study which stated that, proclined anterior teeth followed by insufficient lip coverage and malocclusion were the major risk factors for causing injury to the teeth. However, this particular finding was contradictory to the conclusions from a study conducted by Burden D et al. which stated that although inadequate lip coverage and increased overjet are both risk factors in relation to traumatic injury, inadequate lip coverage is the most important and common risk factor. They further stated that, children with inadequate lip coverage of their maxillary incisors have an increased risk of traumatic dental injury irrespective of the size of their overjet. [35]

Concerning the type of dental injury, we considered the Ellis and Davey classification of dental trauma. The major reason for us to opt for this classification preferably was because of its simplicity as many other classifications included broad and detailed terms sometimes giving rise to controversies and misdiagnosis. Also, Feliciano K et al. in their systematic review on dental trauma classification systems stated that Ellis and Davey classification is the most appropriate classification system for epidemiological studies. [36] The results of our study showed that enamel fractures were very frequently encountered in children followed by fractures involving the pulp, fractures restricted to dentin and avulsion respectively. Majority of other studies also stated that enamel fractures were the most commonly encountered fractures. [37,38] However, few other studies have reported different results; one such study, which surveyed Turkish children, found that avulsion and crown fractures were the most common injuries. [39] Others reported subluxation and avulsions as the most frequent types of dental trauma. [40,41] The difference in the findings of these different studies may be due to the variation in the population and environment being examined.

The present study is of greater importance due to the lack of epidemiologic data regarding traumatic dental injuries in children from central India. The findings we have made can help in the development of preventive measures and enhance adoption of more defined clinical decisions with therapeutic protocols. There is also a lack of parental information regarding dental trauma and its consequences. With the help of data from our study we can institute a preventive educational program directed at parents, teachers and sport coaches to inform them regarding traumatic dental injuries. However, future prospective studies based on the treatment and the follow up of patients are needed to evaluate the efficacy of the therapeutic protocols and their implications over time.

Conclusions:

The current study is among the first studies conducted in children from central India that address the prevalence and epidemiological risk factors of traumatic dental injuries. The significant prevalence of these injuries in children stresses the need for awareness. Based on the results of present study, it can be concluded that traumatic dental injuries are more prevalent in boys and in children aged 8–12 years. The maxillary anterior teeth are the most likely site of injury, the major cause of it being fall, particularly while playing. To prevent these injuries, we need to focus on educational and preventive programs for both the parents as well as the children. Furthermore, screening school campaigns to identify children with high risk for such type of injuries should be conducted, so that relevant preventive measures mouth guards and preventive orthodontic treatment can be implemented.

References :

1. Glendor U. Epidemiology of traumatic dental injuries–a 12 year review of the literature. Dent Traumatol 2008;24:603–11.
2. Ramos-Jorge ML, Bosco VL, Peres MA, Nunes AC. The impact of treatment of dental trauma on the quality of life of adolescents - a case-control study in southern Brazil. Dent Traumatol 2007;23:114–9.
3. Lopez D, Waidyatillake N, Zaror C, Mariño R. Impact of uncomplicated traumatic dental injuries on the quality of life of children and adolescents: a systematic review and meta-analysis. BMC Oral Health. 2019.
4. Andreasen JO AF, Anderson L. Textbook and color atlas of traumatic injuries to the teeth. 4 ed. oxford: Blackwell Munksgaard; 2007.
5. Ritwik P, Massey C, Hagan J. Epidemiology and outcomes of dental trauma cases from an urban pediatric emergency department. Dent Traumatol. 2015 Apr;31(2):97–102.
6. Cardoso M, de Carvalho RM. Traumatized primary teeth in children assisted at the Federal University of Santa Catarina Brazil. Dent Traumatol 2002;18:129–33.
7. Skaare AB, Jacobsen I. Primary tooth injuries in Norwegian children (1–8 years). Dent Traumatol 2005;21:315–9.
8. Kramer PF, Zembruski C, Ferreira SH, Feldens CA. Traumatic dental injuries in Brazilian preschool children. Dent Traumatol 2003;19:299–303.
9. Azami-Aghdash S, Ebadifard Azar F, Pournaghi Azar F. Prevalence, etiology, and types of dental trauma in children and adolescents: systematic review and meta-analysis. Med J Islam Repub Iran. 2015.
10. Garg K, Kalra N, Tyagi R, Khatri A, Panwar G. An appraisal of the prevalence and attributes of traumatic dental injuries in the permanent anterior teeth among 7–14-year-old schoolchildren of North East Delhi. Contemp. Clin. Dent. 2017;8(2):218–224.
11. Petersson EE, Andersson L, Sorensen S. Traumatic oral vs non-oral injuries. Swed Dent J 1997;21:55 68.
12. Glendor U. Epidemiology of traumatic dental injuries–a 12 year review of the literature. Dent Traumatol 2008;24:603–11.
13. Traebert J, Peres MA, Blank V, Boell RS, Pietruza JA. Prevalence of traumatic dental injury and associated factors among 12- year-old school children in Florianopolis, Brazil. Dent Traumatol 2003; 19: 15 –8.
14. Altun C, Ozen B, Esenlik E, Guven G, Gurb € uz T, Acikel C et al. Traumatic injuries to permanent teeth in Turkish children, Ankara. Dent Traumatol 2009;25:309–13.
15. Zuhal K, Semra OE, Huseyin K. Traumatic injuries of the € permanent incisors in children in southern Turkey: a retrospective study. Dent Traumatol 2005;21:20–5.
16. Sae-Lim V, Hon TH, Wing YK. Traumatic dental injuries at the Accident and Emergency Department of Singapore General Hospital. Endod Dent Traumatol 1995;11:32–6.
17. Al-Jundi SH. Dental emergencies presenting to a dental teaching hospital due to complications from traumatic dental injuries. Dent Traumatol 2002;18:181–5.
18. Brown CJ. The management of traumatically intruded permanent incisors in children. Dent Update 2002;29:38–44.
19. Camp JH. Diagnosis and management of sports-related injuries to the teeth. Dent Clin North Am 1991;35:733–56.
20. Sanchez AV, Garcia-Godoy F. Traumatic dental injuries in 3- to 13-year-old boys in Monterrey, Mexico. Endod Dent Traumatol 1990;6:63–5.
21. Yassen GH, Chin JR, Al-Rawi BAO, Mohammedsharif AG, Alsoufy SS, Hassan LA-R, et al. Traumatic injuries of permanent teeth among 6- to 12-year-old iraqi children: A 4-year retrospective study. J Dent Child 2013;80(1):3–8.
22. Yeng T, Parashos P. Dentists' management of dental injuries and dental trauma in Australia: a review. Dent Traumatol 2008 Jun;24(3):268–71.
23. Cavalcanti AL, Bezerra PK, de Alencar CR, Moura C. Traumatic anterior dental injuries in 7- to 12-year-old Brazilian children. Dent Traumatol 2009;25:198 –202.
24. Cem Gung or H, Uysal S, Altay N. A retrospective evaluation € of crown-fractured permanent teeth treated in a pediatric dentistry clinic. Dent Traumatol 2007; 23: 211–7.
25. Guedes O, Alencar A, Lopes L, Pécora J, Estrela C. A Retrospective Study of Traumatic Dental Injuries in a Brazilian Dental Urgency Service. Braz Dent J. 2010. 21(2): 153-57.
26. Jorge KO, Moyses SJ, Ferreira e Ferreira E, Ramos-Jorge ML, de Araujo Zarzar PM. Prevalence and factors associated to dental trauma in infants 1 –3 years of age. Dent Traumatol. 2009; 25: 185 –9
27. Tapias MA, Jimenez-Garcıa R, Lamas F, Gil AA. Prevalence of traumatic crown fractures to permanent incisors in a childhood population: Mostoles, Spain. Dent Traumatol 2003;19:119–22.
28. Adekoya-Sofowora CA, Adesina OA, Nasir WO, Oginni AO, Ugboko VI. Prevalence and causes of fractured permanent incisors in 12-year-old suburban Nigerian school children. Dent Traumatol 2009;25:314–7.
29. Malak C, Chakar C, Romanos A, Rachidi S. Prevalence and Etiological Factors of Dental Trauma among 12- and 15-Year-Old Schoolchildren of Lebanon: A National Study. Sci. World J. 2021.
30. Ekanayake L, Perera M. Pattern of traumatic dental injuries in children attending the University Dental Hospital Sri Lanka. Dent Traumatol 2008;24:471–4.
31. Sandalli N, Cildir S, Guler N. Clinical investigation of traumatic injuries in Yeditepe University, Turkey during the last 3 years. Dent Traumatol 2005;21:188–94
32. Rocha MJC, Cardoso M. Traumatized permanent teeth in children assisted at the Federal University of Santa Catarina, Brazil. Dent Traumatol 2001;17:245-249.
33. . Piovesan C, Guedes RS, Casagrande L, Ardenghi TM. Socioeconomic and clinical factors associated with traumatic dental injuries in Brazilian preschool children. Braz Oral Res 2012;26:464–70.
34. Ramos-Jorge ML, Peres MA, Traebert J, Ghisi CZ, de Paiva SM, Pordeus IA et al. Incidence of dental trauma among adolescents: a prospective cohort study. Dent Traumatol 2008;24:159–63.
35. Burden DJ. An investigation of the association between overjet size, lip coverage, and traumatic injury to maxillary incisors. Eur J Orthod. 1995 Dec;17(6):513-7.
36. Feliciano KM, de França Caldas A Jr. A systematic review of the diagnostic classifications of traumatic dental injuries. Dent Traumatol 2006; 22(2): 71-6.
37. Antunes L, Gomes I, Almeida M, Silva E, Calasans-Maia J, Antunes L. Increased overjet is a risk factor for dental trauma in preschool children. Indian J. Dent. Res. 2015;26(4): 356–60.
38. Chalissery V, Marwah N, Jafer M, Chalisserry E, Bhatt T, Anil S. Prevalence of anterior dental trauma and its associated factors among children aged 3–5 years in Jaipur City, India-a cross sectional study. J Int Soc Prev Community dent. 2016;6(7):S35–S40.
39. Sari M, Ozmen B, Koyuturk A, Tokay U, Kasap P, Guler D. A retrospective evaluation of traumatic dental injury in children who applied to the dental hospital, Turkey. Niger. J. Clin. Pract. 2014; 17(5): 644.
40. Bustos J, Brandt A, Fernandez B. Dental injuries among children and adolescents aged 1–15 years attending to public hospital in Temuco, Chile. Dent Traumatol. 2010;26(3):254–61.
41. Assunção L, Ferelle A, Iwakura M, Nascimento L, Cunha R. Luxation injuries in primary teeth: a retrospective study in children assisted at an emergency service. Braz. Oral Res. 2011;25(2):150–56.

Original **Article**

Impact of Oral Rehabilitation on Patients with Post Covid-19 Mucormycosis Using The Liverpool Oral Rehabilitation Questionnaire In Central India: A Qualitative Study

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ABSTRACT

Background : Liverpool oral rehabilitation questionnaire has been used in the past to assess the quality of life of prosthetically rehabilitated patients who have undergone head and neck cancer operations.
This study was carried out using the same questionnaire with certain modifications but on patients who were prosthetically rehabilitated affected with post covid-19 mucormycosis and the results have shown that there is significant improvement in the quality of life in such patients.

Aim: To qualitatively assess post covid-19 mucormycosis prosthetically rehabilitated patients using Liverpool Oral Rehabilitation Questionnaire (LORQ) in central India.
Settings and Design: Qualitative study

Methods and Material: Subjects included in the study were patients who were prosthetically treated post covid-19 mucormycosis and who were willing to participate in the study. The Liverpool Oral Rehabilitation Questionnaire (LORQ) with certain modifications was given to the targeted population one week after the delivery of the prosthesis.

Statistical analysis used: Wilcoxon paired test was used to analyze the results and P value ≤ 0.05 will be considered to be significant.

Results: For all the individual questions, LORQ showed a significant decrease following the treatment ($p<0.05$) except for Q3 (mouth dryness) where there was no significant difference between pre and post scores.

Conclusions: On comparing the databases, it could be concluded that prosthetic rehabilitation of post CoViD-19 mucormycosis patients significantly improved the quality of life.

Key-words: Post covid-19 mucormycosis, LORQ, prosthetic rehabilitation, quality of life

Introduction

The Covid-19 pandemic has imposed an immense physiological and psycho-social burden on the patients affected by it. The inordinate use of corticosteroids to supress the cytokine storm has paved way for opportunistic infections during the second wave of the pandemic, especially mucormycosis. The Rhino-orbital-cerebral variant was the most commonly presented form of post-covid mucormycosis, that warranted radical resective procedures to eliminate all infected tissues in conjunction with anti-fungal therapy. This led to the surge of a multitude of acquired maxillo-facial defects amongst the individuals afflicted with this maladie.(1)

Just like patients affected by oral cancer, post-covid mucormycosis COVID-19 has a major impact on the physical, psychologic, and social well-being of affected individuals. Diabetes mellitus (DM) has been attributed as an independent risk factor for both severe COVID-19 and mucormycosis.(2-6)

Rehabilitation of such maxillofacial defects is a prosthodontic challenge since many problems are encountered in subsequent prosthetic rehabilitation such as lack of prosthetic retention due to dislodging forces exerted by scarred post-surgical soft tissues, lack of a bony base, lost structures of the posterior palatal seal area, multiple defect sites and compromised medical status due to comorbidities that also affects healing rate of the defect.(7)

The importance of a functional rehabilitation of patients after treatment for oral cancer is well-recognized, particularly for oral rehabilitations that aim to restore oral function, orofacial form and hence, promote the patient's well-being, for which Liverpool Oral Rehabilitation Questionnaire (LORQ) has been widely used. LORQ gives an assessment of change before and after oral rehabilitation. The LORQ version 3 (LORQv3) demonstrated very satisfactory psychometric properties of acceptability, reliability, and validity, identifying differences between cancer and noncancer groups.(3)
The purpose of this study is to evaluate and qualitatively assess the influence of prosthetic rehabilitation efforts on the quality of life of patients affected by post-Covid mucormycosis in Central India using the Liverpool Oral Rehabilitation Questionnaire (LORQ).

Material and methods

An ethical clearance was received from the institutional ethical board for this study (Ref no. IEC/05/01). A total 48 patients were enrolled into this study with prior informed consent, who had been referred to the department of Prosthodontics from various tertiary care centres of central India for prosthetic rehabilitation after surgical resective procedure due to post-Covid mucormycosis. All patients were examined thoroughly and were accordingly rehabilitated using a delayed surgical obturator, an interim obturator or a definitive obturator based on the condition of the surgical site.

Quality of life (QOL) was assessed before and after the prosthetic rehabilitation irrespective of the type of prosthesis delivered using LORQv3 with some modifications. Patients who could not be rehabilitated due to reduced mouth opening and pain, those who were uncooperative and those who were deceased before the fabrication of the prosthesis were excluded from the study.

Patients were instituted a questionnaire consisting of 18 questions based on their experience before the prosthetic rehabilitation and were subsequently followed up after one month . The results were recorded by a single observer. The questionnaire consisted of 18 items that helped to assess the oral function, orofacial appearance, and social interaction of the patient before and after the prosthesis. The patients were asked to rate their experiences over a likert scale of 1 to 4 that best applied to them according to their experienced symptoms and problems with '1' representing 'never', '2' representing 'sometimes', '3' representing 'often' and '4' representing 'always'. The results of the questionnaire instituted before and one month after the prosthetic rehabilitation were assessed and compared. The Wilcoxon signed rank test was used to compare the differences before and after rehabilitation and the statistical significance was set at $P< .05$.

Results

A total of 48 participants were rehabilitated using delayed surgical obturator, interim obturator and definitive obturator. A demographic descriptive analysis of all the participants enrolled in the study was carried out. Participants included were from the age range of 31 to 64 years of age (mean: 48 years of age) (figure 1). Out of the six Aramany classes, class I was found to be the most common extent of the defect site and none of the participant matched in the category of class V defect (figure 2). Majority of the subjects were male (n=39; 81.25%) and had a previous medical history of type 2 diabetes (n=35; 72.91%).

All the patients had undergone surgery for the removal of the post CoViD-19 mucormycosis infection which led to the debridement of the necrotic bone which mainly involved the maxillary bone, the nasal bone and the maxillary sinus. Almost all the patients had an oro-antral communication which necessitated the fabrication of the various obturator prosthesis. Some of the defects were closed by a flap where there was no oro-antral communication. None of the patients had a prosthetic rehabilitation prior to their inclusion in the study.

Table 1 gives a descriptive analysis of the problems faced by the participants wherein the patients reported problems such as food sticking in the palate, difficulty in swallowing solid food and liquids which also affected their choice of food, difficulty in articulating speech, deranged mastication and poor overall appearance of their faces which ultimately affected their social life as well before the prosthetic rehabilitation.

Table 2 describes the scores that were again recorded after one month to assess the improvement if any, after prosthetic rehabilitation. Table 3 portrays the comparison of mean scores of pre and post rehabilitation and there was significant improvement in patients' mastication, speech, swallowing and facial appearance following the prosthetic intervention ($p<0.05$) except for Q3 (Did you have mouth dryness?) where there was no significant difference between pre and post scores.

