The institute formulates the learning objectives of each program. During the course beginning college management with their faculty members conducts a orientation program. During this orientation programme faculty members discuss about the program structure, course content, how the course is scheduled yearwise and the evaluation process like examinations, practical procedures.

Assessment process:

Knowledge gained by the student assessed by various procedures. College conducts classes according to the given schedule and at the end of the class the content delivered to student is assessed by pre and post test. Evaluation is achieved by two processes. Formative or internal assessment, Summative or university examinations. Formative evaluation is done through a series of tests and examinations conducted periodically by the institution. Summative evaluation is done by the university through examination conducted at the end of the specified course. Methods of evaluation followed are Written test, Practicals, Clinical examination, Viva voce.

EXAMINATIONS

SCOPE: These regulations shall be applicable for the B.D.S. degree examinations conducted by various universities in the country.

I. PREFACE:

(A) Evaluation is a continuous process, which is based upon criteria developed by the concerned authorities with certain objectives to assess the performance of the learner. This also indirectly helps in the measurement of effectiveness and quality of the concerned B.D.S. programme.

(B) Evaluation is achieved by two processes

I. Formative or internal assessment

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2. Summative or university examinations.

Formative evaluation is done through a series of tests and examinations conducted periodically by theinstitution.

Summative evaluation is done by the university through examination conducted at the end of thespecified course.

II. METHODS OF EVALUATION:

Evaluation may be achieved by the following tested methods:

1. Written test

2. Practicals

3. Clinical examination

4. Viva voce

INTERNAL ASSESSMENT EXAMINATION

The continuing assessment examinations may be held frequently at least 3 times in a particular yearand the average marks of these examinations should be considered. 10% of the total marks in eachsubject for both theory, practical and clinical examination separately should be set aside for the internalassessment examinations.

SCHEME OF EXAMINATION:

The Scheme of Examination for BDS Course shall be divided into 1st BDS examination at the end of the firstacademic year, 2nd BDS examination at the end of second year, 3rd BDS examination at the end of third, final BDS.

The examination shall be open to a candidate who satisfies the requirements of attendance, progressand other rules laid down by the University.

I B.D.S. Examination:

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1. General anatomy including embryology and histology

2. General human physiology and biochemistry

3. Dental Anatomy, Embryology and Oral Histology

II B.D.S. Examination:

A candidate who has not successfully completed the 1st B.D.S. examination can not appear in the IIndyear Examination.

1. General pathology and Microbiology

2. General and dental pharmacology and therapeutics

3. Dental Materials

4. Pre Clinical Conservative – Only Practical and Viva Voce

5. Pre Clinical Prosthodontics – Only Practical and Viva Voce

III B.D.S. Examination:

A candidate who has successfully completed the 2nd B.D.S. examination can appear IIIrd B.D.S.Examination.

1. General Medicine

2. General Surgery

3. Oral Pathology and Oral Microbiology

Final BDS (Fourth Year):

- Public Health Dentistry

- Periodontology

- Orthodontics and Dentofacial Orthopaedic

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Oral Medicine and Radiology

- Oral & Maxillofacial Surgery

- Conservative and Endodontics

- Prosthodontics and Crown & Bridge

- Paediatric and Preventive Dentistry

WRITTEN EXAMINATION:

1. The written examination in each subject shall consist of one paper of three hours duration andshall have maximum marks of 70.

2. In the subjects of Physiology & Biochemistry and Pathology & Microbiology each paper will bedivided into two parts, A and B of equal marks.

3. The question paper should contain different types of questions like essay, short answer and

objective type MCQ's

4. The nature of questions set, should be aimed to evaluate students of different standards rangingfrom average to excellent.

5 The questions should cover as broad an area of the content of the course. The essay questionsshould be properly structured and the marks specifically allotted

6. The University may set up a question bank

PRACTICAL AND CLINICAL EXAMINATION:

Objective Structured Clinical Evaluation: The present system of conducting practical andclinical examination at several universities provide chance for unrealistic proportions of luck.Only a particular clinical procedure or experiment is usually given for the examination Theclinical and practical examination should provide a number of chances for the candidate toexpress one's skills. A number of examination stations with specific instructions to be provided.This can include clinical procedures, laboratory experiments, spotters etc.

Evaluation must bemade objective and structured. The method of objective structured clinical examinations shouldbe followed. This will avoid examiner bias because both the examiner and the examinee are givenspecific instructions on what is to be observed at each station.

Records/ Log Books: The candidate should be given credit for his records based on the scoresobtained in the record. The marks obtained for the record in the first appearance can be carriedover to the subsequent appearances if necessary.

Scheme of clinical and practical examinations: The specific scheme of clinical and practicalexaminations, the type of clinical procedures/ experiments to be performed and marks allottedfor each are to be discussed and finalized by the Chairman and other examiners and it is to bepublished prior to the conduct of the examinations along with the publication of the time tablefor the practical examinations. This scheme should be brought to the notice of the externalexaminer as and when the examiner reports. The practical and clinical examinations should beevaluated by two examiners of which one shall be an external examiner appointed from otheruniversities preferably outside the State. Each candidate should be evaluated by each examinerindependently and marks computed at the end of the examination.

Viva Voce: Viva voce is an excellent mode of assessment because it permits a fairly broadcoverage and it can assess the problem solving capacity of the student. An assessment related tothe affective domain is also possible through viva voce. It is desirable to conduct the viva voceindependently by each examiner. In order to avoid vagueness and to maintain uniformity ofstandard and coverage, questions can be pre-formulated before administering them to eachstudent. Twenty marks are exclusively allotted for viva voce and that can be divided equallyamongst the examiners, i.e., 10 marks per examiner.

Criteria for a pass:

Fifty percent of the total marks in any subject computed as aggregate for theory, i.e., written, viva voceand internal assessment and practicals including internal assessment, separately is essential for a passin all years of study.

