

Journal of Post graduate Club LINK-NXT



LINK-NXT

2021-2022



GOVERNMENT DENTAL COLLEGE & HOSPITAL, NAGPUR

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GOVERNMENT DENTAL COLLEGE & HOSPITAL, NAGPUR

Government Dental College & Hospital, Nagpur (GDCHN) is a Premier Dental Institute catering to oral health care needs of the population of Central India. It is located in the geographical centre of India in the campus of the Government Medical College, which boasts to be the largest medical campus in Asia. Established in the year 1968, the institute is recognized by its governing bodies, Directorate of Medical Education & Research (DMER), Medical Education & Drug Dept. (MEDD, GOM) and Dental Council of India (DCI). Since its inception, it has served as a nurturing alma mater to more than 2000 dental graduates. GDCHN was earlier affiliated to Nagpur University (RSTMU) with an intake capacity of 30 students for BDS. Since then, the intake capacity has more than doubled, to 63 in 2019. In the year 1998, GDCHN got its UG program affiliated to the Maharashtra University of Health Sciences (MUHS), the largest Health Education University in Maharashtra. The institute has been a pioneer in establishing the MDS Post Graduate program in all specialties. The PG degree program got affiliated to MUHS in the year 2009. GDCHN grew further with the addition of PhD program in 2014 and fellowship program in 2017.



HISTORY OF LINK

Dentist alone cannot always solve some of the more complex oral, cranial and facial problems from which patients suffer. This is when the dentist will traditionally refer his or her patient to a several specialist in order to seek additional expertise over the course of treatment as one specialist cannot deal with all aspects of the problem. The interdisciplinary approach brings in the missing collaborative element and allows all specialists involved to conduct a dialogue concerning patient care.

With this in mind, PG Club was established in 2003 by Dr Vinay Hazare. The name LINK- Lively Interaction Nurturing Knowledge and logo of PG club was given by the Department of Oral Pathology and Department of Conservative dentistry and Endodontics. It was inaugurated by Dr. M.V. Lele sir, a pioneer of Department of Oral Pathology, GDCH, Nagpur. Committee was formed with Dean as Head, Staff as Incharge and 2 PG students as editors. PG club activities are annually published in LINK Magazine.

The interdisciplinary team creates a network of shared skills and expertise, open communication, and trust. The ultimate goal is to open the lines of communication, reducing stress with clear expectations of the intended and better treatment outcome. By combining the individual skills and expertise of all the specialists, a comprehensive treatment plan can be developed. With this intention the journey PG club started under guidance of abled staff incharges who worked hard and did necessary changes as when required for betterment of the PG activity.

Committee members who had worked and are working for the PG activity club are mentioned below.

PG Club Incharges:

2004 – 2005	:	Dr. Ramreddy Yeltiwar
2010 – 2012	:	Dr. Sindhu Ganvir
2013 – 2017	:	Dr. Wasundhara Bhad
2018 – 2021	:	Dr. Suchitra Gosavi
2021 onwards	:	Dr. Sulekha Gosavi

● **LINK Editors:**

- 2004-05 Dr. Saritha (OP) & Dr. Ushaina (Endo)
- 2005-06 Dr. Darshan Dakshindas (Endo) & Dr. Vaibhav Karemore (Perio)
- 2010-11 Dr. Riyaz (Endo) & Dr. Harshal (Ortho)
- 2011-12 Dr. Husain Sabir (OMDR) & Dr. Bipin Mule (Prosthodontics)
- 2012-13 Dr. Tushar Shirude (Perio) & Dr. Anup Bhaisare (Endo)
- 2013-14 Dr. Sushant M. Patil (Prosthodontics) & Dr. Shweta Gupta (OMFS)
- 2014-15 Dr. Isha Agne (OP) & Dr. Veena Mangnale (OMDR)
- 2015-16 Dr. Shilpa Kulkarni (Ortho) & Dr. Divya D. Naik (Prosthodontics)
- 2016-17 Dr. Sharad Agrawal (Perio) & Dr. Pooja Kherde (OP)
- 2017-18 Dr. Sonia Baghla (Endo) & Dr. Jagadish Patil (OMFS)
- 2018-19 Dr. Riya Jain (OP) & Dr. Vaishnavi Chodankar (Perio)
- 2019-20 Dr. Henpu Kamki (Pedo) & Dr. Shrama Karemore (OMFS)
- 2021-22 Dr. Meenakshi. M (Endo) & Dr. Dipak Khade (Ortho)

● **LINK Magazine Issues:**

- 2004-05 - Inaugural Issue
- 2005-06 - Second Issue
- 2011-12 - Third Issue
- 2012-13 - Fourth Issue
- 2013-16. - Fifth Issue
- 2016-17 - Sixth Issue
- 2017-18 - Seventh / Golden Jubilee Issue
- 2021-22 - Link-NXT Issue



Dean's Quote



Dr Abhay Datarkar
Dean,
Government Dental College
& Hospital, Nagpur

“Every success story is state of constant adaptation, revision and change”

Change is certain and to cope with it at the work front, skill and knowledge upgradation become more important to keep pace with the fast conversion of traditional technology into modern digital technology, learning and mastering newer techniques enriching ourselves with growing knowledge , carrying out research which will benefit our patients and community.

LINK NXT – MAOC (Multidisciplinary approach to Oral Care) is a post graduate interdisciplinary activity that involves different disciplines of dental, medical, engineering etc sharing a common platform for healthy interaction and exchange of knowledge.

LINK – Lively Interaction Nurturing Knowledge is PG Club which established in year 2003 , is upgraded to **LINK NXT MAOC** to provide the best treatment plan and comprehensive oral care for benefits of the patient. It provides knowledge about current different modalities of various specialties so that the post graduate students can learn about comprehensive treatment planning through case / evidence / problem based learning to achieve complete oral care.

Interdisciplinary involves researchers, students and teachers in the goals of connecting and integrating several academic schools of thought, professions and or technologies along with their specific perspectives in the common task that requires understanding of diverse disciplines to solve complex problems.

In this activity post graduate students give their excellent integrated presentations that speaks about their perseverance of clinical and academic excellence. This has gained a momentum in all these years and surely be taken to a greater heights by these energetic and enthusiastic postgraduate, who are the backbone of this institution and future responsible health care worker of society.

I sincerely congratulate the hard work of officer incharge Dr. Sulekha Gosavi and co-ordinators of **LINK NXT-MAOC** and all Heads of Department, teaching staff, entire team of post graduates and non-teaching staff for their active participation.

“Success is not destination, it is journey. The future belongs to those who learn more newer skills and combine them in creative ways.”

My best wishes to all.

Dr Abhay Datarkar



From the Desk of Vice Dean Academics



Dr. Mrs. W.A. Bhad
Professor & HOD,
Dept of orthodontics and Dentofacial
orthopaedics,
Government Dental College &
Hospital, Nagpur.

*Jacques Delore has rightly said that,
“Education is based on four pillars of
Learning to Be,
Learning to know Each other,
Learning to Do,
Learning to Live and share together.”*

That's what we aim at our Inter-departmental Lively Interaction Nurturing Knowledge (LINK) postgraduate activity.

LINK started, way back in 2003 and I was fortunate to be LINK In-charge from 2013-18. Over a period of two decades, LINK is now upgraded by our next generation, dynamic visionary Dean sir to LINK-NXT and this has become unique best practice of GDCH.

LINK-NXT is a case based ... problem based ... evidence based ... learning and sharing platform for our budding post graduates.

We the faculty at GDCH groom the young minds so that they can walk the path of life successfully. Congratulations to all postgraduates who participated in the LINK-NXT activity of the year 2021-22.

I extend my heartiest congratulations to the officer In-charge Dr. Sulekha Gosavi and Editors Dr. Dipak and Dr. Meenakshi, who have put in immense efforts in this venture.

Good luck to all.

Dr. Wasundhara Bhad



From the Desk of Vice Dean Administration



Dr. Mangesh Phadnaik
Professor &HOD,
Department of Periodontology,
Government Dental College &
Hospital, Nagpur.

"POWER COMES NOT FROM KNOWLEDGE KEPT BUT FROM KNOWLEDGE SHARED"

I feel great pride witnessing and being a part of the ever-enlightening Post Graduate LINK activity for the past 15 years. However, this year an updated version The LINK NXT was unveiled highlighting an interdisciplinary theme for interacting and showcasing of some excellent cases by the postgraduates.

It is a forum to share and discuss an evidence based, forward-looking holistic method to provide comprehensive dental treatment. The Interdisciplinary approach promotes a healthy interaction and cultivate innovative notions and skills.

I would like to extend my appreciation to the LINK NXT team and congratulate them for putting up a splendid and seamless show throughout the year. It is because of their sincere efforts that we could get such an enriching experience.

Dr. Mangesh Phadnaik
Prof. & Head
Department of Periodontology



From the Officer In-charge Desk



Dr. (Mrs) Sulekha Gosavi
Associate Professor,
Dept of Prosthodontics and Crown & Bridge
Government Dental College and Hospital,
Nagpur.

LINK NXT – MAOC (Multidisciplinary Approach to oral Care) upgraded post graduate LINK activity which involved interaction, discussion and debate amongst different disciplines. It is a common platform for healthy interaction and exchange of knowledge amongst post graduate students.

These interdisciplinary of post graduate activities are being conducted very regularly and meticulously. Each activity consists of 2 case presentation which will be case / problem / evidence based. In each case, various department / disciplines will be involved as a team for comprehensive treatment planning in case completion. Minimum 3 or more departments can be team members. Team can be interdisciplinary involving dental specialties or multidisciplinary (involving other discipline like medical, physiotherapy, engineering etc). All presentations will be followed by question and answer session. Feedbacks are collected to know the need for scope of correction that helps in improvement in activity.

This activity provides platform to showcase the knowledge gained to exhibit the exorbitant challenging clinical work and also to disseminate innovative research done by our postgraduate students.

My sincere thanks to Dean Dr. Abahy Datarkar who had shown faith in me and gave opportunity to conduct activity as an in-charge under his guidance. I would like to thank Dr. Wasundhara Bhad (Vice Dean Academic), Dr. Mangesh Phadnaik (Vice Dean Administration) and Dr. Suchitra Gosavi (Former Link In-charge) for their support and timely guidance. At last my heartfelt thanks to my team members, my backbone and pillars Dr. Dipak Khade and Dr. Meenakshi M. for smooth conduction of all the activities.

I wish good luck to all students for their future endeavors.

“Coming together is beginning, staying together is progress and working together is success”

Dr. (Mrs) Sulekha Gosavi



From the Editors Desk



Dr. Meenakshi. M



Dr. Dipak Khade

An investment in
KNOWLEDGE

always pays the best
INTEREST

The Lively Interaction Nurturing Knowledge (LINK) has now been upgraded to Link – NXT Activity. We are fortunate to be a part of this hallmark upgradation. It's a delightful experience for us to co-ordinate and conduct the sessions every alternate month. This platform has helped us to explore and broaden our knowledge about the other dental specialties and interdisciplinary management, thus inculcating a holistic approach in us towards the complete treatment planning for different cases.

We are thankful to our Dean Dr. Abhay Datarkar Sir for being the wind beneath our wings with his constant support throughout this journey. His innovative clinical approach had helped us to upgrade the LINK to LINK – NXT.

We are grateful to Dr. Sulekha Gosavi ma'am, LINK-NXT Officer In-Charge for all the guidance and ensuring that each LINK-NXT session is informative and smoothly conducted.

We are very fortunate to have the blessings and guidance of Dr. Wasundhara Bhad Ma'am and Dr. Manjusha Warhadpande Ma'am for believing in us & giving us this opportunity.

We express our sincere thanks to all the HODs, Faculty and postgraduate students for their support and timely help.

We extend our gratitude to Dr. Henpu Kampi and Dr. Shrama Karemore for their guidance and support.

