

**Ranjeet Deshmukh
Dental College & Research Centre's
Vibrant
Interdepartmental
Scientific
Activity
2024-2025**



VISA



Dr. Vrinda Kolte
Chairperson, VISA Committee



Dr. Himija Karia
Core Committee Member



Dr. Rohit Moharil
Core Committee Member



FOREWORD

Dr. Abhay Kolte, Dean

Professor and Head, Department of Periodontics & Implant Dentistry,
Ranjeet Deshmukh Dental College and Research Centre, Nagpur



Interdisciplinary research connects fragmented knowledge to solve complex problems, recognizing that disciplines are “nets” for understanding a single world, not separate realities.

VISA Activity has received an immense response and has been growing over the years to establish itself as one of the major interdepartmental scientific activities undertaken by the institute. The special purpose with which the activity was initiated was to showcase the quality of work performed by all the departments/specialties amongst the colleagues and to have better interdepartmental cooperation. It also inspires others to get motivated in trying innovative treatment modalities for better patient care.

In the noble profession, we often face challenges through complex situations which do not apply neatly through a single discipline. The concern towards providing relief for the patient's dental health care needs newer means to solve intricate problems posed by such cases. Such situations are clearly and possibly handled through interdisciplinary approaches. Interdisciplinary activities provide the perfect platform for addressing such challenges by combining expertise, ideas, and methodologies from different fields of the Dental profession.

Interdisciplinary engagement across research, education, and professional practice encourages analytical reasoning, cooperative learning, and creative problem-solving. By engaging with multiple disciplines, students and professionals are exposed to varied perspectives and competencies, enabling them to better comprehend complex systems and develop a more integrated, holistic approach to thinking.

Furthermore, interdisciplinary collaboration extends beyond problem resolution; it emphasizes effective communication across disciplines, the integration of diverse expertise, and the creation of shared understanding. Such collaborative environments cultivate essential attributes including flexibility, teamwork, and intellectual openness—qualities that are increasingly vital for success in a rapidly evolving and competitive global landscape.

This edition of the publication has published interesting cases treated in the respective Departments in the past one year. It is heartening to see the quality of work done in all the departments which really speaks volumes about the overall dental health care we all render to our patients. The commitment of the staff and students involved in the patient care is worth appreciating and reflects upon our own selves in terms of clinical skills and knowledge. Any institution is known by the people working within where some are inclined towards clinical activities and the others in teaching endeavors.

I congratulate the members of the VISA activity who have put in a lot of efforts to bring this publication well in time for all of us. Such initiatives ensure that we all progress together in the profession.

Dr. Abhay Kolte

Dean

Ranjeet Deshmukh Dental College and Research Centre



FROM THE DESK OF VICE DEAN (Administrative)



Dr. Ramkrishna Sheno, Vice Dean (Administrative),
Professor and Head, Department of Oral Surgery, PG Director,
Ranjeet Deshmukh Dental College and Research Centre, Nagpur

As Vice Dean, I view this compilation of interdisciplinary case reports as a meaningful milestone in our institution's ongoing academic journey. It reflects a conscious movement toward integrative clinical thinking, where learning is strengthened through shared expertise and collective insight across dental specialties.

The cases presented encourage reflection on evolving treatment philosophies and highlight the importance of collaboration in navigating increasingly complex clinical scenarios. They underscore the role of our faculty and students not only as skilled clinicians, but as lifelong learners committed to continuous improvement.

I appreciate the thoughtful efforts of the editorial team and contributors in shaping this publication. Such scholarly endeavors serve as catalysts for intellectual exchange and set the foundation for sustained academic growth and innovation within our institution.

Dr. Ramakrishna Sheno
Vice Dean (Administrative)
Ranjeet Deshmukh Dental College and Research Centre



FROM THE DESK OF VICE DEAN (Clinical)



Dr. Mukta Motwani, Vice Dean (Clinical),
Professor and Head, Department of Oral Medicine and Radiology
Ranjeet Deshmukh Dental College and Research Centre, Nagpur

As Vice Dean, I am pleased to note the continued growth of interdisciplinary collaboration within our institution, as reflected in this compilation of case reports. Dentistry today demands integrated thinking, where complex clinical challenges are best addressed through the combined expertise of multiple specialties.

This publication highlights the consistent efforts of our departments in delivering high-quality, patient-centered care while fostering academic excellence. The cases presented demonstrate not only sound clinical judgment but also a strong spirit of cooperation among faculty and students. I commend the editorial team and all contributors for their dedication and timely efforts in bringing out this issue. Such scholarly initiatives strengthen our academic environment and encourage collective progress in both education and clinical practice.

Dr. Mukta Motwani
Vice Dean (Clinical)
Ranjeet Deshmukh Dental College and Research Centre



FROM THE EDITOR'S DESK

Dr. Vrinda Kolte,
Professor, Department of Oral & Maxillofacial Surgery
Ranjeet Deshmukh Dental College and Research Centre, Nagpur



As the Editor, it is a privilege to present this compilation of interdisciplinary case reports that reflect the clinical expertise, academic rigor, and collaborative spirit of our institution. These cases highlight how integrated approaches across dental specialties lead to effective problem-solving and improved patient care.

This issue stands as a testament to the dedication of our faculty and students who continuously strive for excellence in both clinical practice and scholarly contribution. I sincerely appreciate the efforts of all contributors whose commitment made this publication possible.

This year we have gone above and beyond by hosting regional institutes at the interlink activity which was very well appreciated. I congratulate all the staff and students for hosting and participating in the interlink activity.

Regards,

Dr. Vrinda Sunil Kolte

Convenor, VISA Committee

Ranjeet Deshmukh Dental College and Research Centre



Contents		
1	Endodontic And Surgical Management of Traumatic Radicular Cyst: A Case Report	1
2	Verrucous Carcinoma- A Case Report	10
3	Neurofibroma	17
4	A Case Report of Cleidocranial Dysplasia with Multiple Supernumerary Teeth	23
5	Dentigerous Cyst Associated with an Impacted Mandibular Third Molar – A Case Report	27
6	Aesthetic Rehabilitation of child aged 12 year diagnosed with Gunther's disease	36
7	Functional and Esthetic Rehabilitation of Periodontally Compromised Patient Using Basal Implants	43
8	Prosthodontic Rehabilitation of a partially edentulous patient with atrophic Maxilla and Mandible: A Case Report.	50



Endodontic And Surgical Management of Traumatic Radicular Cyst: A Case Report



Presented by:

Dr. Sagarika Sortey

Dr. Hrushikesh Malikar

Introduction:

- Radicular cyst is an inflammatory odontogenic cyst that is most common among all cystic lesions of the jaw.
- Radicular cyst is a sequela of periapical granuloma originating because of bacterial infection and necrosis of dental pulp.
- They are mostly associated with apical and lateral exits of the infected root canal, usually asymptomatic and are discovered sometimes during routine radiographic examination.
- The treatment options for radicular cyst varies from conventional nonsurgical root canal therapy for smaller lesions to surgical treatment like enucleation, marsupialization, or decompression for larger cysts.

Case Report: Demographic Data:

Name: Miss Mansi Baghele

Age/Sex: 18/Female

Chief Complaint: Discolored tooth in upper left front region of jaw since 5 years.

History of Present Illness:

- Patient was apparently alright 5 years back when she noticed slight discolouration in upper front teeth which increased with time.
- No history of pain.
- No history of swelling or pus discharge.

- History of traumatic injury (blow) in upper front region 8 years back.

Clinical Examination:

Extraoral examination:

- No Abnormality Detected

Intraoral examination:

- Discolored tooth with 21



Figure 1- Clinical Examination

- Anterior deep bite seen.

Provisional Diagnosis:

Pulpal necrosis with 21

Investigations: On Electric pulp testing and Cold test there was no response with 21,22 and 23 suggestive of non-vital teeth.

Radiographic examination:

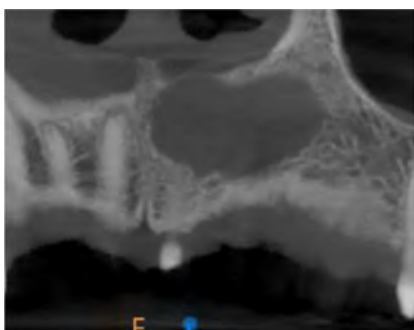
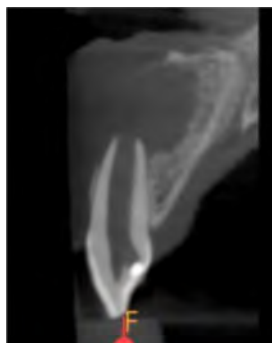
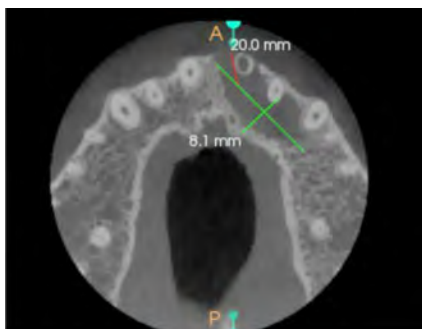
- A large, unilocular radiolucent lesion involving apical region of 21, 22 and 23.
- Incomplete root formation with wide open apex was seen with 21.
- Dilaceration was seen with root of 22.



Figure 2- Radiographic Examination

- Cone beam computed tomography (CBCT) images revealed:

- 1) Labial plate perforation and thinning of nasal floor.
- 2) An osteolytic lesion with well corticated borders



Differential Diagnosis:

Periapical Granuloma	Size is less than 2 cm
Odontogenic Keratocyst	Most common in posterior mandible Multilocular radiographic appearance
Nasopalatine Duct Cyst	Non odontogenic cysts and involved teeth are always vital
Globulomaxillary Cyst	
Pindborg's Tumour	Snow driven appearance on radiographs
Ameloblastoma	Posterior mandibular predilection
Adenomatoid Odontogenic Tumour	Associated with missing teeth Strong female predilection

- As the present case reported was a female patient with non-vital teeth with history of trauma in maxillary anterior region and no signs and symptoms.
- These findings favoured the diagnosis of radicular cyst.

Treatment Planning:

1. Root canal therapy with 21, 22 and 23.
2. Root end filling using MTA with 21
3. Orthograde MTA apical barrier with 22,23
4. Surgical Enucleation of cystic lesion and Apicectomy with 21,22,23.
5. Non-vital bleaching with 21

Preliminary phase:

- Complete oral prophylaxis, done prior to all endodontic and surgical procedures.
- Pre-medication (Amoxiclav 625 mg BID and Diclofenac sodium 50 mg BID for 5 days)
- Patient's written informed consent was obtained before initiating treatment.

Endodontic phase:

First visit-21

- Access cavity preparation with endo access bur, canal orifice located and working length was determined using radiographs
- Upon access opening, purulent discharge through canal was observed. Canal was irrigated with saline and 2% Chlorhexidine.
- Biomechanical preparation was carried out using circumferential filing till no.60 K file.



- 2% Chlorhexidine and saline was used for irrigation.
- Triple antibiotic paste was placed for 7 days.
- Access cavity was sealed using a temporary restorative material.

First visit-22,23

- Access cavity preparation with endo access bur, canal orifice located and working length was determined using electronic apex locator and radiographs.
- Biomechanical preparation was carried out with Azure Endo star E3 sequential file system (6% 25) using crown-down technique in 22 and 23
- Copious irrigation and ultrasonic activation of 5.25% Sodium hypochlorite followed by irrigation with saline (0.9%) and 17% EDTA was done.
- After completely drying of canals with paper points, intracanal calcium dressing was placed for 7 days
- Access cavities were sealed using a temporary restorative material.



Second visit-21

- Access cavity was re-opened and canals were cleaned with thorough irrigation with saline.
- As there was pus discharge through 21, retrograde MTA filling after surgical enucleation of cyst was planned.
- Access cavity was sealed with temporary restoration.

Second visit-22,23

- Access cavities were reopened and canals were cleaned with thorough irrigation with saline.
- As 22 and 23 were asymptomatic and canals were dry, orthograde MTA placement was planned to form apical barrier.
- Canals of 22 and 23 were dried using paper points.
- MTA (ProRoot MTA, Dentsply Sirona) was mixed with distilled water in 3:1 ratio to a wet sand consistency on a clean and sterile glass slab.
- Mixed MTA was carried and condensed properly with help of pre-selected condenser in root of 22 and 23 in an orthograde approach to form an apical plug of 8mm.
- Moist cotton was placed over MTA for setting and access cavity was sealed.



Surgical Management:

- Before surgery xylocaine sensitivity test was done which showed no allergic reaction.
- The patient was then administered with local anesthesia- 2% lignocaine hydrochloride with 1:2,00,000 adrenaline via the infraorbital nerve block bilaterally, nasopalatine nerve block and local infiltration.
- A trapezoidal full thickness sulcular mucoperiosteal flap was raised to gain



access to the area of interest.

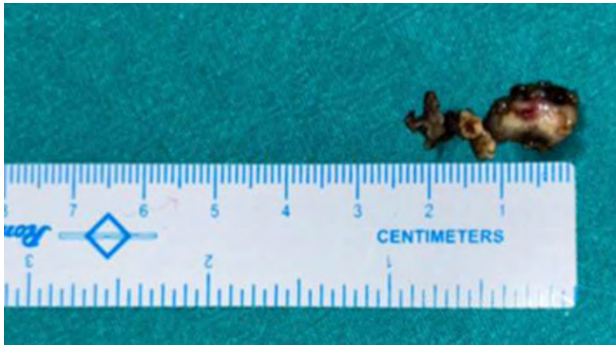
- This flap design was chosen to aid in less soft tissue trauma during retraction and for esthetic reasons.
- This also allows for adequate surgical access and minimize tension and stretching of the soft tissues.
- A time tested axiom regarding the length of an incision is that more trauma results from too short an incision rather than too long and the incisions heal from side to side and not end to end.
- The flap was retracted for proper visibility and to gain access to the surgical area which was followed by the osteotomy procedure.
- The osteotomy procedure involved the removal of the cortical plate to expose the root end.
- The osteotomy was done using micromotor, straight hand piece and HP 702 bur and round bur along with continuous irrigation.