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For declaration of pass in a subject, a candidate shall secure 50% marks in the University examinationboth in Theory and Practical/ Clinical examinations separately, as stipulated below:

A candidate shall secure 50% marks in aggregate in University theory including Viva Voce andInternal assessment obtained in University written examination combined together. In theUniversity Practical/ clinical examination, a candidate shall secure 50% of Universitypractical marks and Internal Assessment combined together In case of pre clinical Prosthetic Dentistry and Pre clinical conservative dentistry in I BDS,where there is no written examination, minimum for pass is 50% of marks in Practical and Vivavoce combined together in University examination including Internal Assessment i.e. 50/100marks Successful candidates who obtain 65% of the total marks or more shall be declared to havepassed the examination in First Class. Other successful candidates will be placed in SecondClass. A candidate who obtains 75% and above is eligible for Distinction. Only those candidateswho pass the whole examination in the first attempt will be eligible for distinction or class First Class and Distinction etc to be awarded by the University as per their respective rules.

Grace Marks: Grace marks upto a maximum of 5 marks may be awarded to students who have failedonly in one subject but passed in all other subjects.

Re-evaluation: The objective of re-evaluation is to ensure that the student receives a fair evaluation inthe university examination and to minimize human error and extenuating circumstances. There shall betwo mechanisms for this purpose.

1. **Re-totaling:** The University on application and remittance of a stipulated fee to be prescribed bythe university, shall permit a recounting or opportunity to recount the marks received forvarious questions in an answerpaper/papers for theory of all subjects for which the candidatehas appeared in the university examination. Any error in addition of the marks awarded ifidentified should be suitably rectified.

2. **Re-evaluation:** Re-evaluation of theory papers in all years of study of the BDS course may bepermissible by the University on application and remittance of a prescribed fee. Such answerscript shall be re-evaluated by not less than two duly qualified examiners and the averageobtained shall be awarded to the candidate and the result accordingly reconsidered.

However inthose universities where double evaluation provision exists, this provision of re-evaluation willnot be applicable.

Any candidate who fails in one subject in an Examination is permitted to go to the next higher class and appears for the said failed subject and complete it successfully before he is permitted to appear for the next higher examination. However, the Dental Council of Indiawould have no objection, if the concerned University follows their examination scheme provided in their statute/regulations.

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University Reg. No 1602106051

DEPARTMENT OF PUBLIC HEALTH DENTISTRY
CLINICAL AND FIELD PROGRAMME RECORD BOOK

2020 to 2021

NAME : M. SRAVANI

ROLL NO : 1602106051

YEAR : 2020 - 2021

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MAHABUBNAGAR

CERTIFICATE

Certified that this is a Bonafide Record work done by ~~Mr./Miss/Mrs.~~ ..... /

..... MADUPATHI. SRAVANI ..... with the university Roll Number 160210605I ..

in the Department of Public Health Dentistry in the year 20.20 - 20.21 ..

Signature of the HOD

Signature of the Examiners

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Sl.No.	NAME OF THE EXERCISE	No. of Cases
1	CASE HISTORY	5
2	INDICES	
	ORAL HYGIENE INDEX (ORIGINAL)	5
	ORAL HYGIENE INDEX (SIMPLIFIED)	5
	SILNESS AND LOE PLAQUE INDEX	2
	SILNESS AND LOE GINGIVAL INDEX	2
	RUSSELS PERIODONTAL INDEX	2
	CPITN	2
	CPI	2
	DEANS FLUOROSIS INDEX	5
	DMFT	10
	DMFS	10
	def/defs	05
	WHO ORAL HEALTH ASSESSMENT FORM	1
3	TOPICAL FLUORIDE APPLICATION	2
4	PIT AND FISSURE SEALANTS	2
5	COMPREHENSIVE HEALTH CARE	5 Patients
6	CAMPS ATTENDED (REPORT)	
7	VISIT TO SCHOOL (REPORT)	
8	VISIT TO INSTITUTION FOR CARE	
	OF THE HANDICAPPED (REPORT)	
9	VISIT TO WATER TREATMENT PLANT (REPORT)	
10	VISIT TO PRIMARY HEALTH CENTRE (REPORT)	
11	VISIT TO SEWAGE TREATMENT PLANT (REPORT)	
12	ORAL HEALTH SURVEY (REPORT)	
13	PROJECT WORK	
14	SEMINAR	
15	SETTING UP OF DENTAL CLINIC (REPORT)	

CASE HISTORY PROFORMA - IV

Student's Name: M. Manasa

Date: 23|10|2021 OP.No. 2114778

Patient's Name: B. Ganga Age: 24 years Gender: female

Date and place of Birth: Afilapur, 16-06-1996.

Religion: Hindu

Education: 10th class Occupation: farmer.

Total Income of family per month: 9,000 /

Total number of family members: 5

Percapita income: 21,000

Address and Contact Number:

Afilapur (Mahabubnagar)

H.NO-9-21|E

I. Chief complaint: patient complains of pain in the left lower back tooth region since 1month.

II. History of present illness: Patient was apparently asymptomatic 1month back later she notfced pain in the left lower back tooth region which is gradual in onset, intermittent in nature & throbbing type of pain & aggravates while taking hot & cold foods and relieves on its own. Non-radiating localize pain.

III. Medical History: No relevent medical history as elicited by patient.

IV. Past Dental History: 1st visit.

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V. Family History:

a) Siblings: 4 b) Marital status: married c) Children (if any)

VI. Personal History:

a) Adverse habits: –

a.Present habits – b.Past Habits –

	Number	Frequency	Duration
1. Smoking	–		/
2. Smokeless tobacco			
a. Ghutka	–		
b. Pan with tobacco	–		
3. Pan chewing	–		
4. Alcohol consumption	–		

b) Habits related to oral cavity:

a.Present – b.Past –

1. Mouth Breathing	Present/absent
2. Thumb sucking	Present/absent
3. Tongue thrusting	Present/absent
4. Bruxism	Present/absent
5. Pencil/nail/lip biting	Present/absent

c) Oral Hygiene Practices:

1. Type of cleaning aid: Toothbrush ☑ Finger ☐ Twig ☐ Any other ☐

Duration -

1a. Type of tooth brush Soft / Medium / Hard

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2. Method of Cleaning: Vertical ☐ Horizontal ☑ Circular ☐

3.Materials Used: Toothpaste ☑ Tooth powder ☐ Charcoal ☐

Sand ☐ Brick powder ☐ Any other ☐

4. Frequency of cleaning: Once ☑ Twice ☐ More than twice ☐

5. Time of brushing: Before meals ☑ After meals ☐

6. Frequency of changing the toothbrush: changes every 6 months due to blurring of bristles.

Reason /

7. Use of other oral hygiene aids: No

d) Dietary habits:

1.Source of water: mineral water

2. Diet : Vegetarian ☐ Mixed ☑

3. Dietary chart:

Time	Item
9:00AM	1 bowl of rice with cup of dal.
8:00AM	1 cup of tea with 2 teaspoons of sugar
9:00PM	1 bowl of rice with cup of dal
5:00PM	1 cup of tea with 2 teaspoon of sugar
2:00PM	1 cup of rice with cup of dal.