The responses of the first 10 questions were only compared between the pre and post rehabilitation questionnaire since the last 8 questions were valid only after insertion of the prostheses. The inference derived by assessing the responses of the participants to the last 8 questions post-rehabilitation is that although the prosthesis improved the mastication, speech and food intake, the patients were still 'sometimes' apprehensive about the prosthesis falling out which although improved but still affected their self-confidence and social life.

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Table 1: Distribution of Liverpool Oral Health Scale Pre-treatment Scores n (%)

Question	Never (1)	Sometimes (2)	Often (3)	Always (4)
Did food particles collect under your tongue ?	22 (45.8)	19 (39.6)	5 (10.4)	2 (4.2)
Did food particles stick to your palate ?	2 (4.2)	9 (18.8)	22 (45.8)	15 (31.3)
Did you have mouth dryness ?	16 (33.3)	29 (60.4)	3 (6.3)	0 (0.0)
Did you experience difficulty with swallowing solids ?	1 (2.1)	8 (16.7)	17 (35.4)	22 (45.8)
Did you experience difficulty with swallowing liquids ?	0 (0.0)	2 (5.4)	19 (39.6)	24 (50.0)
Did you have problem with drooling ?	8 (16.7)	10 (20.8)	16 (33.3)	14 (29.2)
Did you experience problems with speech ?	0 (0.0)	4 (8.3)	23 (47.9)	21 (43.8)
Have you been upset by your facial appearance ?	1 (2.1)	7 (14.6)	25 (52.1)	15 (31.3)
Did your chewing ability affect your social life ?	2 (4.2)	5 (10.4)	18 (37.5)	23 (47.9)
Did your chewing ability influence your choice of food?	0 (0.0)	2 (4.2)	17 (35.4)	29 (60.4)
Did your oral prosthesis cause soreness or ulceration of the gums ?	-	-	-	-
Did your extraoral prosthesis cause soreness or ulcers?	-	-	-	-
Did you find food particles collecting under your intraoral prosthesis?	-	-	-	-
Were you worried that your intraoral prosthesis may fall out ?	-	-	-	-
Were you worried that your extraoral prosthesis may fall out ?	-	-	-	-
Were you embarrassed about conversing because of your intraoral prosthesis ?	-	-	-	-
Have you refused dinner/invitations because of embarrassment about intraoral prosthesis?	-	-	-	-
Have you felt loss of self confidence because of embarrassment about your prosthesis?	-	-	-	-

Discussion

For the physical, social and psychological well-being, an early and appropriate prosthetic rehabilitative effort is essential in patients who have undergone resective surgeries for post CoViD-19 mucormycosis. There have been studies wherein the LORQv3 has been used to assess the improvement in QOL (Quality of Life) in patients who have undergone head and neck surgeries. (8-10) Pace Balzan(3,4,8) et al has validated and developed the LORQ over the years and has compared the results amongst cancer patients and also between cancer and non-cancer patients.

This study is amongst the first few that exclusively includes patients afflicted by and prosthetically rehabilitated due to post-CoViD-19 mucormycosis using the LORQv3 and the results have proven to be significant. The results elucidate that there was improvement in most functional arenas like mastication, speech, choice of food and social life. An exception to the above was in relation to the complaints of mouth dryness that showed no significant improvement after prosthetic intervention. Matsuyama et al had concluded in his study that although there was negligible effect on the hypersalivation after the obturator prosthesis insertion, it had a significant impact on the swallowing ability both qualitatively and quantitatively. (11)

The prescribed prosthetic rehabilitative options usually range from heat-cure acrylic surgical obturators to implant-supported definitive obturators. The treatment modalities applied in this survey were delayed surgical obturators, interim obturators and definitive obturators fabricated with heat cure acrylic resin. Most of the cases reported to the department were still in the healing phase and hence a definitive obturator with an implant supported prosthesis was not opted as an option to rehabilitate.

Conclusion

Based on the responses of the participants enrolled in this questionnaire study, the following conclusions could be derived-

1) Prosthetic rehabilitation led to an improvement in swallowing function of the participants by an approximate 63%, in speech articulation by 80% and in general facial appearance by 67%.
2) Taking into consideration the improved scores over the Likert scale, prosthetic intervention in the form of obturators, can be attributed to ameliorate the functionality and aesthetics of patients affected by post-covid Mucormycosis.

The limitations of this study highlights the need for more studies with increased sample size and over a more longitudinal temporal scale to better evaluate the effects of oral rehabilitation in such patients.

References

1. Alekseyev K, Didenko L, Chaudhry B. Rhinocerebral mucormycosis and COVID-19 pneumonia. Journal of medical cases. 2021 Mar;12(3):85.
2. Rogers SN, McNally D, Mahmood M, Chan M, Humphris GM.Psychologic response of the edentulous patient following primary surgery for oral cancer: A cross-sectional study. J Prosthet Dent 1999;82:317–321.
3. Cawood JI, Stoelinga PJW. International academy for oral and facial rehabilitation—Consensus Report [published online ahead of print January 19, 2006]. Int J Oral Maxillofac Surg 2006;35:195–198.
4. Pace-Balzan A, Cawood JI, Howell R, Butterworth CJ, Lowe D,Rogers SN. The further development and validation of the Liverpool Oral Rehabilitation Questionnaire: A cross-sectional survey of patients attending for oral rehabilitation and general dental practice [published online ahead of print September 26, 2005].Int J Oral Maxillofac Surg 2006;35:72–78.
5. Pace-Balzan A, Butterworth CJ, Dawson L, Lowe D, Rogers SN.The further development and validation of the Liverpool Oral Rehabilitation Questionnaire (LORQ) version 3: A cross-sectional survey of patients referred to a dental hospital for removable prostheses replacement. J Prosthet Dent 2008;99:233–242.
6. Singh AK, Singh R, Joshi SR, Misra A. Mucormycosis in COVID-19: a systematic review of cases reported worldwide and in India. Diabetes & Metabolic Syndrome: Clinical Research & Reviews. 2021 May 21.
7. Gowda M, Shashidhar MP, Prakash P, Sahoo NK. Rehabilitation of a defect secondary to sino-orbital mucormycosis-A prosthodontic challenge. IP Annals of Prosthodontics and Restorative Dentistry. 2021 Feb 15;7(1):41-5.
8. Pace-Balzan A, Butterworth C, Lowe D, Rogers SN. The responsiveness of the Liverpool Oral Rehabilitation Questionnaire (LORQ): a pilot study. International Journal of Prosthodontics. 2009 Sep 1;22(5).
9. Dholam KP, Dugad JA, Sadashiva KM. Impact of oral rehabilitation on patients with head and neck cancer: A study using the Liverpool Oral Rehabilitation Questionnaire and the Oral Health Impact Profile-14. The Journal of prosthetic dentistry. 2017 Apr 1;117(4):559-62.
10. Dholam K, Chouksey G, Dugad J. Impact of Oral Rehabilitation on Patients with Head and Neck Cancer: Study of 100 Patients with Liverpool Oral Rehabilitation Questionnaire and the Oral Health Impact Profile. Indian Journal of Otolaryngology and Head & Neck Surgery. 2020 Sep;72(3):308-12.
11. Matsuyama M, Tsukiyama Y, Koyano K. Objective clinical assessment of change in swallowing ability of maxillectomy patients when wearing obturator prostheses. International Journal of Prosthodontics. 2005 Nov 1;18(6).

Original **Article**

Translation and Validation of Marathi Version of Oral Health Impact Profile-14, a Measure of Oral Health-Related Quality of Life

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ABSTRACT

Background: A quality of life (QoL) assessment tool needs to be translated and validated in the language of the participants to whom it is administered. Therefore, the oral health impact profile-14 (OHIP-14) scale, developed originally in English, has been translated into different languages like Hindi, Gujrati, etc. The Marathi version of OHIP-14 will be useful to assess in regions where the Marathi language is prominently spoken. Thus, the present study was carried out to translate and validate the Marathi version of the OHIP-14 instrument to measure the oral health-related quality of life.

Aims & Objectives: To translate and validate the English Version of the OHIP-14 instrument in the Marathi Language.

Materials and Methods: This was a descriptive cross-sectional study in which 128 participants were selected through a convenient sampling method. The English version of the OHIP-14 was translated using the forward-backward translation technique, and participants were given English and the Marathi versions of the OHIP-14 questionnaire. The filled questionnaires were subjected to statistical analysis.

Result: The difference in mean scores was not statistically significant(p=0.828). Pearson's correlation coefficient test was 0.999, suggesting that the translated Marathi version is highly correlated with the original English version.

Conclusion: The Marathi version of OHIP-14 is a valid, and reliable instrument for assessing QoL among the population who speak Marathi.

Introduction:

Quality of life (QoL) is a principle that is closely related to two critical aspects of life: disease and health.[1]The QoL in relation to oral health focuses on the importance of oral health in relation to the satisfaction or dissatisfaction of his or her life's interest areas.[2]There are various sociodental indicators which assess the extent to which oral and dental conditions interfere with social life. This has highlighted the need for the development of a regionally accepted index to assess an individual's health related QoL.[3]

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Since the OHIP14 was originally developed in English[4] it became difficult to administer this questionnaire in places where the local language was different.[5] As a result, many translated versions of OHIP14 were developed, including Romanian [6,7] ,Hindi [7,8], Gujrati [9], German, and Swedish. All of these translated versions include a validated and accurate instrument for assessing OHR QoL.

Few studies have been conducted to date to evaluate the effects of oral health on QoL, and those that have been conducted used the English version of OHIP14 because the

Marathi version (local language version) of OHIP14 was not available.

As a result, the current study was carried out in order to translate and validate a Marathi version of the OHIP-14 scale for accurate results.

Materials and Methods:
This was a descriptive cross-sectional study, which included 128 participants from the Vidarbha region of Central India. Participants were selected through a convenient sampling method. The study was conducted after obtaining approval from the Institutional Ethics Committee. The sample size for the study was calculated based rule of thumb suggesting four to ten participants per variable [11] and as per a previous study.[9]

A minimum of 128 participants was required for the proposed study to get 0.8 reliability to compare with 0.9 population reliability at 1% risk and 90% power.

Inclusion criteria were participants aged 20 years or more and who know to read and understand Marathi and English.

Exclusion Criteria were individuals who were not willing to take part in the study.

Translation procedure:
- The World Health Organization method of translation [12] was used to translate the English OHIP14 questionnaire into Marathi, which entails the following steps:
- The OHIP-14 questionnaire was translated from English into Marathi by a bilingual translator (forward translation)
- The principal investigator has assembled a bilingual expert panel. The panel consists of the original translator, health experts, and instrument development and translation experts. The panel discussed the forward-translated questionnaire, and the suggested recommendations were incorporated into the questionnaire.
- Following the panel discussion, another bilingual independent translator translated the modified questionnaire into English.
- The English version of the questionnaire was validated once more with the expert's input. Hence, content validity was done with the subject expert's opinion (back-translation).

Validation procedure:
128 participants were selected from the institutional OPD according to the inclusion criteria.

The participants were informed about the nature of the study and a signed informed consent form was obtained along with a participant information sheet. The participants received both English as well as Marathi questionnaires of OHIP-14. The filled questionnaires were collected, analyzed, and then the score was obtained. The obtained data were subjected to statistical analysis.

Reliability:
To assess reliability, a validated Marathi OHIP-14 questionnaire was distributed to twenty respondents, and their responses were collected twice. The questionnaire was distributed to the same respondents the first time. The second time, questions were reshuffled and the questionnaire was distributed to the same respondents.
Statistical analysis

Descriptive statistics such as mean, standard deviation, and range were obtained for the participant's age, while frequencies and percentages were obtained for the individuals' gender and educational levels. Furthermore, the frequencies and percentages for each question were obtained in both English and Marathi. The Wilcoxon signed-rank test was used to compare the mean total score of individuals in English and Marathi. To determine the relationship between total scores in two languages, Pearson's correlation coefficient was obtained. The analysis was carried out using IBM Corp's SPSS version 20.0 software, and statistical significance was tested at a 5% level.

Results:
There were 128 individuals included in the study and the mean age of individuals was 46.74 ± 13.73 years, minimum being 20 years and maximum being 90 years [ref. Table1]. The number of males were 78 (60.9%), which was greater than the number of females, which were 50 (39.1%). With regards to education level, 78 (60.9%) individuals were graduate, followed by 33 (25.8%) with post-graduate, 11 (8.6%) with higher secondary level, and 6 (4.7%) with the secondary level. The frequency distribution of responses to the different questions in English and the Marathi language were analyzed. All questions had 128 responses each, both in Marathi as well as in English. There was a total of 14 mismatched responses across all the questions.

Tables

Table 1: Descriptive statistics for demographic parameters of individuals

Parameter	N (%)
Total responses	128 (100)
Age in years	
Mean ± SD	46.74
Minimum age	20
Maximum age	90
Sex	
Male	78 (60.9)
Female	50 (39.1)
Education	
10th pass	6 (4.7)
12th pass	11 (8.6)
Graduate	78 (60.9)
Post-graduate	33 (25.8)

Table 2: Mismatch of response to each question according to gender

Questions		N (%)]	
		Male	Female
Q1	Match	77 (98.7)	50 (100)
	Mismatch	1 (1.3)	0
Q2	Match	78 (100)	50 (100)
Q3	Match	75 (96.2)	50 (100)
	Mismatch	3 (3.8)	0
Q4	Match	77 (98.7)	50 (100)
	Mismatch	1 (1.3)	0
Q5	Match	78 (100)	50 (100)
	Mismatch	0	0
Q6	Match	78 (100)	49 (98)
	Mismatch	0	1 (2)
Q7	Match	78 (100)	50 (100)
Q8	Match	76 (97.4)	50 (100)
	Mismatch	2 (2.6)	0
Q9	Match	77 (98.7)	50 (100)
	Mismatch	1 (1.3)	0
Q10	Match	76 (97.4)	50 (100)
	Mismatch	2 (2.6)	0
Q11	Match	78 (100)	50 (100)
Q12	Match	77 (98.7)	50 (100)
	Mismatch	1 (1.3)	0
Q13	Match	76 (97.4)	50 (100)
	Mismatch	2 (2.6)	0
Q14	Match	77 (98.7)	50 (100)
	Mismatch	1 (1.3)	0

Table 3: Responses to questions according to educational level

Questions		Education [No. (%)]			
		10th passed	12th passed	Graduation	Post-graduation
Q1	Match	6 (100)	11 (100)	77 (98.7)	33 (100)
	Mismatch	0	0	1 (1.3)	0
Q2	Match	6 (100)	11 (100)	78 (100)	33 (100)
Q3	Match	6 (100)	11 (100)	75 (96.2)	33 (100)
	Mismatch	0	0	3 (3.8)	0
Q4	Match	6 (100)	11 (100)	77 (98.7)	33 (100)
	Mismatch	0	0	1 (1.3)	0
Q5	Match	6 (100)	11 (100)	78 (100)	33 (100)
Q6	Match	6 (100)	11 (100)	77 (98.7)	33 (100)
	Mismatch	0	0	1 (1.3)	0
Q7	Match	6 (100)	11 (100)	78 (100)	33 (100)
Q8	Match	6 (100)	11 (100)	77 (98.7)	32 (97)
	Mismatch	0	0	1 (1.3)	1 (3)
Q9	Match	6 (100)	11 (100)	77 (98.7)	33 (100)
	Mismatch	0	0	1 (1.3)	0
Q10	Match	6 (100)	11 (100)	76 (97.4)	33 (100)
	Mismatch	0	0	2 (2.6)	0
Q11	Match	6 (100)	11 (100)	78 (100)	33 (100)
Q12	Match	6 (100)	11 (100)	78 (100)	32 (97)
	Mismatch	0	0	0	1 (3)
Q13	Match	6 (100)	11 (100)	77 (98.7)	32 (97)
	Mismatch	0	0	1 (1.3)	1 (3)
Q14	Match	6 (100)	11 (100)	77 (98.7)	33 (100)
	Mismatch	0	0	1 (1.3)	0

Table 4: Descriptive statistics for total scores obtained in English and Marathi

Total score					
English			Marathi		
Mean	SD	Median	Mean	SD	Median
32.39	9.06	34	32.38	9.07	34