Dr. Meenakshi. M

Dr. Dipak Khade

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PROSTHETIC REHABILITATION OF A CASE OF HYPODONTIA SECONDARY TO RADIATION AND CHEMOTHERAPEUTIC EXPOSURE



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Abstract

Cancers of the head and neck that present at a younger age warrant therapeutic strategies of a combination of radiation exposure and chemotherapeutic intervention for tumor ablation and prophylactic nodal ablation. Exposure to radiation is attributed to certain side effects such as ablation of tooth buds leading to hypodontia, stunted growth of the jaws and microdontia. We present this case of a 15-year-old male patient with hypodontia diagnosed secondary to radiation and chemotherapy exposure due to being diagnosed with rhabdomyosarcoma, a soft tissue malignant neoplasm when the patient was 2 years old. After pre-prosthetic prophylaxis, extractions of certain deciduous and grossly malformed permanent teeth, and endodontic therapy of carious permanent teeth, the patient was left with a completely edentulous maxilla and dentulous mandible with restored teeth. Inadequate bone availability precluded any implant or fixed therapeutic treatment. Hence, we opted for a removable single complete denture of the maxillary arch against prosthetically restored mandibular teeth. We shall elaborate in our case report, all the necessary modifications in conventional approaches that optimized the retention, stability, support and functionality of a removable prosthesis in a younger patient which optimizes the psychological and functional prosthetic indices.

Introduction

Multi-modal therapeutic strategies such as radiation and chemo-therapy have been developed extensively in recent years to improve the survival of cancer patients of younger ages. As conservative as these strategies may present, they are always associated with cytotoxic effects that lead to long-term complications. Abnormalities such as hypodontia, microdontia, hypoplastic enamel, over-retention of primary teeth, malocclusion and increased caries index secondary to xerostomia^(1,2). There are studies that have reported odontogenic developmental abnormalities in younger patients afflicted with malignancies and treated with chemotherapy and radiation therapy.⁽³⁾ Prosthetic rehabilitation of such patients at the earliest stage not only stabilizes the stomato-gnathic system but also acts to psychologically and socially rehabilitate the patient to the society he/she grows in.⁽⁴⁾

Case report

- A 15 year old male patient reported to the department of prosthodontics with the chief complaint of difficulty in chewing because of missing teeth
- The patient was previously diagnosed with Rhabdomyosarcoma, a soft tissue malignant neoplasm when the patient was 4 years old. He was

treated with radiation and chemotherapeutic regimen of Vincristine 1.5 mg/m sq, Adriamycin 60mg/m sq, Cyclophosphamide 600 mg/m sq, Mesna 400mg/m sq, Dactinomycin 1mg/m sq, Topotecan 0.75mg/m sq and Cyclophosphamide 250mg/m sq

- Reported a recurrence at the age of 9 yrs for which modified neck dissection was performed followed by chemotherapy of the same regimen.
- Intra-oral Examination revealed a Stunted maxillary arch growth 12 13 15 16 25 26 present. 26 was grossly decayed
- OPG revealed under developed roots 12 13 15 16 25 26
- All teeth were present in the Mandibular Arch except 37 and 47. 36 and 46 were grossly decayed
- Grossly decayed teeth with 36, 46
- The patient was diagnosed with hypodontia
- **A Maxillary Conventional single denture and Mandibular fixed prosthesis was decided as the final treatment option**

Treatment plan

- Pre-treatment diagnostics
- Pre-Prosthetic Surgical Procedures- Extraction of remaining maxillary teeth due to poor long-term prognosis secondary to caries. Extraction of 36 because of deep dentinal caries resulting in gross destruction of the tooth.
- Pre-Prosthetic Caries Management by restorations and/or root canal treatment.
- Prosthetic restoration of mandibular teeth by Establishing normal plane of Occlusion with the help of Customized Broadrick's Occlusal Plane Analyzer.
- Construction of a complete denture in maxillary arch with organic occlusion using metal occlusal stops.

Prosthetic management

- Preliminary diagnostic impression of the maxilla and mandible were made and were

mounted on a semi adjustable articulator.

- Preprosthetic endodontic intervention was done to treat the grossly decayed teeth.
- 46 and 44 were endodontically treated
- Following the pre prosthetic phase the definitive prosthetic treatment was started
- Maxillary primary impression was made and a custom tray was fabricated
- A definitive impression was made with green stick compound and zinc oxide eugenol impression paste
- Jaw relation was recorded, and a face bow record was taken
- The facebow record was transferred to the articulator and the casts were mounted
- Customized broadricks occlusal plane analysis was done to correct the occlusal plane
- A wax mockup of the posteriors was done according to the corrected plane
- Mandibular teeth were subsequently prepared using the c silicone putty index as a guide.
- Mandibular final impression was made
- The prepared teeth were temporized with a provisional Bis-GMA material
- This was followed by the coping trial and the cementation of the final crowns on the lower arch
- Fabrication of maxillary single complete dentures
- Maxillary teeth arrangement was done and was subsequently checked in the patients mouth
- Metal occlusal surface was planned on posterior denture teeth as it was against the veneered ceramic surface to avoid wear of denture teeth
- A plaster index of the posterior denture teeth was made for fabricating metal occlusal
- The occlusal surface was trimmed by 2mm to provide space for the metal
- Wax pattern was fabricated for metal occlusal tooth surface
- The metal occlusal trial denture was tried in patientsmouth and subsequently processed.



Intraoral view of Maxillary arch



Intraoral view of Mandibular arch



OPG



Maxillary ridge 2 weeks post-extraction of teeth 12,13,15,16,25&26



Extractions performed in Mandibular arch- Tooth 36 due to extensive caries



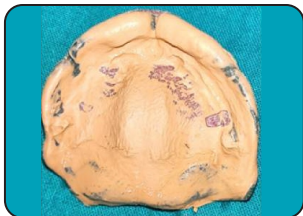
Pre prosthetic endodontic intervention



Maxillary Preliminary Impression



Maxillary Preliminary Cast



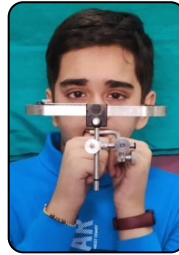
Maxillary Definitive Impression



Maxillary Definitive Cast



Jaw Relation



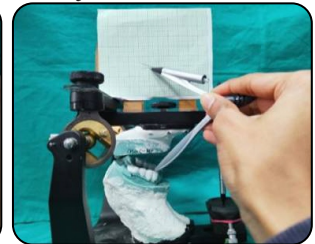
Face bow record



Casts mounted over Semi-adjustable articulator



Customized Broadrick occlusal plane analysis



Wax- mockup of mandibular posteriors according to corrected plane



Tooth preparation



C-Silicone Putty Index as guide for tooth preparation



Mandibular definitive impression



Provisional Bis- GMA restoration were given and checked by using putty index



Cementation of Finished PFM Prosthesis

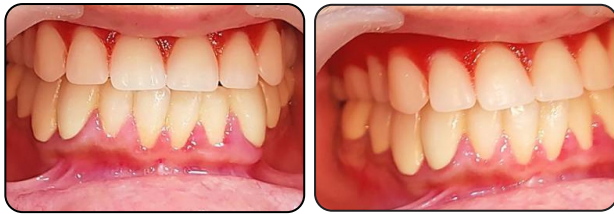


Coping Trial

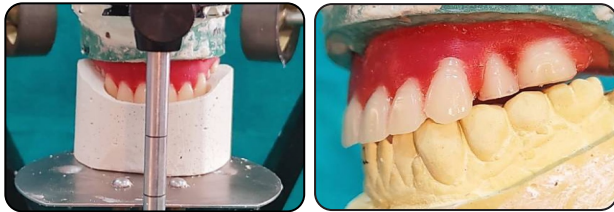


Maxillary Teeth Arrangement





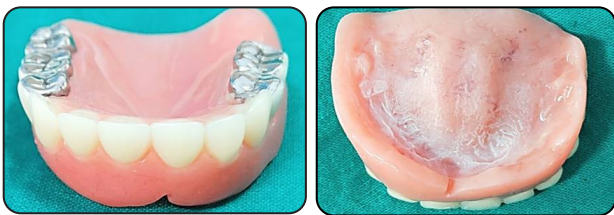
Try-In of Maxillary trial denture



Plaster index for metal occlusal 2mm space for metal occlusal



Wax pattern for metal occlusal teeth surface



Final processed denture with metal occlusal teeth surface and High-Impact Heat-polymerizing Acrylic Denture Base



Without prosthesis



With prosthesis

Discussion

Prosthetic rehabilitation of individuals affected with head and neck malignancies presents with their own set of stipulated complications especially while dealing with younger patients. Usually radio-therapeutic interventions preclude placement of implants up to a prescribed period of 8 to 14 months to prevent complications like osteo-radionecrosis of implant osteotomy site and subsequent implant failure.⁽⁵⁾ Studies have even elucidated the fact that hyperbaric oxygen therapy does not significantly affect the placement of implants in patients undergoing radio and chemotherapy. In younger patients, placing implants prior to completion of all the growth spurts present with another set of complications due to significant bone remodeling and subsequent changes in planned prosthetic positions of the implants. A single removable denture opposing natural dentition is usually more susceptible to prosthetic failures due to acrylic impact fractures. Using metal reinforcing mesh, denture base or high-impact strength acrylic mitigates this issue.⁽⁶⁾ Correcting the occlusal plane ensures better force distribution and loading that contributes to improved denture stability and function.⁽⁷⁾ Opposing ceramic-veneered fixed prosthesis using metal occlusal table prevents functional occlusal wear, promoting an organic occlusal scheme that optimizes prosthetic prognosis.⁽⁷⁾

Conclusion

- An inter-disciplinary approach towards successful prosthetic rehabilitation is warranted to ameliorate functional deficiencies of the stomato-gnathic system secondary to teeth loss.
- A careful balance of diagnostic sciences, therapeutic intervention, esthetic principles and functional engineering contributes to the successful functional, psycho-social and vocational rehabilitation of a languishing survivor of head and neck malignancies.

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MANAGEMENT OF CONDYLAR HYPERPLASIA- A VERSATILE APPROACH



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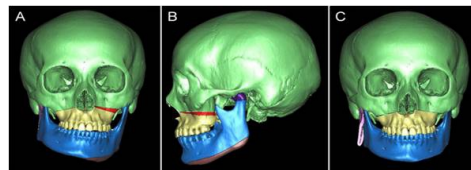
Dr. Hema
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Abstract

Condylar hyperplasia is a condition characterized by increase in size of developing condyle leading to facial asymmetry and malocclusion¹. Most authors have suggested simultaneous condylectomy and orthognathic surgery as the best treatment approach². However, this does not hold true for all cases. So, in this presentation we are going to discuss a case of 23-year-old male who was diagnosed with condylar hyperplasia leading to facial asymmetry and malocclusion treated with condylectomy, wait and watch period followed by orthodontics, where we got excellent esthetic and functional outcome without need for a second surgery.

Introduction

Condylar hyperplasia (CH) is a progressive and pathologic overgrowth of either or both mandibular condyles.



Etiology

- Neoplasia
- Trauma
- Infection
- Abnormal condylar loading
- Hormonal influence
- Heredity

- Aberrant growth factors

What happens

- When Size and Morphology of the Mandible changes it indirectly affects Maxilla thereby affecting Occlusion leading to Worsening of dentofacial deformities, Mandibular prognathism, Facial asymmetry, Malocclusion, Pain.

Treatment objective :

To eliminate the pathologic processes and provide optimal functional and esthetic outcome.

- **Case report** :A 20year old male patient reported to department of oral and maxillofacial surgery with chief complaint as asymmetry of face for past 5 years. There is a history of Chewing difficulty not associated with any pain and no history of reduced mouth opening trauma, facial surgery. No Contributory family history noted.