Apical Curettage and Apical Root End Resection:

- Once the osteotomy procedure was completed, the periapical lesion was curetted.
- The pathosis/granular tissue was curetted from the buccal and the palatal aspect of the root followed by irrigation.
- The apical 3mm of the root tip of 21, 22 & 23 were resected perpendicular to the long axis of their root.





Retrograde MTA Placement with 21:

- After the root end resection with 21, retrograde MTA placement was done.
- This was further confirmed through radiograph.



Placement of Platelet Rich Fibrin (PRF):

Before surgery intravenous blood was drawn from the antecubital vein and placed in two 10ml sterile tubes without anticoagulants. The blood was then immediately spun at 2700 RPM for 12 minutes in the centrifugation machine, which resulted in the formation of Platelet Rich fibrin.

The prepared PRF was then placed into the defect site for healing purpose.



Suturing of the flap: It was done using silk (3-0).



Post operative instructions:

- Post operative antibiotics and analgesics (Amoxiclav 625 mg BID for 5 days and Diclofenac sodium 50 mg BID for 5 days)
- Betadine gargles twice a day for 14 days and warm saline rinses after each meal.
- Use of ice packs for cold fomentation was advised.
- Avoid brushing and flossing in the area, instead area should be gently rinsed with plain saline.

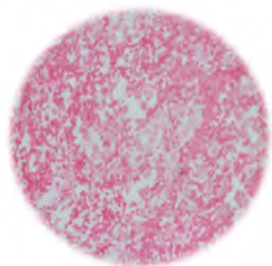
Histopathological findings:

- Provisional diagnosis was confirmed after histopathological examination of the obtained specimen during enucleation.



VIBRANT INTERDEPARTMENTAL SCIENTIFIC ACTIVITY - VISA

- H & E section shows lesional tissue made up of chiefly dense chronic inflammatory cell infiltrate.
- Mainly consists of lymphocytes and small blood vessels.



Final Diagnosis: Pulpal necrosis with infected radicular cyst with 21, 22 and 23.

After suture removal and initial soft tissue healing:

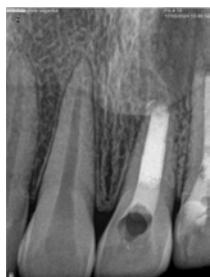
- 21,22,23 were obturated with Thermoplasticized Gutta Percha.
- Post endodontic restoration was completed with 22 and 23 using Nano-hybrid Bulk fill Composite.



- Access cavity of 21 was sealed using a temporary restorative material.

Non-Vital Bleaching with 21:

- After 3 weeks, a GIC barrier of 2mm was placed till the level of CEJ.



- In-office bleaching technique along with walking bleach technique was planned.
- Rubber dam isolation was done
- Additionally, the tooth was isolated using gingival dam to prevent damage to the soft tissues



- 35% hydrogen peroxide (Pola office) was applied using micro-applicator tip on the tooth and inside the pulp chamber followed by light activation.



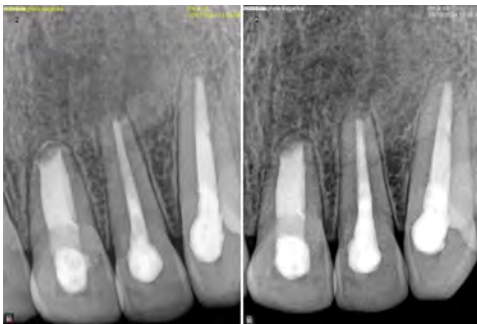
- The tooth surface was washed with water and access cavity was sealed with a temporary restoration
- Patient was recalled after 1 week.
- The procedure was repeated after 1 week to obtain desired results.



- Post endodontic restoration was done with 21 using Nano-hybrid Bulk fill Composite after the bleaching procedure was completed.

Follow up:

- Patient remained asymptomatic in follow up period and we observed complete regeneration of bone and periapical healing during the 6 month follow up.



Discussion: Cyst is defined as a pathological cavity that is usually lined by epithelium and which has a centrifugal, expansive mode of growth.

Among all jaw cysts, radicular cysts are most common comprising of 52% (Shear 1992) to 68 % (Killy et al 1977).

Classification: Radicular cysts are broadly classified as:

- Periapical cyst- Cyst associated with periapex of the involved tooth.
- Lateral radicular cyst- Cyst associated with lateral surface of root indicating exit of lateral canals.

- Residual cyst- Cyst persisted after the extraction of offending tooth.

Trauma is one of the important etiological factors for radicular cyst. It can lead to necrosis of the pulp and render the tooth non vital. Persistent chronic infection can lead to formation of a periapical cyst through the phases of initiation, cyst formation, enlargement. It has been stated that as the cyst enlarges, adjacent teeth can become non-vital.

In this case, patient had history of traumatic blow in the anterior region and 21,22 and 23 were non vital. These findings suggest that trauma could be the possible etiology behind non vitality of teeth and developing radicular cyst in this present case.

Radicular cysts are often asymptomatic and detected accidentally on radiographs. In the current case, patient was asymptomatic and only complained of poor esthetics due to discoloration of tooth.

Treatment plan included root canal treatment with 21, 22 and 23 as they were non-vital.

Working length for 21 was determined with the help of radiographs as accuracy and reliability of electronic apex locator is found to be questionable in teeth with incomplete root formation. Electronic apex locator (Root ZX) was used to determine working length in 22 and 23 as it has been reported to be accurate within 0.5 mm more than 90% of times. This was further confirmed through radiographs.

Thorough chemico-mechanical debridement was carried out to eliminate the necrotic pulp and bacterial products. As 21 was associated with pus discharge, 2 % Chlorhexidine with normal saline was used for irrigation. Irrigation protocol for non-vital teeth i.e. 5.25 % Sodium hypochlorite along with saline and followed by 17 % EDTA was done in 22,23.

Triple antibiotic paste was used as intracanal medicament in 21 due the weeping canal as it can more effectively neutralize tissue debris,



eliminate persisting microorganisms in canal owing to its large antimicrobial spectrum.

Intracanal Calcium hydroxide dressing was placed as an intracanal medicament in 22,23 as it acts as a bactericidal agent and maintains high pH in periapical tissues and promote healing.

Considering large size of the lesion, surgical enucleation and curettage was considered in this case. Root end resection with 21,22,23 was carried out as it was noted as focus of infection. 3 mm root end was resected with 21,22,23 as 99% of ramifications and 93% of lateral canals are believed to be present in apical 3 mm of root. Root end was cut perpendicular to the long axis of tooth with zero bevel.

Due to incomplete root formation and a weeping canal with 21, MTA was used to create an artificial apical barrier in a retrograde manner after root end resection. MTA was placed in an orthograde manner with 22 and 23.

MTA has been preferred as it seals the multiple portals of entry and exit in the apical third and forms a strong apical barrier. Other features include higher biocompatibility, less microleakage, bactericidal effects and good radiopacity.

This was followed by thermoplasticized Gutta Percha obturation using AH Plus Sealer.

AH Plus Sealer was used for obturation due to its advantages such as excellent sealing, low shrinkage, low leakage and high adhesion to dentin.

In order to aid in healing process after surgical enucleation of infected radicular cyst, platelet rich fibrin (PRF) was placed. In a study by Garg et al (2023) a highly significant difference in radiographic healing was observed at 6 months between the PRF (Platelet Rich Fibrin) and FDBA (Freeze dried bone allograft) group. Complete healing was observed in 50% of cases in PRF group

whereas in FDBA group, none of the cases presented with complete radiographic healing.

Healing after periapical surgery can be determined by:

Clinical factors that include absence of:

- Pain
- Sinus tract
- Swelling
- Apico-marginal communication
- Tenderness to palpation or percussion.

Standard radiographic healing classes include:

- Complete healing
- Incomplete healing (scar tissue formation)
- Uncertain healing (partial resolution of radiolucency)
- Unsatisfactory healing (no change or an increase in postsurgical radiolucency)

In current case, patient was asymptomatic in follow up periods with no clinical signs and symptoms.

Radiographically, complete healing with resolution of periapical radiolucency was observed at 3 and 6 months follow up period.

In our case, non-vital bleaching was planned for the discoloured left maxillary central incisor to improve the esthetics. Non-vital bleaching (internal bleaching) is a conservative, simple, effective, and low-cost procedure, with good esthetic results, in the treatment of non-vital tooth discolorations. The cervical barrier is a standard of care in internal bleaching techniques and should be used.

We observed complete regeneration of bone and periapical healing during the 6 month follow up. Patient remained asymptomatic in follow up period.

At 6 months follow-up, no recurrence was observed and periapical radiograph showed resolution of periapical radiolucency and revealed a new bone formation at the site of cystic lesion.



Conclusion:

- Radicular cyst is the most common inflammatory odontogenic cyst occurring as a result of trauma.
- For accurate diagnosis of radicular cysts, thorough clinical, radiological and histopathological evaluation is needed.
- Platelet rich fibrin (PRF) can aid in bone

healing process after surgical enucleation of infected radicular cyst.

- Non-vital bleaching is a non-invasive technique to treat the intrinsic discoloration of teeth and improve esthetics.
- Thus, this case report of the radicular cyst summarizes the clinical, radiological and histological features and its treatment plan.

References:

1. Odontogenic Cyst - an overview | ScienceDirect Topics [Internet]. [cited 2024 Mar 15].
2. Kumar J, Vanagundi R, Manchanda A, Mohanty S, Meher R. Radiolucent Jaw Lesions: Imaging Approach. *Indian J Radiol Imaging*. 2021 Jan;31(1):224–36.
3. Kadam NS. Management of Large Radicular Cyst by Conservative Surgical Approach: A Case Report. *J Clin Diagn Res* [Internet]. 2014
4. Kadam NS, Ataide IDND, Raghava P, Fernandes M, Hede R. Management of Large Radicular Cyst by Conservative Surgical Approach: A Case Report. *J Clin Diagn Res JCDR*. 2014 Feb;8(2):239–41.
5. Narula H, Ahuja B, Yeluri R, Baliga S, Munshi AK. Conservative non-surgical management of an infected radicular cyst. *Contemp Clin Dent*. 2011;2(4):368–71.
6. Elhakim A, Kim S, Kim E, Elshazli AH. Preserving the vitality of teeth adjacent to a large radicular cyst in periapical microsurgery: a case report with 4-year follow-up. *BMC Oral Health*. 2021 Aug 3;21:382.
7. Deshmukh J, Shrivastava R, Bharath KP, Mallikarjuna R. Giant radicular cyst of the maxilla. *BMJ Case Rep*. 2014 May 2;2014:bcr2014203678.
8. Present status and future directions of intracanal medicaments - PMC [Internet]. [cited 2024 Apr 1]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9321724/>
9. Physicochemical properties of AH plus bioceramic sealer, Bio-C Sealer, and ADSeal root canal sealer | Head & Face Medicine | Full Text [Internet]. [cited 2024 Apr 1].
10. Solanki NP, Venkappa KK, Shah NC. Biocompatibility and sealing ability of mineral trioxide aggregate and biodentine as root-end filling material: A systematic review. *J Conserv Dent JCD*. 2018;21(1):10–5.
11. Jang JH, Lee JM, Yi JK, Choi SB, Park SH. Surgical endodontic management of infected lateral canals of maxillary incisors. *Restor Dent Endod*. 2015 Feb;40(1):79–84.
12. Dominiak M, Lysiak-Drwal K, Gedrange T, Zietek M, Gerber H. Efficacy of healing process of bone defects after apicectomy: results after 6 and 12 months. *J Physiol Pharmacol Off J Pol Physiol Soc*. 2009 Dec;60 Suppl 8:51–5.
13. Jacob S. Rushton bodies or hyaline bodies in radicular cysts: a morphologic curiosity. *Indian J Pathol Microbiol*. 2010;53(4):846–7.
14. Pandey SH, Patni PM, Jain P, Chaturvedi A. Management of intrinsic discoloration using walking bleach technique in maxillary central incisors. *Clujul Med*. 2018;91(2):229–233.
15. Garg M, Srivastava V, Chauhan R, Pramanik S, Khanna R. Application of platelet-rich fibrin and freeze-dried bone allograft following apicoectomy: A comparative assessment of radiographic healing. *Indian J Dent Res*. 2023 Jan-Mar;34(1):40–44.



Verrucous Carcinoma- A Case Report



Presented By:

Dr. Sheetal Kedar, MDS-1

Dr. Anant Kahare, JR II - OMFS

- Verrucous carcinoma is also called as snuff dipper's cancer or Ackerman's tumour.
- Verrucous carcinoma is low grade variant of Oral Squamous Cell Carcinoma.
- Verrucous carcinoma represents less than 1%-16% of all the squamous cell carcinomas.

The Patient:



AGE: 41 years

SEX: Male

ADDRESS: Nagpur, Maharashtra.

Chief Complaint: Patient complaints of pain in upper right back region of jaw since 8 days.

History Of Present Illness:

- Patient was apparently alright 1 year ago until he noticed ulceration over upper right buccal mucosa.
- Initially the ulcer was small in size which gradually increased in size.
- Patient then started experiencing pain in the upper right back region of jaw since 1 month.
- **Medical history:** Not significant.

