VSPM'S DENTAL COLLEGE INTERDEPARTMENTAL SCIENTIFIC ACTIVITY 2019-2020

VISA

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FOREWORD

I am pleased to introduce the fourth edition of VISA magazine for the year 2018-2019. VISA team has had yet another successful year in bringing together all the post graduates and staff members to discuss comprehensive management of rare and interesting cases by interdisciplinary approach.

The cases presented this year were overall good and the discussions are an effective way to promote interactive learning. This magazine is a compilation of these interesting cases and serves as a good read for everyone.

I congratulate team VISA for this fourth issue and appreciate their efforts and contribution in continuing uninterrupted VISA activities.

Dr. Usha Radke
Dean
VSPM's Dental College and Research Centre

FROM THE DESK OF THE VICE DEAN

I congratulate team VISA for taking out the fourth edition of VISA magazine which was started in 2016. This indeed is the materialization of all the efforts put in by the team and the post graduate students in presenting the best of cases during this year and fostering better coordination between all the departments.

The brain storming sessions are always healthy and they aid the clinicians in making better diagnosis and treatment plan and the end beneficiaries are the patients.

Wishing the team VISA a very successful new year.

Dr. Ramakrishna Shenoi
Vice dean
VSPM's Dental College and Research Centre

FROM THE EDITOR'S DESK

Dear Readers,

It gives me immense pleasure to present the fourth issue of VSPM's interdepartmental scientific activity (VISA). The aim of VISA is to encourage and facilitate holistic learning by post graduate students by conducting interdepartmental case discussions every month in the institute. The staff members and the students have done full justice to this aim during this year. Some very interesting cases were presented this year with complete treatment plans and follow ups. We hope to have even better sessions in the future.

On behalf of the VISA team, I extend my heartfelt thank you to our management and our respected Dean madam for supporting us in all our endeavors. I also congratulate all the post graduate students who have presented these cases and my VISA team for all the efforts put in to compile this issue.

Regards

Dr. Mukta Motwani

Convener VISA commitee

Contents

UNICYSTIC AMELOBLASTOMA: A CASE REPORT.

Presented by:
Dr. Aayushi Pakhane (Department of Oral pathology
Dr. Juhi Karmarkar (Department of Oral & maxllofacial surgery)

Abstract: Unicystic ameloblastoma (UA) is a rare variant of ameloblastomas. It tends to occurr in younger populations and in posterior mandiblular region, usually associated with an impacted tooth. It is characterized by being relatively locally aggressive. This case report describes unicystic ameloblastoma in the left posterior mandible occurring in a 16 year old male patient, presented with swelling on left side of lower jaw since 1 month. Radiographic examination showed large, well defined unilocular radiolucency involving left mandibular region associated with impacted 37 and 38. Incisional biopsy was suggestive of dentigerous cyst undergoing ameloblastomatous changes. Surgical excision of left side of mandible was done followed by reconstruction. Histopathological examination of the excisional lesional tissue showed cystic cavity lined by ameloblastic epithelium showing palisading and polarization of basal cells with hyperchromatic nuclei, cytoplasmic vacuolization with intercellular spacing. Plexiform ameloblastoma like proliferations were seen in the cystic lumen & also infiltrating from lining into connective tissue wall. Diagnosis of unicystic ameloblastoma, subtype 1.2.3. (luminal, intraluminal, intramural) was given. No recurrence was noted at 6 months follow-up and prosthetic rehabilitation was advised.

Introduction: The ameloblastomas are slow-growing, locally invasive tumors of odontogenic epithelial origin. Unicystic ameloblastomas (UA) is a rare variant of ameloblastoma. It has distinct behavioral and clinicopathological characteristics and its response to treatment varies with the subtype. It is mostly seen in younger patients with predilection for mandible usually in the posterior regions. The lesion is frequently asymptomatic, although larger lesions may present a painless swelling in the jaws. Radiographically, small lesions present as pericoronal radiolucency but larger lesions exhibit a large unilocular radiolucency involving the entire ramus, extending to the coronoid process. It is most frequently associated with an impacted tooth. UA has a considerably better overall prognosis and a much reduced incidence of recurrence compared with conventional ameloblastomas.

Case Report: A 16 year old male patient reported with a chief complaint of painless swelling on left side of lower jaw. The patient was apparently alright 1 month back when he noticed swelling on the left side of the face and intraorally on the alveolar ridge. On extra oral examination, the face was bilaterally asymmetrical due to diffuse swelling on the left side of the face, which was of size 6 cm × 5 cm approximately, roughly oval in shape, with smooth surface and same as adjacent skin color. The swelling was extending anterior posteriorly [AP] from the ala of nose to left ear lobe and superior inferiorly [SI] from left malar prominence to lower border of mandible. (figure 1, 2) Intraorally diffuse swelling was seen distal to left permanent first molar to retromolar area, color same as adjacent mucosa. (figure 3) He also experienced pain on left side on opening of the jaw. Bleeding or pus discharge from the intraoral swelling was not present. Lymph nodes were not palpable.

Fig 1 & 2: Extraoral presentation.

Fig 3: Intraoral swelling

On orthopantomographic examination, a well defined unilocular radiolucency associated with impacted 37, 38, extending AP from distal of 36 to angle of mandible and SI from coronoid process to lower border of mandible was noted. (figure 4)

Computed Tomography (CT) revealed a solitary, unilocular, lytic, expansile lesion involving left posterior mandible with thinning of cortex and filled with thick fluid. The possibility of dentierous cyst, ameloblastoma and odontogenic keratocyst was considered.

Aspiration cytology of yellow colord thin fluid aspirate from the lesion showed few RBCs and inflammatory cells and was inconclusive. Insicional biopsy was advised.