Staple Diet: Rice

Sugar Exposure: Present

4.Sugar consumption (per day) → 2 times a day

Type: Fermentable Frequency: 2 times/day Time of intake: Before & after meals.

Form and consistency: Solid /Liquid/Sticky /Non-sticky

VII. General Physical Examination

Built –) moderately built

Posture –) erect

Gait –) Normal

Vital Signs –) pulse rate - 70 beats/min Temperature - Afibile.
Respiratory rate - 17 cycles/min Bloop pressure - 120/80 mmHg

VIII. Local examination

a) Extra oral

1. Symmetry: No gross facial asymmetry noticed
2. T.M.J: Bilaterally synchronous movements with no clicking/tugs/popings and hand
3. Lymph nodes: No palpable lymphnodes
4. Lip competency –) Competent.

b) Intra oral

1. Soft tissue:

Tongue
Labial mucosa
Palate
Floor of mouth
Alveolar mucosa
} No abnormality detected.

Lip

Gingiva — Color –) marginal melanin pigmentation Contour –) scalloped
Consistency –) firm & resilient Texture –) stippling is present.
Bleeding on probing –) absent

2. Hard tissue

Type of dentition: Permanent

Number of Teeth present: 28

Teeth present: $\frac{8\,7\,6\,5\,4\,3\,2\,1 \mid 1\,2\,3\,4\,5\,6\,7}{8\,7\,6\,5\,4\,3\,2\,1 \mid 1\,2\,3\,4\,5\,6\,7}$

Teeth missing and reason for loss: $\frac{8 \mid 8}{8 \mid 8}$

Root stumps: –

Dental caries: Class II Dental caries in $\frac{6 \mid 6}{}$

Class I Dental caries in $\frac{\cancel{7} \mid \cancel{7}}{}$

Non cavitated (Initial): –

Cavitated: –

Cavitated (with pulp exposure): –

Secondary Caries : –

Filled teeth: –

Any prosthesis: Crown –

Bridge –

RPD\ Implant –

Wasting disease: a. Generalized – b. Localized

A. Attrition – Localized in $\frac{\cancel{3}21 \mid 123}{}$

B. Abrasion –

C. Erosion –

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Enamel Hypoplasia:-

Dental Fluorosis: moderate

Supernumerary teeth: -

Any other anomaly please specify: -

Malocclusion: Angles class I malocclusion.

Fractured teeth

Dental deposits : stains (intrinsic/extrinsic) -> present.

calculus -> present

3. Periodontal Status :

Gingival recession : -

Periodontal pocket : localized / generalized -

Mobility of teeth : -

4. Oral Hygiene Status :

Dental deposits stains -> present

calculus -> present.

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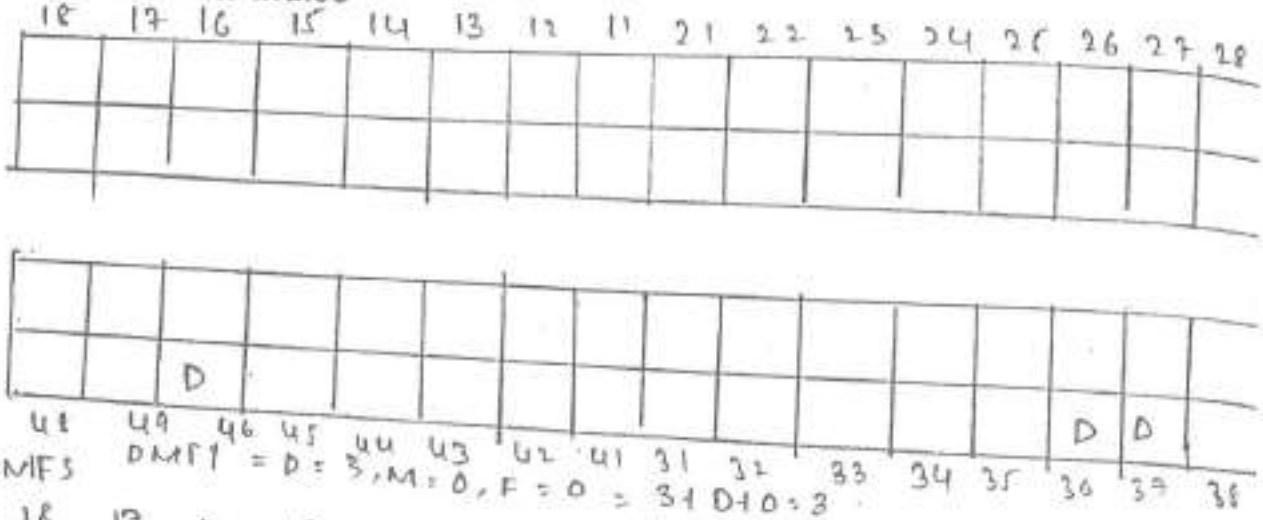
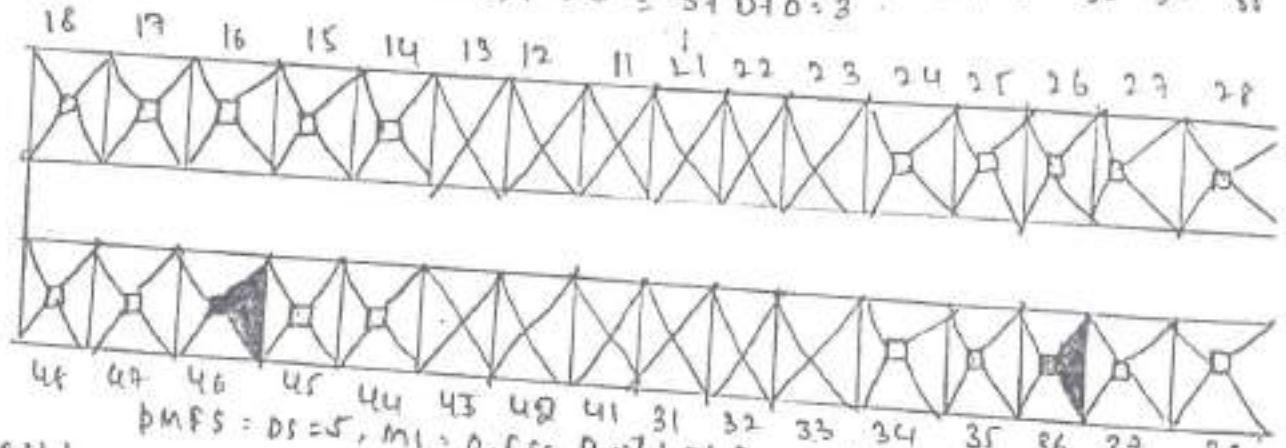
DMFT