Figures

Figure 1: Translated Marathi version of OHIP-14 instrument

तोंडी प्रकृती प्रभाव प्रोफाईल

क्र.	विवरण	1	2	3	4
1.	तुमच्या दात तोंड किवा कवळी मुळे शब्द उच्चारण्यात तुम्हाला अडचण होते कार				
2	तुमच्या दात,तोंड किवा कवळी च्या समस्यांमुळे तुमची चव अनुभवण्याची क्षमता कमी झाली असे वाटते का?				
3	तुम्हाला कधी तोंडात तीव्र दुखणे जाणवले आहे का?				
4	दात. तोंड किंवा कवळी च्या समस्यांमुळे तुम्हाला जेवण करण्यास काही असुविधा झाली का?				
5	तुम्ही तुमच्या दात. तोंड किंवा कवळी मुळे आत्म जागरूक/ भिडस्त (पुढे पुढे न करणारा, होता का?				
6	तुमच्या दात. तोंड किंबा कवळीच्या समस्थेमुळे तम्हाला ताण जाणवतो का?				
7	तुमच्या दात. तोंड किंवा कवळी च्या समस्पांमुळे आपला आहार असमाधानकारक आहे का?				
8	दात, तोंड किंबा कवळी च्या समस्यांमुळे तुम्हाला जेवणयात व्यत्यय आला आहे का?				
9	तुमच्या दात. तोंड किंवा कवळी च्या समस्यांमुळे आपल्याला आराम करणे कठीण झाले आहे का?				
10	तुमच्या दात. तोंड किंवा कवळी च्या समस्येमळे तुम्हाला काही प्रमाणात लाज वाटते का ?				
11	तोंड किंवा कवळी च्या समस्पांमुळे इतर लोकावर तुम्ही थोडे प्रमाणात 'चिडचिपण केले का?				
12	दात किंवा कवळी च्या समस्यांमुळे तम्हाला तुमचे दैनंदिन/नेहमीचे काम करण्यातअडचण येते का ?				
13	दात, तोंड किंवा कवळी च्या समस्यांमुळे तमचे सामान्य जीवन कमी समाधानकारक झाले आहे असे वाटत आहे का?				
14	दात, तोंड किंवा कवळी च्या समस्यांमुळे पर्ण रुपाने कार्य करण्यास तुम्हाला असमर्थता				

अनुक्रमणिका: 1—कधीही नाही. 2—क्वचितच 3—कधी कधी, 2 अनेकदा. 5— नेहमी

Figure 2: Scatter plot showing the relationship of total Scores in English and Marathi

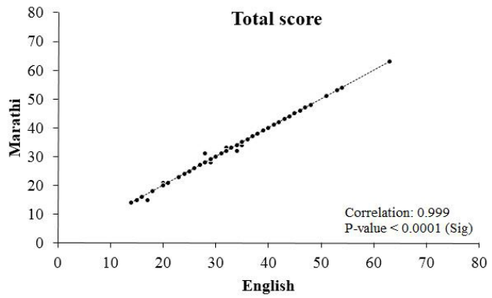

Table 5: Distribution of Liverpool Oral Health Scale Post-Treatment Scores n (%)

Question	Never (1)	Sometimes (2)	Often (3)	Always (4)
Did food particles collect under your tongue?	26 (54.2)	18 (37.5)	3 (6.3)	1 (2.1)
Did food particles stick to your palate?	7 (14.6)	25 (52.1)	14 (29.2)	2 (4.2)
Did you have mouth dryness ?	19 (39.6)	24 (50.0)	4 (8.3)	1 (2.1)
Did you experience difficulty with swallowing solids ?	7 (14.6)	15 (31.3)	18 (37.5)	8 (16.7)
Did you experience difficulty with swallowing liquids ?	6 (12.5)	32 (66.7)	7 (14.6)	3 (6.3)
Did you have problem with drooling ?	18 (37.5)	22 (45.8)	8 (16.7)	0 (0.0)
Did you experience problems with speech ?	8 (16.7)	29 (60.4)	7 (14.6)	4 (8.3)
Have you been upset by your facial appearance ?	6 (12.5)	25 (52.1)	12 (25.0)	5 (10.4)
Did your chewing ability affect your social life ?	8 (16.7)	34 (70.8)	3 (6.3)	3 (6.3)
Did your chewing ability influence your choice of food?	2 (4.2)	16 (33.3)	7 (14.6)	23 (47.9)
Did your oral prosthesis cause soreness or ulceration of the gums?	2 (4.2)	39 (81.3)	6 (12.5)	1 (2.1)
Did your extraoral prosthesis cause soreness or ulcers?	--	--	--	--
Did you find food particles collecting under your intraoral prosthesis?	8 (16.7)	29 (60.4)	9 (18.8)	2 (4.2)
Were you worried that your intraoral prosthesis may fall out ?	15 (31.3)	23 (47.9)	4 (8.3)	6 (12.5)
Were you worried that your extraoral prosthesis may fall out ?	--	--	--	--
Were you embarrassed about conversing because of your intraoral prosthesis ?	8 (16.7)	23 (47.9)	14 (29.2)	3 (6.3)
Have you refused dinner/invitations because of embarrassment about intraoral prosthesis?	20 (41.7)	25 (52.1)	2 (4.2)	1 (2.1)
Have you felt loss of self confidence because of embarrassment about your prosthesis?	5 (31.3)	26 (54.2)	5 (10.4)	2 (4.2)

Table 6: Comparison of pre and post scores

Question	Pre mean (SD)	Post mean (SD)	p value
Did food particles collect under your tongue ?	1.73 (0.818)	1.56 (0.712)	0.023*
Did food particles stick to your palate ?	3.04 (0.824)	2.23 (0.751)	0.001*
Did you have mouth dryness ?	1.73 (0.574)	1.73 (0.707)	1.000(NS)
Did you experience difficulty with swallowing solids ?	3.25 (0.812)	2.56 (0.943)	0.001*
Did you experience difficulty with swallowing liquids ?	3.40 (0.767)	2.15 (0.714)	0.001*
Did you have problem with drooling ?	2.75 (1.062)	1.79 (0.713)	0.001*
Did you experience problems with speech ?	3.35 (0.635)	2.15 (0.799)	0.001*
Have you been upset by your facial appearance ?	3.13 (0.733)	2.33 (0.834)	0.001*
Did your chewing ability affect your social life ?	3.29 (0.824)	2.02 (0.699)	0.001*
Did your chewing ability influence your choice of food?	3.56 (0.580)	3.06 (0.998)	0.005*
Did your oral prosthesis cause soreness or ulceration of the gums ?	-	-	-
Did your extraoral prosthesis cause soreness or ulcers?	-	-	-
Did you find food particles collecting under your intraoral prosthesis?	-	-	-
Were you worried that your intraoral prosthesis may fall out ?	-	-	-
Were you worried that your extraoral prosthesis may fall out ?	-	-	-
Were you embarrassed about conversing because of your intraoral prosthesis ?	-	-	-
Have you refused dinner/invitations because of embarrassment about intraoral prosthesis?	-	-	-
Have you felt loss of self confidence because of embarrassment about your prosthesis?	-	-	-

Wilcoxon signed rank test; * indicates significant difference at p≤0.05; NS: Non-significant difference; Lower mean values represent less of a problem. For all the individual questions, LORQ showed a significant decrease following the treatment (p<0.05) except for Q3 where there was no significant difference between pre and post scores.

Validation:

Table 4 shows the average total score obtained across all the questions by individuals in English as well as Marathi. The mean total score for individuals in English was 32.39 ± 9.06, while that in Marathi was 32.38 ± 9.07. The difference between the total scores obtained in English and Marathi was statistically not significant (p=0.828) using Wilcoxon signed-rank test.

Also, a scatter plot showing the correlation between the total scores in English and Marathi was obtained (Figure 2). There was a significantly strong positive correlation between the two versions with a coefficient of 0.999 and with a p-value < 0.0001.

Discussion:

Any tool used to assess QoL must be validated in the language of the participants who will be using it. It is necessary to develop a culturally sensitive instrument to assess the OHR QoL of Marathi people.

In this study, the proper translation of the Marathi version of OHIP14 was achieved in this study through forward and backward translation, which was verified to be a genuine and appropriate translation of the Marathi version of OHIP14 by two experts in the field of public health dentistry who were fluent in both English and Marathi.

The data collected from each subject in this study included the patient's age, gender, and educational level, as well as their responses to each question. In addition, the frequencies and percentages for the questions were collected in both English and Marathi language. The frequency distribution of responses to the different questions in English and Marathi revealed a total of 14 mis-matched responses across all the questions. There was one mismatch for questions related to pronunciation, while three mismatches for questions related to the pain or aching in the mouth. There was one mis-matched response related to discomfort during eating, while one mis-matched response for stress because of the denture. There were two mis-matched responses to question related to interruption while eating because of the teeth problem. There was one mis-matched response related to relaxation due to a problem in teeth. Two responses were mis-matched while answering the question related to embarrassment due to teeth problems or dentures, while one individual showed a mismatch for questions related to difficulty in doing the routine jobs. There were two mis-matched responses to question related to satisfaction level about the teeth or denture, while one mis-matched on the complete functionality aspect.

As per gender, most of the mismatched responses were from males and there was only one mis-matched response amongst females. [Table 2]

As per educational level, no mismatches were seen in responses from 10th & 12th passed individuals but were seen in responses from graduates & post-graduates. Graduates had more mismatched responses (12) than post-graduates (3). [Table 3]

The mean total score for individuals in English was 32.39 ± 9.06, while that in Marathi was 32.38 ± 9.07. Using the Wilcoxon signed-rank test, the difference between the total scores obtained in English and Marathi was found to be statistically not significant (p=0.828).

A minimum of 80% correlation between the original version and the translated version is necessary for the validation of any newer translated version.[7,8,9] Pearson's correlation coefficient between the original English and translated Marathi versions of OHIP14 was high in the current study (0.999). As a result, the correlation between the English and Marathi versions of OHIP14 was calculated to be 99 percent, indicating that the English and Marathi versions are highly correlated.

The current study's strength is its 100% response rate, which ensured that all participants comprehended the questions.

Conclusion

The findings of the present study indicate that the Marathi version of OHIP-14 is a reliable and valid measure to evaluate the effect of oral health on the QoL of respondents who speak and understand only Marathi.

Limitation of the study

In the present study male and female participants were 78 (72%) and 50(28%) respectively. Thus, the proportion does not represent the actual ratio between males and females.

For proper representation/depiction of gender, a more robust sampling technique is advocated.

References :

1. Hodacová L, Smejkalová J, Cermáková E, Slezák R, Jacob V, Hlavácková E. Oral health-related quality of life in Czech population. Cent Eur J Public Health 2010;18: 76-80.
2. Sanders AE, Slade GD, Lim S, Reisine ST. Impact of oral disease on quality of life in the US and Australian populations. Community Dent Oral Epidemiol 2009;37: 171-81.
3. Atchison KA, Dolan TA. Development of the geriatric oral health assessment index. J Dent Educ 1990;54 :680-7.
4. Batra M, Aggarwal VP, Shah AF, Gupta M. Validation of Hindi version of oral health impact profile-14 for adults. J Indian Assoc Public Health Dent 2015;13: 469.
5. Vikram M, Singh VP. Translation and validation of the Nepalese version of oral health impact profile (OHIP-14) questionnaire. Oral Biol Dent 2014;2: 3.
6. Slusanschi O, Moraru R, Garneata L, Mircescu G, Cuculescu M, Preoteasa E. Validation of a Romanian version of the short form of the oral health impact profile (OHIP-14) for use in an urban adult population. Oral Health Prev Dent 2013;11: 235-42.
7. Deshpande NC, Nawathe AA. Translation and validation of Hindi version of oral health impact profile-14. J Indian Soc Periodontol 2015;19: 208-10.
8. Verma S, Sharma H. Translation and validation of Hindi version of oral health impact profile-14, a measure of oral health-related quality of life of geriatrics. Indian J Dent Res. 2019;30(2):180–4.
9. Goje SK, Patel J, Kalyan P, Kulkarni N, Shah R, Modi B. Translation of english version of oral health impact profile-14 into Gujarati. J Int Oral Health 2017;9: 16-9.
10. John MT, Patrick DL, Slade GD. The German version of the Oral Health Impact Profile--translation and psychometric properties. Eur J Oral Sci. 2002;110(6):425–33.
11. Terwee CB, Bot SDM, de Boer MR, van der Windt DAWM, Knol DL, Dekker J, et al. Quality criteria were proposed for measurement properties of health status questionnaires. J Clin Epidemiol. 2007;60(1): 34–42.
12. World Health Organization. Process of translation and adaptation of instruments. 2007.

Original **Article**

Tympanic Plate Fracture In Maxillofacial Trauma: A CBCT Evaluation

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Running title: Evaluation of Tympanic plate fracture using CBCT

ABSTRACT

Background : Tympanic plate fraucture (TPFs) are uncommon and are usually associated with trauma of temporal and mandibular bone, with or without additional fractures. TPF can lead to complications like external auditory canal stenosis , deafness and trismus.

The purpose of this study is to retrospectively review acute post traumatic CBCT images of maxillofacial trauma cases to evaluate the prevalence of TPF and associated injury.

Material Method : A retrospective study was performed to evaluate patients with maxillofacial trauma who underwent Cone Beam Computed Tomography (CBCT) examination of temporal bone from 2015 to 2019.

Results : Present study showed the prevalence of TPF in maxillofacial trauma is 17.5%. 45 cases of TPF were associated with mandibular trauma (169) thus the prevalence of TPF in mandibular trauma is 26.7%. In present study, significant association was observed between TPF and condylar fracture or combination of condylar and parasymphysis fractures.

Conclusion: Patients with maxillofacial trauma, especially mandibular trauma should be evaluated for TPFs. Early detection and treatment are warranted because these cases have potential for serious complications.

Keywords : Condyle, fracture, maxillofacial, tympanic plate, trauma

Introduction

The tympanic plate of the temporal bone is a U-shaped structure forming the anterior wall, floor, and part of the posterior wall of the external auditory canal.1It is an important anatomic structure because of its neurovascular relation to the base of the cranium and otologic structures and proximity to the temporomandibular joint (TMJ).2Tympanic plate fractures (TPFs) are uncommon and are usually associated with trauma to the temporal or mandibular bone, with or without additional fractures.[3]

Tympanic plate fractures(TPFs) are important to identify, given the potential for the clinically significant long-term complications of external auditory canal stenosis, TMJ dysfunction, prolapse of the mandibular condyle into external auditory canal, and facial nerve paralysis.[4]

Cone Beam Computed Tomography(CBCT) has evolved as a major diagnostic modality in diagnosing pathologies related to hard tissue of face. It gives 3D images enabling visualization of structures in all three sections (Axial, Coronal, Sagittal) thus making diagnosis easy and accurate.

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CBCT has various application, the major one being implant planning, assessment of trauma cases, benign lesions and malignancy etc. It is well documented that fractures of mid face and mandible are accurately diagnosed by CBCT. But studies showing fractures of tympanic plate diagnosed by CBCT are few till date. Most studies1,4,5 reported evaluation of temporal plate fracture through CT (Computed Tomography)but comparably the CBCT(Cone Beam Computed Tomography) is more advantageous due to its low radiation exposure and isometric voxels.

Thus, the present study was planned to evaluate prevalence and association of TPF with maxillofacial trauma using CBCT.

Materials And Method

The present study was conducted in Dental College and Hospital in Oral Medicine and Radiology Department. The study was designed as a retrospective observational study. An approval from the institutional ethics committee was obtained regarding the study design.CBCT scans (CBCT machine, PLANMECA, ProMax, 3D, Mid, Oy, Asentajankatu 6, FIN-00880 Helsinki, Finland) of maxillofacial trauma cases from the departmental archives from 2015 to 2019 were evaluated. The CBCT parameters were FOV- 10 x 17 cm, Kvp-90, mA- 12 and exposure time 24 seconds. CBCT scans not involving temporal bone area, follow up and post treatment CBCT scans and CBCT scans with unacceptable image quality were excluded from this study.

Data Collection Methods

The previously scanned DICOM(Digital Imaging and communications in medicine) images were analyzed using DICOM Image Viewer (PLANMECA Romexis Viewer, version 3.8.0R).CBCT scans were evaluated by two oral & maxillofacial radiologist having more than one year experience (Separately) and were blinded to the original diagnosis or report.

Images fulfilling the inclusion criteria were reconstructed in all three planes (Sagittal, coronal and axial) with 0.2 mm thickness and TPFs were identified and confirmed in all three planes (Fig 1,2, & 3). TPF was confirmed if there was a visible fracture extending through the tympanic plate that was clearly distinct from the petrotympanic fissure.

The recorded data was analysed using SPSS software version 16. Statistical test was done after collection of data using unpaired t test and chi square test.

Results

564 CBCT scans of maxillofacial trauma cases fulfilled the inclusion criteria and were screened thoroughly. There were 99 TPFs evident accounting for an overall prevalence of 17.5% in maxillofacial trauma (Table 1).