Fig 4: Orthopantomographic presentation.

Incisional biopsy was taken from the region distal to 36 which showed cystic cavity lined by a thin non-keratinized stratified squamous epithelium of 2-4 cell layers thick in most the area. Some part of the section shows palisading and polarization of basal cells with hyperchromatic nuclei, cytoplasmic vacuolization with intercellular spacing of the lining epithelium suggestive of ameloblastomatous changes (Vickers & Gorlin criteria). (Fig 5 & 6) Thus the diagnosis of dentigerous cyst undergoing ameloblastomatous changes was given.

Fig 5: H&E stain (10x): Cystic cavity lined by a thin non-keratinized stratified squamous epithelium of 2-4 cell layers thick in most the area.

Fig 6: H&E stain (40x) Palisading and polarization of basal cells with hyperchromatic nuclei, cytoplasmic vacuolization with intercellular spacing of the lining epithelium suggestive of ameloblastomatous changes.

Surgical hemimandibulectomy was planned & under all aseptic precautions, patient was taken in major OT after pre-anesthetic fitness and evaluation of investigations. The patient was scrubbed with betadine solution, draped and the surgical site was isolated. Apron incision was taken on left side of the neck with 15 no. blade and lip split procedure was performed. Supraomohyoid neck dissection was performed with preservation of external carotid artery, facial nerve and vessels. Marginal mandibular nerve was identified and preserved following which left hemimandibulectomy was performed. Simultaneously free fibula graft was taken from left leg and osteotomy was performed to mould it into shape of mandible. Reconstruction of graft was carried out with the help of ricon plate and 2 layer closure was done with the help of vicryl 3-0 and prolene 4-0. Hemisectioned mandible was sent to Oral Pathology department for histopathological evaluation.

Macroscopically, hemisectioned left side of mandible showed lesional tissue posterior to 36 involving ramus, coronoid and condyle. When the lesional tissue was cut opned, a large cystic cavity hollowing the mandible was seen filled with thick yellow colored material.(Fig 7) 37 & 38 were impacted. The light yellow coloured material was processed for cytological examination. The Papanicolaou(PAP) stained smear reveled cohesive cluster of basaloid epithelial cells in eosinophilic background. These basaloid cells had oval or elongated nucleus and palisading arrangement was suggestive of ameloblast like odontogenic cells. (Fig 8)

Histopathological examination of the lesional tissue under low power showed cystic lumen lined by ameloblastic epithelium. Plexiform ameloblastoma like proliferations were seen in the cystic lumen & also infiltrating from lining epithelium into connective tissue wall. (Fig 9) Under higher magnification,

Fig 7: Macroscopic Examination of hemisectioned left side of mandible. Cut surface showed hollowing of the mandible which was filled with light yellow colour material.

Fig 8: PAP stain (40x) Cytological examination of yellow material showed cohesive cluster of basaloid epithelial cells having scanty cytoplasm with oval or elongated nucleus and palisading arrangement in eosinophilic background suggestive ameloblasts like odontogenic cells.

the cystic cavity was lined by ameloblastic epithelium with palisading and polarization of basal cells with hyperchromatic nuclei and overlying epithelial cells were loosely cohesive resembling stellate reticulum.(Fig 10) A network of interconnecting strands of cells bounded by a layer of columnar ameloblast like cells enclosing stellate reticulum like tissue were seen in connective tissue wall.(Fig 11) Solid islands of basaloid tumor cells and follicular ameloblastoma like islands with central cystic degeneration were also present in connective tissue wall.(Fig 12) Perineural & perivascular invasion of the tumor cells were apreciated.(Fig 13 & 14)

Thus in accordance with histopathologic evaluation of excisional biopsy specimen diagnosis of Unicystic Ameloblastoma: Subtype 1.2.3 (Luminal, Intraluminal

& Intramural) (Histologic subgrouping of Unicystic Ameloblastoma, modified after Ackermann et al) was given.

Fig 9: H&E stain (4x) Cystic lumen lined by ameloblastic epithelium. Plexiform ameloblastoma like proliferations were seen in the cystic lumen & also infiltrating from lining into connective tissue wall.

Fig 10: H&E stain (40 x) Cystic cavity lined by ameloblastic epithelium showing palisading and polarization of basal cells with hyperchromatic nuclei and overlying epithelial cells were loosely cohesive resembling stellate reticulum.

Fig 11: H&E stain (40 x) A network of interconnecting strands of cells bounded by a layer of columnar ameloblast like cells enclosing stellate reticulum like cells were seen in connective tissue wall.

Fig 12: H&E stain (20 x) Solid islands of basaloid tumor cells and islands of follicular ameloblastoma with central cystic degeneration were present in connective tissue wall.

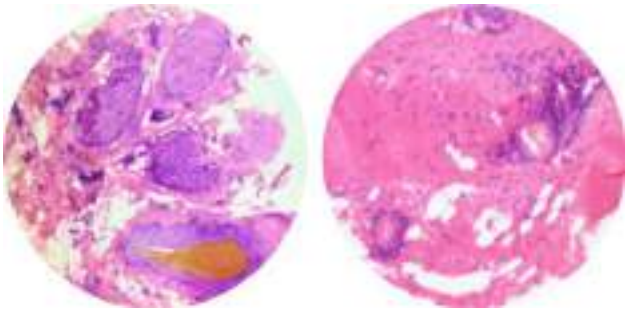

Fig 13 & 14: H&E stain (10x & 20 x) Perineural & perivascular invasion of the odontogenic tumor cells seen.

The postoperative healing was uneventful. No recurrence was noted at 6 months follow-up and healing of the surgical site was satisfactory. Prosthetic rehabilitation was advised.