Extra oral examination



Profile view



Worm view



Bird eye view

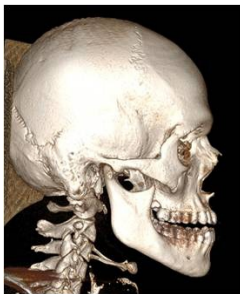
- Facial asymmetry
- Deviation of chin towards left side
- Fullness on right side and flattening on left side.
- TMJs were non-tender on palpation



Class III Molar and Canine relationship

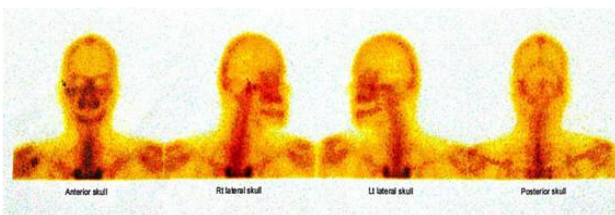


OPG

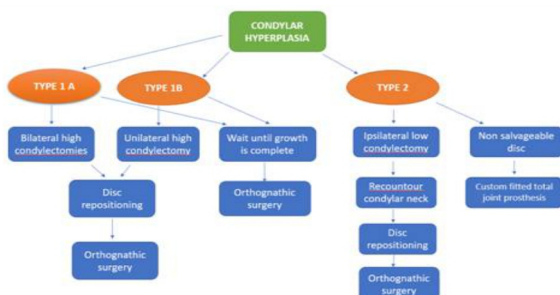


CT Images

SPECT scan TC-99m



FOCAL OSTEOLASTIC ACTIVITY INVOLVING RIGHT TMJ
CONDYLAR HYPERPLASIA



Treatment plan :

- Right side high condylectomy followed by disc repositioning and orthodontics was planned.



Picture post sugery and orthodontics

Conclusion :

Treatment of patients with condylar hyperplasia should include both esthetic and functional problems. So when treating patients with condylar hyperplasia with minimal occlusal cant surgery and wait watch period along with orthodontics gives the best outcome.

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METASTATIC RENAL CELL CARCINOMA - AN RARE ENTITY



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Dr. Prakash Bandiwar
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& Radiology



Dr. Arva Padiwala
Dept. of Oral Surgery

ABSTRACT

Metastatic tumors to the oral region are uncommon, comprising only 1-3% of all malignant oral neoplasms. It accounts for 1-3% of all visceral malignancies. Usually in the 6th & 7th decade of life with male preponderance. Cigarette smokers have double the incidence than non smokers. Clear cell variant is the most common type accounting for 80% of renal cell cancers

The common primary sources of tumors metastatic to the oral region are the breast, lung and kidney. Mandible is the most common location for metastases, with the molar area being the most frequently involved site. They show non-aggressive clinical findings mimicking a reactive or benign lesions or even simple odontogenic infections. However, these tumors are of great clinical significance, as their appearance may be the first indication of an undiscovered malignancy at a distant primary site. Tumor cells are positive for Vimentin & EMA.

CASE

- 66 years / Male
- C/O pain & swelling in lower left back region of jaw since 6 months



History of Present Illness

- Pain & swelling present over left side of face
- No h/o bleeding
- No h/o pus discharge

History of Present Illness

- Pain & swelling present over left side of face
- No h/o bleeding
- No h/o pus discharge
- Past Medical History : not contributory
- Family history : not contributory
- Personal Habit History :
Bidi smoking since 20 years for 5-6 times in a day
Teeth cleaning habit:
Vithobamanjan since 15 years

General Examination

- Patient was co-operative, conscious and well oriented to time, place and person.

Extra-oral Examination



Intra-oral Examination



Radiological Examination



CECT SCAN OF NECK WITH ORAL CAVITY
 Approx 25 ×15×10 mm sized heterogeneously enhancing lesion seen involving left lower alveolus causing expansion and lytic changes in bone. Medially the lesion is abutting floor of mouth and extension in the left sub lingual space. Laterally the lesion is involving lower GBS along its anterior aspect. Left mandibular canal appears to be involved by the lesion.

Provisional Diagnosis
Carcinoma Of Left Alveolo-buccal Complex

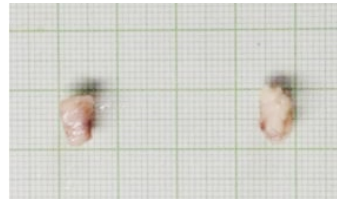
Investigations

- Complete haemogram : Within normal limits
- Biopsy

Biopsy



Grossing

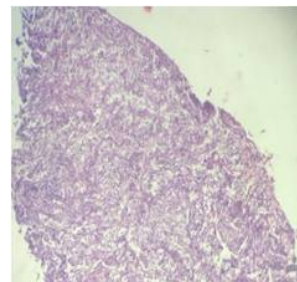


Histopathological examination

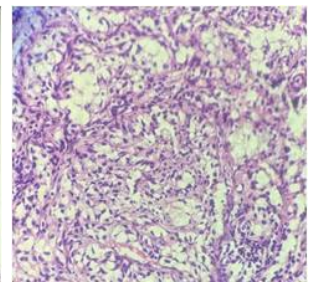


Biopsy no. B/14642/21

H & E Staining

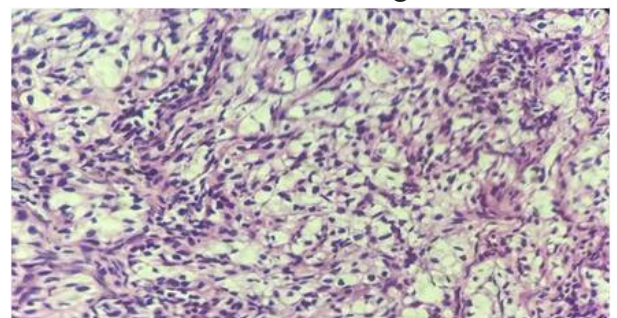


4x



10x

H & E Staining



40x

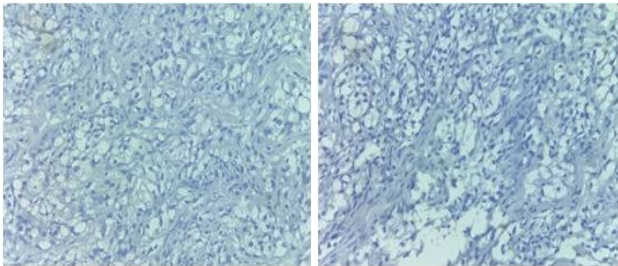
Differential diagnosis

- Oral squamous cell carcinoma with clear cell variant
- Salivary gland malignancy (MEC)
- Clear cell odontogenic carcinoma
- Clear cell variant of CEOT
- Metastatic tumor

MARKERS

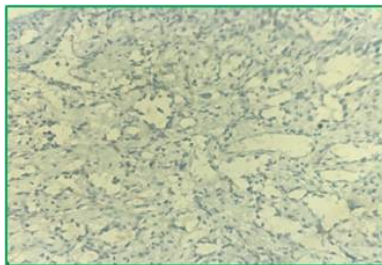
- CK-14
- CK-19
- CK-20
- EMA
- VIMENTIN

Innumunohistochemistry



CK14

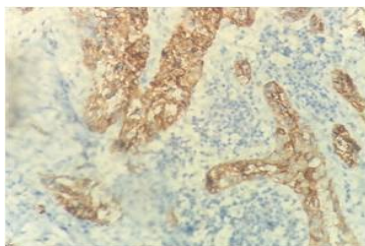
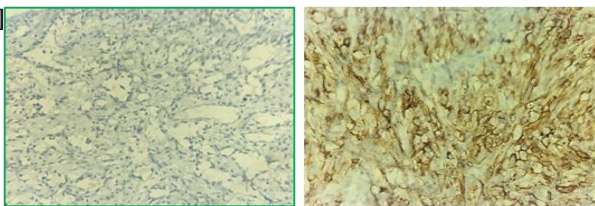
CK15



CK20

Oral squamous cell carcinoma with clear cell variant X

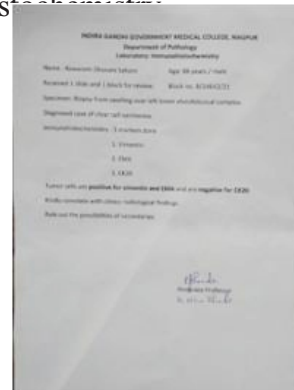
Salivary gland malignancy x
Clear cell odontogenic lesion x
Metastatic tumor



EMAVIMENTIN

Oral squamous cell carcinoma with clear cell variant X
Salivary gland malignancy x
Clear cell odontogenic lesion x
Metastatic tumor

Immunohistochemistry



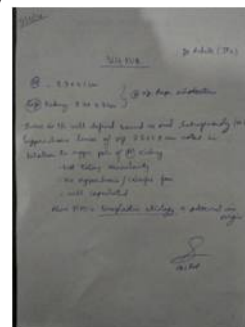
Tumor cells are positive for Vimentin & EMA. Correlation of clinico radiological findings to rule out possibilities of secondaries was required.

METASTATIC TUMORS

- LUNG
- Breast (Female)
- RENAL
- PROSTATE (Male)



Chest X-ray

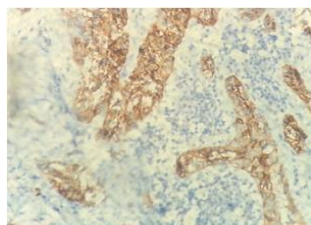
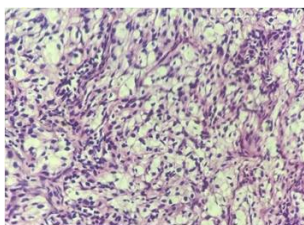
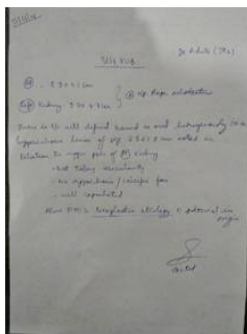


Well defined round to oval heterogeneously isoechoic to hyperechoic lesion of size 3.4 X 2.8 cm noted in relation to upper pole of right kidney

Well capsulated

No vascularity

No hyperechoic or calcific foci



USG Report

Final Diagnosis



METASTATIC RENAL CELL CARCINOMA

Ref. Shafer's textbook page no. 275

RENAL CELL CARCINOMA

- It accounts for 1-3% of all visceral malignancies.
- Usually in the 6th & 7th decade of life with male preponderance
- Cigarette smokers have double the incidence than non smokers
- Clear cell variant is the most common type accounting for 80% of renal cell cancers

All the above findings were present in our case

METASTATIC RENAL CELL CARCINOMA

- Metastatic tumors to the oral region are uncommon, comprising only 1-3% of all malignant oral neoplasms.
- The common primary sources of tumors metastatic to the oral region are the breast, lung and kidney.
- Mandible is the most common location for metastases, with the molar area being the most frequently involved site.
- They show non-aggressive clinical findings mimicking a reactive or benign lesions or even simple odontogenic infections.
- However, these tumors are of great clinical significance, as their appearance may be the first indication of an undiscovered malignancy at a distant primary site.

In our case oral manifestation was the first sign of an occult metastasis of Renal Cell Carcinoma

FOLLOW UP

- On six months follow up pt is still alive and refuses any kind of treatment and further investigations.
- No other complications reported till date.

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MARSUPIALIZATION - CONSERVATIVE APPROACH TO MANAGE LARGE INFLAMMATORY ODONTOGENIC CYST: A CASE REPORT



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Odontogenic cystic lesions of the jaw are not uncommon in children. However, they are asymptomatic in most of the cases and are usually discovered during routine radiographic investigations. Radicular cyst is odontogenic cyst of inflammatory origin which is rare in primary or mixed dentition. It is generally associated with endodontically treated primary mandibular molars. These cysts arise from the epithelial residues in the periodontal ligament as a result of inflammation. Presence of Rushton bodies is one of the characteristic features seen in the epithelial lining of radicular cysts.