Figure 1: DICOM image Shows TPF in Axial plane

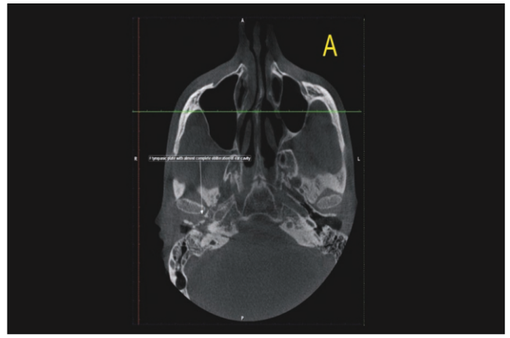

Figure 2 – DICOM image Shows TPF in Coronal Plane

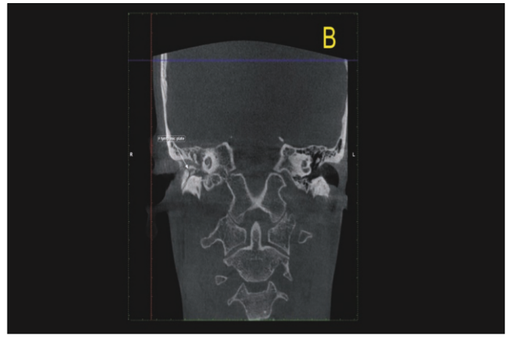

Fig 3- DICOM image Shows TPF in Sagittal plane

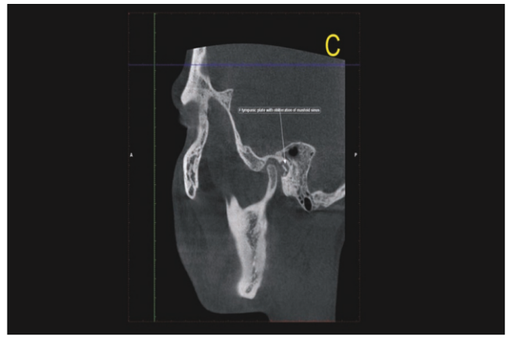

Table 1 - Prevalence of TPF in maxillofacial trauma

Total maxillofacial trauma	Total TPF in maxillofacial trauma	Prevalence
17.5	564	99%

Table 2 shows the prevalence of TPF in different types of maxillofacial trauma cases. The highest prevalence of 26. 7% was evident in mandibular trauma cases, followed by 19.5% in maxillary trauma cases and 2.3% of isolated TPFs.

Table 2 - Prevalence of isolated TPF in maxillofacial trauma and prevalence of TPF in maxillary trauma & mandible trauma

Prevalence of isolated TPF	Isolated TPF – 13	2.3 %
	Total maxillofacial trauma - 564	
Prevalence of TPF in maxillary trauma	Total TPF in maxillary trauma – 41	19.5%
	Total maxillary trauma – 210	
Prevalence of TPF in mandible trauma	TPF in mandibular trauma - 45	26.7%
	Total mandibular trauma – 169	

In maxillary fracture, out of the 97 cases of ZMC fracture, 16 cases were associated with TPFs showing insignificant association (P value - 0.39) [Table 3].

Table 3 - Association of TPF with ZMC fractures

ZMC #	TPF present	TPF absent	P value
Present	16 (39%)	97(46.1%)	0.39
Absent	25	113	
Total	41	210	

Similar insignificant association was also noted with Lefort III fracture. There were total 46 cases of Lefort III fracture, out of which 13 cases of Lefort fracture were associated with TPF (P value – 0.17) [Table 4].

Table 4 - Association of TPF with Lefort III fractures

Lefort III	TPF present	TPF absent	P value
Present	13(31.7%)	46(21.9%)	0.17
Absent	28	164	
Total	41	210	

In 169 mandibular fracture, there were 41 cases of parasympysis fracture out of which 15 cases had TPFs accounting for non-significant association (P value 0.48%) [Table 5]. But in case of condylar fractures, out of 21 cases 15 cases showed presence of TPFs accounting for a significant association (Pvalue-0.02%) [Table 6].

Table 5 - Association of TPF with parasymphysis fractures

parasymphysis #	TPF present	TPF absent	P value
Present	15(33.3%)	41(33.06%)	0.48
Absent	30	83	
Total	45	124	

Table 6 - Association of TPF with condylar fractures

Condylar #	TPF present	TPF absent	P value
Present	15(33.3%)	21(16.09%)	0.02
Absent	30	103	
Total	45	124	

In cases of combination condylar and parasymphysis fractures (n=15), total 9 cases of TPF were evident accounting for a significant association between TPF and condylar and parasymphysis fracture (Pvalue-0.002%).[Table 7].

Table 7 - Association of TPF with condylar and parasymphysis fractures

Condylar and parasymphysis#	TPF present	TPF absent	P value
Present	9(20%)	6(4.8%)	0.002
Absent	36	118	
Total	45	124	

Discussion

The tympanic plate is the anterior wall segment of the tympanic portion of the temporal bone, interposed between the external auditory canal and the glenoid fossa. Literature reports TPF as uncommon and rare type of fracture.6-9 But the finding of present study is in contradistinction with this statement. Present study showed 17.5 % prevalence of TPF in maxillofacial trauma cases using CBCT. In mandibular trauma, 26.7% prevalence was noted, which favors the findings found in the literature, suggesting TPF to be secondary to mandibular fracture.10-12

The second objective of present study was to assess the association of TPF with other maxillofacial fractures. In present study, significant association of TPF was found with condylar fracture and combination of condylar and parasymphysis fracture. The possible reason behind this association could be that the trauma to the mandible can displace the condyle posteriorly and these forces might be absorbed by the soft tissue posterior to condyle leading to TPFs.

Patients with TPFs can present with a wide range of clinical features. These clinical features include hemorrhage or edema involving the EAC, deep pain within the ear and pre-auricle region, hypoacusis and trismus.3In patients with TPFs, injury to soft tissue of the TMJ can cause retrodiscal tissue inflammation, which can lead to temporomandibular disorders(TMD).Persistent TMD can be an underlying cause of trismus and pain in TPF patients. Therefore, all maxillofacial trauma cases should be thoroughly evaluated for persistent hypoacusis, trismus, and pain in the auricular or pre-auricular region because these specific observations could be an important diagnostic tool for TPFs.

Further research including more number of maxillofacial trauma cases and quantitative assessment tools to evaluate TPF could further clarify the true associations of these type of fractures with that of maxillofacial trauma cases.

Conclusion

Patients with maxillofacial trauma, especially mandibular trauma should be evaluated for TPFs. Early detection and treatment is warranted because these cases have potential for serious complications.

References :

1. Wood CP, Hunt DC, Bergen DC. Tympanic Plate Fractures in Temporal Bone Trauma: Prevalence and Associated Injuries. AJNR Am J Neuroradiol 35:186 –90 Jan 2014
2. Chong VF, Fan YF. Technical report. External auditory canal fracture secondary to mandibular trauma. Clin Radiol 2000;55:714-6.
3. Kalaskar A, Kalaskar R. Isolated tympanic plate fracture detected by cone-beam computed tomography: report of four cases with review of literature. J Korean Assoc Oral Maxillofac Surg 2017;43:356-360
4. Zayas JO, Feliciano YZ, Hadley CR, Gomez AA, Vidal JA. Temporal bone trauma and the role of multidetector CT in the emer - gency department. Radiographics 2011;31:1741-55
5. Liebetrau R, Draf W, Kahle G. Temporal bone fractures: high resolution CT. J Otolaryngol 1993;22:249 –52
6. Zayas JO, Feliciano YZ, Hadley CR, et al. Temporal bone trauma and the role of multidetector CT in the emergency department. Radiographics 2011;31:1741–55
7. Gomes MB, Guimaraes SM, Filho RG, et al. Traumatic fractures of the tympanic plate: a literature review and case report. Cranio 2007;25:134 –37
8. Coulier B. Tympanic plate fracture following mandibular trauma with emphasis on 3D imaging. JBR-BTR 2011;94:85
9. Iannetti G, Martucci E. Fracture of glenoid fossa following mandibular trauma. Oral Surg Oral Med Oral Pathol 1980;49:405–08
10. M Psimopoulou, K Antoniades, D Magoudi, D Karakasis. Tympanic plate fracture following mandibular trauma. Dentomaxillofac Radiol. 1997 Nov;26(6):344-6
11. MT Shu, HC Lin, YC Chen, JK Haung. Mandibular condyle and tympanic plate fracture causing external auditory canal stenosis. Otol Neurotol. 2010 Jan;31(1):173-4.
12. Gomes MB, Guimaraes MR, Filho RG, Neves ACC. Traumatic fractures of the tympanic plate: a literature review and case report. Cranio.2007 Apr;25(2):134-7.

Case **Report**

Rehabilitation Of Maxillary Defect In A Patient With Post-covid Mucormycosis With A Definitive Obturator: A Case Report

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ABSTRACT The black fungal disease, mucormycosis, has recently been reported in very high numbers due to the COVID-19 outbreak, particularly in India.1 The fungus, invading the blood vessels, leads to necrosis of hard and soft tissues, calling out for an immediate aggressive management, including surgical resections.2 Post-surgical extensive scarring, along with minor intraoral or major midfacial defects in case of rhino-orbito-cerebral mucormycosis, result in significant morbidity among the patients. The acquired defects grossly affect speech, swallowing, and mastication, along with an impact on aesthetics, emotional stress, depression, and an overall quality of life.3 In cases of maxillary resections, the defects can be addressed with obturators or surgically with microvascularised or pedicled flaps. We report a case of patient who underwent partial maxillectomy due to widespread mucormycosis infection, rehabilitated with a definitive obturator to cover the acquired post-surgical maxillary defect.

Case Report

A 52-year-old male patient reported to the department of Prosthodontics with a chief complaint of nasal regurgitation of food and speech difficulty after being operated for COVID-19 associated rhinoorbital mucormycosis, eight months back. Intraoral examination revealed a large maxillary defect on the left side with partially edentulous arch and an oroantral fistula (Figure 1). To rehabilitate the functional demands of the patient, fabrication of a definitive obturator by single flask technique was planned.

Obturator Fabrication Technique

According to the obturator design principles proposed by Aramany in 1978,4 a linear design for a Class I maxillary defect was selected, with the remaining palatal tissues exploited as a support and embrasure clasp and I Bar for retention, which was made on the remaining intact dentition.

A diagnostic impression was recorded with an irreversible hydrocolloid impression material using a stock tray (Figure 2). mouth preparation is done with proximal rest seat between 16 and 17, 14 and 15(Figure 3). Border moulding was performed and the complete extent of the maxillary defect was recorded using an impression. One mm of the impression compound was scrapped and a second impression was recorded using a light body impression material for the undercuts aiding in anatomic retention of the obturator (Figure 4) and a master cast was poured in type IV gypsum material.

A tripodal configuration for the cast metal framework was designed and transferred on the cast. (Figure 5)

The fabricated cast metal framework was checked intraorally for fit and retention(Figure 6).. jaw relation was recorded and facebow transfer to Hanau articulater(Figure 7,8). Teeth were arranged on the metal framework and a wax try-in was conducted. The waxedup obturator was processed with the conventional single flask technique. A fabricated, finished, and polished obturator was inserted into the patient's mouth along with adequate intraoral adjustments. (Figure 9,10)

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The patient experienced no nasal regurgitation of food and expressed satisfaction with regards to speech and aesthetics. Appropriate hygiene and maintenance instructions were given to the patient and was recalled for periodic check-ups.

Figure 1 – Aramany class 1 maxillary defect

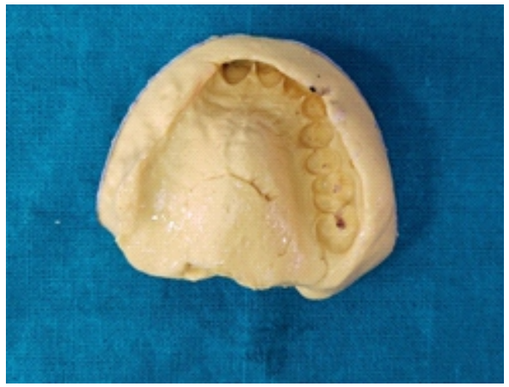

Figure 2 – Diagnostic impression

Figure 3 – Mouth Preparation

Figure 4– Final impression

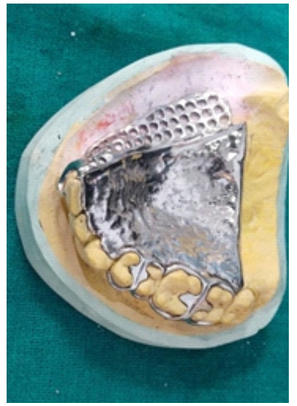

Figure 5– Metal framework

Figure 6– Metal framework

Figure 7 – Facebow Record

Figure 8 – Facebow Transfer

Figure 9 – Final prosthesis delivered

Figure 10 – Final prosthesis delivered

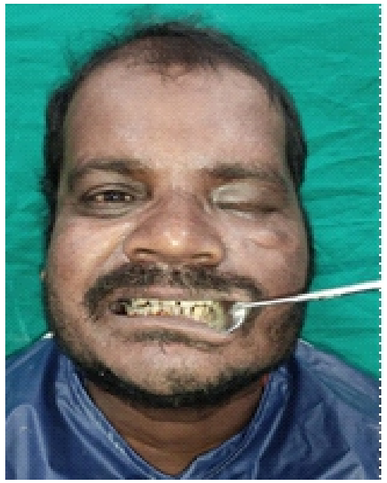

Figure 10 – Postoperative View

Discussion

The incidence of mucormycosis has increased following the outbreak of the COVID-19 pandemic, and so has of the post treatment complications of mucormycosis, of concern to a prosthodontist being the ones involving the rhinoorbital structures. Surgical resection being the most commonly employed treatment strategy for the aggressive fungal infection, rehabilitation of the orofacial defects needs to be addressed effectively. In case of postsurgical maxillary defects, obturators are effective rehabilitation frameworks for the recovery of orofacial functions and aesthetics.5

The designs of the frameworks for obturators are selected as per the classification system for maxillary defect, as done in our case. Moreover, the designing rests on the basic principles of prosthodontics including a broad stress distribution, cross-arch stability with a rigid major connector, and intra-arch stability and retentive components to best minimize the dislodging functional forces.4,6

In this case, the patient was dentate, enabling us to exploit the remaining teeth for the purpose of retention, support, and stability of the obturator. The support for the obturator was gained from the palate, the remaining teeth, and the proximal rest seat prepared between right first, second premolars and first,second molars in the right quadrant of the maxilla. For maximal distribution of functional load, complete palate was included in the design. Retention was ensured with an indirect retainer on the right first premolar and a direct retention through the I-bar clasp on the rihht central incisor, two embrasure clasp between right first, second premolar and between right first and second molars. In this case, we did not find the necessity of retentive aids such as magnets, snap-on attachments, acrylic buttons, etc. Furthermore, the use of implant for the purpose of retention was avoided owing to the cost of the implants and the general health of the patient post COVID-19 and mucormycosis infections. Owing to the metal framework, the patient retained the sensitivity to temperature changes and was ensured about the longevity of the obturator.

Cases exhibiting successful rehabilitation among patients with maxillary defects due to benign or malignant tumors with definitive obturators have been already reported in the literature; however, to the best of our knowledge, our case is one of the preliminary cases to be reported with regards to the fabrication and successful delivery of definitive obturator in a patient with post-surgical maxillary defect due to COVID-19 associated mucormycosis.

Conclusion

Rehabilitation of the maxillary defects due to several pathologies including the recently highlighted fungal infections like mucormycosis, although challenging, can be effectively addressed with appropriate fabrication strategies and by understanding the needs of the patients. Our patient was a middle-aged male, who needed a prosthesis that could enable him to speak and eat food without difficulty. The definitive obturator fabricated in this case effectively improved his food consumption and speech, thereby improving his overall quality of life.

Conflict of Interests

None declared

References :

1. Singh AK, Singh R, Joshi SR, Misra A. Mucormycosis in COVID-19: A systematic review of cases reported worldwide and in India. Diabetes and Metabolic Syndrome: Clinical Research and Reviews. 2021;15(4). doi:10.1016/j.dsx.2021.05.019
2. Skiada A, Lass-Floerl C, Klimko N, Ibrahim A, Roilides E, Petrikkos G. Challenges in the diagnosis and treatment of mucormycosis. Medical Mycology. 2018;56:S93-S101. doi:10.1093/mmy/myx101
3. Alhajj MN, Ismail IA, Khalifa N. Maxillary obturator prosthesis for a hemimaxillectomy patient: A clinical case report. Saudi Journal for Dental Research. 2016;7(2):153-159. doi:10.1016/j.sjdr.2016.03.001
4. Aramany MA. Ihsic Principles of Obturator Design for Partially Edentulous Patients. Part II: Design Principles.
5. Chander N. Mucormycosis and prosthodontic management. Journal of Indian Prosthodontic Society. 2021;21(4):317-318. doi:10.4103/jips.jips_436_21
6. Chaubey P, Tripathi R, Singh A. Rehabilitation of hemi-maxillectomy with a definite one piece hollow bulb obturator. National Journal of Maxillofacial Surgery. 2018;9(1):82. doi:10.4103/njms.njms_85_16

Management of Horizontal Root Fracture using MTA - A Case Series

Shivani Thakare, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: To maintain the natural integrity of the dentition root fracture with the help of bio active material MTA. Root fracture has been defined as a fracture involving dentin, cementum, pulp and periodontal ligament. Radicular fractures in permanent teeth are uncommon injuries and account for only 0.5–7% of dental traumas. These fractures commonly result from a horizontal impact and are transverse to oblique in direction. Depending on the level of the fracture line, various treatment modifications can be employed by the clinician to promote healing. This paper highlights case reports highlight how changes in technique allow for conservative management of horizontal root fractures at different levels. These patients presented with complaints of pain and mobility following trauma. Diagnosis was confirmed on the basis of intra-oral periapical radiographs following which root canal treatment was performed. This approach allows the patient to retain their natural dentition with the help of bioactive material (MTA).