FULL-MOUTH REHABILITATION OF A PATIENT WITH SEVERELY WORN DENTITION AND UNEVEN OCCLUSAL PLANE: A CASE REPORT

Presented By:
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Dr. Vijeta Gajbhiye (Department of Prosthodontics)

Abstract: Full mouth rehabilitation is a biggest challenge to any prosthodontist in the restorative dentistry. It requires detailed diagnosis and efficient treatment planning to achieve occlusal contacts that are in harmony in order to optimize stomathognathic function, health and esthetics. This gives a patient utmost comfort and satisfaction. Prosthodontic management of occlusal wear problems is very much difficult and demanding task on the part of the prosthodontist. Various factors such as vertical dimension of occlusion, centric relation, occlusal contact pattern, esthetics and phonetics must be considered simultaneously for both anterior and posterior teeth when the occlusion is rehabilitated. This may be further complicated by existing restorations, pulpal exposure, missing teeth and tooth sensitivity. Several techniques of full mouth rehabilitations are available and a clinician should describe to one after a comprehensive diagnosis of the patient's clinical condition and prospective consideration of his/her oral health, function, comfort and esthetic requirements.

Introduction: Full mouth rehabilitation seems to be a challenging treatment modality which is liable to improve the appearance of the patient and corrects occlusal imperfections. Vertical dimension, centric relation, speech and muscle tone are essential fundamentals of full mouth rehabilitation. The goal of dentistry is to increase the life span of the functioning dentition, just as the goal of medicine is to increase the life span of functioning individual.[1] There is a need to analyze each aspect carefully with regard to existing natural dentition and its relationship with the stomatognathic system. Full mouth rehabilitation tends to create smile that is not only esthetic but also functionally comfortable.[2]

Attrition of teeth is commonly seen in routine clinical examination. Many a times patients are unaware about the ongoing process of attrition as the main etiology is stress and it generally happens in an unconscious state and patient realizes it only when sufficient loss of teeth structures has already occurred.[3] Various factors such as vertical dimension of occlusion, centric relation, occlusal pattern, esthetics and phonetics needs to be considered simultaneously for both anterior and posterior teeth during rehabilitation. This may be further complicated by existing restorations, pulpal exposure, missing teeth, tooth sensitivity, supra erupted teeth and TMJ pain.[4]

This case report describes a clinical case of wear, treated prosthetically using Modified Pankey Mann Schuyler philosophy.

Case: A healthy 62-year-old male patient reported to the Department of Prosthodontics, VSPM's Dental College and research center, Nagpur, with a chief complaint of difficulty in mastication and esthetics, as well as replacement of missing teeth [Figure 1].

The patient was in good general health and the medical and dental history indicated no contraindications for dental treatment. Clinical and radiographic examinations revealed severe tooth surface loss on the maxillary anterior teeth [Figure 2,3]. Uneven occlusal plane were observed. No signs and symptoms

were found in the temporomandibular joints, and the patient reported no parafunctional habits. A periodontal examination revealed that the attached gingiva around the maxillary anteriors were adequate. Teeth missing were maxillary right first premolar, first molars and left first premolar, second molar, mandibular left central incisor, lateral incisor and canine, second premolar and first molar and mandibular right first molar and second molar.

A careful evaluation of the existing occlusal vertical dimension (OVD) was taken. The vertical dimension was assessed clinically. Physiologic rest position was determined by facial measurements and confirmed by phonetics. The interocclusal distance was judged to be approximately 6 mm and the OVD could be restored by approximately 3 mm.

Prior to definitive treatment, diagnostic casts were obtained from primary impressions (Alginate, Tropicalgin, Zhermack, Rovigo, Italy). Tentative jaw relation was recorded by using face-bow [Figure 4] and centric records and then mounting was done on semiadjustable articulator (Artex articulator, Amann Girrbach, Koblach, Austria). Based on amount of freeway space and for convenience of restoration, an anterior jig with increased vertical dimension was fabricated.

Occlusal plane was determined by Broadrick's flag analysis. Wax-up of diagnostic casts with increase VDO was done and an occlusal template was fabricated with thermoplastic vaccum foam sheet [Figure 5]. Patient was allowed to wear this template and go for Crown lengthening.

Introduction: Crown Lengthening Procedure (CLP) CLP is a surgical procedure designed to increase the extent of supragingival tooth structure for restorative or esthetic purposes by apically positioning the gingival margin, removing supporting bone or both. (Anoop S. et al, 2018)

Objectives of CLP:

1. Increased preservation and maintenance of restorations.
2. Cosmetic improvement.
3. Enabling restorative treatment without impinging on biologic width.
4. Removal of subgingival caries. 5. Correction of occlusal plane. 6. Facilitation of improved oral hygiene.

Indications:

1) Teeth with subgingival caries or extensive caries that shortens the tooth.
2) Tooth fractures.
3) Short clinical crowns caused by incomplete exposure of the anatomic crowns
4) To produce a "ferrule" for restoration.

Several Techniques For CLP:

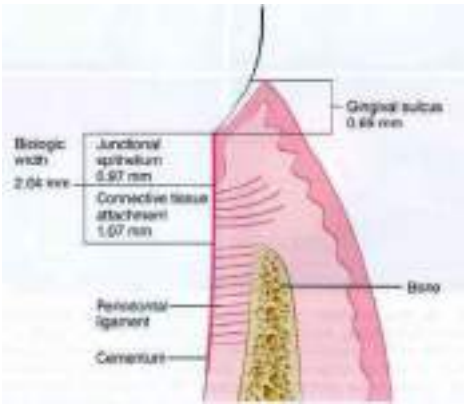
1) Gingivectomy, Un-displaced flap with or without osseous surgery
2) Apically repositioned flap with or without resective osseous surgery
3) Orthodontic forced eruption with or without fibrotomy

The selection of one technique over another depends on several patient-related factors such as esthetics, clinical crown to root ratio, root proximity, root morphology, furcation location, individual tooth position, collective tooth position, and the ability to restore the teeth.