- **Past dental history:** Not significant.
- **Family history:** Not significant.
- **Personal history:** Brushes teeth once daily with tooth paste and tooth brush.
- **Habits:** H/o kharra chewing & tobacco chewing since 5 years for 2-3 times a day

General Examination:

- General appearance: Patient was conscious, co-operative and well oriented to time, place and person.
- Built: Mesomorphic
- Gait: Normal
- Height: 5 feet 6 inches
- Temperature: afebrile
- Pulse: 74 bpm
- Respiration: 18 cycles per minute
- Blood Pressure: 126/78 mm of Hg
- General Examination
 - Pallor
 - Icterus
 - Clubbing
 - Odema

} Absent

Extra-oral Examination:



- Facial asymmetry is noted due to diffuse swelling on the right side of face.
- Anteroposteriorly 7cm from corner of mouth to the angle of mandible . Superoinferiorly extends from 5cm below the alatragus line to 1cm above the lower border of mandible.
- Size = Approx 7cm x 5 cm



- Bilateral blanching seen on buccal mucosa & soft palate.
- Keratotic patch seen on right side of tongue.
- Uvula could not be assessed due to reduced mouth opening.
- Restricted tongue movements.
- Vertical fibrous bands are palpable bilaterally in buccal mucosa.
- Mouth opening 15 mm
- Teeth present: All teeth are present.
- Grade II mobility with 16 & 17
- Stains ++
- Calculus +



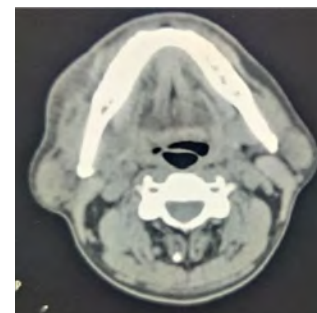
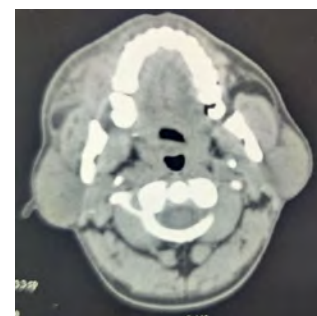
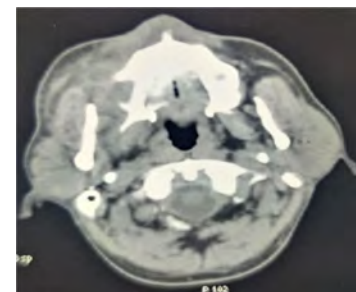
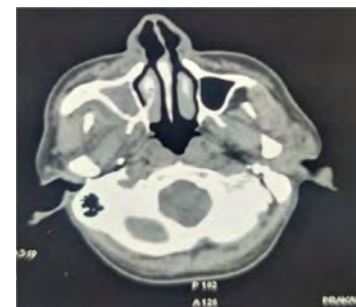
Provisional Diagnosis: Verrucous Carcinoma & OSMF Stage IV (according to Khanna et al. classification)

Differential Diagnosis: oral squamous cell carcinoma

Investigations:

- CECT
- Hemogram
- Biopsy

Radiological examination-CECT





- Report suggestive of neoplastic lesion with no bony involvement.
- For more detail advice histopathology & PET scan
- Blood investigations – within normal limits
- Incisional Biopsy: s/o verrucous proliferative growth

Treatment Protocol for Verrucous Carcinoma:

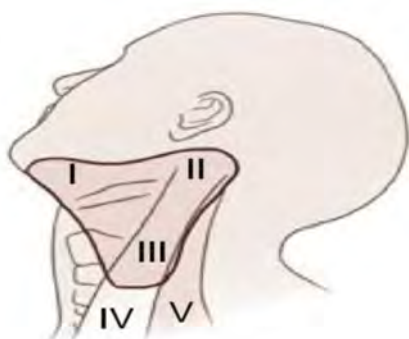
Wide local excision of primary tumor with right infrastructural maxillectomy followed by Supra-omohyoid neck dissection and reconstruction with Anterolateral Thigh Flap

Surgical approach:

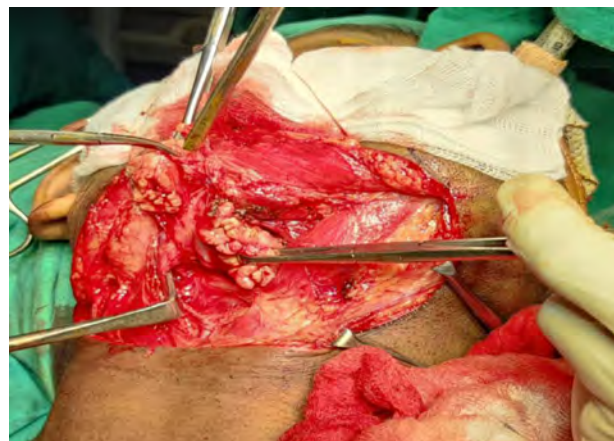


After intubating the patient under General anesthesia. Apron flap with lower lip split incision was taken exposing supra omohyoid region by dissecting in subplatysmal plane.

Neck Dissection:



Supraomohyoid
neck dissection



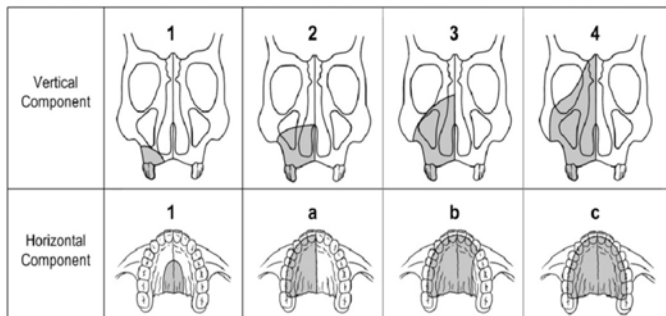
In this selective neck dissection, removal of level 1 2 and 3 lymph nodes along with right submandibular gland was done.



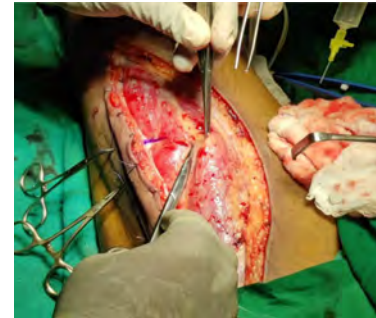
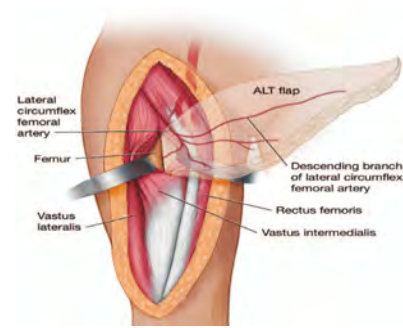
After the supra omohyoid neck dissection, wide local excision of the primary tumour was carried out. Then bite resection with

right infrastructural maxillectomy was done. Now in the 2nd image we can clearly see the excised tissue having a minimum safety margin of 5 to 10 mm from all sides.

Brown's classification of maxillectomy:



Vertical component	
●	Class 1: Removal of maxillary alveolar bone without resultant oro-antral or oronasal fistula
●	Class II: Low maxillectomy. Resection of the maxillary alveolus and antral walls but not involving the orbital floor or rim
●	Class III: High maxillectomy. Involves the orbital floor, periorbital structures +/- skull base resection
●	Class IV: Radical maxillectomy. Orbital exenteration +/- anterior skull base resection
Horizontal component	
●	a: Unilateral resection of alveolar maxilla and hard palate
●	b: Bilateral resection of alveolar maxilla and hard palate
●	c: Complete resection of alveolar maxilla and hard palate



And then the case was handed over to plastic surgery for reconstruction with ALT flap.

Anastomosis is achieved between descending LCFA and facial artery and respective veins using Ethilon.





1st one is the post op image taken after 2 days where we can appreciate the reconstruction. The 2nd and 3rd image are taken after 4 months where we can appreciate the mucosalization.

Follow up:



Acknowledgements:

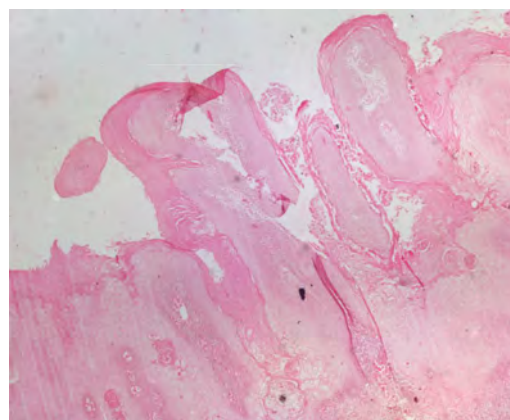
 Thank you

- Dr. Ramakrishna Sheno - Head of the Department
- Dr. Vrinda Kolte - Professor
- Dr. Kshitij Bang - Associate Professor
- Dr. Pranav Ingole - Associate Professor
- Dr. Nilima Budhreja - Reader
- Dr. Rahul Dahake - Senior Lecturer
- Dr. Sandeep Khandaikar - Senior Lecturer

Histo-pathology:

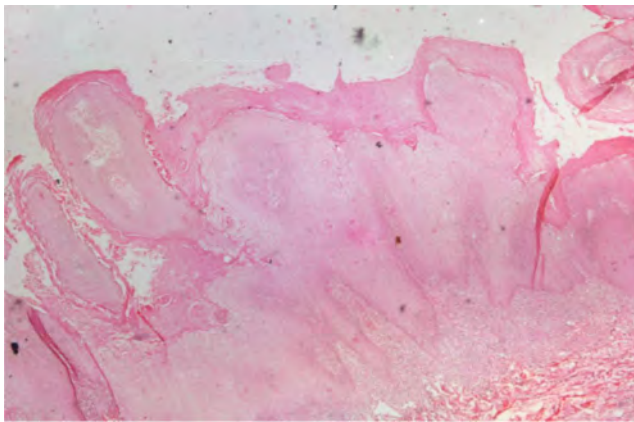
 on excisional biopsy

Histo-pathology:



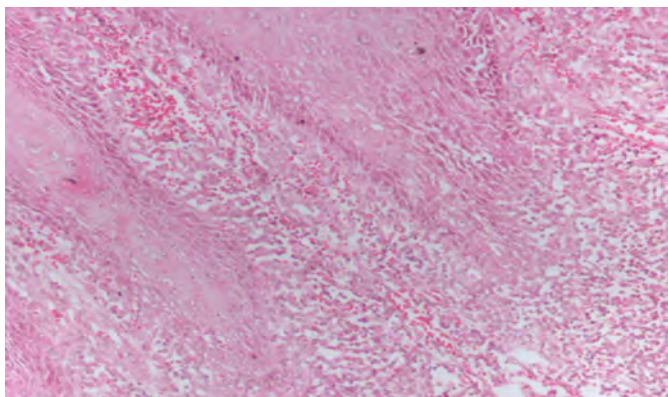
H & E stain 4x

- Lesional tissue shows overlying proliferative hyperparakeratinized stratified squamous epithelium with papillary projection.
- Proliferative stratified squamous epithelium with broad/thick bulbous rete ridges with pushing margins
- Parakeratin plugging is also seen



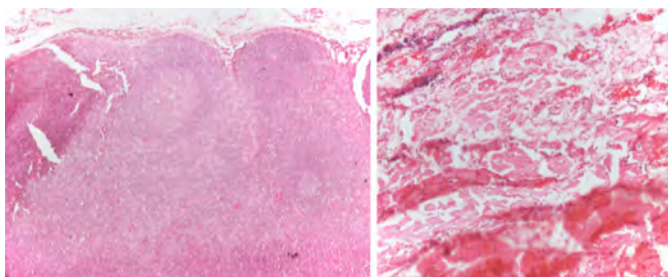
H&E stain 10x

Proliferative stratified squamous epithelium seen with broad thick bulbous pushing rete pegs & underlying fibrocellular connective tissue shows dense chronic inflammatory infiltrate.

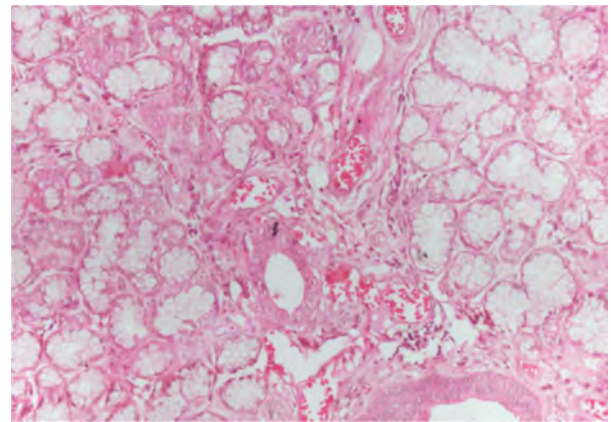


H&E stain 20x

Proliferative stratified squamous epithelium seen with broad thick bulbous pushing rete ridges & underlying fibrocellular connective tissue shows dense chronic inflammatory infiltrate.



H&E stain 10x



H&E stain 10x

Single reactive lymph node is evident without invasion, mucous salivary gland & underlying muscle tissues also received which are normal on histopathology with clear margins.

Diagnosis: Final diagnosis is Verrucous Carcinoma involving right buccal mucosa, upper right alveolus, right side of hard palate and maxilla with reactive lymph nodes.

Verrucous Carcinoma:

Introduction:

- Verrucous carcinoma is also called as Snuff Dipper's cancer or Ackerman's tumour.
- Verrucous carcinoma is low grade variant of Oral Squamous Cell Carcinoma.
- Despite low mitotic activity and slow growth, it can infiltrate adjacent tissues in advanced stages but does not metastasize
- Verrucous carcinoma represents less than 1%-16% of all the squamous cell carcinomas

Clinical features:

- Occurrence is 60 to 70 years.
- Nearly 75% lesion develop in males
- Verrucous carcinoma is characterized by low mitotic activity reflecting in slow growth.
- Buccal mucosa, gingiva or alveolar ridge palate & floor of mouth are involved.
- This neoplasm is chiefly exophytic and appears papillary in nature.



- The lesion commonly have rugae like folds.
- white or erythematous pink in color.
- Pain
- Difficulty chewing or swallowing.
- Bad breath.

Etiology:

- Verrucous carcinoma might be associated with smokeless tobacco
- Alcohol
- betel nut chewing
- poor oral hygiene
- poorly fitting dental prosthesis
- earlier mucosal injuries or scars
- Human papillomaviruses(HPVs)

Histopathology:

- There is generally marked epithelial proliferation with downgrowth of the epithelium into the connective tissue but usually without pattern of true invasion.
- The epithelium is well differentiated and shows little mitotic activity pleomorphism or hyperchromatic.