Results: Successful and long term follow up of the root fractured segment shows almost exact integrity of the dentition as it was before.

Conclusion: The proper diagnosis of the root fracture case can be managed successfully with the inter disciplinary approach and it maintains the complete functionality.

'Photobiomodulation' - An advanced Treatment Modality in Dentistry

Akshay Wadekar, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: Photobiomodulation is non invasive treatment modality in various maxillofacial pathologies .Studies have shown significant effects in reduction of pain in various orofacial and maxillofacial pathologies.

Results:
1) Implant stability
2) In accelerating orthodontic treatment
3) It affects proliferation of premature osteoblasts
4) Myofacial pain in TMJ
5) Treatment of chronic pain.

Conclusion: So to conclude, in photobiomodulation therapy, a light source is placed contact with the tissues, which allows the light energy to pierce the tissues which in turn interacts with chromophores located in the cells as a result of which photophysical and photochemical changes take place.

Photobiomodulation also tends to increase the speed, along with the quality and tensile strength of tissue repair, which overall aids to resolve inflammation and relieve analgesia.

Effects of Cinnamon in Dentistry

Swamini Suryakant Gabhane, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: The use of herbal medicine in dentistry is usefull in reducing inflammation and controlling plaque formation.

Results: Cinnamon EO show significant antimicrobial activities against oral pathogens

Conclusion: Cinnamon shows antibacterial, antifungal, antioxidant, antimutagenic, antivirus etc activities.

Scaffolds In Periodontal Regeneration

Palak Bhaiyya, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: The periodontium is a well-designed central core made up of numerous tissues that surround and support the tooth. Sustained periodontitis have ability to create havoc on periodontal tissues, leading to tooth loss. Diverse biomaterials which are used as obstacle layer in the coordinated-tissue-recuperation (GTR), which in present is the highest quality level under the dentistry community, to treat periodontally weak teeth. Unique biomaterials have recently been structured in a tissue planning stage to aid in the recovery of injured periodontal tissues. In recent decades, innovations in stage manufacture have ranged from a genuine substrate to aid in the recovery of a specific kind of periodontal tissue to a multiphase/bioactive stage structure to coordinate a coordinated periodontal tissue recovery. This article discusses the new sorts of phases that are being developed for periodontal tissue recovery.

Results : The collaborative approach of biomaterial, cytotheraphy has brought a notable progress in regenerative field of Dentistry and several attempts are made to achieve a successful regenerative material.

Conclusion : The purpose of this paper presentation is to highlights various biomaterial that have significant potential to undergo regeneration.

Scaffolds In Periodontal Regeneration

Rohan Khetan, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: The periodontium is a well-designed central core made up of numerous tissues that surround and support the tooth. Sustained periodontitis have ability to create havoc on periodontal tissues, leading to tooth loss. Diverse biomaterials which are used as obstacle layer in the coordinated-tissue-recuperation (GTR), which in present is the highest quality level under the dentistry community, to treat periodontally weak teeth. Unique biomaterials have recently been structured in a tissue planning stage to aid in the recovery of injured periodontal tissues. In recent decades, innovations in stage manufacture have ranged from a genuine substrate to aid in the recovery of a specific kind of periodontal tissue to a multiphase/bioactive stage structure to coordinate a coordinated periodontal tissue recovery. This article discusses the new sorts of phases that are being developed for periodontal tissue recovery.

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Conclusion : The purpose of this paper presentation is to highlights various biomaterial that have significant potential to undergo regeneration.

Scaffolds In Periodontal Regeneration

Rohan Khetan, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: Need of functional stability and esthetics in adults

Results : Adult orthodontics is beneficial to obtain functional stability and esthetics.

Conclusion : The purpose of this paper is to review the scope, indication, effectiveness and limitations of orthodontic treatment in adult patients.

Preoperative pain and root canal therapy

Muskan Dinesh Chouksey, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: The aim of this prospective study was to investigat correlation between the intensity of preoperative pain.

Results : It provides readers with an understanding of the physiology, pharmacology and psychology of acute pain together with key message for best practice.

Conclusion : The main purpose of this role are to meet the patient's and the family 's needs individually and to prepare them for the scheduled procedure and postoperative recovery.

Effects of cinnamon in dentistry

Akshay Wadekar, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: How cinnamon affects patients dental treatment and help them to recover easily

Results : Without medicine patient can be treated with cinnamon

Conclusion : Easy treatment option with cheap expenses

Proteomics : A boon for Periodontal Regeneration

Bhawana Dajjuka and **Namrata Mangtani,** Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: This paper will focus on proteomics technology and its future in periodontology.

Results : Proteomics will prove to be a blessing and will start a new era of dental treatment planning.

Conclusion : Through this paper we are trying to spread awareness about the future prospects of proteomics to improve the diagnosis and treatment of periodontal diseases.

Gingival depigmentation

Nisarga mahajan, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: Gigival pigmentation how it causes esthetic concern and treatment

Results: Different surgeries are available for the same

Conclusion : Esthetic concern require removal for gingival pigmentation

Gingival depigmentation

Palak Agrawal, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: How Gingival pigmentation causes esthetics issues and whats the treatment for it.

Results : Different surgeries are available

Conclusion : Esthetic concern require removal of pigmented gingiva.

Awareness of adults for functional stability and aesthetics with fixed orthodontics

Shivani Patha and **Nandini Thakrani,** Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: Functional stability with aesthetics

Results : Adult orthodontics is beneficial to obtain functional stability and aesthetics.

Conclusion : The purpose of this paper is to review scope, indication, effectiveness and limitations of orthodontic treatment in adult patients.

Non surgical management of large periapical lesion using calcium hydroxide

Nidhi Raghuwanshi, Government Dental College and Hospital, Nagpur

ABSTRACT

Background: Periapical lesion usually develop in non vital teeth as a result of chronic aggression by the presence of pathogenic microgranisms into the root canal which may appear as radiolucent lesion in radiographs. Treatment of such lesion varies from non surgical endodontic to surgical means depending upon a individual case. In the era of minimally invasive dentistry, non surgical endodontic approach has been highly recommend to promote periapical healing. Oztan and Kalaskar et al. have confirmed that large periapical lesion can respond favorably to nonsurgical treatment using calcium hydroxide paste. Calcium hydroxide plays a pivotal role in such procedures since it has very effective antibacterial properties and special ability of tissue repair by hard tissue formation. Our case report describe the regression of periapical lesions using nonsurgical endodontic treatment along with calcium hydroxide based medicaments.

Results : Large periapical lesion healed by the means of nonsurgical management using calcium hydroxide as intra canal medicament

Conclusion : In this case report, periapical healing was obseserved through through cleaning and prolonged disinfectanting procedure using calcium hydroxide as intra canal medicament. However, periapical surgery may be the only alternative when the tooth with periapical lesions fails to respond to calcium hydroxide as intra canal medicament.

Post Endodontic restoration by fibre post and composite resin

Anjali Gayke, Government Dental College and Hospital, Nagpur

ABSTRACT

Background: Use of fibre post and composite resin as an alternative approach of implant placement

Results : Restoration of fractured crown done successfully with fibre post and composite resin

Conclusion : Post endododontic restoration with fibre post and composite resin exhibit satisfactory results. Thus fibre post with composite resin serve as durable, esthetic, conservative and economical restoration.

Esthetic Management Of Median Diastema_A Case Report

Khushi Chandak, Sharad Pawar Dental College, Sawangi ,Wardha

ABSTRACT

Background: Despite of the increasing cases in Xerostomia, no conventional protocol exists

The subjective experience of oral dryness is referred to as xerostomia[1]. It's more common among older people. Xerostomia is a condition that affects 1-29 percent of the population, predominantly women[2]. Xerostomia can be caused by a variety of salivary and non-salivary factors, the most common of which being drug side effects[3] . The complaint of dry mouth may or may not be associated with decreased salivary gland function. Individuals with xerostomia complain of problems with eating, speaking, swallowing, and wearing dentures. Assessment of salivary gland function, replacement therapy, and prevention of caries and oral candidiasis are all part of xerostomia management. Multidisciplinary and multimodal management is required. A patient with xerostomia (dry mouth sensation) or insufficient saliva may have a variety of clinical signs and symptoms that impair the oral cavity and overall health. Despite the fact that xerostomia affects a large percentage of the population,no conventional treatment protocols exist. Successful treatments are usually tailored to the needs of the particular patient and should focus on the disease's underlying pathophysiology[4]. As a result, a precise diagnosis of xerostomia is critical in order to provide patients with the best available treatment. Medication-induced xerostomia frequently leads to tooth decay and limited restorative alternatives. Because xerostomia has such a substantial impact on a person's quality of life,a multimodal treatment strategy is offered. This paper provides a thorough examination of differential diagnosis of xerostomia, evaluation, and therapy. It is believed that this evaluation would assist dental healthcare providers in better responding to xerostomia patients.

Result : Multimodal treatment and evaluation will help the dental practitioner to deal with Xerostomia patient

Conclusion : Multimodal treatment and evaluation will help the dental practitioner to deal with Xerostomia patient

Esthetic Management of Median Diastema_A Case Report

Faiza Husnat Syed Mohd Akramuddin, Government Dental College and Hospital, Nagpur

ABSTRACT

Background: Closure of median diastema with conservative,esthetic and economical approach using composite resin

Result : On clinical evaluation, results indicated no loss of restoration,no noticeable colour difference with adjacent tooth, gingival health was without any signs of inflammation

Conclusion : Treatment exhibits satisfactory results.thus composite resin are durable, highly esthetic, economical and conservative restoration leading to complete patient satisfaction.

Mesmerizing Concept of Ligaplant

Sidhanti Nyahatkar, VYWS Dental College, Amravati

ABSTRACT

Background: Ligaplant is the next generation prosthodontic implant, which is the upcoming 3G of dentition

Result : Bioengineered implants can be constituted as an modified tool to restore lost tooth. Osseointegrated implants lack the property of PDL attachment which can be overcome by ligaplant.Ligaplant has biofunctional and physiologic efficiency,shock absorbing capacity,occlusal overload and proprioception It is an new revolutionary concept for implant dentistry.

Conclusion : The ligaplant placement is comparatively easy as the implant is not tightly fit on the other hand the patient may not have the need to undergo any further discomfort of grafting with ligaplant.

Current Overview on Dental Stem Cells Applications in Regenerative Dentistry

Akshita Parlawar, Government Dental College and Hospital, Nagpur

ABSTRACT

Background: To discuss the history of stem cells, different stem cells relevant for dentistry, their isolation approaches, collection, and preservation of dental stem cells along with the current status of dental and medical applications.

Results : Researchers have so far succeeded in making specific dental tissues or tooth like structures although in animal studies but future advances in dental stem cell research will be the regeneration of functional tooth in humans.

Conclusion : Stem cells of dental origin have multiple applications nevertheless there are certain limitations as well. Stem/progenitor cells are comparatively less potent than embryonic stem cells. Teeth-like structures cannot replace actual teeth, thus a considerable research and development efforts is required to advance the dental regenerative therapeutics.

Dentistry in Cosmos

Ketki Ravindra Gujar, PDU Dental College, Solapur

ABSTRACT

Background: Humans have long dreamt of flying and in recent years, the dream has evolved to exploring space and creating new habitat on other planets. Studies have described the effect of microgravity on health, therefore it is essential to identify relevant problems and address microgravity complications leading to increase in need for dental treatment, leading to the creation of aeronautic dentistry.

Results : Due to changes in external environment ,barometric pressure, bacterial flora in mouth , inattention to good dental hygiene, changes in food consistency, lack of food with natural gingival cleansing properties causes dental pain.

Conclusion : Space stations are looking ahead to longer duration space mission, initially in earth orbit and later into deeper space . Therefore, exploring dental health will open the horizons to newer subjects like Aeronautics dentistry.

Augmented Reality in Dentistry

Sritej Jagtap, MGM Dental College and Hospital, Navi Mumbai

ABSTRACT

Background: The rationale of the presentation was to screen the literature and to describe the current applications of augmented rationale in dentistry.

Results : We searched two databases, namely PubMed and Google Scholar using the key search words in our search strategy viz. (augmented reality AND (clinical trial[Filter]) AND (((dentistry) OR (dental)) OR (dentist) AND (clinicaltrial[Filter])) and got more than 10,000 hits. out of these 7 clinical trials were found in relevant english literature since 2018. Augmentation reality technology has been successfully used in a myriad of applications in clinical dentistry and dental education and training alike. In dentistry, oral and maxillofacial surgery is the primary area of use, where dental implant placement and orthognathic surgery are the most frequent applications. Recent technological advancements are enabling new applications of restorative dentistry, orthodontics and endodontics.

Conclusion: On the base of literature the current development is still in process, however independent sources of customized software for augmented reality seems promising to help routinely procedures, complicate or specific interventions, education and learning.

Comparative evaluation of efficiency of chlorhexidine chips and tetracycline fibres as local drug delivery therapy in treatment of chronic periodontitis a split mouth randomized controlled clinical trail

Ashvini Pathrikar, Government Dental College And Hospital Nagpur

ABSTRACT

Background: The effective elimination of plaque mass and microorganisms by scaling and root planning have been well documented but inability to access deep and tortuous pockets has proven to be major drawback,this has led to adjunctive use of antimicrobial agent subjecting a patient to long term systemic administration of antibiotics was not feasible it was for reasons local drug delivery system evovled ,in recent years chlorhexidine chips and tetracycline fibres in the form of local drug delivery have been used as an adjunctive to conventional non-surgical therapy,however there is insufficient literature comparing the efficacy of both these modelof local drug delivery in patients with chronic periodontitis

Results : Significant reduction in plaque and gingival index improvement in PPD and CAL levels were observed in both groups at the end of study period i.e. 3months however in comparison the reduction in pocket depth gingival index, plaque index, bleeding on probing, improvement in CAL was no significant

Conclusion : The present study shows that LDD system can be effective adjunctive to mechanical debridement in treatment of chronic periodontitis,The LDD system used in this study chx chips and tetracycline both showed comparative results however the ease of handling and patients compliant towards chx chip was more as compared to tetracycline

The Rise Of Intra Oral Scanners: Unknown to Known

Mahak C Pidwani, Chhattisgarh Dental College And Research Institute, Sundra

ABSTRACT

Background: Advancement in imaging technology led to introduction of 1 dental impressioning digital scanner in the year 1980. Intra oral scanners are devices for capturing direct optical impression that was introduced to ease the technique of impression by enhancing patient comfort, time efficiency, simplify clinical procedure and allowing better communication with dental technician. The purpose of this narrative is to study the principles of capturing 3D virtual images of tooth, types of intraoral scanners and determine the current clinical applications of intraoral scanners..

Results : 3D scanners provide reliable scans depending upon the technique and the scanner used and therefore have a wide range of application in dentistry.

Conclusion : Therefore use of intraoral scanners is not just restricted to implantology and prosthetic rehabilitation but has also expanded its application in orthodontics and smile design and forensic dentistry.

Nutritonal Knowledge Among Undergraduate Dental Students

Trupti Balasaheb Gawande, V.S.P.M. Dental College, Nagpur

ABSTRACT

Background: Nutrition plays a vital role in human growth and development .Therefore, acquiring accurate and adequate nutrition information is important as it could inform nutritional choices positively and promote the maintenance of a healthy nutritional status. The undergraduate dental students who are the future dentist serving the people for the betterment. So, they should have adequate knowledge about the nutrition also they need to develop skills in providing nutritional messages and also identify those who are at nutritional risk . That's why the knowledge on nutrition is very important. Lack of awareness of it will become a barrier to the development of promoting healthy food habits. So this study was conducted to evaluate the knowledge of nutritional status among undergraduate dental students..

Results : Out of 315 students, 77% of the participants agreed that they should eat more vegetables 65% agreed that they should consume less sugary foods, 67% agreed for less consumption of fatty foods and 51% agreed for consumption of more of high fiber foods.

Conclusion : The inputs obtained from the present study regarding the knowledge of nutrition among undergraduate dental students showed that students had adequate knowledge. To increase the student's nutritional knowledge and to keep them update the institute should arrange the seminars, workshops on it on regular basis.

Assessment of knowledge and attitude towards Teledentistry during COVID pandemic amongst undergraduate dentistry students and interns of a private dental institute of Nagpur city (Original Research)

Apoorva Nilay Dhopte, V.S.P.M. Dental College, Nagpur

ABSTRACT

Background: Teledentistry may be a sort of telehealth utilizing an online source involving transmission of information over a distance. In the wake of current situation and considering practicing dentistry in the coming future, there is a need of Teledentistry.

Results-Total 307 students and interns were surveyed in this study. Out of them, 175 (57%) said they were aware of the term teledentistry.227 (74%) participants felt that Teledentistry can improve the reach of oral health care to rural areas and during pandemic and 256 (83%) said they want to practice Teledentistry in future.

Conclusion-The knowledge of interns regarding Teledentistry was good. Their attitude towards applying it in the profession was satisfactory. More than 80% of students were willing to practice Teledentistry and 60% thought it is the future of dentistry. The future perspective will be assessing more students and interns for more insight on topic.