The present casereports describe the conservative management (marsupialization) and 1 to 2 year follow-up of radicular cyst in a 9 year-old child.

The treatment comprised of extraction of the primary mandibular molars involved followed by marsupialization and close follow-up for 1 year.

Key words: Marsupialization, Radicular cyst, Mixed dentition.

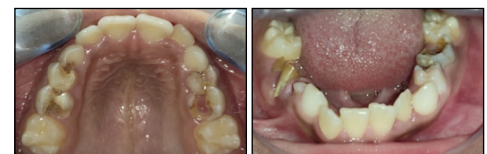
Introduction :-

Radicular cysts represent 60% of odontogenic cysts but are very rare in primary dentition. In relation to the location in the arcades, the mandibular primary teeth are affected more frequently than the maxillary teeth. In most cases they are asymptomatic lesions with slow development; however, these cysts

can become large and lead to tooth mobility and displacement of adjacent teeth. The etiology is related to pulp injuries or pulp necrosis caused by deep dental caries or dental trauma. The mechanism to develop radicular cyst includes pulp necrosis, colonization and proliferation of microorganisms within the root canal system, release of bacteria toxins and inflammatory mediators into the periapical region and a combination of factors involving epithelial-stromal interaction. The periradicular inflammation leads to proliferation of epithelial cell rests. This paper related a case with radicular cysts associated to primary molars, with different characteristics.

Case description:-

A 9 year healthy boy c/o decayed teeth in upper and lower back teeth region. Carious teeth 53,54, 55, 64, 65, 74 and Root piece with 84, 85. Dislodged restoration with 75. Intraoral smooth, bony hard, painless swelling measuring 2cm x 1.5 cm in dimension in left mandibular posterior area of 73 to 36. Mucosa over swelling area appeared normal in colour.



Radio opaque root canal filling material and missing coronal restoration with 75. Large periapical radiolucency seen with the apical

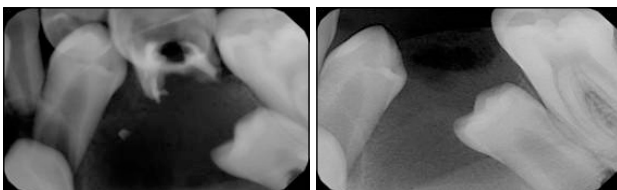
region of 75 with loss of cortication of follicle of 35 displacing 35 apically and distally and root of 34 mesially. Follicular cortication with 33 is intact.



Well defined ovoid radiolucency from distal of 33 to mesial of 37 and extending from alveolar crest to 1cm above the level of lower border of mandible. Fluid aspiration done, Blood tinged Straw- colored fluid detected as shown in photograph.



Treatment plan included removal of the affected tooth Analgesics and antibiotics were prescribed and post-operative orientations were given. At the one-week follow up consultation, the suture was removed and there was good healing of the gingival tissue. Finally, restorative treatment of the other tooth elements was performed. Clinical and radiographic follow-ups are ongoing for next one year.



Pre-operative IOPA radiograph

2 months follow up IOPA radiograph

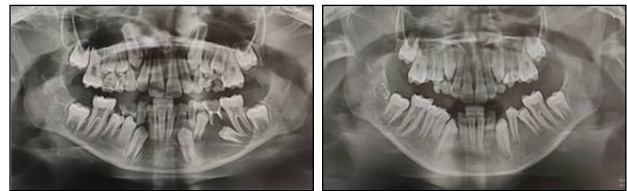


Intra-operative photograph 2 months follow up photograph

Histopathological Examination

The curettage material was sent for histopathological analysis that showed a predominant presence of acute inflammatory

cells, stratified squamous epithelium with underlying connective tissue and confirmed the diagnostic of radicular cysts.



Pre-operative OPG

1 year follow up OPG



Pre-operative photograph

1 year follow up

Discussion:-

Radicular cysts are considered rare in primary dentition, compared with permanent dentition.

The most affected teeth in primary dentition are mandibular molars with endodontic involvement. The treatment options available was to remove the affected teeth, enucleation of the lesion, space management of the involved region and protection against infection. The conservative approach was marsupialization of the affected lesion. Marsupialization causes conversion of the cyst into a pouch and decompression leading to reduction in the pressure in the cystic cavity

Advantages of Marsupialization includes simple and less invasive procedure, spares vital structures, helps in eruption of teeth. It also prevents pathological fractures, reduces blood loss, Reduction operating time and helps shrinkage of cystic lining. It also allows for endosteal bone formation

Conclusion:-

Marsupialization is treatment of choice for management of cysts in young patients with primary or mixed dentition due its underlying simplicity and ability to spare vital structures. This procedure can be performed chair-side under local anaesthesia and so avoids an extensive procedure under GA.

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AN EVIDENCE BASED APPROACH TO DENTAL CARIES



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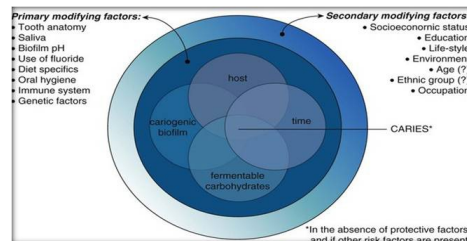
INTRODUCTION:

Dental caries is defined as an irreversible microbial disease of the calcified tissues of the teeth, characterized by demineralization of the inorganic portion and destruction of the organic substance of the tooth, which often leads to cavitation.

EPIDEMIOLOGY:

Out Of 328 Disease Of Global Burden, prevalence of permanent dental caries ranked first and its incidence ranked second.

FACTORS AFFECTING DENTAL CARIES:



PREVENTION OF DENTAL CARIES IN CHILDREN:

Early childhood caries is associated with pain and loss of teeth, as well as impaired growth, decreased weight gain, and negative effects on quality of life. Repairs or extractions of carious teeth can be traumatic experiences for young children and occasionally result in serious complications.¹ Furthermore, it is also seen that dental caries disproportionately affects minority and economically disadvantaged children. Research in the past states that 54 percent of children age 2 to

11 years in families below the Federal poverty threshold experienced primary tooth dental caries, compared with one-third of children in families with good income.² The cost required for treating the carious teeth in these underprivileged children is therefore not affordable by the parents. Thus, prevention of caries rather than curing the teeth should be our primary aim, for which pre screening for dental caries right from the early childhood should be performed to identify caries at an earlier and reversible stage, and lead to interventions to treat existing caries, prevent progression of caries, and reduce incidence of future lesions. Emphasis towards caries prevention should be more rather than the treatment as caries usually tend to cause severe pain, the symptomatic treatment at times can be very intensive, caries sometimes also results in dysfunctional speech and compromised nutrition and as stated earlier the cost of treatment is not always affordable.³ Interestingly, the journey of caries prevention begins right from the time the mother is expecting.⁴ S. mutans and more recently Candida species have been implicated as potential major etiological microorganisms that may be involved in the initiation and development of ECC.⁵ Studies have also shown an association between maternal poor oral health and increased risk for ECC. The association between mother's and

child's oral health could possibly be explained firstly by the mothers' oral health behavior and secondly the mother might be main source of her children's acquisition of oral *S. mutans* and *Candida sp.*⁶

At the same time, it is important for all the expecting as well as parents of infants that the first dental visit should occur as soon as the first tooth erupts or no later than 12 months.⁷ The dental visit provides the dentist an opportunity to advise parents on prevention of oral diseases and also allows for early detection of caries and arrest of its progression.

Dietary analysis of children is very essential as the main reason for dental caries to occur is when the demineralization of the enamel exceeds its demineralization capacity. Bacteria in the dental plaque metabolize fermentable carbohydrates from the diet, particularly sucrose. As a result of this process, organic acids are produced, causing a drop in the pH. It has been hypothesized that when the pH is lower than 5.5, demineralization of the enamel occurs, known as the critical pH. This process occurs every time fermentable carbohydrates are consumed. Caries development necessitates sugar to occur; health care professionals should also be well informed regarding dietary strategies to prevent this disease.⁸

Moving ahead, the effects of fluoride in preventing caries are beyond any reasonable doubt. Inclusion of fluoride use in caries prevention protocols has resulted in significant reduction in caries prevalence in the majority of the population.⁹ Water fluoridation is the most widely adopted means of systemic fluoridation, reaching more than 370 million people in 27 countries, with many studies demonstrating effectiveness and safety, with the sole exception of dental fluorosis as a possible side effect.¹⁰

Fluoride varnish furthermore offers the additional advantage of prolonged contact time, acting as a slow-releasing reservoir to prevent the immediate loss of fluoride after application. These varnishes can be applied quickly and easily and sets rapidly on teeth.¹¹ Preventive measures generally have a huge impact on the avoiding the development of caries and therefore should be inculcated by the children, their parents and the dental professionals.

IMAGING OF DENTAL CARIES

Cariou lesions are detectable radiographically when there has been enough demineralization to allow it to be differentiate from normal. An average of 50% to 70% sensitivity and for definitive decision on caries 30% to 40% demineralization is required. Radiographic examination includes bitewing, IOPA and OPG. Modified radiographic techniques includes Digital Image Receptors (DIR) Scanning Device Indirect digital imaging (IDI). Direct receptors includes Charged couple device (CCD), Complementary metal oxide semiconductor (CMOS) and Flat panel device (FPD). Digital Subtraction radiography (DSR), another modality used to subtract all unchanged structures from a pair of serial films and display only the area of change. DSR is used in evaluation of the progression, arrest, or regression of caries lesions. CBCT method constructs radiographic slices, cross section through teeth, specifically useful for the detection of recurrent caries. Newer clinical diagnostic aids for Dental Caries Detection includes ICDAS Score for clinical diagnosis of caries. Other modalities based on laser fluorescence include diagnodent and quantitative light induced fluorescence. Those based on transillumination are Fibre Optic Transillumination (FOTI), Digital Fibre Optic Transillumination (DI-FOTI) and Near Infra Red Light Transillumination (NIR-LT). Other newer modalities include intra oral camera, dyes and Optical coherence tomography. This presentation will brief about the current mentioned and upcoming modalities for caries detection in dentistry and also discuss evidence based sensitivity and specificity of particular modality.

CASE PRESENTATION NO :1

- ❖ Female patient aged 23 years came to the department with the chief complaint of a discoloration in lower right back tooth region for past 3 months. History revealed no night pain or spontaneous pain in relation to the involved region. Intraoral examination revealed buccal pit caries in relation to 47 and percussion test been negative in relation to 47. Provisional diagnosis been given is buccal pit caries in relation to

47. radiographic examination couldn't reveal the extent of the lesion and no periapical changes seen. on thorough examination and deliberation the treatment plan decided is composite restoration in relation to 47



Preoperative radiograph

❖ The tooth no 47 been isolated using a molar clamp no 7 and caries excavation been done using rotary burs (round diamond bur) and cavity refined using pear shaped diamond bur.



Rubber dam isolation



Tooth preparation

❖ Pulp protection done using Resin Modified Glass Ionomer Cement (approximately 1.5 mm thickness) followed by dentin bonding agent application (universal adhesive) followed by incremental addition of composite resin with curing time of 20 sec each



Pulp protection with rmgic



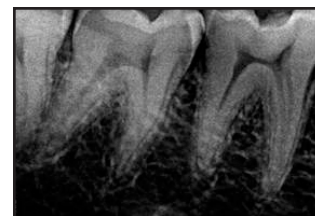
Composite restoration

❖ Finishing done using yellow band diamond bur followed by polishing with color graded polishing disk. Post operative instruction been given to the patient.