References:

1. Rajendran R, Textbook Shovapath sundaram B Shefer's Oral Pathology, 7th edition New Delhi Elsevier; 2016
2. Neville B, Douglas D, Allen C, Bouquot J. Oral and Maxillofacial Pathology. 3rd ed. New Delhi: Saunders, Elsevier; 2014.
3. Lucas RB. The pathology of epithelial cysts and tumours in the jaws. British Journal of Cancer. 1952 Dec;6(4):356.
4. Kristofelc N, Zidar N, Strojanc P. Oral verrucous carcinoma: a diagnostic and

- Parakeratin plugging also occur extending into the epithelium.
- Parakeratin lining the cleft with a parakeratin plugging is the hallmark of verrucous carcinoma.
- Basement membrane often appear intact.
- Significant chronic inflammatory cells in underlying connective tissue may or may not be present.

Treatment & Prognosis:

- Surgical excision is the first-line treatment for verrucous carcinoma. Primary surgery with negative surgical margins seems to be the most successful treatment.
- The prognosis is much better than for the usual type of squamous cell carcinoma.

Acknowledgements: Thank you

- Dr. Alka Dive - HOD and prof.
- Dr. Shubhangi khandekar - Professor
- Dr. Ashish Bodhade - Associate Professor
- Dr. Rohit Moharil - Senior Lecturer
- Dr. Rakshata Sorte - Senior Lecturer

therapeutic challenge. Radiology and oncology. 2023 Mar 22;57(1):1.

5. Candau-Alvarez A, Dean-Ferrer A, Alamillos-Granados FJ, Heredero-Jung S, García-García B, Ruiz-Masera JJ, Arévalo-Arévalo R, Zafra-Camacho F, Valenzuela-Salas B. Verrucous carcinoma of the oral mucosa: an epidemiological and follow-up study of patients treated with surgery in 5 last years. Medicina oral, patologia oral y cirugía bucal. 2014 Jun 1;19(5):e506.



Neurofibroma



Presented By:

Dr. Manas Jain (JR II – OMFS)

Dr. Pratiksha Ghotkekar (JR II – Oral Medicine & Radiology)

Patient details:

- Age - 38 years
- Sex - Male
- Address - Rampur, Madhya Pradesh



Chief complaint: Patient complains of swelling over right lower side of face since 2 months.

History of presenting illness:

- Patient was apparently alright 2 months back when he started noticing a swelling over right lower side of face.
- Initially, the swelling was small in size (pea size) which gradually increased to attain present size.
- Patient also complains of Altered taste sensation over right side of tongue and numbness over lower lip on right side.
- Other contributory history were absent.
- Patient was then taken to a government hospital in Rampur, Madhya Pradesh in 2nd

week of September where OPG, CECT Scans were performed and Incisional biopsy was done which was suggestive of Neurofibroma

- Patient then reported to OPD on 15/10/2024 for further management.

Past medical history:

- No significant medical history was noted.

Past dental history:

- No significant dental history was noted.

Family history:

- Not significant

Personal history:

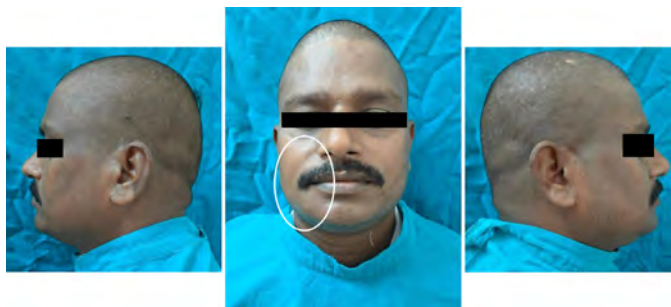
- Oral hygiene habit : Patient cleans his teeth with toothbrush and toothpaste, once daily.
- No H/o any deleterious habits.
- Sleep Cycle : Normal
- Bowel & Bladder movements : Normal
- Parafunctional Habits : Absent

General examination:

- The patient was conscious, co-operative and well oriented to time, place and person.
- Built : Average
- Gait : Normal
- Height : 5'5"
- Weight : 63 Kgs
- Pulse : 78 beats /min.
- Respiratory rate : 20 cycles/min.
- Blood pressure : 126 / 80 mm Hg.
- Pallor, icterus, cyanosis, clubbing : Absent
- Oedema feet : Absent



Extra-oral examination:



Extra-oral examination:

Inspection:

- Face – a small swelling seen over lower right side of face.
- Eyes- normal
- Ears- normal
- Lips – Competent lips
- Extent – A/P from left corner of mouth upto 1.5cm ant to left angle of mandible and S/I 1cm below ala tragus line upto 1cm above inf border of mandible
- Swelling was diffuse with ill defined borders
- Size – 6cm x 4cm approx.

Extra-oral examination: Palpation: All inspeactory findings confirmed on palpation

- Tenderness – Absent
- Paresthesia – Present with mental nerve on right side
- Consistency – Firm to hard
- Fixity with underlying tissues – Absent

- Temperature over the swelling – No local rise in temperature
- Pulsatility – Absent
- Reducibility – Absent
- Compressibility - Absent
- Fluid thrill – Absent
- Transillumination test – Negative
- Slip sign - Negative
- **Extra-oral examination:**
- TMJ - Bilateral condylar movements palpable.
No clicking or popping sound heard.
No deviation and deflection seen.
Interincisal distance – 33 mm
- Regional lymph nodes – Non-palpable.

Intra-oral examination: Soft tissue examination: On inspection

- A single diffuse swelling was seen in the lower right vestibular region of size 3x3 cm Approximately.
- It extends A/P from distal of 43 to mesial of 47 and
- S/I from attached gingiva of 44 and obliterating the lower right buccal vestibule.
- Shape – Roughly oval
- Borders – Ill defined



On palpation:

- All inspeactory findings confirmed on palpation.
- Consistency was firm to hard
- Tenderness was absent over the swelling.
- No pus discharge seen.



Intra-oral examination: Hard tissue examination

All teeth are present

Obliteration of right lower buccal vestibule was noted.



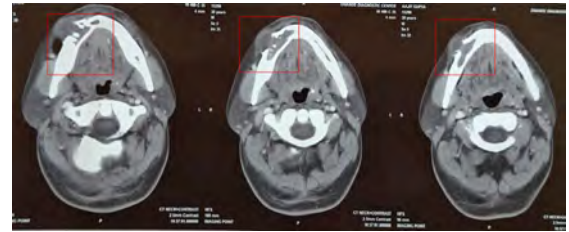
Radiological investigations:



OPG showing well defined radiolucent right body of mandible in relation to 31 to 47



The 3D constructed CT image demonstrates a well defined, desructive bony lesion in the right body of the mandible



Observation: In axial section we can notice

- Ill-defined heterogeneously enhancing lesion of size 2.3 x 3.8 x 2.0 cm (Anteroposterior x Transverse x Craniocaudal) is noted in the lower right buccal mucosa.
- Laterally the lesion is infiltrating the buccal fat pad.
- The lesion is causing erosive destruction as well as infiltration of the right hemi mandible with involvement of its buccal, occlusal as well as gingival cortex, however the overlying dentition appears to be preserved.
- This soft tissue lesion is also seen to infiltrate the right mandibular nerve canal.
- The lesion is infiltrating the right lower gingivo-buccal sulcus. Subcentimetric bilateral level Ib & II lymphnodes are noted (SAD upto 5.3 mm) - likely reactive.
- **Radiographic impression is:** Ill-defined heterogeneously enhancing lesion in the lower right buccal mucosa with extent and adjacent bony erosion as described - suggestive of neoplastic etiology

Orthopantomogram:



Orthopantomograph showing well-defined, homogeneous, unilocular lesion in the left mandibular parasymphysis region



Location: Commonly affects the posterior mandible, especially the mandibular canal region.

Shape: Often presents as a well-defined or poorly defined radiolucent lesion.

Internal Structure: Typically, unilocular radiolucency. Sometimes appears multilocular if larger.

Cortication: Borders may or may not be corticated.

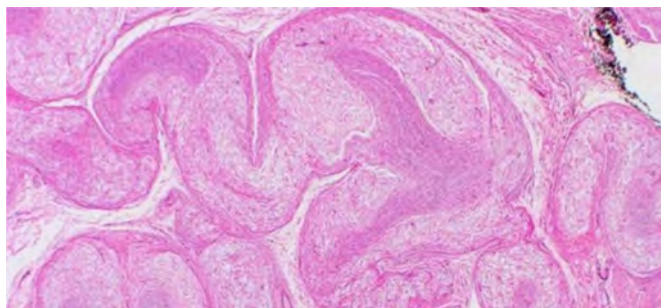
Effect on Surrounding Structures: May cause widening of the mandibular canal. Can displace or resorb adjacent teeth roots.

Expansion of the cortex is possible in long-standing cases.

Key feature: Neurogenic origin indicated by canal widening

Biopsy:

- An incisional biopsy (bone + soft tissue) was done which showed proliferation of myxoid cells and osteoblasts suggestive of **Neurofibroma**.



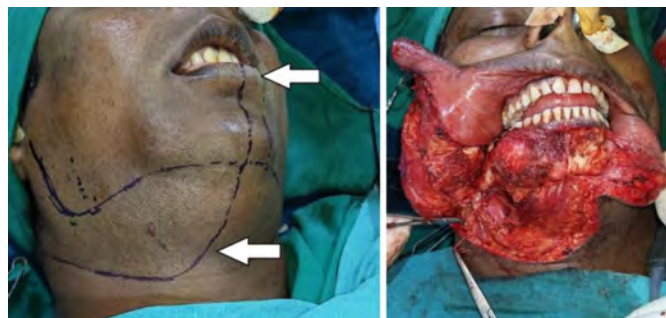
- Clinicroradiographic diagnosis
- Neurofibroma with Right Body of Mandible.

Treatment protocol for neurofibroma:

Radical excision of the lesion with segmental resection of mandible followed by reconstruction with Free Fibula graft



Surgical management:



Technique of reconstruction:



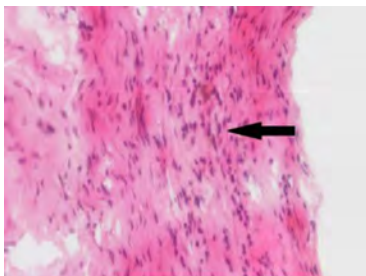
Post-op photos:



Post-op radiograph:



Post operative histopathology: Post operative histopathology report suggestive of neurofibroma.



Discussion:

- Neurofibromas are the most prevalent benign peripheral nerve sheath tumor.

- A mutation in the NF1 gene causes neurofibromas.
- There are three main types of neurofibromas: localized (most common), diffuse, and plexiform.
- Neurofibromas are the most common tumor of the peripheral nerve sheath, affecting men and women equally, without racial or ethnic predilection.
- Age of onset is highly variable; however, localized lesions most commonly occur in adults aged 20 to 40 years.
- The diffuse and plexiform types occur more frequently in children, with the plexiform type rarely occurring after age 5.
- Primarily associated with NF1, a genetic disorder caused by a mutation in the NF1 gene.
- Recurrence is about 15-23% in conventional neurofibromas, and can be higher for plexiform neurofibromas, potentially reaching 40-68%.
- A higher recurrence rate is associated with incomplete or partial surgical removal.
- In this case, Segmental resection was plan of treatment because tumor is Involving Entire Vertical Height ,Extensive Cancellous Involvement and to avoid recurrence.
- Free Fibula Graft is generally the choice of reconstruction in mandibular defects.

Microscopic histopathological features:

- Loose and haphazard spindled cells with poorly defined cell borders.
- Small, hyperchromatic, wavy nuclei, resembling “diving dolphins,” sometimes with nuclear enlargement and smudgy chromatin.
- Nuclei may also be described as “buckled” or “comma-shaped.”

Conclusion:

- Craniomaxillofacial lesions can be divided into massive plexiform, cranio-orbital, and



cervical neurofibromas. Different clinical presentations can be observed, depending on the prevalent clinical locations.

- The definitive approach to the pathology remained surgical treatment due to aggressive nature of the lesion.

- Therapy of neurofibromas is usually surgical, aiming at resecting deforming masses and cancerous tissue when malignant transformation occurs.
- The prognosis is still unpredictable due to the high risk of progression of the disease.

References:

1. Ferner RE, O'Doherty MJ. Neurofibroma and schwannoma. *Curr Opin Neurol*. 2002 Dec;15(6):679-84.
2. Lassmann H, Jurecka W, Lassmann G, Gebhart W, Matras H, Watzek G. Different types of benign nerve sheath tumors. *Light microscopy, electron microscopy and autoradiography. Virchows Arch A Pathol Anat Histol*. 1977 Sep 28;375(3):197-210
3. Ferner RE, Gutmann DH. Neurofibromatosis type 1 (NF1): diagnosis and management. *Handb Clin Neurol*. 2013;115:939-55.



A Case Report of Cleidocranial Dysplasia with Multiple Supernumerary Teeth



Presented By:

Dr. Manika Jaiswal (Dept. of Orthodontics and Dentofacial Orthopedics)

Dr. Priyanka Raut (Dept. of Oral Medicine and Radiology)

Case presentation:

Name: Master Deepanshu Diwane

Age:14

Sex: Male

Address: Nari, Nagpur

Date: 06/12/2022

Chief complaint: Pt c/o missing teeth in upper and lower front region of jaw since 2years.

HOPI: Patient was apparently alright 2 years back when he started noticing short height and delayed exfoliation of primary teeth.

So he visited an endocrinologist on October 19, 2020 for short height and there he was given protein and calcium supplements for the same. After which he noticed increase in height and weight gain. But after two months of consumption of the given supplements he stopped due to financial issues.

On November 24, 2022 patient visited LMH, Burdi for delayed exfoliation of primary teeth and delayed eruption of permanent teeth from there patient was referred to RD DCRC.

No family h/o similar complaint.

So, patient reported to OPD on December 06, 2022 with the same complaint.