Save a tooth? Break a tooth? Why not just regenerate one

Sanober sobani, V.S.P.M. Dental College, Nagpur

ABSTRACT

Background: A study on advances of regenerative dentistry and its impact on conservative endodontics. Regenerative dentistry is a type of tissue engineering which arises to emulate morphogenesis for the purpose of tissue and organ regeneration both in lab and in situ. Goal of endodontics is to save teeth and altough after successful endodontic treatments they are devitalised and hence susceptible to infections and fractures. Some questions that will be explored further are: 1. How can regenerative dentistry change the course of endodontics? 2. Criteria for regenerative dentistry? 3. How do we deal differently with immature and mature teeth?

Results : Differences observed between current root canal treatment and dental pulp regeneration during study. Goal of RCT is to eliminate space for bacterial recolonization whereas of regeneration is to restore native defense with natural killer cells, B and T lymphocytes and antibodies. Outcome of RCT is nonvital tooth susceptible to reinfections and fracture and on the other hand outcome of regeneration is vital tooth with restored homeostasis and natural defense that may promote tooth survival. To summarize, regenerative endodontics is one of the most exciting development in dentistry today and endodontists are at the forefront of this cutting edge research.

Conclusion : Regenerative endodontic treatment is based on concept of tissue engineering technology to regenerate the dentin pulp complex in the canal space thus restoring development of arrested tooth root. With the advances in the biotechnology today, regenerative dentistry and its application in endodontics can be seen as a breakthrough from regular endodontic practice.

A Comparative Evaluation of Pain on Administration of Local Anesthesia Following The Administration of A Topical Anesthetic and A Cryotherapeutic Agent In A Bilateral Split Mouth : A Randomised Control Trial.

Sanober sobani, V.S.P.M. Dental College, Nagpur

ABSTRACT

Background: Topical Anesthesia Is Important To Optimize Pain Control During Dental Injection. Our Aim Was To Describe A New Simple Method For Topical Anesthesia Of Oral Mucosa And To Compare The Clinical Efficacy Of A Topical Anesthetic Spray And The Cryotherapeutic Agent On Pain Perception In Children.

Results : The Cryotherapy Group Had Significantly Reduced Pain Score (p< 0.001) When Compared With The Spray. The Mean Visual Analog Score For The Cryotherapy And Anesthetic Spray Were, Respectively Estimated. The Cryotherapy Group Had Reduced Pain Score On The VAS (Wong Baker) Scale When Compared With The Topical Anesthetic Spray Group (p<0.05) Which Was Not Statistcally Significant.

Conclusion : When Compared With Topical Anesthetic Spray, Precooling The Injection Site With Cryotherapy Is Beneficial In Reducing Pain Before Local Anesthesia Injection In Pediatric Patients. Based On The Findings Of This Study, Precooling The Injection Site Before Local Anesthetics Might Be Preferred As An Easy And Economical Auxillary Technique That Is Beneficial To All Pediatric Patients With Fear And Anxiety.

Osseodensification : A Paradigm shift in implant dentistry

Rutwik Rajesh Khandre, Nanded Rural Dental College and Research Centre

ABSTRACT

Background: A new concept for osteotomy called osseodensification has been introduced with changes in surgical site preparation in implantology. In this technique primary stability can be achieved in low density bone

Results : one of the obstacles in implantology is it's poor prognosis on placing the implants in region of low density bone, where it is difficult to achieve primary stability which is considered as a key factor for osseointegration of implant. Osseodensification creates an autograft layer of condensed bone at the periphery of implant bed with the aid of specially designed burs. It works on the mechanics that, it rotates in clockwise direction for osteotomy and in anticlockwise direction for condensing and helps in increasing the density of bone. It also facilitates the lateral ridge expansion. It facilitates the vertical ridge expansion therefore there is no need for sinus lifting in case of maxillary sinus.

Conclusion : Primary stability can be achieved in low density bone with minimum dehiscence. This technique can be used where ridge is narrow with the broad base for expansion of the ridge with the help of special burs

Narrow Band: A Diagnostician's Magic Wand

Ketaki Mahadev Musale, Nanded Rural Dental College and Research Centre

ABSTRACT

Background: NBI is an chair side investigation technique that allows visualizing mucosal surface texture and mucosal and submucosal vascular morphology. It is one of the most valid diagnostic techniques for early detection and monitoring of potentially malignant and malignant lesions in oral cavity.

Results : NBI facilitates better assessment of oral SCC and reduces the risk of recurrence. Use of NBI examination in the oral cavity revealed higher specificity, sensitivity & accuracy compared to white light examination for the diagnosis of malignant lesions. It has proved great utilty in detecting malignant features in oral premalignant lesions. White light is filtered to emit two narrow bands of blue and green light which allow visualization of blood vessels in deeper mucosal & submucosal layers.

Conclusion : This imaging technology can be used as an adjunctive diagnostic technique along with standard diagnostic protocol. This technology could increase the clinician ability to detect initial changes in dysplastic tissue and aid in better judgment of progression of lesions.

Artificial Intelligence in Dentistry

Anand Bapurao Deshmukh, Nanded Rural Dental College and Research Centre

ABSTRACT

Background: with the help of artificial intelligence algorithms obtained will be more accurate and clearer it will help clinicians provide unprecedented diagnosis treatment and care to the patients.

Results : Artificial intelligence is a technology that is idea of machines being capable of performing human task.The evolution of artificial intelligence make the analysis of big data possible. It has a tremendous potential for improve patient care and revolutionize healthcare field. Uses of diseases and prediction of treatment outcomes.Artificial intelligence benefits for decreasing postoperative complications.Artificial intelligence has a crucial role in improving diagnosis.Artificial intelligence it is mainly used for work faster, reducing cost and for more accuracy.

Conclusion : The evolution of artificial intelligence make the analysis of big data possible

Comparison of Digital and Conventional Teaching Methods amongst Undergraduate Dental Students in Nanded District of Maharashtra: A Cross Sectional Surve

Utkarsha Deshmukh, Nanded Rural Dental College and Research Centre

ABSTRACT

Background: To uncover the students' perspectives on online teaching-learning implemented due to COVID-19 pandemic in comparison with conventional teaching, considering the lack of research on teaching methods in dental education particularly in India.

Results : 49% of the students revealed both digital and class room teaching as suitable platform for learning. Most liked feature of online is accessibility and comfort, whereas it is more guidance in offline platforms. Lack of interaction (49%) and poor network connection (26%) are disliked in online and restricted schedule (82%) from offline method. Only 30% of the students want online teaching as part of their regular curriculum in future.

Conclusion : The future of dental education will have far-reaching changes in teaching methods and tools to cope with situations like COVID-19. We should be prepared to take necessary steps so that education does not suffer. Modifications should be made in the curriculum according to the perspective of students and their preferred modes to create a better learning environment.

Prevalence of Self-medication Practices amongst Dental Patients in Nanded District of Maharashtra - A Cross Sectional Survey

Sanober sobani, V.S.P.M. Dental College, Nagpur

ABSTRACT

Background: The practice of self-medication has been recognized since long time in developing countries like India with vast rural back ground. There has been enough evidence regarding self medication for medical illness. However available literature is very small for dental problems. Hence this study was designed to know the prevalence of self medication practices and reasons for practicing same.

Results : 70% of the respondents revealed that they were taking self-medication. It was used for both medical (50%) and dental (50%) conditions. Most common reason for self-medication in dental conditions was acute dental pain. Medication was found to be easily available from local pharmacy stores.

Conclusion : Self-medication practices are significant problems among dental patients. Dental practitioners must keep educating their patients about hazards of self-medication. There must be a proper legislation which should limit the sale of drugs without prescription.

'Photobiomodulation' - An advanced Treatment Modality in Dentistry

Sakshi A . K Pagrut, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: Photobiomodulation is non invasive treatment modality in various maxillofacial pathologies .Studies have shown significant effects in reduction of pain in various orofacial and maxillofacial pathologies.

Results : 1) Implant stability 2) In accelerating orthodontic treatment 3) It affects proliferation of premature osteoblasts 4) Myofacial pain in TMJ 5) Treatment of chronic pain.

Conclusion : So to conclude, in photobiomodulation therapy, a light source is placed contact with the tissues, which allows the light energy to pierce the tissues which in turn interacts with chromophores located in the cells as a result of which photophysical and photochemical changes take place. Photobiomodulation also tends to increase the speed, along with the quality and tensile strength of tissue repair, which overall aids to resolve inflammation and relieve analgesia.

Comparative evaluation of pre contour and self adhesive matrix system

Khushi Heda, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: At the time of class 2 restoration, Two major issues of concern while reconstructing the proximal surface are: contact and contour of the restoration. An open or loose proximal tooth contact will lead to food impaction and will cause subsequent tooth migration, dental caries, or periodontal disease. On the contrary, excessively tight proximal contact will cause patient discomfort, undesirable tooth movement, and hamper passing dental floss through the contact area which will finally result in trauma to the periodontium. For attaining proper proximal restoration, along with building optimum contact and contour , the Matrix system is used. Our study aimed at comparing the 2 matrix system for optimum contact and contour of the restoration.

Results : By radiographic evaluation and using dental floss, pre contoured matrix showed better proximal contact and contour as compared to self adhesive matrix.

Conclusion : All the interproximal matrix systems presented some deficiency in either the contact tightness or contours. But the precontured matrix was seen to be better than self adhesive matrix system.

Advanced diagnostics tools for oral oncology

Trupti Manoj Chikankar, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: This poster scrutinizes the assessment of diagnostic tools in oral oncology.

Results: Depending on the situation, your dentist may choose for one of the numerous innovative breakthroughs in advanced dentistry which can provide you with modern answers to conventional dental issues. It also helps in detecting dental problems in early stage. Few of these advances are mentioned in our poster which includes diagnostic tools. The advances in the diagnostic tools recently are: Common diagnostic tests used in clinical practice under optical imaging VELscope, Vizilite, Identafi 2. New methods under development for clinical practice- Biomarkers 3. Developing technologiesAI (Artificialintelligence),lab-on-chip.

Conclusion : The recent advances in the dentistry is helping in early diagnosis of oral cancer, better treatment planning, less time consuming, both patient and doctor friendly and better prognosis.

Glam Up Your Smile

Sidrah Raheman, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: This poster discusses some recent innovations in finishing and polishing devices in restorative dentistry.

Results : Finishing is the process of removing extra material and shaping the repair, which is commonly done using tungsten carbide finishing burs or diamonds. Polishing is the process of reducing surface roughness and removing scratches caused by finishing equipment. Polishing also tries to inhibit bacterial adhesion, which starts with the adherence of a salivary pellicle layer to the tooth or restoration's surface and has been shown to be favoured by rough surfaces. Multistep discs, fine and superfine diamond burs, abrasive discs, and diamond- and silicon-impregnated soft rubber cups are among the several finishing and polishing methods available in the dental market. The capacity of polishing systems to generate smooth surfaces is influenced by factors such as the flexibility of the material, the hardness of the abrasive, and its grit size. Effective finishing and polishing of dental restorations ensures not only excellent aesthetics, but also acceptable oral health of soft tissues and marginal interface integrity. Excessive plaque accumulation, gingival discomfort, increased surface staining, and poor or suboptimal aesthetics of treated teeth are some of the issues caused by inadequately completed and polished restorations.

Conclusion : The overall aim is to provide the reader with an enhanced awareness and broader knowledge of the materials and tools available to produce optimal surface finishing and integrity in dental restoratives with their advantages, disadvantages and uses in operative dentistry.

Obstructive Sleep Apnea- The Not-So-Silent Killer

Ellen John, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: The high prevalence of untreated sleep apnea and links to serious morbidity and mortality underscore the population burden of this condition and the need for greater clinical recognition and strategies to reduce prevalence. Hence this poster is intended to give comprehensive review on OSA.

Results : Obstructive sleep apnoea (OSA) is a prevalent disease defined by nocturnal breathing stoppage due to upper airway collapse on a constant basis. OSA is associated with considerable cardiovascular morbidity and mortality, as well as severe symptoms such as increased daytime somnolence. For efficient management of this disease, a variety of treatment alternatives are currently available. Continuous positive airway pressure (CPAP) is still considered the gold standard treatment after more than three decades of use. Nasal CPAP (nCPAP) is very effective at controlling symptoms, improving quality of life, and reducing sleep apnea's clinical consequences. Mandibular advancement devices, especially those manufactured to order, are helpful in mild to moderate OSA and offer a viable alternative to CPAP therapy for individuals who are unable to tolerate it. Patients with a craniofacial malformation may benefit from uvulopalatopharyngoplasty, which is a well-established therapy that might be explored if CPAP treatment has failed. Patients with a craniofacial malformation may benefit from maxilla-mandibular surgery.

Conclusion : OSA has a multifactorial origin. The condition will be better managed if a multidisciplinary approach is taken and educational activities are implemented.

Use of Biopolmers in Teeth Regeneration

Vaishnavi Patekar, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: Loss of tissue structure could be because of various reasons. Restoration of these lost or damaged tissue assembly has been a challenging task in the field of medicine. Studies throughout the decades have depicted a promising way to regenerate these tissues via Tissue engineering. Tissue engineering is a multidisciplinary area which is responsible for regenerating and replacing various tissues of human body. In the field of dentistry, if the tissues are lost by any extreme wear, destruction, caries or fracture. The individual might suffer from difficulty in chewing, swallowing, inability to make fricative sounds, loss of support via soft tissues, over-close jaws, or accentuated naso-labial folds. Considering the importance of healthy and functional teeth, it is necessary to focus on methods that are capable of regenerating the tissues of oral cavity. And this is done with the help of nanostructured biopolymers such as hydrogels, scaffolds, dendrimers, nano-fibres, and nano bioceramic such as hydroxyapatite, bioactive glass ceramics etc. available in the form of nano crystals, paste, rods and particles, spheroids, cell sheets and so on, to regenerate both hard as well as soft tissues of oral cavity. These materials have a close resemblance with tooth tissues that are enamel, dentin, and periodontium.

Results : The collaborative approach of nanomedicine and tissue engineering has brought a notable progress in regenerative field of dentistry and several attempts are made to achieve a successful regenerative material that is not only biocompatible but also feasible to use chair side.

Conclusion : The purpose of this poster presentation is to highlight various biopolymers that have significant potential to undergo regeneration of both hard and soft oral tissues.

Proteomics : A boon for Periodontal Regeneration

Bhawana Dajjuka, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: This paper will focus on proteomics technology and its future in periodontology.

Results : Proteomics is competent enough to bring about a new era of advance medication and treatment planning customized for every patients there by increasing the effectiveness of therapy given by multiple folds.

Conclusion : Through this paper we are trying to spread awareness about the future prospects of proteomics to improve the diagnosis and treatment of periodontal diseases.

Effects of Cinnamon in Dentistry

Swamini Suryakant Gabhane, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: The use of herbal medicine in dentistry is usefull in reducing inflammation and controlling plaque formation.

Results : Cinnamon EO show significant antimicrobial activities against oral pathogens

Conclusion : Cinnamon shows antibacterial, antifungal, antioxidant, antimutagenic, antivirus etc activities.

Use of Biopolmers in Teeth Regeneration

Kasturi Wankhede and **Vaishnavi Patekar,** Sharad Pawar Dental College, Wardha

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The Transfer of Oral Microbiota to the Drinks, when consumed 3Directly through the Containers.

Dimpal S. Jambhulkar, V.S.M.P's dental college and research centre, Nagpur

ABSTRACT

Background: The oral cavity harbours diverse microbiota. It nurtures numerous microorganisms which include bacteria, fungi, viruses, protozoans.It has been speculated that the oral microbes can be transferred to the drinks when consumed directly through the containers. The microbes then multiply in the remaining drinks. The Microbial Contamination of the beverages associated with consumption has been proved.

Results : According to the study performed by Ohnishi et al, 2013; the number of microorganisms was quantified with the help of Potato Dextrose Agar[PDA] and standard methods agar. The Bacterial DNA and fungal identification was done through PCR kit. The Results showed the predominance of oral microflora in the drinking test eg: Streptococcus spp.[S. salivarius]; the Candida spp.[C. albicans] and Cladosporium spp. along with other microbial species. (Ohnishi et al, 2013). The visible changes which occurred due to bacterial growth and development of fungal moulds at room temperature storage conditions were noticed. (Watanabe et al, 2014).

Conclusion : The microbial contamination of the drinks have been reported. Thus the transfer of oral microbiota to the drinks takes place, when consumed directly through the containers. It is however recommended to discard the remaining drinks from the containers as early as possible without storage.

Dynamic Navigation in Implantology: A New Dimension Towards Excellence

Shrutika Muneshwar Pandit, Pandit Deendayal Upadhyay Dental College, Solapur

ABSTRACT

Background: Navigation systems are increasingly being used in oral implantology to support and improve qualitative results of implant positioning.