CASE PRESENTATION NO :2

❖ Male patient aged 30 years came to the department with the chief complaint of food lodgement in lower right back tooth region for past 2 months . History revealed no night pain or spontaneous pain in relation to the involved region. Intraoral examination revealed Occlusal

caries in relation to 47, 36,37,15,16,26 and percussion test been negative in relation to 47, 36,37,15,16,26. Provisional diagnosis been given is Occlusal caries in relation with 47,36, 37, 15,16, 26. radiographic examination couldn't reveal the extent of the lesion and no periapical changes seen. on thorough examination and deliberation the treatment plan decided is composite restoration in relation to 47,36, 37, 15,16, 26



Preoperative photograph and radiograph (in relation to 46, 47)

❖ Rubber dam isolation and caries excavation been done using rotary burs (round diamond bur) and cavity refined using pear shaped diamond bur.



Tooth preparation

❖ Ethching for 15sec, dentin bonding agent application (universal adhesive) followed by incremental addition of composite resin with curing time of 20 sec each in relation to 47,36, 37, 15,16, 26



Etching with 37% phosphoric acid

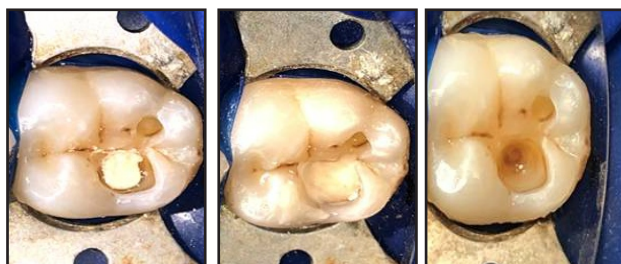


Bonding agent application

❖ Finishing done using yellow band diamond bur followed by polishing with color graded polishing disk. Post operative instruction been given to the patient.



Composite restoration in relation to 36,37



Pulp protection using mta in relation to 47



Pre-Operative



Post-operative

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A PROBLEM-BASED APPROACH WITH TREATMENT CONSIDERATIONS AND TECHNIQUES FOR MANAGEMENT OF SHORT CLINICAL CROWNS



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ABSTRACT

A *short clinical crown* is defined as any tooth with less than 2 mm of sound, opposing parallel walls remaining after occlusal and axial reduction. Indirect restorations require a minimum crown height for the restoration to be biomechanically successful. Troubles associated with short clinical crowns may be limited to single teeth, localized to few teeth or be a part of a more generalized problem.

Attempting to restore a tooth with an inadequate crown height often results in restorations which are biologically, aesthetically and retentively inadequate. The challenges presented by short clinical crowns demand a sound comprehensive treatment plan which take care of both the periodontal and restorative factors to ensure a satisfactory result. Moreover, there are a large number of materials available in the market to fabricate indirect restorations and these materials have different space requirements which have an effect on the treatment plan. Clinical crown lengthening procedures, placement of retentive grooves, choice of restoration with minimum space requirements and endo crown are some of the common treatment options available. Modes of therapy are usually combined to meet the biologic, restorative, and aesthetic requirements imposed by short clinical crowns. This presentation aims to give an insight to a problem-based therapeutic approach available for the management of short clinical crowns and to provide a holistic

treatment to improve the overall oral health related quality of life of the patient.

CASE REPORT

INTRODUCTION

A short clinical crown is defined as any tooth with less than 2 mm of sound, opposing parallel walls remaining after occlusal and axial reduction (1). A comprehensive treatment plan and proper sequencing of therapy is needed to overcome the complications presented by a short clinical crown. This case examines the periodontal and restorative factors related to restoring teeth with short clinical crowns and also various methods available for treating short clinical crowns are reviewed.

When restoring a short clinical crown, the clinician may attempt to gain length by placing a subgingival margin. However, deep subgingival margins that encroach upon the biologic width jeopardize the periodontal tissue and are therefore not desirable (2,3). The short clinical crown cannot be evaluated by visual inspection alone. A thorough examination that includes clinical examination, radiographic examination, and diagnostic cast analysis is essential for successful rehabilitation of severely complicated oral dentition.

Crown retention and resistance form

are primarily related to crown length, total occlusal convergence degree, and axial surface area. Secondary retention and resistance form may be derived from boxes, grooves, or pins placed in solid tooth structure. The relationship of axial wall height to prepared tooth width also greatly influences crown retention and resistance form. The axial wall height must be great enough to prevent the rotation of the casting around a point on the opposite margin. A crown on a short tooth preparation has a greater tendency toward displacement than a crown on a tooth of the same axial wall height with a smaller diameter. Sound tooth structure should provide the principal source of retention. Foundation restorations (buildups) should not be relied upon because it is difficult to know how well the foundation itself is retained. It is important to place the finish line on a sound tooth structure to ensure a favorable prognosis for the restoration (2)

CAUSES:

Common causes of short clinical crowns (SCC) include

- Disease (caries, erosion, tooth malformation).
- Trauma (fractured teeth, attrition).
- Iatrogenic dentistry (excess tooth reduction, large endodontic access openings).
- Eruption disharmony (insufficient passive eruption, mesially tipped teeth).
- Exostosis, and genetic variation in tooth form.

Restorability assessment of short clinical crown

1. Consideration of the arch position of the tooth.
2. Strategic value of the tooth.
3. Periodontal considerations.
4. Crown-to-root ratio.
5. Interarch space occlusion.

CASE REPORT

- A 26-year-old female patient reported to the department of endodontics with a chief complain of pain in the lower right back region of the jaw. On examination there revealed a deep occlusal caries with 46

(Figure1).

- Radiograph (Figure 2) showed caries extending into the pulp with widening of lamina dura.
- Based on this the lesion was diagnosed as symptomatic apical periodontitis with 46. Endodontic treatment of the tooth was planned.
- Under rubber dam isolation, the caries was excavated and access cavity was prepared with a no-2 round bur.
- Under copious saline and hypochlorite irrigation, biomechanical preparation was done after establishing the proper working length and confirming the same with a radiograph (Figure 3).
- Master cone radiograph was taken and the canal was obturated with gutta percha (Figure 4&5). Post endodontic amalgam was done and referred to the department of prosthodontics for crown fabrication (Figure 6).
- On clinical examination, the tooth was asymptomatic and presented with a clinical crown height of 3mm buccally and 2mm lingually and the tooth was in occlusion with the opposing tooth. As previously described this tooth is categorized as a short clinical crown.
- Principle problem was to achieve adequate retention of the restoration within the existing vertical space. The measured clinical crown height was 3mm buccally and 2mm lingually.
- To achieve adequate retention and resistance in a conventional prosthetic crown the minimum abutment height after preparation should be about 4mm. (5-7)
- Based on the conditions, three prosthodontic options were considered, they were:
 1. Conventional full coverage restoration.
 2. Conventional full coverage restoration after crown lengthening.
 3. Endo-crown approach with a monolithic restoration and resin cement.
- A layered restoration like Porcelain fused to metal and Porcelain fused to zirconia should be avoided. Hence, in this case a Cad-Cam fabricated Zirconia restoration was selected as they are stronger in thin sections.

- As per the option selected, after occlusal reduction, the crown height would adversely reduce to about 2 mm buccally and 1 mm lingually.
- The tooth 47 was well in occlusion with an optimum plane of occlusion. Hence, within the restorative space crown lengthening was indicated.
- Without which it would complicate the restoration and oral hygiene maintenance by the patient. Hence, patient was referred to the department of periodontics.
- Flap reflection with resective osseous surgery was done and the crown height was increased by 2mm overall (Figure 7).
- Ideal tooth preparation was done for a zirconia restoration with 5mm wide and deep occlusal box (Figure 8).
- After soft tissue and fluid management, the tooth was scanned with CS3500 intraoral scanner. After designing the endocrown on exocad software, the prosthesis was milled and sintered.
- Air particle abrasion was done to the tissue surface. After conditioning the tooth, ivoclar resin cement was used to cement the restoration.



Figure 1- Deep occlusal caries with 46



Figure 2- Deep occlusal caries involving pulp with widening of lamina dura

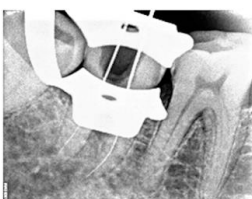


Figure 3- Working length determined



Figure 4- Gutta percha master cone IOPA

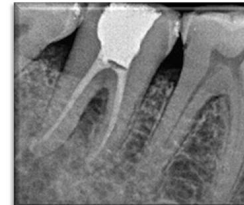


Figure 5- Post obturation IOPA



Figure 6- Post endodontic amalgam restoration



Figure 7- Post crown lengthening procedure



Figure 8- Endocrown preparation

CONCLUSION

A sound knowledge into the various treatment modalities, material sciences and the biological tissues is required to render a successful treatment. Since, this is a common problem encountered it has to be handled with utmost care in order to preserve the oral structures remaining instead of replacing the same.

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CONDYLAR HYPERPLASIA- ORTHODONTIC AND SURGICAL MANAGEMENT - A CASE SERIES



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Abstract-

Condylar Hyperplasia is pathological condition often causing deformation of dentofacial hard and soft tissue. It is diagnosed most often in mid 20s after cessation of growth. Condylar Hyperplasia is self-limiting pathology with excessive growth occurring at the head of mandibular condyle leading to significant facial deformation and occlusal changes along its course. Early surgical intervention is useful in limiting the extent of deformation that Condylar Hyperplasia causes. Wolford recommends high condylectomy which is removal of top 3-5mm of hyperplastic condylar cartilage. Three cases of Condylar Hyperplasia are discussed here

1st case

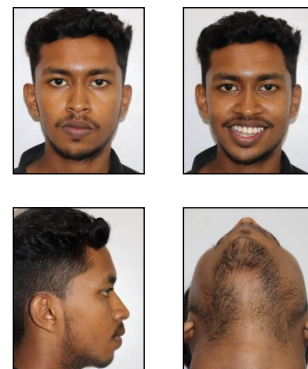
18 years male patient reported with chief complaint of deviation of chin towards right side. There was no significant history of any trauma or facial surgery. Chin deviation towards right was noted 2 years back and it was progressive in nature leading to asymmetry of the face and occlusal canting. Patient was having both aesthetic & functional problems.

On extraoral examination patient was having convex facial profile with reduced nasolabial angle. TMJs were non-tender on palpation. Intraoral examination revealed class I molar and canine relationship on right side

& class III on left side. Upper & lower anteriors were proclined with shift of mandibular midline to right by 3 mm. Provisional diagnosis of condylar hyperplasia was made from clinical examination and OPG which showed elongated condylar neck on affected side. This was confirmed with Tc 99 bone scan.

Appliance was strapped after extractions of all first premolars. Alignment and leveling was completed within 6 months. TADs assisted space closure with crimpable hooks of different heights to correct the occlusal cant was started. Chin deviation was still progressive in nature; hence second Tc 99 Bone scan was repeated. Increased uptake in left TMJ revealed that the lesion was still active. Hence, condylectomy was performed with endaural incision by Oral surgeon. Post surgically the facial asymmetry was corrected to some extent. The case is still under progress.