IX. Relevant Indice

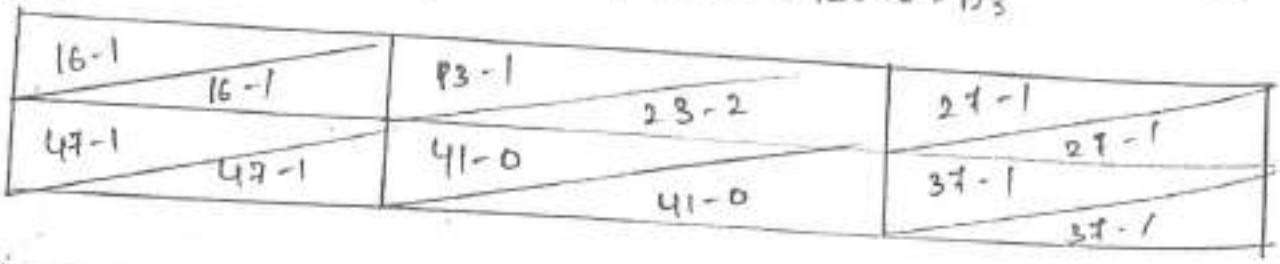


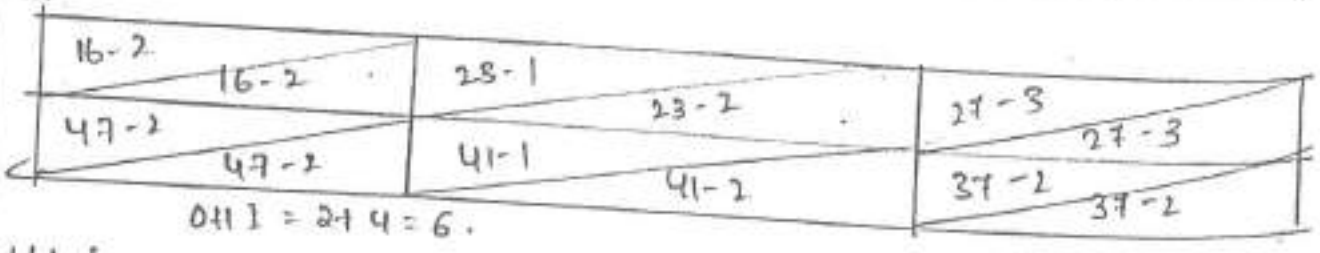
DMFS DMFT = D = 3, M = 0, F = 0 = 3 + 0 + 0 = 3



DMFS = DS = 5, MS = 0, FS = 0 = 3 + 0 + 0 = 128 - 5 = 123

OHI





OHI = 2 + 4 = 6.

OHI-S

16	11	26
1	0	0
1	1	2
46	31	36

DI-S = $\frac{5}{6}$ = 0.8

CI-S = $\frac{7}{6}$ = 1.1

OHI-S = DI-S + CI-S

16	11	26
2	1	2
1	0	1
46	31	36

X. Provisional diagnosis: Chronic apical periodontitis irt $\frac{}{6}$
Class II Dental caries irt $\frac{}{6}$
Class I Dental caries irt $\frac{}{7}$
Chronic generalized gingivitis.

XI. Investigation:

IOPA irt $\frac{}{6}$.

XII. Diagnosis: Chronic apical periodontitis irt $\frac{}{6}$
Class II Dental caries irt $\frac{}{6}$, Class I Dental caries irt $\frac{}{7}$
Chronic generalized gingivitis.

XIII. Treatment Plan:

PRIMARY LEVEL: Advised to brush twice daily with soft tooth brush for 4minutes using modified bass technique and also use tongue cleaner daily.
→ Advised mouth rinse after food intake.
→ Advised regular dental checkup for every 6 months.
→ Advised changing of tooth brush for every 3months.

SECONDARY LEVEL:

→ Advised oral prophylaxis.
→ Advised restoration irt $\frac{}{7}$.

TERTIARY LEVEL:

→ Advised root canal treatment irt $\frac{}{6}$ followed by crown placement.

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* Caries vaccines:-

The vaccines to prevent the dental caries may be prepared from:-

1) Live modified organisms
2) Inactivated killed organisms.
3) Extracted cellular fractions, toxoid, (or) combination of these.

→ In the past the most popular type of vaccine was prepared from whole cells of S. mutants killed by heat or by treatment with formalin.

→ This resulted in cross-reactivity with other tissues.

→ When animals are injected with whole s. mutants bacteria, they form antibiotics which react not only with the bacteria but also with heart tissue.

→ There was a chance that antibodies induced by the heart cross-reactive antigens [HCRA] would cause damage to the heart. However recent advances promise to provide safer, more effective vaccines.

SETTING UP OF DENTAL CLINIC (REPORT)

* Selection of the location:-

Selection of the place is a very crucial step in one's decision of private practise.

→ The place for private practice is selected depending upon the number of dentist practicing in that place. It is preferable to move to a place where there are fewer dentists.

→ In a town which is surrounded by many villages, the location near the bustop as great advantages as people from near by villages can come easily for the treatment.

→ In a city where railways are the biggest mode of commuting, naturally a location close by has an advatanges

→ In cities the shopping complex are a have advantages have of good public transport facilities.

→ The heart of the city has the advantange of attracting people from all volks of life for dental treatment.

→ The location should also be selected keeping safety in mind the dental office should be located in a place from where ladies can commute easily without fear.

SETTING UP OF DENTAL CLINIC (REPORT)

Selection of building:-

→ It is better to select the dental office in a new building. when an old building is selected one may face certain situations like:-

* Old building has danger of leakage, improper electrical circulations, grounding etc. where one may have to face the danger.