Past dental history: Not Significant

Past medical history: History of Protein and Calcium supplements 2 years back for stunted growth.

General examination:

- Pt. was well oriented to time ,place and

person, with a thin built, normal gait, and with height of about 152 cm and weighed 35kgs.

- He was afebrile to touch with no pallor, icterus, cyanosis, clubbing and oedema seen.
- And generalized lymphadenopathy absent.

Extra-oral examination:

- Face was bilaterally symmetrical.
- Frontal Bossing was evident.
- Anterior Fontanelle was soft on palpation.
- Hypertelorism seen
- Low nasal bridge.
- Pigeon chest was seen.
- Flat feet was seen.
- TMJ Examination
- Bilateral Condylar Movements Palpable with no clicking and popping
- No deviation and deflection seen.
- No lymph nodes were palpable.



Intra-oral examination:

Hard tissue examination:

Teeth present: 16 26 36 41 46



VIBRANT INTERDEPARTMENTAL SCIENTIFIC ACTIVITY - VISA

Overretained: 52 53 54 55 62 63 64 65 72 73
74 75 82 83 84 85

Missing teeth: 11 21 31

Root piece: 55 75

Grossly decayed: 16 26 85 46

Proximal caries: 65 74 84

Pit caries: 54

Generalized attrition seen

Stains++



Provisional Diagnosis:

1. Partially edentulous with 11 21 31
2. Cleidocranial dysplasia



Investigations:

Radiographic:

- 1) OPG:
Teeth present:
51 52 54 55 16 61 63 64 65 26
72 73 74 75 36 81 82 83 84 85 46
Erupting:
11 12 13 14 15 17
21 22 23 24 25 27
31 32 33 34 35 37
41 43 44 45 47
- 2) Tooth bud:
18 28 38 48
- 3) Supernumery tooth seen between:
1) 14 15
2) 24 25
3) 35
4) 44 45
- 4) Severe caries:
55 16 65 26 75 84





Diagnosis: Skeletal class I base with Orthognathic maxilla, retrognathic mandible and Vertical growth pattern, Angle's class III malocclusion, retroclined upper and lower anteriors, over retained deciduous teeth with 52, 53, 54, 55, 62, 63, 64, 65, 72, 73, 74, 75, 82, 83, 84, 85, cariously destructured with 16, 26 and 46, Increased nasolabial angle, prominent lingual frenum, shallow mentolabial sulcus, Straight profile, non-consonant smile and increased buccal corridors.

Differential diagnosis :

- **Cleidocranial Dysplasia:** Aplasia or hypoplasia of one or both clavicles, a short skull, delayed ossification of the fontanelles and short stature, delayed exfoliation of primary teeth, multiple supernumerary teeth and multiple impacted teeth.
- **Craniofacial dysostosis:** Premature craniosynostosis, Frontal bossing, Hypertelorism, High-arched palate, Crowded teeth due to small maxilla.
- **Hypohidrotic ectodermal dysplasia:** Hypohidrosis, anomalous dentition, onychodysplasia and hypotrichosis, relative focal absence of the dermis, skin atrophy, streaky pigmentation, multiple mucosal papillomas, deformity of the extremities.

- **Apert syndrome:** Craniosynostosis, craniofacial abnormalities, syndactyly of the hands and feet, pycnodysostosis, short-limbed stature, acro-osteolysis, osteosclerosis and bone fragility.

Features of cleidocranial dysplasia:

General features	● Aplasia (10%)/hypoplasia of one or both clavicles and ability to approximate shoulders
	● Short stature
	● Spinal scoliosis
	● Anomalies of the pubis and hip bone
	● Flat feet and knock knees
	● Shortening of long bones
Craniofacial features	● Short skull
	● Delayed ossification of the fontanelles
	● Brachycephaly
	● High arched palate
	● Cleft palate
	● Hypoplasia of maxilla, zygoma and nasal bones
	● Relative prognathism of the mandible and shortened cranial base
	● Frontal, parietal and occipital bossing
	● Underdeveloped paranasal sinuses
	● Lack of mastoid air cells

Dental disability begins in late youth, with the progressive morbidity of the deciduous dentition.

Deterioration becomes rapidly progressive over the period of a few years, giving the patient an edentulous and aged facial appearance.

Three distinct and contrasting approaches have been suggested over the past few years.

1. The Toronto-Melbourne approach.
2. The Belfast-Hamburg approach.
3. The Jerusalem approach.



Current status:



Treatment:

- Extraction of over-retained deciduous teeth
- Extraction of supernumerary teeth
- Bite plane for stimulating eruption of impacted permanent teeth



Dentigerous Cyst Associated with an Impacted Mandibular Third Molar – A Case Report



Presented By:

Dr. Poonam Ambhore (JR II – OMR)

Dr. Vishal Patil (JR II – OMFS)

Chief complaint: A 30-year-old male patient reported to the Department of Oral Medicine and Radiology with the complaint of pain on food lodgement in lower right back tooth region of jaw since 2 months.

History of present illness:

- The patient was apparently alright 2 months back when he complains of pain on food lodgement in posterior most tooth on right side of the jaw.
- After removal of trapped food pain was subsided.
- The food lodgement region was not associated with bleeding or pus discharge.
- No h/o swelling or difficulty in swallowing.
- No h/o any previous dental visit.
- Now due to persistent food lodgement, the patient visited RDDC and RC, OPD to seek treatment.

Past medical history:

- Not significant.

Past dental history:

- Not significant.

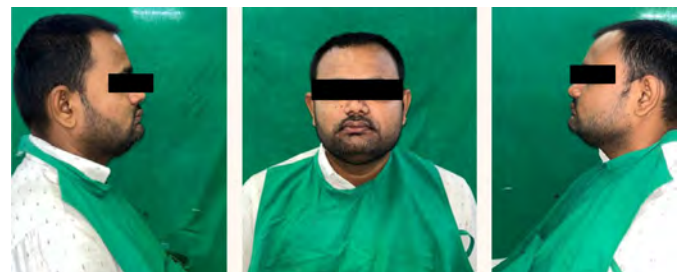
Family history:

- Not significant.

Personal history: The patient brushes his teeth once daily. He has no addictive habits. His sleep cycle, as well as bowel and bladder movements, are normal.

General examination: The patient was of moderate built, weighed 78 kg, was 5'8" tall. All the vital signs were within normal range.

Extra-oral examination:



- TMJ
 - Bilateral condylar movements palpable.
 - No clicking or popping sound heard.
 - No deviation and deflection seen.
 - Interincisal distance – 51 mm



Intra-oral examination:

Hard tissue examination

18 17 16 15 14 13 12 11 21 22 23 24 25 26 27 28
47 46 45 44 43 42 41 31 32 33 34 35 36 37 38





- Missing 48.
- Distal pocket with 47 with a probing depth of > 2mm.
- Buccally erupted : 18 and 28.
- Pericoronal flap with 38.
- Occlusal pit caries 37.
- Stains +
- Calculus +
- An increased deep bite was noted.



- A crossbite was noted between teeth 13 and 43.
- The gingiva appeared pale pink with physiologic pigmentation, firm in consistency with presence of stippling and no bleeding on probing was noted.

Soft tissue examination:





The buccal mucosa, labial mucosa, and tongue appeared normal with no lesions or abnormalities.

Area of chief complaint: On inspection-



- Mild gingival inflammation noted distal to 47.
- Tooth 48 was found to be missing.
- Tooth morphology and alignment appear normal in the inspected area.
- Stains visible in the inspected region however, no visible caries were detected.
- Oral mucosa appears healthy with normal color and texture.



On palpation:

- All inspectory findings were confirmed on palpation.
- Periodontal probing reveals a distal periodontal pocket, with no bleeding on probing.
- Tenderness on percussion: Absent
- Tooth shows no mobility on bidigital palpation.

Provisional diagnosis:

- Chronic localized periodontitis distal to 47.
- Impacted - 48?



Radiological investigation:

1. OPG



- Horizontally impacted 48.
- A well-defined, corticated unilocular radiolucency is seen surrounding the crown of 48, attached at the cemento-enamel junction, is roughly oval in shape.
- The lesion extends anteriorly to involve the distal root and the apical region of mesial root of 47, with loss of lamina dura, s/o loss of tooth vitality with 47 and dentigerous cyst with 48.

2. CBCT:

A CBCT scan was advised to evaluate the extent of the lesion and its relationship with the surrounding anatomical structures.



Observation: In axial section we can notice



In the axial sections, the tooth and associated lesion were evaluated from the superior/occlusal level downward toward the inferior border of the mandible.

As the slices progress inferiorly, the lesion becomes more prominent, showing its maximum buccolingual and mesio-distal extent, with evidence of thinning of the lingual cortical plate.

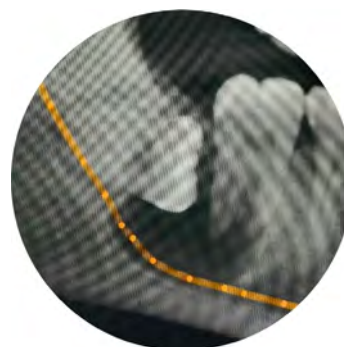
Observation: In coronal section we can notice



The A/P extent of the lesion, beginning at the mesial and distal root regions of 47, without evidence of root resorption, and extending posteriorly up to the distal margin of the radiolucent lesion associated with the crown of the impacted 48.

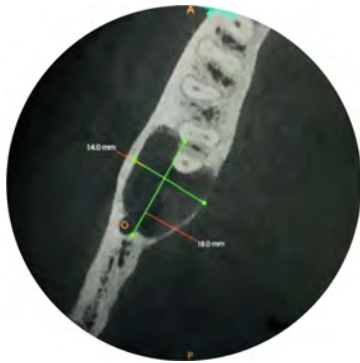
The lesion lies in close proximity to the inferior alveolar canal, with thinning and loss of clarity of its superior cortex, suggestive of pressure-induced remodeling rather than direct involvement.

Observation: In sagittal section we can notice



In this section, the superior cortex of the mandibular canal can be appreciated.

Due to the high radiolucent gradient of the lesion, adjusting the scan contrast allows better visualization of the superior cortex and confirms displacement of the canal.



- A well-defined, corticated unilocular radiolucency is seen surrounding the crown of 48, attached at the cemento-enamel junction.
- The lesion is roughly oval in shape and measures 18 mm supero-inferiorly, 18 mm mesiodistally and 14 mm buccolingually.



- The lesion extends to involve the distal root and the apical region of the mesial root of 47, with no evidence of root resorption.
- Displacement of mandibular canal and thinning of lingual cortical plate noted.

Clinico – radiographic diagnosis:

- Dentigerous cyst with horizontally Impacted 48.

Differential diagnosis:



1. Lateral periodontal cyst



2. Radicular cyst

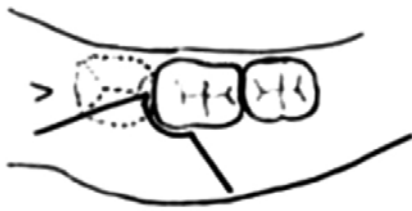


3. Unicystic Ameloblastoma

Surgical management:

Treatment of choice is enucleation and curettage of the cyst and extraction of involved teeth.





Incision marking



Full thickness mucoperiosteal flap raised



Enucleation with extraction of teeth



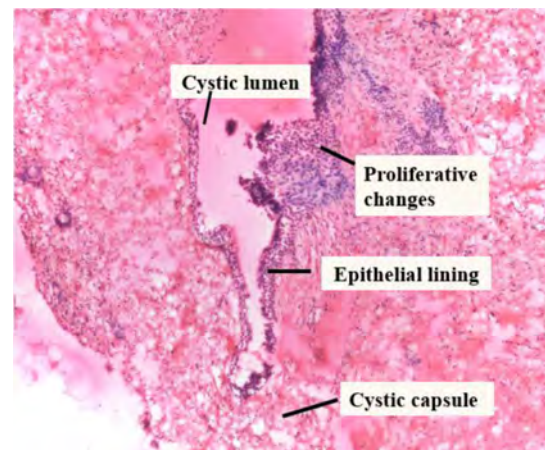
Extracted 48 tooth with attached cyst lining



The empty cystic cavity post enucleation

- A Wards 1 incision was marked starting from mesial extent of 47 in buccal sulcus extending superiorly upto marginal gingiva, into the sulcus of 47 continued distally upto middle of distal surface of 47 and then extending distally.
- A full thickness mucoperiosteal flap was raised and the overlying cortical bone was removed and cyst lining was removed in piece meal along with extraction of 47 and 48 teeth.
- Here we see the 48 tooth with the attached lining and the empty cystic cavity post enucleation.

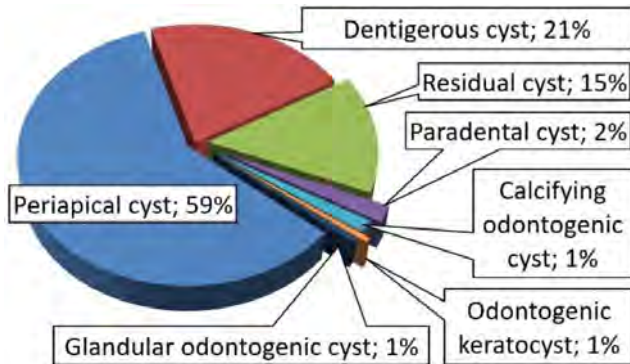
Histopathologic assessment:



- The H&E-stained section shows a cystic cavity lined by a thin epithelium, made up of 2-4 layers of odontogenic epithelial cells.
- In some areas, the epithelial lining becomes thicker, showing focal proliferations.
- The connective tissue wall (capsule) shows chronic inflammation, with many lymphocytes and plasma cells, especially near the epithelium.

Final diagnosis: Clinicopathological & Radiological correlation – Features confirms diagnosis as **Dentigerous Cyst with 48.**

Discussion:



- A dentigerous cyst is a developmental odontogenic cyst which develops from the reduced enamel epithelium in an impacted permanent tooth.
- They account for approximately 17–25% of all jaw cysts.
- The most frequently involved tooth is the mandibular third molar, seen in 45.7% of cases, 21.2% occur with maxillary third molars, and 6.6% with maxillary canines.