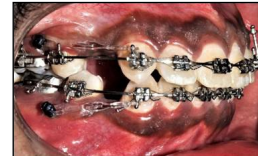
Pre-Treatment Extraoral Photographs



Pre-Treatment Intraoral Photographs



Space Closure Mechanics



Pre-Treatment Radiographs



Mid Treatment



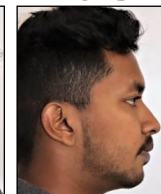
Pre-Surgical Orthodontics



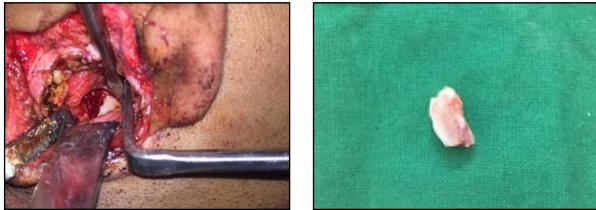
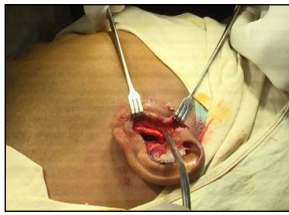
Alignment & Levelling



Mid Treatment Extraoral Photographs



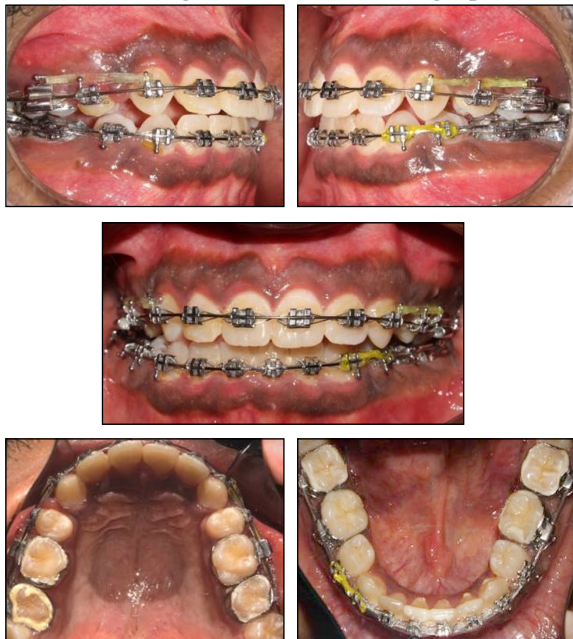
Intraoperative Photographs



Post-Surgical Extraoral Photographs



Post-Surgical Intraoral Photographs



2nd case

Male patient 22 years old, reported with complaint of deviated chin towards right. As per the history, deviation started when patient was 16 years old and had been progressive since then. On clinical examination chin was deviated towards right. Extraoral profile was concave. There was cross bite on right side.

Angle' sclass I relation on right and class III on left side. Lower dental midline was shifted to right by 6mm.

Provisional diagnosis of condylar hyperplasia was made from clinical examination and OPG which showed elongated condylar neck on affected side. This was confirmed with Tc 99 bone scan.

Appliance was strapped and initial alignment and leveling was completed after which condylectomy was performed with preauricular incision by Oral surgeon.

Post surgically class III elastics were prescribed on left side to finish the case Proximal stripping was done in lower anteriors and box elastics were given to achieve overbite. Composite restoration buildups were done for right peg shaped lateral incisor. Occlusion was functionally acceptable at 12months followup. Total treatment time was 24 months.

Pretreatment extraoral photographs



Pretreatment Intraoral photographs

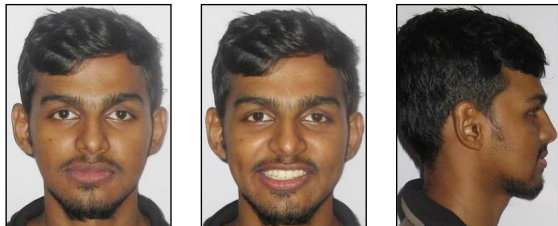


Immediate Postsurgical Intraoral photographs





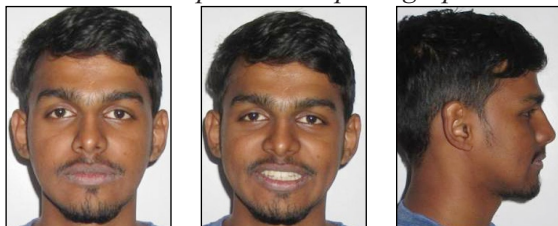
Post treatment extraoral photographs



Posttreatment intraoral photographs



Follow up extraoral photographs



Followup intraoral photograph



3rd case

22 years old male patient reported with complaint of deviated chin. Patient started noticing the chin deviation towards left 3 years back and was progressing.

On clinical examination patient had deviated chin towards left and a straight profile. Intraorally patient had class II molar relation on right side and super class I relationship on left side. Posterior cross bite was present on left side. Anterior cross bite was also present. Both upper and lower anteriors showed interdental spacings. Right upper central incisor was fractured which was restored later on during the treatment.

Provisional diagnosis of right-side condylar hyperplasia was made which was confirmed on Tc99 bone scan.

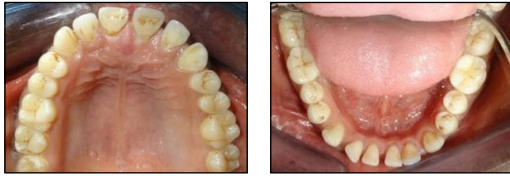
MBT (022") appliance was strapped and initial alignment and leveling was completed. Interdental spaces were closed with power chain. Condylectomy was performed with preauricular incision by an Oral Surgeon.

Postsurgical lyfacial midline was corrected. After period of 3 weeks post surgically, labial root torque was incorporated in rigid 19x25" stainless steel wires. Settling elastics were given. Composite restoration buildup was done for left side fractured central incisor. Post treatment photographs show pleasant profile and good intercuspation.

Total treatment time was 28 months.

Pre treatment extra oral photographs





Posttreatment extraoral photographs



Post treatment intra oral photographs



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Summary & Conclusion

- Unilateral Condylar Hyperplasia (UCH) is a pathology at the head of mandibular condyle which causes overgrowth of one side of the condyle leading to asymmetry and significant esthetic derangement
- Although diagnostic aids are essential, but clinical examination reveals the maximum information about CH
- Surgical management is always advised for correction of CH requiring Condylectomy and in certain cases Orthognathic surgery
- Orthodontic intervention is needed to stabilize the occlusion and allow the condyle to heal after surgery.

Rehabilitation of post-covid mucormycosis maxillectomy defect using patient specific implant (psi) and zygomatic implant -A case report

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ABSTRACT :

Several cases of mucormycosis in people with COVID- 19 have been increasingly reported world-wide, in particular from India. Extensive resection in mucormycosis patient often leads to maxillectomy defect causing communication between oroantral and oronasal compartments and resulting in difficulty in mastication & speech.

According to literature, for maxillary defects, different reconstruction modalities include prosthetic obturation, autogenous bone grafts, allogenic grafts and alloplastic materials. The advent of additive manufacturing, 3-dimensional (3D) printing, and the recent advances in those technologies has positively influenced the biomedical field, leading to the utilization of patient-specific implants (PSIs) in the surgical repair of maxillofacial defects. Computer surgical planning allows a surgeon to freely plan and adjust both the defect and flap, with unobstructed three-dimensional visualization. These custom plates allow for more rigid hardware to be used despite the irregular shape of the maxilla. The use of PSI offers higher accuracy, better site adaptation, and shortened operating time compared to pre-bent or pre-made implants.

Thus, this presentation aims to give an insight of efficacy of Patient Specific Implant(PSI) in functional and aesthetic rehabilitation of post covid mucormycosis maxillectomy defect.

2021) by a rapid and deadly surge with up to a 50% fatality rate. Treatment includes local or systematic antifungal medications and surgical debridement. Surgical excision and debridement of the affected areas results in defects of varied sizes which affects the functions, esthetics, morbidity and quality of life. Most patients are coming in the age groups of 21-40 and are willing for full reconstructions instead of just a simple closure. Prosthodontic rehabilitation or surgical correction of the defect is used to treat maxillectomy defects. The decision to use either of the options is determined by the Site, Size, Severity, Age, & Patient's wishes.

CLASSIFICATION OF MAXILLARY DEFECTS:-

Armany presented a classification system for maxillectomy defects in 1987, divided these defects into 6 categories, based upon the relationship of the defect with the abutment teeth.

Class I: The resection is performed in the anterior midline of the maxilla, with abutment teeth present on one side of the arch.

Class II: The defect in this group is unilateral, retaining the anterior teeth on the contralateral side.

Class III: The palatal defect occurs in the central portion of the hard palate

and may involve part of the soft palate.

Class IV: The defect crosses the midline and involves both sides of the maxilla, with abutment teeth present on one side.

Class V: The surgical defect is bilateral and lies posterior to the abutment teeth. Labial stabilization may be needed.

Class VI: Anterior maxillary defect anterior with abutment teeth with abutment teeth present bilaterally in the posterior segment.

RECONSTRUCTION METHODS

Recent technological advances have led to the use of custom computer-designed patient-specific implants (PSIs) in reconstructive surgery. Its planning and manufacturing require acquiring data from the CT scan in a dicom file format. This dicom file is converted into an STL file that depicts the dimensions of the implant. This STL file is converted into SLI file format that designs the implants into layered (30 microns approx.) structure. This SLI format file is sent to the 3D printer that builds the implant by the process of additive (layerwise) manufacturing. The concept of zygomatic fixtures was introduced by BRÅNEMARK in 1988: long titanium implants (30-52.5 mm) were placed across the alveolar crest and cortically anchored in the zygomatic bone to optimize the use of residual anatomical bone in the upper jaw and zygomatic bone, through alternative insertion angles and consecutive fixed prostheses.

PSI CASE NUMBER ONE



- Age/Gender : 31years/ Female
- Address: Nagpur
- Chief complaint:-c/o missing teeth in right side of the jaw and wants replacement of the same.

Patient specific implant was placed under general anaesthesia & adapted bilaterally to the bone and fixed with titanium mini screw of sizes

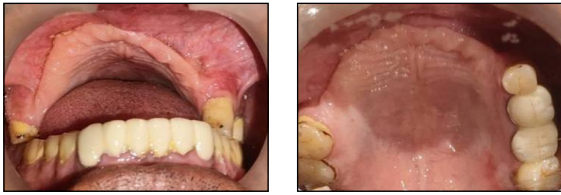
2x6 mm,2x8 mm,2x10mm

Prosthetic phase was done by taking impression and jaw relation & the temporary prosthesis was fabricated & delivered.



PSI CASE NUMBER TWO





Prosthetic phase was done by taking impression and jaw relation & the temporary prosthesis was fabricated & delivered.

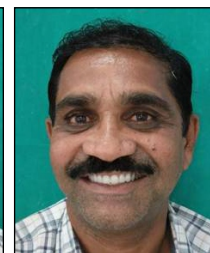
- Age/Gender:- 53 years /Male
- Chief Complaint:- complains of missing teeth & difficulty in mastication since 13 months

HOPI:-

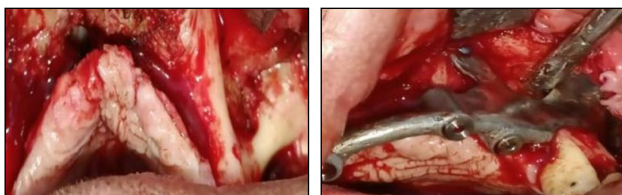
- h/o COVID-19 infection on may 2021
- h/o operated for mucormycosis(b/l maxillary sinus debridement) in month of june 2021

Patient specific implant prototype was fabricated on STL model and the correction were made according to design and amount of bone available. Final prototype was made in designing software. Patient was operated under general anaesthesia & PSI was adapted bilaterally to the bone and fixed with titanium mini screw of sizes.

2x6 mm,2x8 mm,2x10mm.