Results : Static templates prevent unexpected implant positioning but are limited to undesirable cooling methods, poor visualization, and nonadjustable protocols. However, dynamic navigation avoids these risks and visualizes the relationship between the drill and crucial anatomical structures in real-time during implant surgery, resulting in less tissue damage and predictable positioning of implant. Several reports have provided evidence that the deviation of drilling or implant placement using dynamic navigation is clinically acceptable. Thus, dynamic navigation technology has excellent potential as a tool to assist implant placement.

Conclusion : Dynamic navigation is flexible allowing the clinician to change the surgical plan as the clinical situation dictates. Implant surgeons can go for immediate scanning, planning and guidance on the same day as patient presentation without the delay or cost of fabrication of a static surgical guide stent. Hence, it undoubtedly enhances the safety and efficacy of dental implant treatment.

Conservative smile makeover using microabrasion with resin infiltration

Eva Maria Saji, Pandit Deendayal Upadhyay Dental College, Solapur

ABSTRACT

Background: In today's era of minimal invasive dentistry the resin monomer penetration in the porous lesions of hypomineralised lesions provides an alternative esthetic management. New light-polymerized resin composites optimized for rapid infiltration of enamel lesions with resin light curing monomers are commercially available today to prevent enamel lesions from further demineralization and provide a highly conservative therapy and could successfully be applied in blending hypoplastic stains.

Results : Resin infiltration technique is successful in mild to moderate fluorosis stains .

Conclusions : The resin infiltration technique is a minimally invasive procedure for treating mild to moderate fluorosis and hypoplasia stains.

Intraoral Scanners In Dentistry – A Current Overview.

Sonal Bhatkar, MGM Dental College And Hospital, Navi Mumbai

ABSTRACT

Background: This poster on Intraoral scanner provides an overview on the advanced features of impression registration in dentistry.

Results : With the use of the intraoral scanner, the cumbersome use of alginate can be avoided and a 3D printing model can be obtained within minutes. The process will therefore be faster, more pleasant and more comfortable for the patient. Since the procedure is more precise,the errors are reduced to the maximum. It facilitates diagnosis, simplifies the process of obtaining models and improves the effectiveness of the results.

Conclusions : The intra-oral scanner is the need of this new era of the Digital dentistry world. An understanding of the Intraoral scanner technology is necessary for any practitioner to have a successful clinical strategy during the scanning of prepared teeth. So ,intraoral scanning systems appear to be a highly promising development for the future.

Vasoconstrictors

Sanat Utpal Gokhale, MGM Dental College And Hospital, Navi Mumbai

ABSTRACT

Background: The purpose of this presentation is to briefly illustrate about the chemical structures of various vasoconstrictors, their selection and mode of action. The importance of addition of vasoconstrictor to a local anaesthetic solution, effects of vasoconstrictors on various systems, maximum doses of vasoconstrictors, side effects of overdose, its management and its applications are also briefly highlighted.

Result : Vasoconstrictors are an integral and necessary part of most local anaesthetic solutions used in dentistry and are thus an important group of drugs to the dentist. Vasoconstrictors like adrenaline in local anaesthetics are associated with more drug interactions than any other drug in Dentistry with a significant incidence of adverse reaction. Therefore, understanding the physiological and pharmacological effects, interactions with other drugs, and dosages are important in day-to-day dental practice.

Conclusion : It is imperative to clearly know the pharmacodynamic concepts and have a thorough understanding of the pharmacologic interactions of vasoconstrictors to avoid untoward reactions in patients in the course of dental treatment.

Innovative uses of technology in dentistry – Dental Apps

Akshad Nitin Pajai, Sinhgad dental college and hospital

ABSTRACT

Background: The use of mobile has already become very rampant in COVID times. Dental apps can offer a good behavioral management tool and also may help in diagnosis.

Result : With the advancement in technology a dentist have to learn to incorporate the proper use of technology , the mobile dental apps like " Dr.Dentist", "Brush DJ", "Dentist Games", can be used to relieve anxiety in children, before the actual dental visit. An innovative app called "Tooth SOS" has been developed by International Society of Dental Traumatology to help deliver instructions in a simple way even to a layman in any case of trauma.

Conclusion : Mobile dental apps can be useful tool for reduction in anxiety, behavioral management, diagnosis & in general bridging the gap between patient and the dentist.

Its 2022 Guys! Let's Treat Online

Pranay Vijay Rajput, Sinhgad Dental College and Hospital

ABSTRACT

Background: In the wake of COVID-19, we all came closer even after being apart. In many cases Dentists were forced to interact with the patient online.

Results : Teledentistry is a form of telehealth utilizing a combination of communication & dentistry. It has been used for enhancing clinical care & dental education. It can be used for communication & diagnosis by exchanging relevant clinical information through the use of technology. Not only does Teledentistry minimize the cost but it also brings then patient & dentist closer, and reduces the burden of transportation. Hence the aim of our poster is to make the dental community aware regarding the advantages as well as the disadvantages of Teledentistry.

Conclusion : Teledentistry can be useful & novel tool in dentistry.

"Homes & Phones are Smart so Why not Toothbrushes"

Tithi Rajan Dakhave, Sinhagad Dental College and Hospital

ABSTRACT

Background: Oral Hygiene is an important aspect in the overall health of patient. For years we have been using conventional toothbrushes. Due to these inappropriate brushing styles, it has contributed to many gingival and periodontal problems.

Results : Intelligent toothbrushes are capable of monitoring brushing motion & orientation despite motor development has been described. These toothbrushes are the so called smart tooth brushes. Smart tooth brushes can offer care to children whose motor abilities have not yet developed, developmentally & medically challenged individuals to maintain the level of oral hygiene. So now these tooth brushes include – Oral –B iO Electic tooth brush, ultrasonic toothbrush, self cleaning tooth brush.

Conclusion : As a dentist the patients often ask as to which toothbrush they should use. Smart toothbrushes can be a novel and effective alternative to conventional tooth brushes in near future.

Lets heal Smartly!

Yashashree Waghole, Sinhagad Dental College and Hospital

ABSTRACT

Background: "Smart materials involve smart behavior by design". They include ability to harness stimuli like stress, moisture, temperature, pH, electric and magnetic fields. The aim of our poster is to make the dental community aware about the novel smart materials

Results : Glass Ionomer cements are the future of dentistry. The smart properties are enhanced even today by additional means .The shape and memory of NiTi smart alloy has revolutionarised in endodontics as well as orthodontics. In the poster we will also be covering smart ceramics, ACP, smart composites, smart coating for dental implant.

Conclusion: Smart materials can be a good alternative to conventional materials and it is necessary for all us to be aware of these materials

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3D Printing In Orthodontics

Sachi Chute, VSPM Dental College, Nagpur

ABSTRACT

Background: The conventional 2D printing only includes 2 axis but 3D printing includes x, y and z axis. This process includes building a 3D model by layering up with the material. This enhance the procedure, improves precesion.

Results : Highlights the use of 3D printing.

Conclusion : This posters aims to highlight the uses of 3D printing in Orthodontics.

Dynamic Navigation in Implantology: A New Dimension Towards Excellence

Shrutika Muneshwar Pandit, Pandit Deendayal Upadhyay Dental College, Solapur

ABSTRACT

Background: Navigation systems are increasingly being used in oral implantology to support and improve qualitative results of implant positioning.

Results : Static templates prevent unexpected implant positioning but are limited to undesirable cooling methods, poor visualization, and nonadjustable protocols. However, dynamic navigation avoids these risks and visualizes the relationship between the drill and crucial anatomical structures in real-time during implant surgery, resulting in less tissue damage and predictable positioning of implant. Several reports have provided evidence that the deviation of drilling or implant placement using dynamic navigation is clinically acceptable. Thus, dynamic navigation technology has excellent potential as a tool to assist implant placement.

Conclusion : Dynamic navigation is flexible allowing the clinician to change the surgical plan as the clinical situation dictates. Implant surgeons can go for immediate scanning, planning and guidance on the same day as patient presentation without the delay or cost of fabrication of a static surgical guide stent. Hence, it undoubtedly enhances the safety and efficacy of dental implant treatment.

Tooth brush for specially abled

AMISHA SHARMA, VSPM Dental College, Nagpur

ABSTRACT

Background: :Specially abled people have to depend on care givers for maintaining oral hygiene and are prone to a number of dental diseases .A tooth brush specially designed will help in improving quality of life.

Results : Designing the toothbrush targeting this population will not only make them self reliant but also improve the quality of life .

Conclusion: Tooth brush will Improve in quality of life

Salivatory reservoirs: A saviour for xerostomic completely edentulous patients.

Jasnoor Kaur Makan , Aditi Gandhewar,

ABSTRACT

Background: Xerostomia is a common complaint found often among older adults. Dry mouth has multiple oral health consequences and affects quality of life. It can produce serious negative effects on, the patient's quality of life by affecting dietary habits, nutritional status, speech, taste and tolerance to dental prosthesis and increasing the risk of oral infection, including candidiasis and susceptibility to dental caries, periodontal disease and tooth loss. Saliva protects oral mucosa and teeth against harmful substances, lubricates the mouth to facilitate chewing, swallowing and speech, and reduces tissue trauma. There are several approaches to manage dry mouth. Depending upon the cause, various treatment options are available; like in medication induced xerostomia, change in dosage/timing or prescribing drug substitute may reduce the severity of the problem. Sustained release of artificial saliva within a complete denture prosthesis not only helps a xerostomic patient to utilize the denture properly, but it also prevents undue harm to the oral mucosa that can result due to the mucosal dehydration and denture friction.

Result : As a result, after going through various literature to gain a better understanding. This convenient and innovative technology for fabricating and designing functional salivary reservoir complete dentures has proven to be effective and beneficial to both dentists and patients in the treatment of xerostomia.

Conclusion : Xerostomic patients wearing prostheses will benefit greatly from this as it will improve their oral health and quality of life. Prosthodontists are the first-line health care providers for such patients who require artificial salivary reservoir prosthesis. To meet the functional and aesthetic needs of the patient, a thorough knowledge and understanding of different saliva reservoir designs, as well as the benefits and drawbacks of each design, is necessary. The management of xerostomic patients in prosthodontics has been a difficult task for the dentist. However, this review poster offers useful treatment methods that address both the need of xerostomia and the lack of retention of prostheses in patients who are completely edentulous.

Dentistry in 2022

Samiksha Ghagre, V.S.P.M.D.C.R.C. NAGPUR

ABSTRACT

Background: The COVID-19 pandemic has affected the delivery of health services across the world. The World Health Organization (WHO) declared the COVID-19 outbreak to be a global pandemic on 11th March 2020, prompting the closure of dental services worldwide. As COVID-19 is transmitted via droplets, aerosol, direct or close physical contact Dental practitioners, like all other healthcare professionals around the world, have been facing challenges of providing care to patients . Hence, reconfiguration of dental clinic set up is must to prevent spread of infection which includes screening of patient, use of PPE during treatment, use of appropriate disinfection method, use of tele-consultation becomes new normal .. Dentistry is a technically oriented profession, and the health care sector is significantly influenced by the ubiquitous trend of digitalization. Hence Use of new technologies in such situation is the need of hour.

Results : No result

Conclusion : As this pandemic hits with many unexpected questions to this generation of how a disease can affect human being at many aspect life , So there is no way out but, to Be prepare for situations like this in future and digitalization can be the one Way out .

Expertise the Operation - through Dynamic Navigation

Naushin sheikh, - VSPM Dental College and Research Center

ABSTRACT

Background : - "The development of dedicated surgical navigation distance for different surgeries performed in various aspects of dentistry good facilitate the operator's maneuvers and reduce the risk of iatrogenic errors. visualisation is one of the key factors that determine the precision of surgical outcome. ""Navigation"" system that helps surgeons to see more, know more and ultimately do more for their patients. This has a wide range of applications not only in accurately planning implant placement but also in craniomaxillofacial trauma,orthognathic surgeries,head and neck pathological resections,complex skull base surgeries and surgery involving temperomandibular joint avoiding insults to vital structures by respecting each anatomical boundaries. FOLLOWING QUESTIONS WILL BE DEALT WITH: 1. What is dynamic navigation 2. Bridge for evolution 3.Complex cases 4.simplified TAP workflow 5.4D working 6.NEW INNOVATION TO AID THE PROCESS.".

Results : According to a systematic review taken till December 2019, total of 32 students were included; 29 reported accuracy values (2756 implants) and 10 focused on complications and implant failure (1039 implants). The navigation group showed significantly lower implant placement errors with respect to the freehand technique (P0.05) compared with static technique. The pooled prevalence of failure was 1% (95% CL:0.00% to 2%) .Predictability of surgery and restoration are assured with allowing us to pre-plan the case and relative crown position accurately,combined with the surgical precision thus makes life easier for both the surgical and restorative clinician along with the patient.

Conclusion : In conclusion, correction of deformities secondary to trauma or craniofacial anomalies,resection of tumor and reconstruction, localisation of foreign bodies,placement of an implant and correction of the secondary deformity. With better understanding,now this system has gained domain over majority of the procedures in the head and neck region. In future this will not just be a supplement but sine qua non for surgical practice.

Use of Artificial Intelligence in dentistry

Sakshi Gupta, Government Dental college and hospital Nagpur

ABSTRACT

Background: The field of Artificial Intelligence has experienced spectacular development and growth over the past two decades. With recent advances in digitised data acquisition, machine learning and computing infrastructure, AI applications are expanding into areas that were previously thought to be reserved for human experts. When applied to dentistry, AI has immense potential to improve patient care and revolutionise the healthcare field. In dentistry AI is being investigated for a variety of purposes, specifically identification of normal and abnormal structure, diagnosis of disease and prediction of treatment outcomes. Furthermore AI is used extensively in dental laboratories and is playing a growing role in dental education. AI methodologies have immense capacity to detect and diagnose the lesions of the oral cavity, also which may go unnoticed by the human eye, therefore making their way towards dental practice. This poster depicts some current and future applications of AI in dentistry.

Results : Not applicable

Conclusion : Not applicable

Dentistry in COVID Era

Arpita Biswas, MGM Dental College And Hospital

ABSTRACT

Background: The purpose of this presentation is to briefly demystify the impact pandemic had on various aspects of dentistry. It also highlights the ways in which dental practitioners redesigned dentistry to a new reality in a way to combat dental crisis to bridge the gaps in dental settings to overcome this emergency.

Results : The highly contagious disease Covid - 19 has created havoc all over the world. This novel corona virus with human to human transmission has put the world to halt and has become a major concern for all healthcare professionals. Studies reveal that Dental practitioners are at a higher risk because of its potential transmission via saliva, water droplets, and aerosols generated during most of the dental clinical procedures. In an effort to combat COVID-19 infection, reformed practices have to be instituted to provide dental care and education in these trying times.

Conclusion: This COVID - 19 pandemic has posed economic and social difficulties for all dental professionals. Therefore, instead of restricting dental procedures, it is better to think of tackling the risk of infection by following all the safety procedures and by orienting the dental treatment by taking a more preventive, conservative and less invasive approach.

Artificial Intelligence: Dentistry of the Future

Sakshi Gupta, Government Dental College and Hospital Nagpur

ABSTRACT

Background: Artificial intelligence (Al) is a field of engineering science dealing with the computational understanding and ability of the computers to mimic human brain to exhibit an intelligent behaviour to perform the tasks effortlessly. It has begun to establish itself even into the field of dentistry and medicine.The most promising applications of AI in dentistry includes- 1. Dental decay and periodontal disease detection 2. Oral cancer detection 3.Detection and diagnosis of dental caries 4.Endodontics 5. AI-assisted orthodontic treatment planning.

Right from data acquisition to even performing virtual surgeries may be a reality in future with the introduction of virtual reality in the medicine and dentistry. The need for proper documentation of the patient's information, quick and reliable treatment protocols through robotics in the field of surgery has encouraged the use of these software technologies in assisting the dentist to diagnose and treat the patients efficiently.

Conclusion : AI solutions have not by large entered routine dental practice, mainly due to 1) limited data availability, accessibility, structure, and comprehensiveness, 2) lacking methodological rigor and standards in their development, 3) and practical questions around the value and usefulness of these solutions, but also ethics and responsibility. Thus this technological advancement is still in the stages of infancy and this paper/poster is an attempt to highlight the role of artificial intelligence in dentistry and its future perspectives.

VELSCOPE, Regenerative endodontics

Chaitanya J Pinge, MGM Dental College And Hospital

ABSTRACT

Background: Velscope as an adjunct for detection of premalignant lesions

Results : ESULTS AND CONCLUSION – It aids in the detection of the site of biopsy. It is used in aiding tool inside the surgical theatre for the detection of the borders on enucleating. About 9.4% of the lesion detected were abnormal lesions and 83.09%had loss of fluorescent light effect. Based on the use of surgical biopsy, the machine had a sensitivity of 74.1% and specificity of 96.3%. So it can be used as clinical diagnostic aid in detection of oral malignant lesion but it cannot replace the standard technique of surgical biopsy for final diagnosis

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"Health E-Card": Innovative Strategy for Storage of Health Related Data

Aakanksha Subodh Mishra, MGM Dental College And Hospital

ABSTRACT

Background: To access and store all the health related data using Artificial Intelligence thus facilitating the stake holders for identification of previous health data

Results : Keeping storage of health related data becomes challenging for each patient, also there is chance of inadequacy of information and miscommunication between practitioners and patient. This model will facilitate all the information at once about the patient medical and dental history to avoid any complication and give access and storage platform also this will facilitate less time consumption and convenience for the practitioner and patients will be there. As it will be issued by Government of India privacy and security will be assured. There will be a UIN,QR CODE And AI CHIP. A APP will be provided for the patients to scan the QR code and link to mobile number to get regular updated scheduled appointments. with the Artificial Intelligence the information can be translated and stored by the software.