Clinical features:

1. Most common in 2nd and 3rd decades.
2. Slight Male predilection. (1.8 : 1).
3. It is always associated with the crown of impacted or unerupted teeth.

Etiopathogenesis:



The dentigerous cyst arises from the epithelium of the dental follicle and remains attached to the neck of the tooth, enclosing the crown within the cyst.



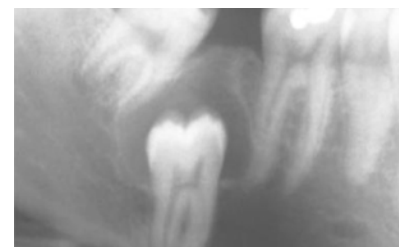
The follicular space represents the normal soft tissue surrounding an unerupted tooth, and it typically measures about 3–4 mm.



A dentigerous cyst develops when the follicular space enlarges abnormally due to fluid accumulation.

When this space measures > 5 mm, it becomes s/o a dentigerous cyst.

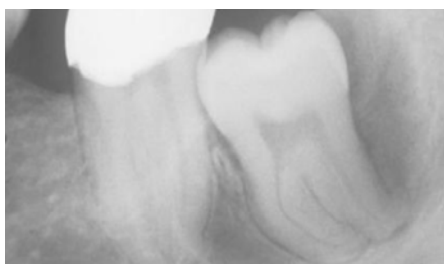
Radiographic Classification of Dentigerous Cysts:



1. Central type



2. Lateral type



3. Circumferential type

In the present case, the radiographic features are consistent with the circumferential type of dentigerous cyst.

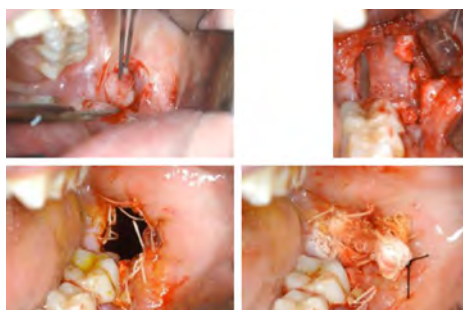
Treatment options for Dentigerous Cyst:



Enucleation – Partsch II

1. Enucleation

- Most commonly preferred treatment.
- Involves complete surgical removal of the cystic sac along with extraction of the associated impacted tooth.
- Ensures total removal of epithelial lining, minimizing recurrence.
- Indicated for small to medium-sized cysts.
- Healing is usually uneventful; recurrences are rare.

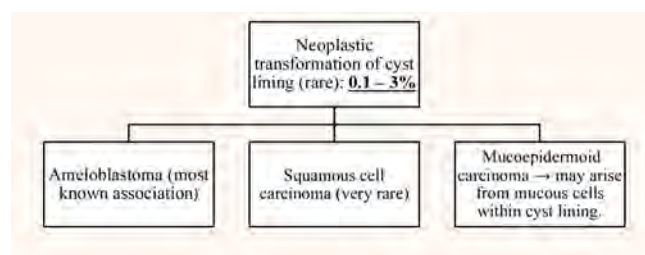


Marsupialization – Partsch I

2. Marsupialization (Decompression):

- Used for very large cysts where enucleation may risk: Pathological fracture or Damage to adjacent teeth or vital structures.
- Procedure involves creating a surgical window and suturing cyst lining to oral mucosa to allow gradual shrinkage.
- Often followed by secondary enucleation once the cyst reduces in size.
- Preserves adjacent structures and facilitates eruption of involved teeth (more often in children).

Possible Complications if left untreated



- Recurrence risk is low (around 5 %)
- Potential damage to adjacent teeth or nerve if cyst is large.

Case reports:

1. **P. Sushma, B. Sowbhagya et al** reported a case of a 30-year-old female who presented with mild intermittent pain in the lower anterior region
2. **Ryan P. Austin, Brenda L. Nelson et al** They reported a case of a 21-year-old male who presented for routine dental care with no complaints and no significant medical or dental history.

During routine evaluation, a panoramic radiograph was taken, which revealed a dentigerous cyst with Impacted third molar.

Take home message:

- This case highlights that subtle periodontal findings—such as an isolated distal pocket adjacent to a second molar with a missing third molar—should never be overlooked.



- They may represent the earliest detectable indicators of an impacted third molar or an evolving cystic lesion, long before any

clinical symptoms appear.

- Even small clinical signs can often point towards deeper underlying pathologies.

Referances:

1. Leandro Bezerra Borges; Francisco Vagnaldo Fechine; Mário Rogério Lima Mota; Fabrício Bitu Sousa; Ana Paula Negreiros Nunes Alves (2012). "Odontogenic lesions of the jaw: a clinical-pathological study of 461 cases.". *Revista Gaúcha de Odontologia* 60 (1).
2. Omami G, Yeoh M. Cysts and benign odontogenic tumors of the jaws. *Dent Clin North Am.* 2024;68(2):277-295. doi:10.1016/j.cden.2023.09.004.
3. Kondamari, S. K., Taneeru, S., Guttikonda, V. R., & Masabattula, G. K. (2018). Ameloblastoma arising in the wall of dentigerous cyst: Report of a rare entity. *Journal of oral and maxillofacial pathology : JOMFP*, 22(Suppl 1), S7–S10.
4. N.V.V. Satya Bhushan, U. Siva Kalyan, Kho Chai Chiang, K. Bramara Kumari, M. Bharat Prakash and Srinivas Saketh G. (2017); DENTIGEROUS CYST TRANSFORMING INTO MUCOEPIDERMOID CARCINOMA OF THE MAXILLARY SINUS IN A 10 YEAR OLD CHILD ? A RARE CASE REPORT. *Int. J. of Adv. Res.* 5 (Mar). 129-134] (ISSN 2320-5407).
5. Kharazmi, M., Melville, J., Huang, A. et al. SCC from a dentigerous cyst. *Br Dent J* 229, 74 (2020).



Aesthetic Rehabilitation of child aged 12 year diagnosed with Gunther's disease

Presented By:

Dr. Shruti Dawale

Dr. Siddhi Sonare

Dr. Sheetal Kedar



Introduction:

Also termed Gunther disease, this rare disease usually presents with photosensitivity shortly after birth or in utero as nonimmune hydrops.

Etiology:

Genetic basis: It's caused by mutations in the UROS gene. This gene is responsible for an enzyme (uroporphyrinogen III synthase-URO-synthase) involved in heme production.

Inheritance:

Autosomal recessive: A child needs to inherit two defective copies of the gene (one from each parent) to develop the condition.

When URO-synthase enzyme doesn't work properly, porphyrins (intermediate substances in heme synthesis) build up in the body, especially in red blood cells, skin, and bones.

Prevalence: Very rare subtype of porphyria with a prevalence of < 0.9 per 1,000,000.

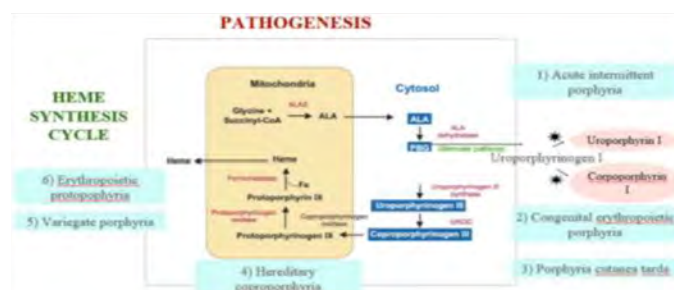


Figure 1

Patient aged 12 years complained of discoloured teeth in upper and lower arch since 6 months of age.

History of present illness:

0 months (Birth)- Normal at birth

2 months- Blisters on face, periungual hands, legs recur every 1-2 months

2-3 months- Atrophic scars, hyperpigmentation develop on exposed areas

6 months- Dark red-brown urine (decreased over time without treatment)

Primary teeth eruption with blackish-pink discoloration (erythrodontia)

8 years- Blistering worsened (face, fingers, legs, peri-auricular) Diagnosis given as Gunther's Disease without any confirmatory test. 50% improvement with treatment. Permanent teeth with erythrodontia, normal eruption sequence

- Past medical history - Was on medication for the same
- Medication - Tab Flatuna (1/2 OD)
- Calariz lotion (application of lotion on skin before going out)
- Past dental history - non- contributory
- Prenatal history - mother had normal delivery no medications taken during pregnancy. only vitamin supplements
- Family history - parents had non-consanguineous marriage

- Gunther disease was not present in any family member of patient

Extra-oral examination:



Figure 2

Extraoral photographs showed yellowish sclera face appeared bilaterally symmetrical face with hyperpigmentation and scars on face short nasal bridge narrow nares and incompetent lips and also convex profile



Figure 3

Digits - abnormal digits , scars of blisters seen

Nails - greyish discolouration

Intra-oral examination:



Figure 4

Both maxillary and mandibular arches were U - shaped.

Discolouration seen on palate.

Lower anterior crowding seen

- Erupting 13,33,43 seen
- Physiologic mobility with 72,73
- Root piece with 74
- Grossly decayed with 85



Provisional diagnosis:

- Congenital Erythropoietic porphyria

Differential diagnosis(systemic disease):

- Porphyria cutanea tarda
- Hepatoerythropoietic porphyria
- Hereditary corpoporphyria

Investigations:

- OPG
- Wood Lamps test- Wood's lamp (UV light) to detect fluorescence in teeth or urine. The coloured teeth fluoresce in near-ultra violet light with a wavelength of 365 nm, so called Woods light.
- Urine Porphyrin profile
- Complete hemogram

Histopathology:

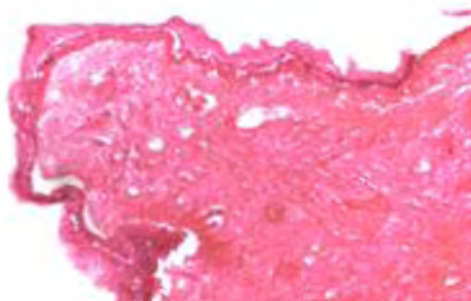


Figure 5

Thin layer of eosinophilic amorphous dentine at places is seen. Pulp tissue containing loose fibro -cellular connective tissue stroma, extravasated RBCs & blood vessels are seen.

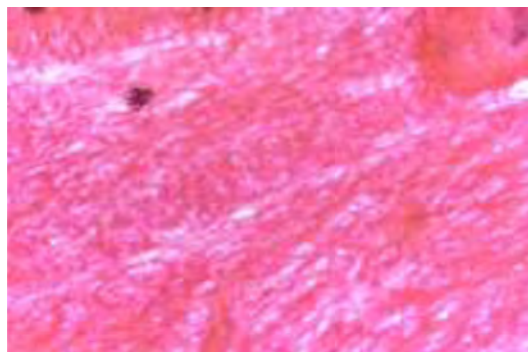


Figure 6

Numerous Extravasated RBCs are seen in Pulp tissue. This may be the new histopathological finding in this condition. And one of the reason for pink or bluish pink discoloration clinically seen in teeth of these patients.

Final diagnosis:

Congenital Erythropoietic Porphyria

Treatment plan (Aesthetic Rehabilitation):

- Preventive Phase- Complete oral prophylaxis
- Orthodontic Phase- Evaluation for orthodontic treatment after complete eruption of canine
- Restorative Phase (Aesthetic management of anterior teeth)- Direct composite veneer
- Surgical Phase- Gingival Depigmentation

Steps:

1. Surface preparation



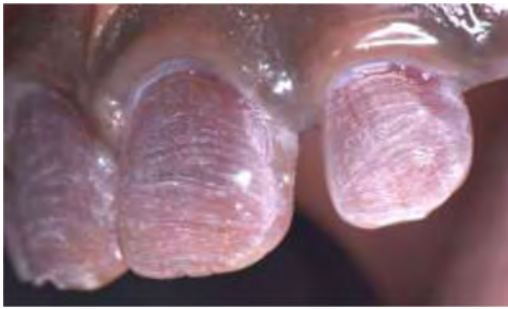


Figure 7

2. Etching and Bonding

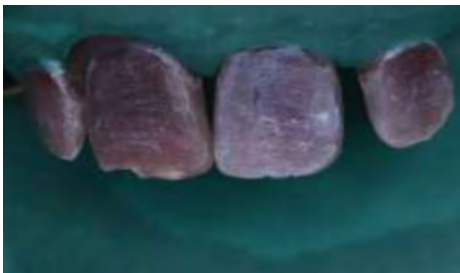
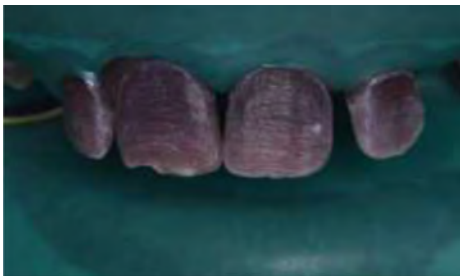


Figure 8

3. Opaque layer application for uniform masking



4. Composite Build up

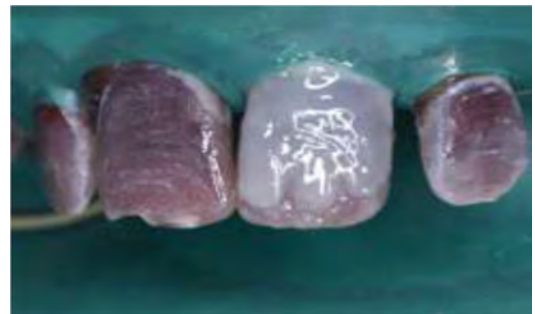


Figure 9

5. Finishing and Detailing





Figure 10



Figure 11





Figure 12

Discussion: Congenital erythropoietic porphyria (CEP) is an exceptionally rare autosomal recessive disorder caused by mutations in the UROS gene, which encodes the enzyme uroporphyrinogen III synthase. The inheritance of two defective gene copies—one from each parent—results in deficient enzyme activity, leading to the pathological accumulation of porphyrins in various body tissues, including the skin, bones, and dentition. To date, fewer than 15 cases have been documented in the literature, emphasizing its rarity.