Biomechanical Considerations that govern the CLP:

1. Biological Width
2. Ferrule
3. Crown root ratio

Biological width is defined as the physiologic dimension of the junctional epithelium and connective tissue attachment, according to the pioneering study conducted by Gargiulo et al.



Biological width Evaluation:

- Clinical assessment of the distance between bone and restoration margin, using a sterile periodontal probe.
- Bone sounding followed by subtraction of the sulcus depth from the resulting measurement.

Signs of Biologic Width Violation:

- Chronic progressive gingival inflammation around the restoration and bleeding on probing.
- Pocket formation, gingival recession, clinical attachment loss and alveolar bone loss.
- Localized gingival hyperplasia with minimal bone loss.

Advantages of Stents in Biomechanical Considerations:

- Stents act as a perfect guide for placing incision for CLP
- Accurately visualise the proposed margins at the time of surgery itself.
- Perfectly scalloped incision according to proposed restoration.

Case presentation: A 62 year old male patient was referred from the Department of Prosthodontics to Department of Periodontics with an indication for surgical crown lengthening in the maxillary anterior region with 11, 21 and 22.Past medical history was nonsignificant. Past dental history was patient was treated RCT with 11, 12, 13, 21, 22 and 23; 7 months back Habits were Betel nut chewing, pan chewing since past 30 years and has stopped the habit from 3 months. Clinically healthy marginal gingiva with 3.7 mm adequate width of attached gingiva was present and radiographic examinations revealed severe tooth surface loss on the maxillary anterior teeth healthy marginal gingiva with 3.7 mm adequate width of attached gingiva was present.

Probing Depth with 11

Disto-buccal	Mid-buccal	Mesio-buccal
2 mm	2 mm	2 mm

Probing Depth with 21

Disto-buccal	Mid-buccal	Mesio-buccal
2 mm	1.5 mm	2 mm

Probing Depth with 22

Disto-buccal	Mid-buccal	Mesio-buccal
2 mm	2 mm	2 mm

Surgical Procedure: After achieving adequate local anesthesia the bleeding points were marked with 11, 21 and 22 with the help of pocket marker 1.5 apical to the gingival margin. An external bevel incision was given apical to the point of tissue that is desired to be removed. The incision was bevelled approximately 45 degrees to the tooth surface to recreate, as far as possible, the normal festooned pattern of the gingiva. Then about 1.5 mm excised tissue was removed. After gingivectomy, a mucoperiosteal flap was raised with 11, 21, and 22 and carefully granulation tissue was curetted out as well as remaining calculus or necrotic cementum was also removed so as to leave a smooth clean surface. After this, about 1.5mm of osseous resection was done with the help of low speed handpiece with carbide and diamond burs and figure of eight sutures were placed with 11, 21 and 22. Periodontal dressing was placed to aid in maintaining flap adaptation. Gentle brushing and flossing was advised to the patient which will begin at 4 to 7 days post-surgery or following dressing removal at 7 days post-surgery. Chlorhexidine mouth rinse was also prescribed for 4 to 6 weeks to aid in plaque control.

Postoperative : After 1 week

How long does it take before proceeding to the final restoration (healing)?

- Between 4 to 6 weeks in the esthetic area.

The patient should:

- Be in good systemic condition
- No infection
- Margins should be supra-gingval
- The epithelial basal membrane – membrana basalis (lat.) bonding epithelium with connective tissue under it, totally recovers just after 4 weeks there is possibility of retraction of gingival tissue.

Conclusion:

1) Patient reported no discomfort during and after the CLP procedure.
2) The Procedure was completed in 1 hour.
3) No post-operative morbidity was seen.

The crown lengthening was done with 11, 12, 21 and 22 followed by RCT, fiber post and composite build up. The rehabilitation was done with PMS philosophy, where in restoration of lower anterior dentition was done first, then upper anteriors followed by lower posterior and at last upper posteriors. Tooth preparation with shoulder-bevel margins in the buccal and chamfer margin in the lingual aspects was performed on the mandibular anterior teeth. Interim prostheses were fabricated and cemented with non eugenol zinc oxide cement (Temp Bond NE; Kerr Corp, Orange CA.).

Next, maxillary anterior tooth preparation was performed. Provisionals were fabricated according to diagnostic waxup with proper anterior guidance during protrusion and unilateral group function during lateral excursions and were cemented [Figure 6], which was later replaced with crown with porcelain fused to metal (PFM) restorations. The preparation of mandibular posterior teeth and maxillary posterior teeth was performed with chamfer margins in the buccal and chamfer margin in the lingual/palatal aspects. Interim prostheses were fabricated and cemented with non eugenol zinc oxide cement (Temp Bond NE; Kerr Corp.) which was later replaced with metal crown restorations and the OVD restored by approximately 3 mm [Figure 7] During the following visit, treatment options were discussed with the patient, including cast partial denture and implant placement in suitable areas but the patient did not accept this surgery, and was convinced for CPD. To begin the CPD phase of treatment, an impression of the mandibular arch was made, poured with dental stone. A treatment plan was developed with the aim of improving occlusion, restoring masticatory function, and improving the patient's appearance. An Cast Partial Denture was planned for 36 and 37 as patient is not ready for implant placement and surgical procedure in this region. The Cast Partial Denture was fabricated and inserted in patient's mouth, occlusal contacts were adjusted, and the Cast Partial Denture was delivered to the patient [Figure 8]. Minor adjustments were required at four post-insertion visits. After 2 months, the temporary cement was changed with zinc phosphate cement and the patient was placed on a 6-month recall for evaluation of the esthetics and function of the restorations and also if there was any evidence of temporomandibular joint problems, fractures in the teeth, or PFM restorations.