Conclusion: In our day to day life, paper works and record keeping becomes difficult for the practitioner, so this model will be beneficial for various medical institutions, hospitals, colleges, stake holders For access and keeping record safe and secure all at once for achieving the treatment

An Apparatus for Prevention of Airborne diseases

Soham Suraj Wadke, Sinhgad Dental College and Hospital

ABSTRACT

Background: This invention relates to prevention of contagious, infectious and Communicable diseases those are spread through air (airborne) or through inhaled aerosol in air (aerosol borne), it also prevents health hazard occuring due to contaminants in air like dust particles, metals and fine particles .

Results: Airborne disease can spread when people with certain infections cough, sneeze, or talk, spewing nasal and throat secretions into the air. Because these diseases and particles travel in air, they are hard to control. This apparatus comprises of human machine interface, an electrical and electronic control, a charger, a battery, a HEPA filter, compressor unit air control safety valve and an air compressed cartridge configured in backpack to make apparatus portable. It includes an air head band configured to be worn on head by user and comprises an air inlet, pressure chamber, fine slit and breathing air outlet and air holding hooks. The air from air compressor unit and air cartridge filtered through HEPA filter and passes through the air inlet, passes through pressure chamber and exhausts from the slit in form of laminar flow, forming an invisible shield and barrier between face of user and surrounding environmental area.

Conclusion: This invention should effectively solve the problem of aerosols being inhaled by a person and prevent airborne diseases in Medical and Dental Professionals.

An Apparatus for Prevention of Airborne diseases

Prayag Pramod Khade, Sinhgad Dental College and Hospital

ABSTRACT

Background: This invention relates to prevention of aerosol spread during surgical and dental procedure which is a professional hazard for every dentist, surgeon, dental clinician and their assistants. The invention also pertains and applies to hospitals, operation theatres, nursing home and clinics

Results : An apparatus comprises a human machine interface, an electrical and electronic control, a compressor unite, an air curtain valve, an air shower valve, a suction unite, a suction valve, an air curtain air shower suction device, a sensor wherein said an air curtain air shower suction device having an curtain nozzle, suction nozzle, shower nozzle, an air reservoir/ pressure chamber, parallel surfaces, affine slit, suction inlet, shower outlets. The said apparatus prevents contamination from outside into operative field and contamination (aerosol) generated during treatment in operating field into rest area of the clinic or operation theatre by forming air curtain. This device is combination of an air curtain, an air shower, an air suction unite that uses compressed air to create positive and negative pressure areas

Conclusion: The invention will make a surgical and dental clinics and operatory safer both for the clinician as well as the patient by minimizing the aerosols and splatter and in turn reducing the risk of infection

Demineralised dentin matrix (DDM) a new frontier in periodontal regeneration.

Prayag Pramod Khade, Sinhgad Dental College and Hospital

ABSTRACT

Background: DDM is Autologous and has high concentration of BMP'S and thus provide reliable regeneration in periodontal defects and implant surgeries.

Conclusion : DDM is achieved by grinding extracted tooth and grafting it in same individual. It provides a rich source of BMP'S and hence gives effective regeneration .The present table clinic demonstrates how to make DDM in clinical setup and provide a good alternative to conventional bone graft.

Orthodontics on 5G with DentLase

Fazail Ahmad And **Mohd Sohail Ahamed ,** Sharad Pawar Dental College, Wardha

ABSTRACT

Background: There is a need to accelerate the tooth movement in patient seeking orthodontic treatment there by reducing duration of treatment and functional inconvenience, prevent relapse and root resorption secondary to braces.

RESULTS : A major concern to orthodontic patients is treatment time Generally, the time required for fixed appliance treatment is 20 to 30 months. Reducing the treatment time requires increasing the rate of orthodontic tooth movement, Low-intensity laser therapy is a good option to reduce treatment duration and pain. This device will be result in average increase of 30% in the rate of tooth movement will be cost effective, non-invasive, portable, an ergonomic hand-held with user centric interface and the device will also ensure patient's compliance with recommendations from dentists with the low-intensity laser therapy.

CONCLUSION : The DentLase product has potential to reduce duration of orthodontic treatment with reduction in number of visits to the dentist, doctor can monitor the progress of treatment remotely and also establish online platform to introduce new solution.

Treatment of early stage oral cancer - Brachytherapy

Akshata Awachat, Sharad Pawar Dental College, Wardha

ABSTRACT

Background: Brachytherapy, a type of radiotherapy with energy from radionuclides inserted directly into the tumor, is increasingly used in cancer treatment.

Results : Cancer therapy and therapy depends upon number of factors, including age, socioeconomic status and geographical location, and its prevalence is growing around the world. Most of cancer treatment includes external beam radiotherapy or Brachytherapy. For cervical and skin cancers, it has become a standard therapy for more than 100 years as well as the important part of the treatment guidelines for other malignancies, including head and neck, skin, breast and prostate cancer. Compared to external beam radiotherapy, brachytherapy has the potential to deliver an ablative dose over a short period of time directly to the altered tissue area with the advantage of a rapid fall-off in dose, and consequently, sparing of adjacent organs. As a result patient is able to complete the treatment earlier, and the risks of occurrence of another cancer is lower than the conventional radiotherapy treatment. Brachytherapy has increased its use as a radical or palliative treatment, and become more advanced with the spread of pulsed-dose-rate and high-dose-rate after loading machines; the use of new 3D/4D planning systems has additionally improved the quality of the treatment.

Conclusion - The benefits of brachytherapy vary depending on the patient, their priorities, and preferences, though as a minimally invasive treatment method, the benefits of avoiding surgery are universal. These include a quicker recovery time, less time spent in a hospital, and a reduced risk of postoperative infections. The benefits of using brachytherapy in the treatment of early stage cancer are quite pronounced.

Regenerative Endodontic Therapy Using Tissue Engineering

Rituja Wagh, Chaitanya Pinge, MGM Dental College, Navi Mumbai

ABSTRACT

Background: Recent advances in biomaterial science and tissue engineering technology have greatly enhanced the development of regenerative endodontics. Conventional endodontic treatment involves simply filling the root canal systems with biologically inert materials which merely replaces the lost tissue and does not regenerate it. Whereas regenerative endodontics aims to replace and regenerate the lost tissue through tissue engineering. Currently, cell transplantation has gained increasing attention as a scientifically valid method for dentin-pulp complex regeneration. This multidisciplinary approach involves three key elements of tissue engineering—stem cells, scaffolds, and signaling molecules and includes two approaches, cell transplantation and cell mobilization.

Result : Owing to the recent advances in the field of biomedicine, tissue engineering, and material science, great progress has been achieved in the development of regenerative endodontics.

Conclusion : However, there are challenges such as risks of immunological rejection and pathogenic transmission, the lack of a banking system and storage. Despite the challenges, it has the potential to be the superior treatment when compared to traditional methods in restoring functional dentin-pulp complex.

An innovative esthetic muscle deprogramming device

Rituja Wagh, Chaitanya Pinge, MGM Dental College, Navi Mumbai

ABSTRACT

Background: Recent advances in biomaterial science and tissue engineering technology have greatly enhanced the development of regenerative endodontics. Conventional endodontic treatment involves simply filling the root canal systems with biologically inert materials which merely replaces the lost tissue and does not regenerate it. Whereas regenerative endodontics aims to replace and regenerate the lost tissue through tissue engineering. Currently, cell transplantation has gained increasing attention as a scientifically valid method for dentin-pulp complex regeneration. This multidisciplinary approach involves three key elements of tissue engineering—stem cells, scaffolds, and signaling molecules and includes two approaches, cell transplantation and cell mobilization.

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Conclusion : However, there are challenges such as risks of immunological rejection and pathogenic transmission, the lack of a banking system and storage. Despite the challenges, it has the potential to be the superior treatment when compared to traditional methods in restoring functional dentin-pulp complex.

Comparitive evaluation of radiographic appearance of pulp treated by three different chemicals- an in vitro study

Syeda Madiha, Government Dental College and Hospital, Nagpur

ABSTRACT

Background: Does dental pulp treated with different radio opaque chemicals cast a radio opaque image on radiograph

Results : Result are awaited in conclusion.

Conclusion : If the results are encouraging, then one of its kinds of product can be developed which will help dental clinicians practicing endodontics, to locate the exact location of pulp tissue radiographically. This will not only make endodontics more predictably successful, but also help in reducing pain which is related to this procedure. These products will be safe, cost effective and user friendly.

DENSOV - the solar powered mobile dental vehicle

Ayesha, Government Dental College and Hospital, Nagpur

ABSTRACT

Background: Idea of "Solar powered Mobile Dental Vehicle " for oral healthcare promotion with the utilization of renewable resources of energy .

Globally, the demand for energy is growing at a rapid pace and has surpassed the limits of production. Every sector is in need for a constant supply of power, and the field of medicine is no exception. In an attempt to meet its rising energy needs and the depletion of fossil fuels , the global healthcare sector is fast moving from fossil fuels to renewable alternatives.

Residents in rural areas generally suffer from a higher prevalence and severity of dental caries and periodontal disease, yet they face numerous difficulties and barriers in accessing oral healthcare.

Conventional strategies, such as building of dental clinics or, hospitals, or the provision of outreach services by using disposable materials, are neither practical nor effective in rural settings. Mobile dental vehicles have been proposed as an alternative strategy to supplement the traditional oral healthcare in many rural regions.

In lieu of using the conventional electricity as a source of energy, a sustainable completely clean renewable source 'The Solar Energy' can be used, which is

- Sustainable
- Durable
- Efficient
- Can be stored
- Free

In rural areas, the electricity supply is often insufficient or unstable. In such situations the solar powered mobile dental van will turn out to be a boon.

There are significant oral health inequalities between people living in urban and rural areas. With high mobility, self-sufficiency, and cost-effectiveness, the use of Solar powered Mobile dental vehicles can be a promising strategy to deliver oral healthcare to rural populations along with a sustainable environment.

An innovative esthetic muscle deprogramming device

Arpita Biswas, Yashvi Hodar, MGM Dental College And Hospital

ABSTRACT

Background: Purpose of this table clinic is to describe a straight forward & inexpensive technique to fabricate an esthetic muscle deprogammer.

Results : To present techniques of esthetic deprogrammers using conventional methods and to display and demonstrate esthetic deprogrammers digitally. This table top presentation also highlights various indications ,contraindications and limitations of the same. A 2mm thickness of thermoplastic sheet and a clear autopolymerising resin was used for fabricating a muscle deprogrammer by conventional technique. Whereas for the digital fabrication of a muscle deprogrammer, the designing was accomplished into 3 dimensional virtual software and the manufacturing was done by using an additive technology. The advantages of resultant design of muscle deprogrammer include improved patient acceptance and comfort, muscle deprogramming over long period, and dual approach of fabrication. Moreover, this design facilitate the clinicians to remove the premature contacts and adjust occlusion with the muscle deprogrammer in patients mouth.

Conclusion : A straightforward design for fabricating a muscle deprogrammer by using both conventional and digital workflows. The primary advantage being the neuromuscular reprogramming can be accomplished over an extended period with improved patients' comfort and acceptance.

Development of Mobile App 'DENTMATE' for promoting awareness regarding oral health and diseases among population.

Soundarya Soundararajan, Government dental college and hospital Nagpur

ABSTRACT

Background: In the 21st century, the world is dominated by technology. Smart phones, have become the most accessible and affordable means of gathering information. Various Apps pertaining to Medicine, Healthcare and fitness have gained wide popularity among the general public. In dental fields, the use of Apps is restricted among dental students for educational purposes. However, such digital developments for the patients are limited. With increasing number of internet users worldwide it is reasonable to assume that India will be a large market digitally. Oral hygiene and oral health plays a key role in the population. We aim at providing the users of our app brief and concise information regarding the burning topics in dentistry, thereby, educating the population regarding basic oral hygiene to malignant oral cancers.

Results : The app was designed using Anroid studio application. The user interface and layouts was developed by front- end technologies. A trained model was made which took data from the user and did necessary calculations and gave result to the user. Main tabs:1. Check your symptoms 2.Oral hygiene status 3.Common dental diseases 4.Different branches in dentistry 5.Myths in dentistry 6.FAQs in dentistry 7. Reminders 8.Covid –dentistry. The App is available in English, Marathi and Hindi language.

Conclusion : The main implications of this research projects will – to reach out to wide population and improve oral health status of the entire population.

Digital Workflow – An Innovation and its Impact in Maxillofacial Reconstruction

Komal, Government dental college and hospital Nagpur

ABSTRACT

Background: Digital techniques are being increasingly used in medical practices. Digital medical technologies or the computer aided medical procedures refers to imaging, 3D reconstruction, virtual design, 3D printings, navigation guided surgeries and robotic assisted surgery techniques.
Integration of these techniques to our conventional surgeries produces DIGITAL SURGERY
Rhino-maxillary Mucormycosis affects Maxilla, paranasal sinuses and other facial components creating major functional and aesthetics problems.
The rehabilitation of these patients can be accomplished by combining digital lab techniques with conventional surgical practices.
Patient Specific Implants are designed based on the particularity, severity and availability of supporting tissue present in the patients.
Thus, the Patient specific implants (PSI) are designed to restore the quality of life in patients.

Results : This Table Top Demonstration presents the criteria of 3D Implants Designing and Printing in the Functional and Aesthetic rehabilitation of post COVID Mucormycosis Maxillofacial defects.

Conclusion : The main implication of this study is to restore the masticatory function in patients. It also aims in enhancing the aesthetic as well as Post COVID quality of life.

Efficacious and penny wise way of isolation

Kshitija Dhoke, VSPM dental college and research centre

ABSTRACT

Background: Any dental operating procedures the need for adequate control over operating field. It is imperative that there should be proper moisture control, good accessibility and visibility as well as adequate room for instrumentation around working area.such an environment is necessary for easy manipulation and insertion of restorative materials in oral cavity. Isolating working area includes isolation from moisture like saliva, blood and gingival crevicular fluid and isolation from soft tissue like cheeks, gingival and tongue. One of the major barrier while working on paediatric as well as adult patients is tongue movement which dislodge the placed cotton roll. So we have tried to make newer technique of isolation by use of readily available materials which include cotton, metal wire and acrylic that will not only used for moisture control but can also be used for tongue retraction and it will not get dislodged from site of operation

Conclusion : This innovative way of isolation definitely will become helpful for isolation during restoring tooth in either paediatric and adult patient

Application of CRISPR Screen/Genome Editing in Oral and Craniofacial region

Divya Subhashchandra Yadav, Saraswati Dhanwantari Dental College and Hospital

ABSTRACT

Background: -Precise and efficient genetic manipulations have enabled researchers to understand gene functions in disease and development, providing a platform to search for molecular cures. Early genome editing strategies involved many naturally occurring nuclear, including meganucleases, zinc finger nuclear, and transcription activator-like effector-based nucleases. More recently, the cluttered regularly interspersed short palindromic repeats (CRISPR) / CRISPR-associated nuclear (CRISPR/Cas) system has greatly enriched genetic manipulation methods in conducting research.

Results : Those nuclear generate double strand breaks in the target genetic sequences and then utilize DNA repair mechanism to permit precise yet versatile genetic manipulation. The oral and craniofacial field harbours a plethora of diseases and developmental defects that require genetic models that can exploit these genome editing techniques. Head and neck squamous cell carcinoma remains a highly morbid and fatal disease. Importantly genomic suppressor genes. While targeted therapeutic increasingly are being investigated in head and neck cancer, the majority of these agents are against overactive/overexposed oncoming. Therapy to restore lost tumor suppressor gene function remains a key and under-addressed niche in trails for head and neck cancer. Recent advances in gene editing have captured the interest of both the scientic community and the public.

Conclusion : This Presentation will summarize new techniques, challenges to implementation, future directions, and ethical ramifications of gene therapy in head and neck cancer.

Virtuality To Reality: AI Based Implant Concept Clinic

Sarthak mishra, Chhattisgarh dental college and research institute

ABSTRACT

Background: Innovation in dental practice is the need of the hour and it is being continuously incorporated in the ongoing dental practice to make it more efficient. Artificial intelligence (AI) is a fast moving technology that enables machines to perform tasks previously exclusive to humans. It has its application in radiology and 3D imaging. Inclusion of Al in ongoing practice can make various tasks easy to perform with high level of efficacy compared to the conventional methods.

Results : Integration of maxillofacial radiology with image processing software and CAD with integration of Al into dental implant practice will help deliver an ideal solution for fixed rehabilitation of the implant patients.

Conclusion : The purpose of this narrative is to present a model of Al based implant clinic showing a complete procedure involved in implant from evaluation, investigation, planning followed by treatment to implant delivery.

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