One of the most notable dental manifestations of CEP is erythrodontia, characterized by a reddish-brown discoloration of both primary and permanent teeth. This intrinsic stain results from porphyrin deposition during the formative stages of tooth development and is often confirmed by pink-red fluorescence under ultraviolet light. Unlike the yellow-

brown stains seen in fluorosis, black discoloration in alkaptonuria, or greenish discoloration due to bilirubin in neonatal jaundice, the discoloration in CEP is unique. Other causes of intrinsic staining, such as tetracycline therapy, erythroblastosis fetalis, or dental trauma, do not produce this distinctive reddish hue.

Intrinsic stains like those seen in CEP are typically permanent and may affect not only the color but also the structure and optical properties of enamel and dentin. Such changes may resemble dental abnormalities found in patients undergoing chemotherapy, including enamel hypoplasia and pitting. Given the esthetic and functional implications, early recognition and appropriate dental management of erythrodontia in CEP are essential for improving the patient's oral health and psychosocial well-being.

Conclusion: This case emphasizes the need for:

- A multidisciplinary approach involving Pedodontist, Periodontist, Oral Pathologist, Pediatricians & Dermatologists.
- Choosing esthetic treatment options that are biologically respectful, age-appropriate, and adaptable.
- Recognizing the psychosocial value of esthetic dentistry in medically compromised children.

References:

1. Harrison's Internal Medicine 2022, 21th Edition Vol 1 & Vol 2 copy
2. Andrews Diseases of the Skin Clinical Dermatology.pdf
3. Direct composite veneer to treat primary teeth with sequela of dental trauma: a case report
4. Ciftci V, Kılavuz S, Bulut FD, Mungan HN, Bisgin A, Dogan MC. Congenital erythropoietic porphyria with erythrodontia: A case report. International Journal of Paediatric Dentistry. 2019, Feb 27;29(4):542–8.
5. Kahila A, Zamlout A, Mazloun A, Laila O, Badran A. Congenital erythropoietic porphyria (Gunther disease): a case report. Oxford Medical Case Reports. 2020 Jul 1;2020(7).
6. Congenital Erythropoietic Porphyria Synonym: Günther Disease



7. Angelika Erwin, MD, PhD, Manisha Balwani, MD, MS, Robert J Desnick, MD, PhD, FACMG; Porphyrias Consortium of the NIH-Sponsored Rare Diseases Clinical Research Network.
8. Sowmya K, Dwijendra KS, Pranitha V, Roy KK. Esthetic Rehabilitation with Direct Composite Veneering: A Report of 2 Cases. *Case Reports in Dentistry*. 2017;2017:1-3.
9. Moneim RA, El Deeb M, Rabea AA. Gingival pigmentation (cause, treatment and histological preview). *Future Dental Journal*. 2017 Jun 1;3(1):1-7.
10. Gul M, Hameed MH, Nazeer MR, Ghafoor R, Khan FR. Most effective method for the management of physiologic gingival hyperpigmentation: A systematic review and meta-analysis. *Journal of Indian Society of Periodontology*. 2019 May 1;23(3):203-15.
11. Muharib SI, Almasoud AA. Different surgical techniques for gingival depigmentation and their outcomes. A literature review. *Int J Med Dent*. 2020;24(4):607-11..
12. Alasmari DS. An insight into gingival depigmentation techniques: The pros and cons. *Int J Health Sci (Qassim)*. 2018;12(5):84-89



Functional and Esthetic Rehabilitation of Periodontally Compromised Patient Using Basal Implants



Presented By:

Dr. Palak Abhay Kasliwal
Dr. Hrushikesh Malikar

Introduction: “A neglected periodontium today becomes a lost tooth tomorrow”

- Periodontitis is a chronic inflammatory disease-causing progressive destruction of tooth-supporting structures.
- Advanced periodontitis often leads to ridge atrophy, particularly in the anterior esthetic zone.
- Tooth loss in such cases results in both functional and esthetic concerns, along with psychological distress.
- Conventional implant therapy requires sufficient bone volume and often necessitates grafting procedures.
- In cases of severe bone loss, basal implants are a graftless alternative that engage stable cortical bone and allow immediate loading.
- This case demonstrates successful anterior ridge rehabilitation with basal implants following surgical periodontal therapy.

Case Presentation:

- Age/Sex - 36 years/Female
- Chief Complaint - Patient complains of poor esthetics and bleeding gums since 5 yrs.
- History of Present Illness - Patient was apparently asymptomatic 5 years ago, when she began experiencing gingival bleeding during brushing. This was followed by gingival recession and then progressive tooth mobility, eventually leading to loosening and exfoliation of the mandibular anterior teeth one by one.

- **Past Medical History** - Not significant
- **Past Dental History** - Not significant
- Personal History

Oral Hygiene - Patient has a habit of brushing twice daily using a soft bristle toothbrush and a toothpaste using horizontal scrub technique.

Adverse habits - Absent

Parafunctional habits - Absent

- Extraoral Examination

Facial symmetry - Symmetrical

TMJ - No clicking sounds; bilaterally synchronous movements



- Intraoral Examination

Oral mucosa - Normal; except sinus tract seen with 16

Buccal mucosa - Normal

Tongue, palate, tonsils - Normal

Frenal attachment - Labial Frenum: Maxillary – Mucosal; Mandibular- Mucosal
Buccal Frenum: Maxillary – Mucosal; Mandibular- Mucosal

Ulceration, suppuration, exudate - Absent

- Gingival Examination

Color - Reddish pink



Contour - Scalloped

Consistency - Soft and edematous

Size - Normal

Position - Apical to CEJ

Surface texture - Stippling reduced

Bleeding on probing - Present

- Mucogingival examination

Width of attached gingiva - Adequate

Vestibular depth - Adequate

- Probing Depth

17	16	15	14	13	12	11	21	22	23	24	25	26	27
4	4	2	3	6	5	6	4	5	5	7	4	5	4
6	5	5	5	5	-	-	-	-	-	6	5	5	6
47	46	45	44	43	42	41	31	32	33	34	35	36	37

Recession - Generalized Millers Class III recession

Clinical attachment loss -

17	16	15	14	13	12	11	21	22	23	24	25	26	27
4	4	2	5	10	9	12	4	7	8	8	4	5	4
6	5	5	5	6	-	-	-	-	-	7	5	12	11
47	46	45	44	43	42	41	31	32	33	34	35	36	37

Hard tissue examination:

- Missing teeth - 42,41,31,32,33
- Caries - Root piece with 15; Occlusal caries with 16
- Wasting diseases - Abfraction with 12,13, 22,23,24
- Mobility - Grade I mobility with 36
- Proximal contacts - Spacing seen with 13-22
- Occlusion - Angles Class I
- Fremitus test - Negative
- Pathological migration - Seen with 11, 43
- Furcation involvement - Grade II furcation involvement with 36
- Hypersensitivity - Present

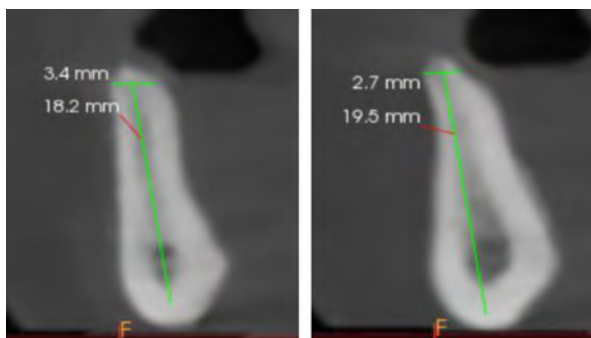
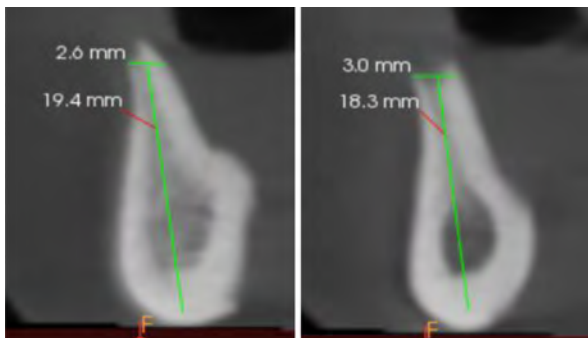
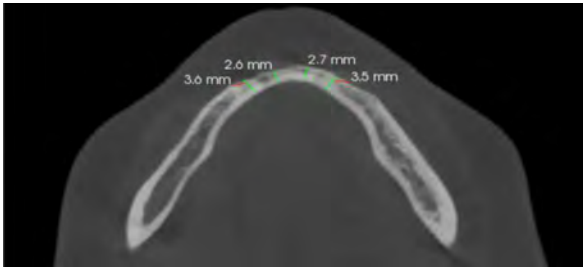
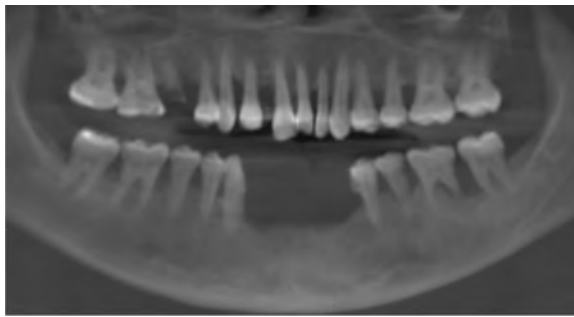


- Etiological Factors

Local - Plaque

Precipitating - Calculus, Poor oral hygiene

- Provisional Diagnosis - Generalized Stage IV Periodontitis
- Investigations - CBCT, Blood investigations



- Final Diagnosis – Generalized Stage IV Grade C Periodontitis

Treatment Plan:

Phase I (Non-surgical therapy)

- Full-mouth scaling and root planing (SRP)
- Oral hygiene instructions
- Correction of brushing technique
- Motivation and patient education
- Desensitizing agents for hypersensitivity

- Reevaluation after 3 weeks after Phase I therapy

Phase II (Surgical Phase)

- Periodontal flap surgery in areas with deep pockets
- Root canal treatment with 16
- Basal implant placement with mandibular anterior missing teeth
- Extraction and Immediate implant placement with 15, 11

Phase III (Restorative Phase)

- Implant-supported prosthesis in the mandibular anterior region
- Final prosthetic rehabilitation

Phase IV (Maintenance Phase)

- Periodic periodontal maintenance therapy every 1-3 months
- Reinforcement of oral hygiene measures
- Re-evaluation following Phase I therapy
- Persistent probing depths exceeding 5 mm
- Modified operational flap (Kirkland, 1931)
- Crevicular incision was given
- Full-thickness mucoperiosteal flaps were reflected
- Thorough debridement done
- Revealed a one-wall intrabony defect along with reverse architecture
- Osseous recontouring done
- Hemostasis was achieved
- Flap thinning to enhance adaptation
- The flap was repositioned at its original level
- Primary closure was achieved using simple interrupted sutures





Full thickness mucoperiosteal flap raised
Osteotomy prepared using 2, 2.5 mm drills
Parallelism checked using paralleling pins
Four Basal implants placed of size-
3.6 x 17 mm with 42
3.6 x 20 mm with 41
3.6 x 17 mm with 31
3.6 x 17 mm with 32
Suturing done Vicryl resorbable sutures
Prosthetic rehabilitation done



Discussion:

- Periodontal health is non-negotiable before any implant therapy.
- In the present case, the patient presented with bleeding gums, poor oral hygiene, and mobility—clear signs of active disease.
- Therefore, firstly quadrant-wise periodontal flap surgery was performed.
- Periodontal flap is defined as a section of gingiva and/or mucosa surgically separated from the underlying tissues to provide visibility of and access to the bone and root surface. (Carranza's Clinical Periodontology 13th edition)
- The primary objective of periodontal access surgery is access for root instrumentation.
- The secondary objective of periodontal access surgery is pocket reduction via soft and hard tissue resection or periodontal regeneration.

Indications:

1. Areas with irregular bony contours, deep craters and others requiring a surgical approach.
 2. Deep pockets where complete removal of root irritants is not possible.
 3. Infrabony pockets in non-accessible areas which are nonresponsive towards nonsurgical methods.
 4. Persistent inflammation in areas with moderate and deep pockets.
Critical probing depth for surgical intervention - 5.4 mm
Critical probing depth for non-surgical periodontal therapy - 2.9 mm
- Critical probing depth refers to a specific probing depth measurement that serves as a threshold for predicting the outcome of periodontal treatment.
 - The concept of the critical probing depth of 5.4 mm has been advanced to assist in making the determination to proceed to surgical intervention.
 - This is the measurement above which



therapy will result in clinical attachment gain and below which it will result in clinical attachment loss.

- A similar 5-mm standard has been commonly used as a guideline for identifying candidates for surgical referral.

Modified flap operation:

- Kirkland (1931) described a surgical procedure called the modified flap operation, which involved intracrevicular incisions through the pockets on both the labial and the lingual aspects.
- Allowing the retraction of buccal and lingual full thickness flaps to permit proper root debridement, but without eliminating any soft or hard tissue, just the pocket epithelium and granulation tissue from the inner side of the flaps.
- The flaps are then replaced in their original position and secured with interproximal sutures
- Periodontal disease causes irregular bone loss, often a mix of horizontal and vertical patterns, leading to complex bony deformities.
- Osseous surgery is performed to reshape these defects and can be additive (regenerating lost bone) or subtractive (recontouring existing bone).

The morphology of the osseous defect largely determines the treatment technique to be used. -

- One-wall angular defects usually need to be recontoured surgically i.e. resective osseous surgery.
- Three-wall defects, particularly if they are narrow and deep, can be successfully treated regenerative flap surgery.
- Two-wall angular defects can be treated with either method, depending on their depth, width, and general configuration.
- This staged and biologically driven treatment sequence underscores that implant therapy in periodontal patients is

not contraindicated, but rather, demands a comprehensive and customized plan.