Fig.1 extra-oral view of the patient

Fig 3. Radiographic view

Fig 4. Jaw Relation

Fig 5. Maxillary stent

Provisionalization

Left side	Right side
	
Working Side	
	
Balanceing Side	
	
	

Fig 6,7. Provisionals given

Fig 8. Final crowns given

Discussion: Rebuilding of severely attrited dentition has been a challenge to a dentist's skill and capabilities. The concept of complete mouth rehabilitation is dependent upon three proved and accepted principles. These are; the existence of a physiological rest position of the mandible which is constant, the recognition of a variable vertical dimension of occlusion and the acceptance of a dynamic, functional centric occlusion.[7] Occlusal rehabilitation seeks to convert all unfavourable forces on the teeth which inevitably induce pathologic conditions, into favourable forces which permit normal function and therefore induce healthy conditions.[1] Many clinical studies indicate that, vertical dimension of occlusion is maintained even with the rapid wear. As the occlusal surface wears, compensatory alveolar process elongates by progressive remodeling of the alveolar bone.[8] The three prime requirements of full mouth rehabilitation are healthy TMJ, harmonious anterior guidance and non-interfering posteriors. These three factors are interrelated and presence of any disharmony between these will affect the stomatognathic system. There are many philosophies to follow for an occlusal rehabilitation, but the most important among them is Hobo's philosophy and Pankey Mann Schuyler philosophy. Pankey Mann Schylur philosophy is one of the most practical philosophies for occlusal rehabilitation. It is well organized logical procedure that progresses smoothly with less wear and tear on the patient operator and technique.[9] Pankey and Mann introduced an instrument for occlusal plane analysis, here we used simplified version of the instrument i.e. customized broad rick flag analyzer. This assists in the reproduction of tooth morphology that is commensurate with the curve of Spee when posterior restorations are designed.[10] The anterior teeth are usually restored first so as to achieve functional and esthetically viable anterior guidance. Anterior guidance is the dynamic relationship of the lower anterior teeth against the upper anterior teeth through all ranges of function.

Anterior guidance plays a very important role in full mouth rehabilitation following centric relation.[11] Anterior guidance forms the anterior control to provide posterior disclusion. The three main things to be taken care of, while replacing posterior teeth, are achieving posterior disclusion, establishing the plane of occlusion and deciding the type of occlusal scheme. Disclusion refers to separation of opposing teeth during eccentric movements of mandible, as reported by Christensen.[12] A proper plane of occlusion permits the disclusion of all the teeth on the balancing side when the mandible is moved laterally. The reconstruction of vertical dimension of occlusion should be done at the centric relation and it should be acceptable for the patient at the neuro-muscular level.[13] Pankey Mann Schyuler's philosophy advocates that condylar guidance does not dictate anterior guidance. Thus it believes in harmonization of the anterior guidance for best possible esthetics, function and comfort and the determination of an occlusal plane based on anterior guidance. Occlusal rehabilitation is a radical procedure and should be carried out in accordance with the dentist's choice of treatment based on his knowledge of various philosophies followed and clinical skills.[14] The PMS technique is a very flexible concept. According to Dawson[7] the most impressive advantage of PMS is the latitude it permits. The advantages of this technique include incorporation of freedom from centric, no need to prepare or rebuilding all the teeth at a time, a well-organised procedure, all posterior occlusal contours are programmed in harmony with both condylar border movements and a perfected anterior guidance, and there is no need of any specific instrument unlike Hobo's technique.

Conclusion: The key to success is a multidisciplinary treatment approach and constant communication with patients to make them understand the disorder

and proactively participate in treating it.[15] Whenever treating severely worn teeth, an anterior guidance should be established in harmony with functional jaw movements and all posterior teeth should discluded during any eccentric jaw movement. A detailed diagnosis and treatment planning is necessary to achieve predictable success. The restoration of normal healthy function of the masticating apparatus is the ultimate aim of full mouth rehabilitation. By following Pankey Mann Schuyler philosophy the treatment can be completed more quickly and easily and with much more comfort for the patient. The patients appreciate anything which expedites having their work finished faster so that they can enjoy the oral health, comfort, functional efficiency and esthetics which are prime objectives of oral rehabilitation.

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NASOLABIAL FLAP IN ORAL AND SUBMUCOUS FIBROSIS

Presented By:
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Dr. Rucha Gulhane (Department of Oral pathology)

Defination: In 1966, OSMF was defined by Pindborg as "An insidious chronic disease affecting any part of the oral cavity and sometimes the pharynx; occasionally preceded by and/or associated with vesicle formation, it is always associated with juxta epithelial inflammatory reaction followed by a fibro elastic change of the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa causing trismus and inability to eat".[1]

In the literature, this established precancerous condition was first described by Schwartz in 1952.

He then examined 5 women of Indian origin from Kenya, and called it "atrophiaidiopathica mucosa oris."

According to Shirsat et al, 2015, OSMF is globally accepted now as in Indian disease. According to their epidemiological data, there is an alarming increase in the reported cases in India from 250,000 in 1980 to 14 million cases in 2010.

Based on the current scenario, the risk of developing SCC is very high, with a reported malignant transformation rate of 7-13% in osmf patients.

Etiology: The etiology was previously considered to be idiopathic but later it was concluded to be of a multifactorial origin.