* The owner of the building may decide to demolish the building & construct a new one (or) sell the building, where the dentist has established, say about 20-25 yrs of practice.

* If a rented place is taken there is every chance that a landlord might hike the rent at regular intervals.

* the building for dental practice should have parking facility for the patient as well as for the dentist.

Designing the dental office:-

since there is no ideal dental office, design, it has to be done according to individual requirements primarily the dental office project

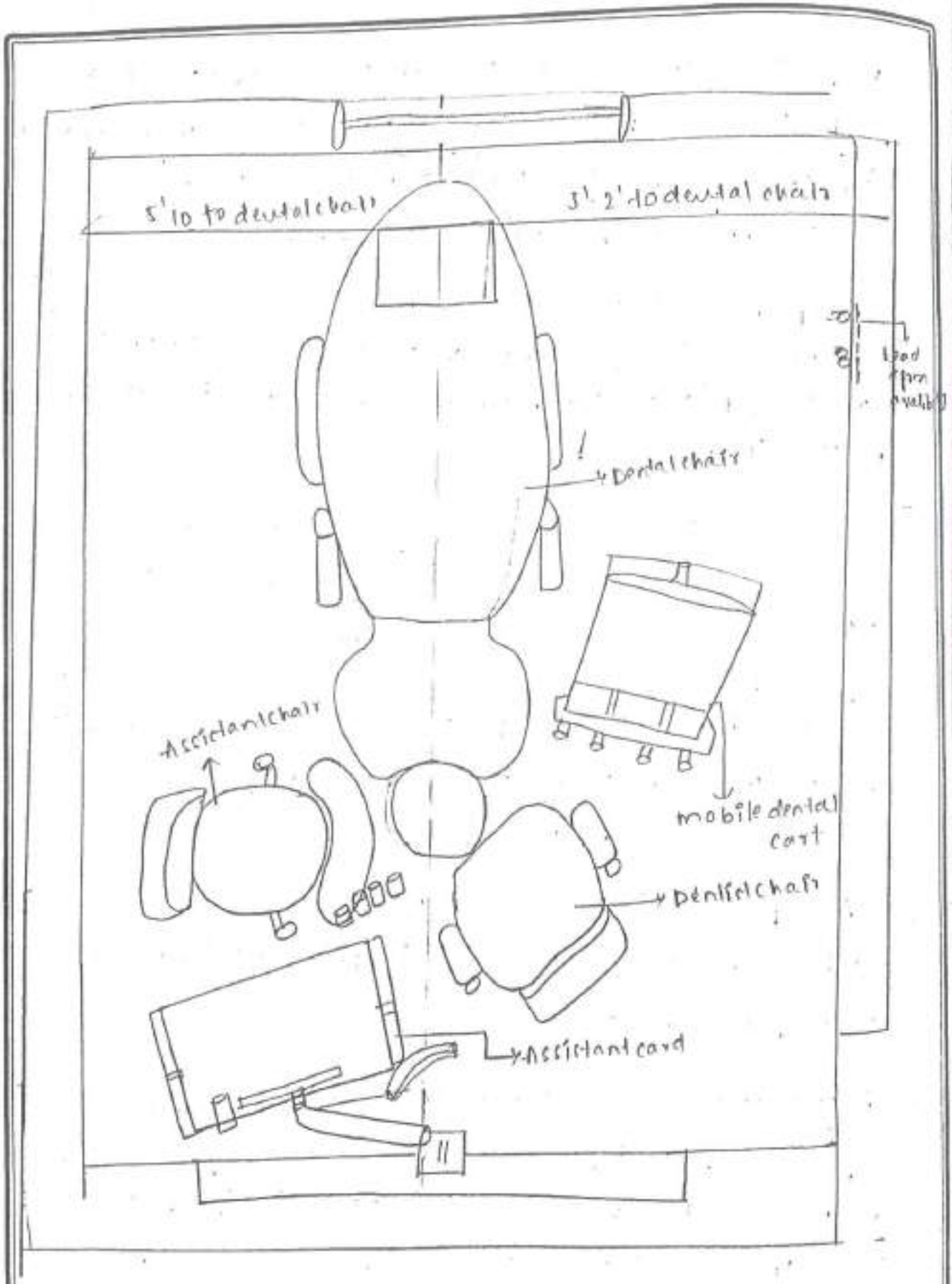
how the dentist feels about his office, it is important that patient should not be dissatisfied by the office & the dentist also needs to be comfortable in his working environment.

→ A spacious working area, waiting area with dental chair and unit, x-ray room, laboratory, resting place, toilet .. etc. should be incorporated in the design.

→ The furniture in the reception area must be durable, esthetic and comfortable otherwise patients may wonder if the quality of the dental work is as cheap as the furnishing (or) if the reception area is excessively lavish, patients may wonder if the dental work is going to be more expensive than usual.

→ A separate x-ray room with the walls enclosed within a lead barrier will help to minimize the x-ray hazards.

→ Autoclaving and sterilization can be done in a separate chamber near the work area so that it is easy to carry the instruments from there. The instruments should be neatly arranged in the cabinates avoiding unecessary exposures.



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CLINICAL RECORD BOOK

DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY

ame: G. ARPITHA.

eg. No.: 14094030.

ear: 20..17.....to 20.....18.....

SVS Institute of Dental Sciences
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SRI VENKATA SAI INSTITUTE OF DENTAL SCIENCES
Appanapally, MAHABUBNAGAR - 509 002.
Affliated to NTR univ. of health sciences Andhra Pradesh.

DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY

CERTIFICATE

his is to certify that Mr./Miss G. ARCHNA *has ompleted the clinical exercises and training in Oral Maxillofacial urgery prescribed by the NTR University of Health Sciences for B.D.S. ourse during the year* 2013 *to* 2018 .

ate : 18/05/2018.

niv. Regd. No.: 140940130

Signature
Dept. of Oral & Maxillofacial Surgery

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S.No	Date	OP.No.	Name	Age	Sex	Diagnosis	Procedure	Anesthesia	Signature
1.	16/10/17	796835	K. Laxmidevi	55yrs	Female	Chronic generalised periodontitis	Extraction of 12345 ↓ LA done	Greater palatine Nasopalatine nerve block, Buccal infiltration (B)	
2.	17/10/17	797798	S. Susheela	62yrs	Female	Chronic generalised periodontitis	Extraction of 12345 ↓ LA done	Buccal infiltration Greater palatine Naso palatine nerve block. (B)	
3.	20/10/17	798443	K. Vijaya kumari	55yrs	Female	Chronic periapical abscess 1st q	Extraction of 1 ↓ LA.	Infraorbital nerve & long buccal nerve block (B)	
4.	21/10/17	798784	Narsamma	35yrs	Female	Chronic localised periodontitis	Extraction of 12 ↓ LA.	Buccal infiltration, Greater palatine nerve block (B)	

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S.No	Date	OP.No.	Name	Age	Sex	Diagnosis	Procedure	Anaesthesia	Signature
5.	9/10/17	795489	P. Bhaghyamma	60yrs	Female	chronic generalised periodontitis	Extraction of $\frac{8}{\text{LR4}}$ ↓ LA.	Buccal infiltration, Greater palatine, Infraorbital (B) alveolar nerve, Long buccal nerve block	
6.	24/10/17	797132	M. Jyothi	48yrs	Female	chronic generalised periodontitis.	extraction of $\frac{8}{}$ ↓ LA.	Infraorbital (M) alveolar nerve & long buccal nerve block	
(7).	30/10/17	801081	Bheemamma	40yrs	Female	chronic localised periodontitis in $\frac{}{7\,6}$	Extraction of $\frac{}{7\,6}$ ↓ LA.	Infraorbital alveolar nerve & long buccal nerve block. (A)	

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S.No	Date	OP.No.	Name	Age	Sex	Diagnosis	Procedure	Anaesthesia	Signature
8.	1/11/17	801486	P. Sridevi	22yrs	female	chronic periapical abscess Prt 7	extraction of 7 ↓ LA.	Inferior alveolar nerve block (A) along buccal nerve block	
9.	6/11/17	802712	G. Siddappa	45yrs	male.	chronic generalized periodontitis	Extraction of FBI ↓ LA.	Inferior alv. nerve block along buccal nerve block. (B)	
10.	6/11/17	802773 OP	Gori Bee.	70yrs	female	chronic generalized periodontitis	extraction of 2/2 ↓ LA.	Inf. alveolar nerve block Buccal infiltration (M)	
11.	9/11/17	803766	Chinnaswamy	55yrs	male	chronic periapical abscess Prt 7	extraction of 7 ↓ LA.	Inferior alveolar nerve & long buccal nerve block (R)	

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S.No	Date	OP.No.	Name	Age	Sex	Diagnosis	Procedure	Anesthesia	Signature
12.	14/11/17	803413	Shabana Begum	40yrs	Female	chronic periapical abscess w/ 61	Extraction of 61 ↓ LA.	Greater palatine block @ Buccal infiltration	
13	15/11/17	996476	B. Venkat Reddy	68yrs	male	chronic generalised pes	Extraction of 4|345 ↓ LA.	Greater palatine buccal infiltration, Bylei- Or alveolar nerve block (A)	
14.	15/11/17	803468	Shakunthalamma	38 yrs	female	Chronic generalised periodontitis	Extraction of 345|458 ↓ LA.	Nasopalatine, Greaterpalatine, Buccal infiltration, Bylei for alveolar (B) nerveblock Long buccal nerveblock	

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S.No	Date	OP No.	Name	Age	Sex	Diagnosis	Procedure	Anaesthesia	Signature
18.	18/5/18		Jyothi	32yrs	female.	chronic periapical abscess i.r.t 18. Root stump i.r.t 18	extraction of 18 LA done.	Posterior superior alveolar nerve block, buccal infiltration, Greater palatine nerve block	
19.	18/5/18.	8214486.	E. Sridevi	21yrs.	female				
19.	18/5/18	833527	Lakshmamma	50yrs	female	chronic generalised periodontitis	extraction of 16 LA done	Inferior alveolar nerve block, long buccal nerve block	
20.	18/5/18	854830	Narsamma.	50yrs	female.	Root stump i.r.t 6	extraction of root stump i.r.t 6 LA done	Buccal infiltration, Greater palatine nerve block	

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TRIGEMINAL NERVE.

→ Trigeminal nerve is the largest of all twelve cranial nerves.
→ It is composed of a small motor root and a considerably larger sensory root.
→ Motor root supplies the muscles of mastication.
→ The three branches of sensory root supplys the skin of entire face & mucous membrane of the cranial viscera & Oral cavity, except for pharynx & base of the tongue.

Motor Root:-

→ Motor root of trigeminal nerve arises separately from sensory root, originating in the motor nucleus with in the pons & medulla oblongata.
→ It fibers, forming a small nerve root, travel anteriorly along with, but entirely separate from sensory root to region of semilunar (or) Gasserian ganglion.
→ At the semilunar ganglion, motor root passes in a caderal & inferior direction under ganglion toward the foramen Ovale through which it leaves middle cranial fossa along with third division of sensory root, mandibular nerve.
→ Just after leaving skull, motor root unites with the sensory root of mandibular division to form a single nerve trunk.

Motor fibers of trigeminal nerve supply muscles:-

1) Masticatory :- (a) Masseter (b) Temporalis.
(c) pterygoideus medialis (d) pterygoideus lateralis
2) Mylohyoid
3) Anterior belly of digastric.
4) Tensor tympani
5) Tensor veli palatini.

SENSORY ROOT:-

→ Sensory root fibers constitute central processes of ganglion cells.
→ The ganglions are located in Meckel's cavity on the anterior surface of petrous portion of temporal bone.
→ The ganglion is flat & crescent shaped.
→ 3 sensory divisions of trigeminal nerve are:-
1. Ophthalmic division
2. The maxillary division
3. The mandibular division.

OPHTHALMIC DIVISION:-

→ It travels anteriorly in the lateral wall of cavernous sinus to medial part of superior orbital fissure through which it exists the skull in to orbit.
→ It is purely sensory and is the smallest of all the three divisions. The nerve trunk is appx. 25cm long.
→ It supplies the eyeball, conjuctiva, lacrimal gland, part of forehead mucous membrane of nose & paranasal sinuses & skin of forehead eyelids and nose.
→ Just before it passes through superior orbital fissure it divided in to its 3 main branches.