PSI CASE NUMBER THREE



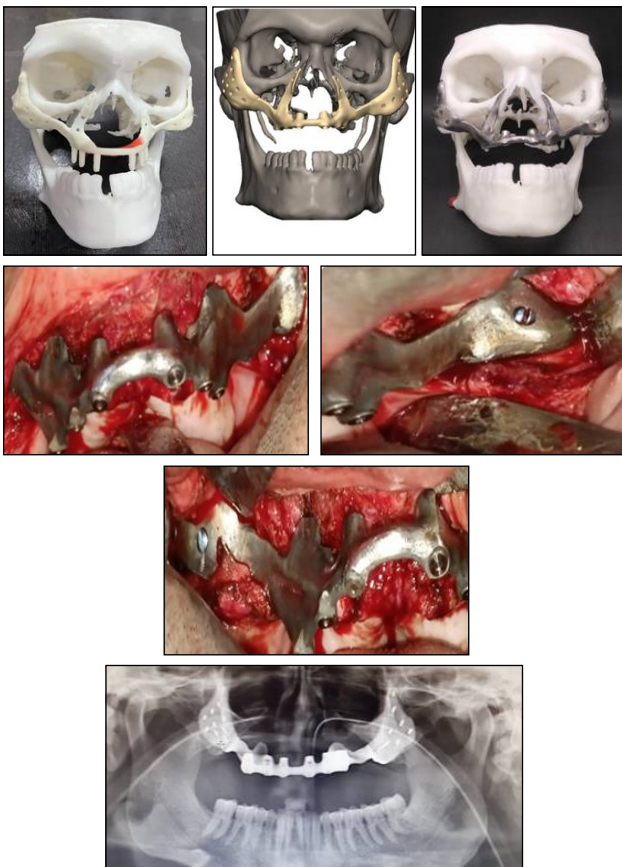


- Age/Gender:- 41 years /Male
- Chief Complaint:- complains of missing teeth & difficulty in mastication since 10 months

HOPI:-

- h/o COVID-19 infection on 13th march 2021; On steroids for 7 days

Patient specific implant prototype was fabricated on STL model and the correction were made according to design and amount of bone available. Final prototype was made in designing software. The design was changed from strut to screw retained where the titanium single tooth implant was welded inside the implant hole in anterior and posterior region.



Patient was operated under general anaesthesia & PSI was inserted through bilateral intraoral vestibular incision & extra-oral crow-feets incision. The implant was adapted bilaterally to the bone and fixed with titanium mini-screw of sizes 2x6 mm,2x8 mm,2x10mm. Nasal extension was cut during insertion due to poor adaptation.

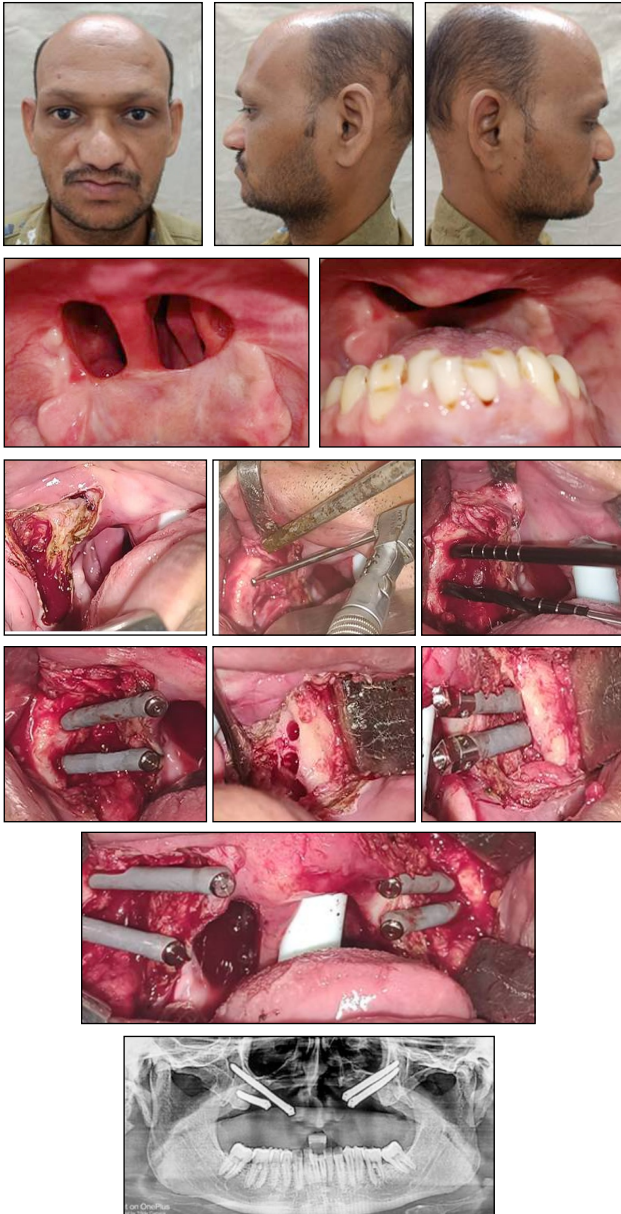
Prosthetic phase was done by taking impression and jaw relation & the temporary prosthesis was fabricated & delivered.



ZYGOMATIC

- Age/ Gender- 34 Yrs/ Male
- Chief Complaint:-complains of missing teeth & difficulty in mastication since 16 months
- HOPI:-

- H/O COVID-19 infection on MAY 2021
- h/o operated for mucormycosis(b/l maxillary sinus debridement) in month of june 2021



IMPLANT CASE

- Age/ Gender- 34 Yrs/ Male
- Chief Complaint:-complains of missing teeth & difficulty in mastication since 16 months
- **HOPI:-**
- H/O COVID-19 infection on MAY 2021
- h/o operated for mucormycosis(b/l maxillary

sinus debridement) in month of june 2021

Patient was operated under general anaesthesia & zygomatic implant was inserted through bilateral intraoral vestibular incision. The implant was adapted bilaterally to the bone and cover screw was placed.

CONCLUSION

- The use of PSI offers higher accuracy, better site adaptation, and shortened operating time compared to pre-bent or pre-made implants
- The use of zygomatic implants offers a comparatively cost effective modality with less morbidity and complete restoration of form, function and esthetics

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FORLORN TO FORTUNE - A MYTH OR A REALITY



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Abstract :

· Periapical lesions develop as sequelae to pulp disease. They often occur without any episode of acute pain and are discovered on routine radiographic examination. The incidence of cysts within periapical lesions varies between 6 and 55%. The occurrence of periapical granulomas ranges between 9.3 and 87.1%, and of abscesses between 28.7 and 70.07%. It is accepted that all inflammatory periapical lesions should be initially treated with conservative nonsurgical procedures. Studies have reported a success rate of up to 85% after endodontic treatment of teeth with periapical lesions

Case report-1

· A 32 years old Female patient came to the department of conservative dentistry and endodontics with the Chief complaint of Pain and swelling in upper front region of the tooth since 1 month. she had History of Trauma 10 years back, teeth 11,12 RCT treatment was done one year back on Oral examination a Diffuse rounded swelling 1x1cm on right side of palatal region was present .tender on percussion and palpation in relation to 11,12,13. Pulp vitality test was done which revealed 11,12,13 as non-vital. On radiographic examination a well-defined radiolucency was seen involving periapical area of 11, 12, 13. on thorough examination treatment plan decided as retreatment with 11, 12 and root canal treatment with 13.

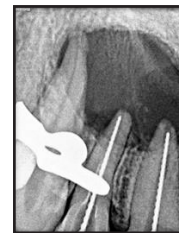


Pre-operative intraoral radiograph



Rubber dam isolation

GP removal



Working length determination

Placement of intercanal medicament



Obturation

6 months follow up

· Teeth 11,12,13, were isolated using rubber dam and access cavity was prepared using no. 2 endo access bur. gutta percha removal was done with teeth 11,12. cleaning and shaping was done for teeth 11,12,13 using hand files and 3% sodium hypochlorite and normal saline irrigation. Calcium hydroxide was used as an intracanal

medicament for teeth 11, 12, 13. in second visit after 1 week root canal were cleaned and final irrigation protocol was followed. Root canals were dried using paper points and gutta percha fit was taken. Obturation was done using gutta percha and bio ceramic sealer. Teeth were restored with composite resin restoration.

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Case 2

Surgical management of cervical root resorption

Abstract-

· External cervical resorption of a tooth is relatively uncommon and the aetiology is not very clear. It is sometimes misdiagnosed and can lead to improper management or tooth loss. Correct diagnosis and proper management can result in a successful outcome. The treatment should aim toward the complete suppression of all resorbing tissues and the reconstruction of resorptive defect by the placement of a suitable filling material or some biological systems.

Case report-

· A 30 years old male patient came to the

department of conservative dentistry and endodontics with the chief complaint of discoloration and pain in the upper front tooth region. He had history of trauma, 12 years back. On intraoral examination blackish discoloration in the cervical third in relation to 21 with localized gingival inflammation was present. Tenderness on percussion in 21 was present and there was Ellis class III fracture in 12. Vitality test revealed that teeth 21, 12 were Non vital. Treatment plan was decided as root canal treatment followed by surgical treatment of cervical root resorption

· Tooth 21 was isolated using rubber dam and access cavity was prepared using no. 2 endo access bur. cleaning and shaping was done for teeth 21 using hand files and 3% sodium hypochlorite and normal saline irrigation. Root canal was dried using paper points and gutta percha fit was taken. Obturation was done using gutta percha and bio ceramic sealer. After the reflection of mucoperiosteal flap and isolation MTA was placed in the resorption defect. Flap was placed back and sutures were given. After 1 week suture were removed. Patient is under f



Pre-operative intraoral photograph



Pre-operative intraoral radiograph



Working length determination



GP fit radiograph



Obturation



Reflection of flap and placement of MTA



Post operative intraoral photograph



Post operative intraoral radiograph

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CASE 3-MODIFIED CAST POST TECHNIQUE - TO MEET AN ESTHETIC CHALLENGE

Abstract-

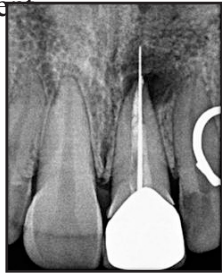
· The restoration of endodontically treated teeth with limited remaining coronal tooth structure often requires the use of post-and-core restorations. A post serves to retain the core material, which serves to replace the missing tooth structure to provide adequate resistance and retention form for a crown. The custom-fabricated cast post-and-core approach has long been advocated as the gold standard because of its high success rate and favourable long-term prognosis. The advantages of using a cast post and core include custom fit to the root configuration, minimal alteration of canal anatomy, and adaptation to large, irregularly shaped canals and orifices.

Case report-

· A 23 years old female patient reported to the department of conservative dentistry and endodontics with the complaint of pain in the upper front tooth region. She had history of root canal treatment before 4 years. On intraoral examination prosthesis seen in relation to 21 with tenderness on percussion. On intraoral radiographic examination a radio opaque material was seen in the root canal beyond the apex with tooth 21. The treatment plan was decided as removal of prosthesis and retreatment followed by placement of same prosthesis after treatment with 21.

· In first visit the crown was removed with tooth 21. After removal of crown and a pin like material from root canal system. Tooth 21 was isolated using rubber dam and access cavity was prepared using no. 2 endo access bur. cleaning and shaping was done for teeth 21 using hand files and 3% sodium hypochlorite and normal saline irrigation. Root canal was dried using paper points and MTA was placed as apical barrier. For custom

fabricated post and core wax pattern was made using inlay wax and already present prosthesis and a metal post and core was fabricated for tooth 21. the crown was cemented using glass ionomer cement.



Post operative



After instrument & GP



Working length



After removal of crown



Placement of MTA apical

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MANAGEMENT OF IMPACTED TEETH “WAKING UP THE SLEEPING BEAUTIES OF DENTISTRY”



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• INTRODUCTION –

Impacted teeth are those which are prevented from erupting by some physical barrier in the eruption path. Maxillary and mandibular third molars and the maxillary cuspids are most frequently impacted, followed by the premolars and supernumerary teeth.

• INCIDENCE OF CANINE IMPACTIONS-

Canine impaction was found in (1.9%) of the population. Bilateral canine impaction was present in 22.3% of the patient with impacted canines. The ratio of maxillary to mandibular impaction was about 10:1.

According to our registry from year 2017, total cases of impacted teeth reported were 282(except third molars impactions). Out of which 67% consisted of impacted maxillary canines, 17% mandibular canines, 8% of premolars and central incisors each.

• ETIOLOGY-

Systemic factors like endocrine disorders, febrile conditions, and/or irradiation are involved.

Several local factors- such as tooth size arch length discrepancies, failure of the primary canine root to resorb, prolonged retention or early loss of the primary canine, ankylosis of the permanent canine, cyst or neoplasm, dilaceration of the root, absence of the maxillary lateral incisor, variation in root size of the lateral incisor (peg-shaped lateral incisor), variation in timing of lateral incisor root

formation, are believed to play critical roles in canine impaction.