The various causes include areca nut, capsaicin (chillies), zinc, iron and vitamin deficiencies, human leucocyte antigen.

Clinical Features:

- Burning sensation
- Blisters
- Ulcerations
- Excessive salivation
- Defective gustatory sensation
- Dryness of mouth
- Blanched mucosa
- White fibrous bands (vertically)
- Fixation, shortening or deviation of uvula
- Impairment of tongue movement
- Inability to blow or whistle
- Difficulty in swallowing
- Nasal voice

Classification: Classification based on clinical and histopathological features of OSMF Khanna J N & Andrade N N (1995):

Group I:

- Very early cases.
- Burning sensation.
- Acute ulcerations & recurrent stomatitis.
- No limitation in mouth opening.

Group II:

- Early cases.
- Buccal mucosa appears mottled & marble like.
- Widespread sheets of fibrosis palpable.
- Interincisal distance 26-35mm.

Group III:

- Moderately advanced cases.
- Trismus evident with interincisal distance 15-25mm.
- Buccal mucosa appears pale & firmly attached to underlying tissues.
- Atrophy of vermilion border.
- Vertical fibrous bands soft palate, pterygomandibular raphe, anterior faucial pillars.

Group IV A:

- Advanced cases.
- Trismus is severe with interincisal distance 15 mm.
- The fauces are thickened , shortened & firm to palpation.
- Uvula is shruken & appears as small , fibrous bud.
- Tongue movements limited.
- On palpation of lip circular bands felt around the entire mouth.

Group IV B:

- Advanced cases with premalignant & malignant changes.
- Hyperkeratosis, leukoplakia, or squamous cell carcinoma can be seen

Our Patient: Patient complains of reduced mouth opening since 3 year. Patient was apparently alright 3 years back when he started noticing reduced mouth opening which was 4 fingers initially and now it reduces to 2 finger.

H/O restricted tongue movement

H/O ulceration

H/O burning sensation on consumption of spicy food.

No H/o difficulty in deglutition, change in voice.

Habits: Kharra chewing since 12 years 4-5 times a day but has stopped since 15 days.

Provisional Diagnosis: Group IV-A

The treatment modalities of OSMF revolves around addressing the two distinctive complains i.e Stomatitis and limited mouth opening.

Stomatitis is the initial and one of the most significant complaints in patients with OSMF.

It may include ulcers, vesicles mucosal patechie, and/or burning sensation on consumption of hot and spicy food.

Limited mouth opening is due to fibrosis, often preceded/accompanied by blanching.

The objective of the treatment is to revert the signs and symptoms associated the condition and to stop the progress so as to deprecate the risk of malignant transformation.

By and large, management includes 3 modalities - Physical, medical and surgical.

The aim of the physical approach is to remodel the tissue with dynamism.

It includes physiotherapy and mouth opening exercises with the help of splints and other devices like histers mouth gag.

It also includes local application of heat (microwave diathermy).[10]

Medical modality includes Inflammatory modulators like placental extracts, steroids, interferon gamma.[11]

Fibrinolytic and proteolytic agents like collagenase and hyluronidase. Dietary supplements including vitamins and lycopene.[12]

These agents can be given orally, topically, submucosally at the site.

Injection at the local site has its own disadvantages in the form of increased fibrosis, delayed trismus and morbidity at the local site due to needle injury and drug irritation.[13]

Surgical management is the treatment of choice for advanced cases of OSMF.

Most often it is combined with other two modalities.

The aim is to surgically excise the fibrous bands after forceful mouth opening and placement of suitable flap to restore the defect.

Intra oral flaps includes tongue flap, palatal flap and placement of buccal pad of fat. Tongue flap placement bilaterally causes severe dysphagia and increases the risk of aspiration post operatively.[14]

Palatal flap has the disadvantage of donar site fibrosis and require extraction of 2 nd molar for the tension free closure of the flap.[15] other disadvantage is the narrow reach of the flap which makes its use limited.

Placement of buccal fat pad is another option. The method is simple and quick. However anterior reach of the pad of fat is an issue.

The fat pad undergoes atrophy and the remaining area heals by fibrosis further adding to trismus.[16]

Extraoral flaps include conventional split thickness skin graft, temporalis fascia and temporalis pedicled flap, platysmal flap.[17]

Free flaps are popular now a days but the facility are not readily available and requires second stage debulking procedures in 40% cases.[18]

Nasolabial flap is widely used these days and becoming the choice of clinicians worldwide. The disadvantage being extra oral scars, which eventually gets hidden in the nasolabial fold with age.

Post Operative Care: A temporomandibular joint trainer was placed postoperatively for 15 days to prevent dehiscence of the flap as a result of occlusal trauma.

Post operatively, physiotherapy was started using Heister's mouth gag to prevent relapse of fibres.

Counselling of patients was done regarding the need of post-operative physiotherapy for a period of minimum 6 months.

1 year follow up was done.

Patients had dissatisfying results due to nonconformity of post-operative physiotherapy.

By the end of 1 year, flaps were covered with healthy mucosa with a appreciable decrease in hair growth intraorally.

Other positive findings included reduction in burning sensation and recurrent ulceration.

Few complications were reported in the form of postoperative infection, flap necrosis, widening of oral commissure, sub-luxation of mandible and relapse of fibrosis (non-compliance of patient, lack of exercise)

Conclusion: The use of nasolabial flap in the reconstruction of OSMF is commendable. The technique is easy to master with limited post-operative sequelae.