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(i) Nasociliary nerve:
→ It lies along medial border of orbit roof, giving off branches to nasal cavity. Three branches in to anterior ethmoidal & external nasal nerves.
→ External nasal nerve supplies mucous membrane of anterior part of nasal septum & lateral wall of nasal cavity.
→ Ciliary ganglion contains sensory fibres that travel to eyeball. Two (or) three long ciliary nerves supply iris, cornea.
→ Infratrochlear nerve supplies skin of lacrimal sac & the lacrimal caruncle.
→ posterior ethmoidal nerve supplies ethmoidal & sphenoid sinuses.
→ External nasal nerve supply skin over apex, ala of nose.
(ii) Frontal nerve:- divides in to two branches-Supratrochlear & supraorbital. The frontal is largest branch of the ophthalmic division.
→ Supratrochlear nerve supplies the conjunctiva & skin of medial aspect of upper eyelid & skin over lower & mesial aspects of forehead.
→ Supraorbital nerve is sensory to upper eyelid, scalp
(iii) Lacrimal nerve:-
→ The lacrimal nerve is smallest branch of ophthalmic division.
→ It supplies lateral part of upper eyelid.

MAXILLARY DIVISION:

→ Maxillary division is purely sensory in function.
→ Travels anteriorly & downward to exit cranium through foramen rotundum in to upper portion of pterygopalatine fossa.
→ As it crosses the pterygopalatine fossa, it gives off branches to the sphenopalatine ganglion, posterior superior alveolar nerve & zygomatic branches.
→ It then angles laterally in a groove on posterior surface of maxilla, entering orbit through inferior orbital fissure.
→ With in orbit it occupies infraorbital groove & then infraorbital nerve which courses anteriorly in to infraorbital canal.
→ The maxillary division emerges on anterior surface of the face through infraorbital foramen, supplying skin of face, nose, lower eyelid & upper lip. It innervades.

1. Skin.
(a) Middle portion of face.
(b) Lower eyelid
(c) side of nose
(d) upper lip.

2. Mucous membrane.
(a) Nasopharynx
(b) maxillary sinus
(c) Soft palate
(d) Tonsil
(e) Hard palate.

3) Maxillary teeth and periodontal tissues.
→ maxillary division gives off branches in four regions.
(i) Within the cranium
(ii) In the pterygopalatine fossa.
(iii) In infraorbital canal
(iv) on the face.

Branches of maxillary division
Within the cranium:- Immediately after separation from the trigeminal ganglion, maxillary division gives off a small branch, the middle meningeal, which travels with middle meningeal artery to provide sensory innervation to duramater.

Branches in pterygopalatine fossa:- After exiting the cranium through the foramen rotundum, maxillary division crosses the pterygopalatine fossa. It gives off 3 branches the zygomatic nerve, pterygopalatine nerve, posterior superior alveolar nerve.

- Zygomatic nerve:- Travels anteriorly entering the orbit through the inferior orbital fissure, where it divides into zygomatic-temporal, zygomatic-facial nerve.
- Zygomatic-facial:- Supplies the skin on the prominence of cheek. Just before leaving the orbit, zygomatic nerve sends a branch that communicates with lacrimal nerves of opthalmic division. This branch carries secretory fibres from sphenopalatine ganglion to lacrimal gland.

- zygomaticotemporal - Supplies skin on the side of forehead.

→ pterygopalatine nerve:

Branches: Orbital, Naval, Palatal and Pharyngeal

(a) Orbital branches: Supply periosteum of the orbit

(b) Naval branches: supply mucous membrane of sup and middle conchae, the lining of posterior ethmoid sinus and posterior portion of nasal septum

(c) palatine branches:

Greater palatine nerve - provides sensory innervation to some part of soft palate.

Lesser palatine nerve: Sensory innervation to mucous membrane of soft palate → middle palatine gland tonsillar region - posterior palatine.

(d) pharyngeal branch: Supplies mucous membrane of nose, pharynx, posterior to eustachian tube.

⇒ Posterior Superior Alveolar nerve:

Main trunk of maxillary division.

↓

pterygopalatine fossa.

↓

Inferior temporal surface of maxilla.

↓

Infra Orbital canal.

Buccal gingiva in maxillary molar region & adjacent facial mucosal surface

Enters up to maxilla along with a branch of the Internal maxillary

Branches in Infratemporal canal:-

- Middle superior alveolar nerve:- Supplies two maxillary premolar mesiobuccal root of first molar, periodontal tissues, buccal soft tissue, bone in premolar region.
- Anterior Superior alveolar nerve:- pulpal innervation to central & lateral incisors & canine; sensory innervation to periodontal tissues, mucous membranes of the teeth. Sensory innervation - to premolars & occasionally to mesiobuccal root of first molar.

Branches on face:-

Infra orbital nerve emerges through infra orbital foramen on to face to divide in to trigeminal branches.

Inferior palpebral branches - Supplies skin of lower eyelids with sensory innervation.

external nasal branches - Sensory innervation to skin on lateral aspect of nose.

Superior lateral branches - skin & mucous membranes of upper lip.

MANDIBULAR DIVISION (V_3):-

It - The largest branch of the trigeminal nerve. It is a mixed nerve with two roots, a large sensory root & a small motor root. The sensory root of the mandibular division originates at the inferior angle of the trigeminal ganglion, where as the motor root arises in motor cells located in the pons & medulla oblongata.

Areas innervated by mandibular division are included in following outlines.

1) Sensory root.
a) Skin
(a) Temporal region.
(b) Auricula.
(c) External auditory meatus
(d) Cheek
(e) Lower lip.
(f) Lower part of face (Chin region)
(b) mucous membrane.
(a) Cheek.
(b) Tongue
(c) Mastoid cells
(d) Mandibular teeth & periodontal tissues.
(e) Zone of the middle.
(f) Temporomandibular joint
(g) parotid gland.
(ii) Motor root:-
(a) Masticatory muscles - Masseter
Temporalis
pterygoid medialis.
pterygoideus lateralis.
(b) Mylohyoid
(c) Anterior belly of digastric.
(d) Tensor tympani
(e) Tensor veli palatini.
Branches:-
(i) undivided nerve.
(a) Nerves spinous
(b) Nerve to the medial pterygoid muscle.

(5) Undivided nerve:

(a) Anterior division

Nerve to lateral pterygoid muscle

Nerve to masseter muscle

Nerve to temporal muscle.