Of all the local factors listed above, arch length deficiency is believed to be the most common cause of labially impacted canines.

• CLASSIFICATION-

Archer classification (1975)

Class I- Palatally Impacted canine-

Horizontal / Vertical / Semivertical

Class II- Buccally impacted canine-

Horizontal / Vertical / Semivertical

Class III - Located in both the palatal and labial surfaces.

Class IV - Located in the alveolar process.

Class V - Located in an edentulous maxilla.

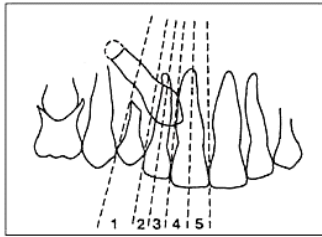
Class VI- Located in aberrant position

• DIAGNOSIS AND LOCALIZATION-

Palpation of alveolar ridge is one of the most common clinical methods to identify the location of the impacted canines. However, 35% of impacted teeth are not clinically palpable. So, many radiographic assessment methods, such as panoramic, periapical, occlusal, lateral cephalometric radiographs and Cone-beam computed tomography have been utilized to evaluate the presence and position of impacted canines. One of these methods involve taking two or more periapical radiographs at different angles to confirm the position of the impacted tooth by utilizing the principle of the SLOB or Clark's rule. The SLOB rule means

“Same Lingual, Opposite Buccal”.

SECTOR CLASSIFICATION-



TREATMENT-

1. Monitoring
2. Extraction of primary canine
3. Auto-transplantation
4. Orthodontic traction

WHY BRING IMPACTED CANINES IN OCCLUSION?

1. Muscle support
2. Esthetics
3. Functional efficiency
4. Risk of pathologies

SURGICAL EXPOSURE AND ORTHODONTIC TRACTION-

Two treatment strategies of surgical exposure are most often used, i.e., closed exposure and open exposure. In the closed technique, a mucoperiosteal flap is surgically opened, the bone to the tooth is removed, and a metal pad with a gold chain is bonded to the tooth. The flap is then sutured back with the chain or the ligature, coming out in the proper place for the best attachment to a fixed appliance system. In the open exposure technique, the soft tissue and the bone are removed, followed by placing the canine in its right position in the dental arch by orthodontic treatment.

Factors in consideration

1. Age of patient
2. Availability of space
3. Radiographic position of canine
4. Patient motivation for orthodontic appliances and General health
5. Presence of adequate width of attached gingiva

CASE-01

An 18 years old male patient reported with the chief complaint of spacing in upper front jaw. On intraoral examination overretained right maxillary primary canine was noticed, though the molar relation was class I with Average overjet and overbite. Generalised spacing present in upper anterior measuring around 4mm with mild crowding in lower anterior that estimated around 3mm. Examination of OPG shows

impacted right maxillary canine. Cephalometric analysis shows skeletal class I pattern. CBCT shows precise location and orientation as obliquely impacted, on buccal side with oblique root in approximation with nasal floor which falls under sector-2 in Erickson and kurol classification.

Treatment plan was first extraction of deciduous primary canine with subsequent orthodontic traction. Tunnel traction method was chosen to take the benefit of extraction socket of primary teeth. After completion of traction, remaining orthodontic treatment continues.

Pre-treatment extraoral photograph



Pre-treatment intraoral



OPG



LAT CEF



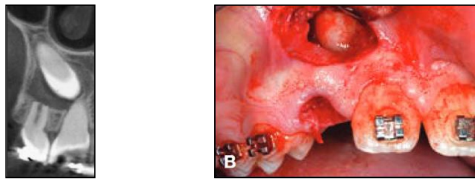
CBCT



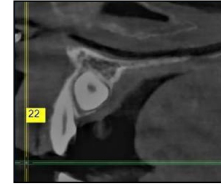
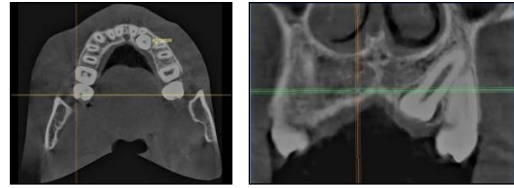
Treatment sequence



Tunnel transation



Mid treatment



Post op- intraoral



Case-2

an adult patient reported with the chief complaint of spacing in upper front jaw. On intraoral examination Impacted left maxillary canine was noticed. Generalised spacing present in upper anterior, Examination of OPG shows impacted left maxillary canine. Cephalometric analysis shows skeletal class I pattern. CBCT shows precise location and orientation as palatally impacted 23. For retraction Ballista spring made up of 0.016-inch wire was used. After 10 months teeth retracted to the level of occlusion. Remaining orthodontic treatment still going on.

Pre-treatment intraoral photograph



OPG

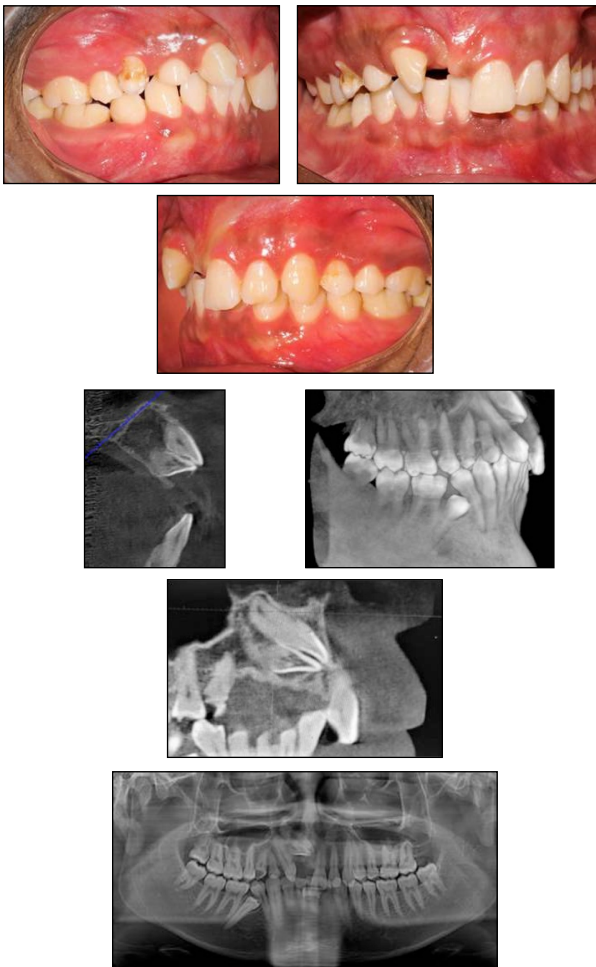


Case-3

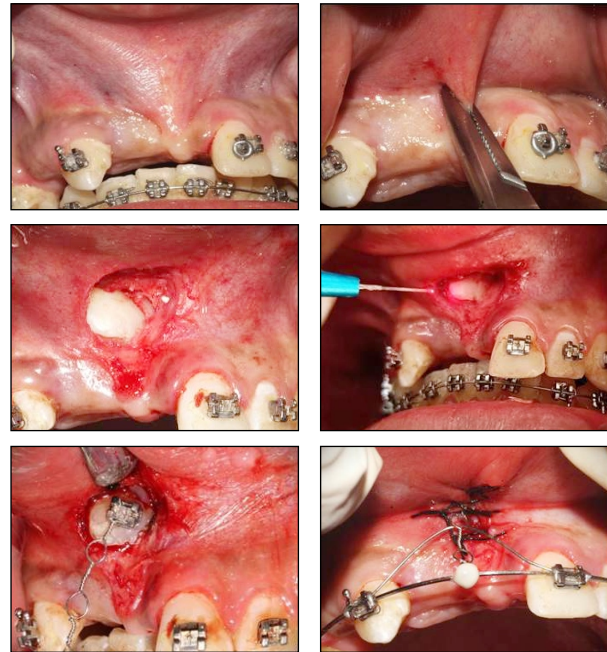
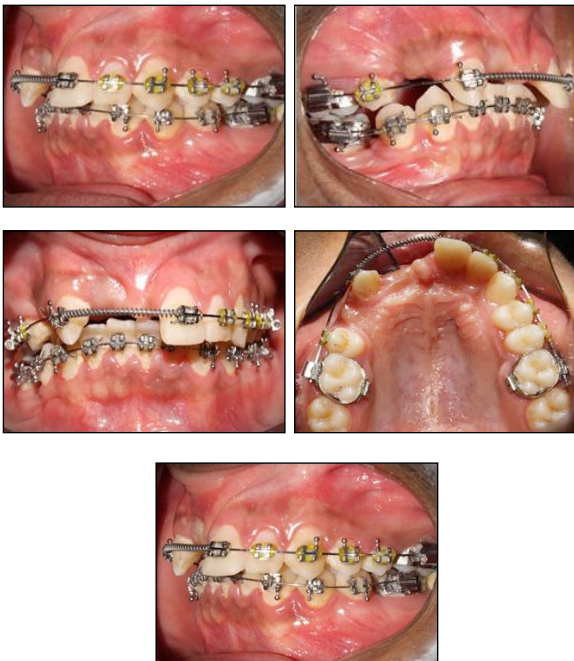
An 18 yrs. old male patient reported with the chief complaint of missing upper front teeth and unpleasant smile. On intraoral examination missing 11,12, 45 with over retained 53 and carious 14 were noticed, though the molar relation was class I with Average overjet and overbite. Examination of OPG shows impacted permanent right maxillary canine. CBCT shows precise location and orientation of 11,12,45. 11, was OBLIQUELY IMPACTED, Crown - Facing Buccal side, Root - Oblique and in approximation with nasal floor. 12, was Horizontally impacted, Crown - Palatal to crown of 11, Root - Horizontal overlapping the wall of maxillary sinus. Treatment plan was first extraction of 53,45,14 with subsequent orthodontic alignment of 11,12. Due to insufficient space for 11 and 12 open coil spring was given to create space. After that separation of crown and roots of 11 and 12 will be done and management of mechanics for vertical traction will be carried out.

Pre-treatment extraoral photograph





Fixed mechanotherapy



Discussion:

- The most desirable approach for managing impacted maxillary canines is early diagnosis and interception of potential impaction. However, in the absence of prevention, clinicians should consider orthodontic treatment followed by surgical exposure of the canine to bring it into occlusion. In such a case, open communication between the orthodontist and oral surgeon is essential, as it will allow for the appropriate surgical and orthodontic techniques to be used.
- The most common methods used to bring palatally impacted canines into occlusion are surgically exposing the teeth and allowing them to erupt naturally during early or late mixed dentition and surgically exposing the teeth and placing a bonded attachment to and using orthodontic forces to move the tooth.
- Although it is recommended to create adequate space first in the dental arch to accommodate the impacted canine and then surgically expose the tooth to give them access so that they can apply mechanical force to erupt the tooth.
- Although various methods work, an efficient way to make impacted canines erupt is to use closed-coil springs with eyelets, as long as no obstacles impede the path of the canine.
- In our Department of orthodontics and dentofacial orthopedics we have designed novel appliance , W-spring for traction of impacted canine.
- Treatment duration in case of impacted canine takes approximately 25-32 months. Various acceleration methods such as sublaxation,

corticotomy, and lasers have been used to reduce the treatment time. In one of our cases we have used lasers assisted canine traction to reduce the treatment time.

Conclusion:

- Every case is different in terms of treatment planning and mechanics to be used.
- Customized treatment plan should be made according to,
 - Impacted tooth.
 - Severity of impaction.
 - Available space of alignment.
- With thorough knowledge of biomechanics we can have win-win situation for both patients and Orthodontist.

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12. Traction of impacted and stacked maxillary anterior teeth with precise biomechanics followed by torque control using gate spring – AJODO 2022.

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