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INTERDISCIPLINARY MANAGEMENT OF MAXILLARY BUCALLY IMPACTED CANINE ASSOCIATED WITH BIMAXILLARY PROTRUSION: A CASE REPORT

Presented by:
Dr. Nitesh Mahaton (Department of Orthodontics)
Dr. Jignesh Rajguru (Department of Oral surgery)

Abstract: Failure of eruption of the maxillary permanent canine is an unusual event. This case report presents combined surgical and orthodontic management of an impacted permanent maxillary canine of a 16 year old girl with bimaxillary protrusion of incisor.

Introduction: Impacted tooth refers to a tooth that fails to erupt into the dental arch within a specific time. Teeth frequently impacted are—third molars, maxillary canines, maxillary and mandibular premolars and maxillary central incisors. Prevalence of impacted maxillary canines is 0.9–2.2% and of impacted mandibular canines is 0.05–0.4%. It has been suggested that eruption disturbances of a maxillary canine are most often caused by local factors such as mechanical obstruction (supernumerary tooth/cyst/tumour), insufficient space in the dental arch and tooth-arch size discrepancy. Systemic factors such as genetic disorders, endocrine deficiencies and previous irradiation of the jaws also have been suggested to play a role.

Surgical exposure and orthodontic management of impacted canines have been used to bring impacted teeth into occlusion. The following case report presents combined surgical and orthodontic management of an unerupted maxillary permanent right and left canine.

Case presentation: A 15-year-old girl presented with the chief complain of forwardly placed upper and lower front teeth.

On extra oral examination, the patient's has symmetrical face with equal facial thirds and fifth profile was convex and lips were incompetent.

Figure 1: Extraoral view

Intra oral examination revealed: (Figure 2 & 3)

1 The patient has overretained deciduous right canine
2 Class I molar relation on both side
3 Canine relation cannot be predicted
4 V shaped Upper and U shaped lower arch
5 Spacing in the upper anteriors
6 Anterior crowding in lower arch with lingually erupted canine
7 Non coinciding dental midline
8 Lower midline is shifted towards right

Figure 2: Intraoral view of maxilla and mandible in occlusion.

Figure 3: Occlusal View

Pretreatment OPG shows impacted maxillary right and left canine. Where right canine is in sector no 3 and left canine is in sector no 1 according to sector classification of canine impaction. (figure 4)

Aim: The aim of the treatment was to reduce the proclination of upper and lower incisor and bring the impacted right and left canine into occlusion and provide adequate function, structural balance and esthetics.

Treatment Plan: The treatment objectives was correction of –

1) Proclination of upper and lower incisor
2) Bucally impacted canine
3) Crowding in lower incisor
4) Midline correction
5) Convex profile
6) Increased curve of spee
7) Spacing in upper anteriors
8) Reduced nasolabial angle, nonconsonant smile.

It was decided to extract all 1st premolars and surgically exposed the bucally impacted canine's followed by fixed mechanotherapy.

As the anteriors where severly proclined critical anchorage was decided in both the arches, nance was given in upper arch and lingual arch was given in lower arch.

Then extraction of all first premolar was done followed by surgical exposure of canine after that attachment are placed on the exposed canine which are attached by ligature ties, initially the canine was tracted by ligature tie after that using cantilever spring was used to bring the canine into occlusion which tooks around 7 months.

Figure 5: Exposed canine with attachment placed

After the canine came into occlusion leveling and alignment was done then it was retracted using active tie back in both the arch. Individual canine retraction tooks 6 month for the retraction.

Then the anterior was retracted with sliding mechanics which took 6 months for retraction after that settling elastics are given for posterior occlusal settlement(figure 6)

Figure 6: Midtreatment intraoral view

At present the patient chief complain is solved, Decreased in the proclination of the anteriors, improvement in facial profile and all the treatment objectivis was achieved and can be well appreciated. (figure 7)

Conclusion: The successful treatment of a patient with an ectopic tooth can be a challenging task for an orthodontist. This case

report has demonstrated careful planning in alignment of the buccally displaced canine with by extraction fixed orthodontic mechanics to deliver light, controlled force, with good results. Thus, the planned orthodontic treatment resulted in correction of occlusion, harmony of smile, periodontal health, and stability after treatment

Figure 7: Current status Extraoral

EPITHELIOID HEMANGIOMA: A RARE ENTITY TO REPORT

Presented by:
Dr. Kunal Sarate (Department of Oral medicine and radiology)

Abstract: Epithelioid hemangioma (EH) or angiolymphoid hyperplasia is an uncommon benign vasculoproliferative neoplasm. We are reporting a case of EH involving the gingiva in a 12-year-old male patient who reported to the outpatient Department of Oral Medicine and Radiology with the chief complaint of gingival growth in the lower mandibular gingiva involving both buccal and lingual gingiva and facial asymmetry due to enlarged left submandibular lymph nodes.

Keywords: Epithelioid hemangioma, capillary hemangioma, gingival growth, vasculoproliferative neoplasm

Introduction: Epithelioid hemangioma (EH) is an uncommon benign vasculoproliferative neoplasm, whose etiology and pathogenesis are still uncertain. The term EH was coined by Enzinger and Weiss in 1983, but EH was first described in 1969 by Wells and Whimser as angiolymphoid hyperplasia with eosinophilia.[1-3]

Extraoral counterpart of this entity typically presents as a small angioma-like nodule, red to brown in color, which may be located intradermally or subcutaneously in young adults. It can mimic lymphoproliferative disorders, especially when the lesion arises in typical location, such as the extremities.[4]

Oral presentation of EH is nonspecific and it may be difficult to clinically differentiate EH from angioma, pyogenic granuloma, Kaposi's sarcoma, salivary gland tumor, lymphoma, and squamous cell carcinoma.[1] Oral cases of EH were found to be common in males as compared with females, and the lips, tongue, buccal mucosa, and palate are the common sites involved.[5]