- Ellegaard et al. (2002) demonstrate that with meticulous infection control, rigorous maintenance protocols, and patient compliance, successful outcomes are achievable even in this high-risk group.
- Karoussis et al. (2007) further reinforced that although a history of periodontitis poses risk, well-maintained treated patients show favorable long-term implant outcomes.
- This review analyzed implant outcomes in partially edentulous patients with treated periodontitis compared to periodontally healthy individuals. Across 27 selected studies, it was concluded that implant placement in treated periodontitis patients is viable, though supportive therapy is essential.
- Once the periodontal condition is stabilized, the next challenge is the rehabilitation in an atrophic anterior ridge.
- Given the extent of horizontal and vertical alveolar bone loss, placement of conventional endosseous implants was contraindicated due to inadequate bone volume and density.
- In such compromised ridges, basal implants, also referred to as bicortical or cortical implants, present a reliable alternative.
- Basal implants are a type of implant that is anchored into the basal bone—the dense, cortical bone of the jaw.
- The basal bone is highly mineralized, providing a strong and stable foundation for the implant.
- These implants are designed to be placed in areas with low bone density or in patients who have suffered significant bone loss, which might make conventional implants challenging or impossible.



- Basal implants achieve osseofixation rather than traditional osseointegration, providing immediate and rigid anchorage in the cortical layers. This anatomical engagement ensures high primary stability, even in cases with severely diminished alveolar bone.
- A key advantage of this system is the possibility of immediate functional loading, typically within 48–72 hours post-placement, owing to the mechanical stability derived from the cortical anchorage. This significantly shortens treatment time and enhances patient satisfaction without compromising long-term outcomes.
- Study by Fadia et al (2020) evaluated patient satisfaction following the transition from fixed, removable, or conventional implant prostheses to basal implant-supported prostheses.
- Sixty patients, primarily partially edentulous were assessed through structured interviews and clinical examinations.
- Results showed significant improvements in comfort, mastication, speech, and aesthetics, with a high overall satisfaction score.
- Basal implant-supported prostheses demonstrated a substantial positive impact on oral health and patient quality of life.
- Furthermore, the monoblock (single-piece) design eliminates the implant-abutment interface, thereby minimizing microbial colonization and microleakage—two key risk factors for peri-implant mucositis and peri-implantitis. This design also reduces biomechanical complications associated with abutment screw loosening or fracture.
- The choice between basal and conventional implants depends on several factors, including the patient's oral health, bone density, and treatment goals.

- Basal implants are ideal for patients with severe bone loss or those seeking a quicker, immediate loading solution.
- Conventional implants, on the other hand, are better suited for patients with sufficient bone density and those willing to undergo a longer treatment process for a proven, reliable outcome.
- Who Should Consider Basal Implants?
 - Patients with severe bone loss.
 - Patients who prefer immediate loading.
 - Those looking to avoid bone grafting.

Basal Implants:

- Ideal for patients with low bone density or severe bone loss, as they are anchored in the cortical bone.
- Typically allow for immediate loading, meaning teeth can be placed within a few days.
- Usually a single-piece design, reducing the risk of complications.
- Rarely require bone grafting.

Conventional Implants:

- Require sufficient bone density and may need bone grafting or augmentation if bone loss is significant.
- Generally require a healing period of 3 to 6 months before the prosthetic tooth can be attached.
- Two-piece design, with a separate implant and abutment.
- Often require bone grafting in cases of bone loss.

[Ann Maxillofac Surg. 2019 Jul-Dec;9\(2\):371-378. doi: 10.4103/ams.ams_147_19.](#)

Immediately Loaded Bicortical Implants Inserted in Fresh Extraction and Healed Sites in Patients with and Without a History of Periodontal Disease

Lukasz R Palka¹, Aleksandar Lazarov²

Affiliations + expand

PMID: 31909018 PMCID: PMC6933992 DOI: 10.4103/ams.ams_147_19

- This retrospective study evaluated the clinical performance of 1,019 immediately loaded, polished surface, one-piece bicortical screw implants placed in 87



patients—77 with a history of periodontitis and 10 without.

- Implants were inserted in both healed bone (526) and fresh extraction sockets (493).
- Over a mean follow-up of 22.2 ± 7.3 months, the cumulative survival rates at 12, 24, and 35 months were 99.3%, 98.6%, and 97.0%, respectively.
- The results support the high predictability and success of bicortical implants with immediate loading, even in periodontally compromised patients.

> Ann Maxillofac Surg. 2019 Jul-Dec;9(2):371-378. doi: 10.4103/ams.ams_147_19.

Immediately Loaded Bicortical Implants Inserted in Fresh Extraction and Healed Sites in Patients with and Without a History of Periodontal Disease

Lukasz R Pałka¹, Aleksandar Lazarov²

Affiliations + expand

PMID: 31909018 PMCID: PMC6933992 DOI: 10.4103/ams.ams_147_19

- This prospective study evaluated the feasibility and outcomes of using basal implants for immediate functional loading in atrophied ridges.

References:

1. Carl E. Misch. Contemporary implant dentistry, 3rd Edition.
2. Carranza's Clinical Periodontology 13th edition.
3. Papapanou PN, Sanz M, et al. Periodontitis: Consensus report of Workgroup 2 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. J Periodontol. 2018;89(Suppl 1):S173-S182.
4. Jan Lindhe, Thorkild Karring, Niklaus P. Lang, Textbook of Clinical Periodontology and Implant Dentistry, 5th ed.
5. Patel K, Madan S, Mehta D, Shah SP,

- Ten patients received a total of 157 implants, regardless of bone quantity or quality.
- Implants supported both full-arch and segmental fixed prostheses. With only 4 failures, the survival rate was 97.5%.
- The findings highlight that basal implantology overcomes the limitations of conventional implants and offers a reliable solution for severely resorbed jaws, improving patient rehabilitation and quality of life.

Conclusion:

- This case demonstrates a successful anterior ridge rehabilitation with basal implants following surgical periodontal therapy.
- The use of basal implantology, which engages the basal cortical bone for enhanced primary stability, allowed functional and aesthetic restoration in an atrophic ridge with minimal bone availability, emphasizing the importance of timely infection control and strategic implant planning.

Trivedi V, Seta H. Basal implants: An asset for rehabilitation of atrophied resorbed maxillary and mandibular jaw – A prospective study. Ann Maxillofac Surg 2021;11:64-9.

6. Anuradha M, Babaji HV, Hiremath NV, Usha VA, Kumar A, Nandkeoliar T, et al. Assessment of basal implants in compromised ridges. J Family Med Prim Care 2020;9:2067-70.
7. Pałka LR, Lazarov A. Immediately loaded bicortical implants inserted in fresh extraction and healed sites in patients with and without a history of periodontal disease. Ann Maxillofac Surg 2019;9:371-8.



Prosthodontic Rehabilitation of a partially edentulous patient with atrophic Maxilla and Mandible: A Case Report.



Presented By:

Dr. Krutika Borle, Dept. of Prosthodontics & Implantology

Dr. Teena Oomen, Dept. of Oral & Maxillofacial Surgery

Introduction:

- The success of the complete denture relies on the fulfillment of the three basic properties which are retention, stability, and support that are determined by anatomy of the Residual Ridge.
- Residual ridge reduction is one of the main causes of loss of denture stability and retention especially in mandibular complete dentures.
- Extreme resorption of the maxillary and mandibular ridges also, results in sunken appearance of cheeks, unstable and non-retentive dentures with associated pain and discomfort.
- The prosthodontic management of resorbed ridges can be done with non surgical intervention such as modified impression technique, neutral zone techniques etc.
- An implant-supported prosthesis is a reliable protocol in the management of complete edentulism to achieve maximum retention and stability.
- The zygoma implant has been an effective option in the management of the atrophic edentulous maxilla as well as for maxillectomy defects.¹
- Brånemark introduced the zygoma implant not only as a solution to obtain posterior maxillary anchorage but also to expedite the rehabilitation process.¹
- The original zygomatic Brånemark protocol included one implant on each zygoma, traversing the sinus, and splinted

to 2 to 4 conventional implants in the anterior region.²

Case Report:

- **Chief Complaint:** A 62 yrs old male patient reported to the Department of Prosthodontics with the chief complaint of difficulty in mastication due to missing teeth in the upper and lower right and left back region of jaw.
- **Past Medical History:** Not Relevant
- **Habit History:** h/o Areca nut and tobacco chewing since 10 years
- **Past Dental History:** h/o Multiple Extractions 6 months back.

Extraoral Examination:

- **Facial Symmetry:** Bilaterally symmetrical face
- **Facial profile:** Straight
- **Lip support:** Adequate
- **TMJ Examination:** Bilaterally synchronous TMJ movements.



Frontal View



Front View Smiling



Lateral View

Pre-Operative Intra-oral Examination:



Pre-operative frontal View

Treatment Plan:

I. Pre-Prosthetic phase:

1. Evaluation of Periodontal Prognosis with remaining teeth.
2. CBCT of Maxillary and Mandibular Arch.

II. Surgical Phase:

1. Extraction followed by endo-osseous and zygomatic implant with Multi-unit placement.

III. Prosthodontic phase

1. Open tray Impression of maxillary and mandibular arch
2. Jig verification
3. Jaw Relation
4. Arrangement Trial
5. Metal Try-in
6. Bisque Trial
7. Final prosthesis Cementation.

Surgical Phase:



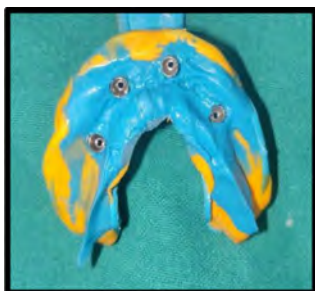
Maxillary (Zygomatic) and Mandibular Implant Placement

Prosthetic Phase:

1. Final Impression



Maxillary Final Impression



Mandibular Final Impression

2. Jaw Relation



Jaw Relation

3. Arrangement Trial



Maxillary and Mandibular Digital Trial

4. Final Prosthesis Cementation



Maxillary and Mandibular Final Prosthesis

Discussion: The zygomatic implant, originally designed to rehabilitate discontinuous maxillae by anchoring an obturator prosthesis to the zygomatic bone, has evolved over time with several studies examining its placement and potential complications. In one study, Petruson (76) used sinuscopy on 14 patients with zygomatic implants, where the placement was not specifically controlled for membrane disruption. The study found no adverse reactions, suggesting that the risk of complications might be lower than initially anticipated.

However, Becktor et al. (17) proposed that complications like sinusitis are more commonly associated with oro-antral communications (openings between the oral cavity and the maxillary sinus) rather than with exposed implant threads themselves. This emphasizes the importance of preventing such communications during implant placement.

Additionally, an in vitro study by Corvello et al. (29) highlighted that when using the exteriorized technique (a method where the implant exits the bone surface), longer holes were necessary for the placement of zygomatic implants compared to the original Branemark technique. This could have implications for surgical planning, indicating that the exteriorized approach might require more extensive drilling into the zygomatic bone.

Conclusion:

- Zygoma implants are a unique alternative for rehabilitation of the posterior maxilla in resorbed ridges and after tumor resection or trauma.
- Due to both the anatomical intricacies of the zygomatic bone and the implant length, the placement of zygoma implants still represents a challenge.
- The zygomatic implant-supported prosthesis requires special care due to the biomechanical forces that affect the long-



term stability of an implant-supported restoration.

- Use of a rigid prosthesis is necessary because flexing of the materials can cause

deformation and deviation, resulting in loss of implant or loosening of the junction between the prosthesis and fixation.

References:

1. Aparicio C, Manresa C, Francisco K, Claros P, Alánde J, González-Martín O, Albrektsson T. Zygomatic implants: indications, techniques and outcomes, and the zygomatic success code. *Periodontol 2000*. 2014 Oct;66(1):41-58. doi: 10.1111/prd.12038. PMID: 25123760.
2. Brånemark PI, Gröndahl K, Öhrnell LO, Nilsson P, Petrusen B, Svensson B, et al. Zygoma fixture in the management of advanced atrophy of the maxilla: technique and long-term results. *Scand J Plast Reconstr Surg Hand Surg*. 2004;38(2):70-85. doi: 10.1080/02844310310023918. [DOI] [PubMed] [Google Scholar]
3. Tunkiwala, Ali. "Numerical guidelines for selection of implant supported prostheses for completely edentulous patients." (2017).
4. Ferreira EJ, Kuabara MR, Gulinelli JL. "All-on-four" concept and immediate loading for simultaneous rehabilitation of the atrophic maxilla and mandible with conventional and zygomatic implants. *British Journal of Oral and Maxillofacial Surgery*. 2010 Apr 1;48(3):218-20.
5. Bhoi S, Baghel AS, Deepa E, Reddy RN, Nadakkavukaran D, Borra A, Rao K. Assessment of Stress Distribution Around Dental Implants Based on the All-on-Four Treatment Concept using Finite Element Analysis. *Journal of Pharmacy and Bioallied Sciences*. 2023 Jul 1;15(Suppl 2):S907-9.



Intetlink: Intercollegiate interdepartmental activity



Intetlink: Intercollegiate interdepartmental activity



Intetlink: Intercollegiate interdepartmental activity

Facilities available

Dental x rays

OPG

CBCT

Tooth coloured Restorations

Root Canal Treatment

Regenerative endodontics

Laser assisted restorative treatment

Magnification assisted endodontics

Prosthesis

Partial dentures

Complete dentures

Laminates & Veneers

Maxillofacial Prosthesis

Dental implants

Scaling and polishing

Flap surgeries

Bleaching

Smile designing

Fixed Orthodontics

Removable orthodontics

Growth Modulation

Biopsy

Cytology

Hematology

Research microscope with phase contrast

Dark field polarization & fluorescent photography

Dental extractions

Trauma care

Oral cancer care

Management of TMD

Pediatric dental care



Published by:
Ranjeet Deshmukh Dental College and Research Center
Hingna, Nagpur