Case: A 12-year old male reported to the outpatient Department of Oral Medicine and Radiology with the chief complaint of gingival growth in the lower mandibular gingival involving both buccal and lingual gingiva. Patient gave history of gradual increase in size and involvement with history of occasional gingival bleeding in the last 2 years. No history of weight loss or fever or other constitutional symptoms. Clinical examination showed granular growth involving marginal and attached gingiva, covering cervical third of all teeth in the region [Figure 1]. The growth was painless and not associated with bleeding on probing or any discharge. Lymph node examination revealed enlarged left submandibular node of size was 2 × 1.5 cm, oval shaped, firm, mobile, and nontender. In addition, two smaller submandibular lymph nodes, one on left side and one on right side, were also enlarged and nontender. Patients consent was obtained and radiological investigations such as an Intra oral periapical radiograph and Orthopantomograph were made, which revealed moderate alveolar bone resorption extending from 32 up to 37 region. On ultrasonography of the neck, except for enlarged lymph nodes, no other pathology was observed. Incisional biopsy was done, and at the same time, other investigations were carried out, such as Mantoux test, chest X–ray, and USG-guided FNAC for the lymph node to rule out any systemic cause. USG-guided FNAC for left submandibular enlarged lymph node suggested it as reactive lymphadenopathy, whereas other tests revealed no abnormality.

Fig 1- Extent of lesion from 32 up to the retromolar region involving both buccal and lingual gingival

Fig 2: IOPA showing moderate alveolar bone loss with 35, 36, and 37 regions

Fig 2: IOPA showing moderate alveolar bone loss with 35, 36, and 37 regions

Histopathological evaluation showed underlying lesional fibrocellular connective tissue stroma composed of abundant blood vessels of variable sizes mostly capillary sizes. Remarkable endothelial cell proliferation was present in the stroma. There is mild chronic and acute inflammatory infiltration. (fig 4 & 5) In other section, endothelial lining of the vessels showed 'tombstone' appearance which is a feature of Epithelioid Hemangioma. (Fig 6) Immunohistochemical (IHC) evaluation with CD-34 marker heighted proliferation of numerous small blood vessels suggestive of Capillary Hemangioma. (Fig 7)

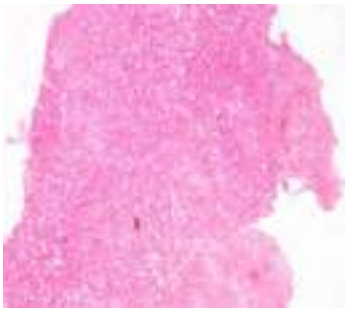

Fig 4: H & E stain (10x)

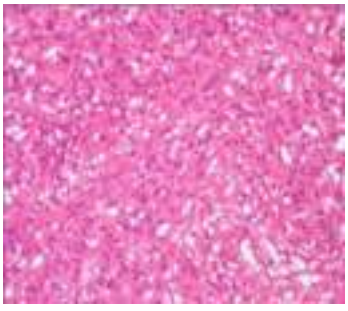

Fig 5: H & E stain (40x)

Discussion: Haemangiomas are benign tumour composed of disorganized manner of endothelium lined vessels that are filled with blood and connected to the main blood-vascular system. It can be either congenital or traumatic in origin and are characterized by rapid growth phase with endothelial cell proliferation, followed by gradual involution. It is the result of endothelial cell hyperplasia in the presence of certain growth factors involved in angiogenesis like vascular endothelial growth factor (VEGF), basic fibroblast growth factor (b-FGF).

Oral hemangiomas represent 14% of all human hemangioma. There are various subtypes of hemangioma like capillary hemangioma, lobular hemangioma, cellular hemangioma, and epithelioid hemangioma. Various synonyms used for epitheloid hemangioma are angioblastic hyperplasia with eosinophilia (ALHE), nodular angioblastic lymphoid hyperplasia with eosinophilia. It usually appears soon after birth, typically proliferate during the 1st year of life and then involute during the childhood years (upto 12

years). The hemangioma of the oral soft tissue is similar to the hemangioma of the skin and appears as a flat or raised lesion of the mucosa, usually deep red or bluish red and seldom well circumscribed. They are readily compressible and fill slowly when released. They are much more common in females than males (ratio=3:1). Only 21 cases of epithelioid hemangioma have been reported in the oral cavity where lips are the most frequent site, followed by the tongue, buccal mucosa and palate.

A useful approach to the management of hemangiomas can be based on location of the lesion, stage of the lesion and type of lesion. Treatment of haemangioma is often a challenge. Intralesional corticosteroids, cryotherapy, laser cauterization, and irradiation have been used but are not proven to be effective.[2,9] Other therapeutic options available are intralesional interferon alpha-2a, indomethacin farnesil, pentoxifylline, and chemotherapeutic agents such as vinblastine, mepolizumab (anti-interleukine-5) and imiquimod.[9] Surgical excision with periodic follow-up has been accepted as recommended treatment till now. In the present case, patient was advised for surgical treatment. It is reported that patients with oral EH underwent for complete surgical resection without additional therapy, and recurrence was relatively rare in such cases.[7,10,11] The prognosis of the hemangioma is excellent, since it does not become malignant or recur after adequate removal or destruction. Recurrence observed in about 2% of the reported cases of hemangioma of oral cavity.

Conclusion: Most Hemangiomas are self regressing, but the lesions that do not undergo involution, should be evaluated clinically and histopathologically. Hemangioma clinically present in various forms and so should be considered as differential diagnosis in soft tissue tumours. Thorough clinical examination supplemented with histopathological analysis will help for definite diagnosis

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