Buccal nerve.

(b) posterior division:

Auriculotemporal nerve.

Lingual nerve.

Inferior alveolar nerve: dental branches.

Mylohyoid nerve

Incisive branch: dental branches.

Mental nerve.

→ Undivided nerve

Nerves stimulus:- Supplies dura mater to mastoid air cells.

Nerve to medial pterygoid:- Supplies tensor velli palatine & tensor tympani.

→ Divided nerve

Anterior division:- Nerve to lateral pterygoid muscle.

Nerve to masseter muscle.

Nerve to temporal muscle.

Buccal nerve:- Sensory innervation to buccal gingiva of mandibular molar & mucobuccal fold in that region.

Posterior division:-

→ Auriculotemporal nerve:- Supplies the skin of tragus, ear, parotid gland & temporomandibular joint.

→ Lingual nerve:- Sensory root to anterior two thirds of tongue, both general sensation & gustatory. Sensory innervation to mucous membrane of floor of mouth & the gingiva on lingual of mandible.

→ Mylohyoid nerve:- Molar to mylohyoid muscle and anterior belly of digastric. sensory to skin of and anterior surfaces of mental protuberance.

→ Inferior alveolar nerve:- Dental plexus serves the mandibular posterior teeth, sensory innervation buccal periodontal tissues of these same teeth.

→ Incisive nerve:- Supplies pulpal tissues of mandibular first premolar, canine & incisor.

→ Mental nerve:- Supplies the skin of chin & lip mucous membrane of the lower lip.

NERVE SUPPLY OF EACH TOOTH.

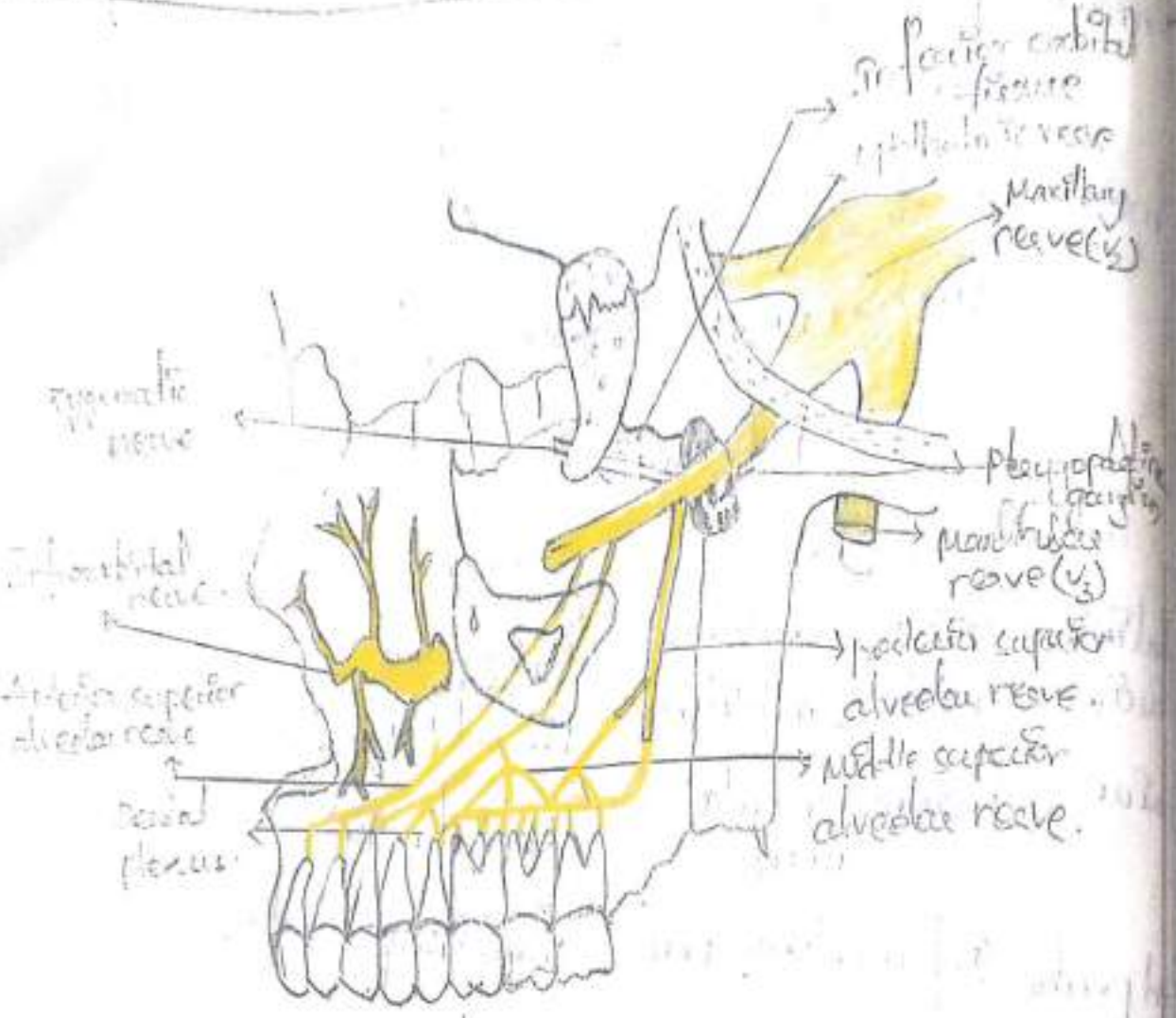
MAXILLA.

	TOOTH	BUCCAL	PULPAL	PALATAL
1)	central Incisor.	Anterior superior alveolar nerve - Infraorbital nerve.	Anterior superior alveolar nerve.	Nasopalatine
2)	Lateral Incisor.	- Anterior superior alveolar nerve - Infraorbital nerve	Anterior superior alveolar nerve	Nasopalatine
3)	Canine.	- Anterior superior alveolar nerve - Infraorbital nerve	Anterior superior alveolar nerve.	Nasopalatine
4)	1st & 2nd premolars.	Middle superior alveolar nerve.	Middle superior alveolar nerve	Greater palatine nerve.
5)	1st molar.	- Middle superior alveolar nerve - posterior superior Alveolar nerve	- Middle superior alveolar nerve - post. superior alveolar nerve.	Greater palatine nerve

Tooth	Buccaly	palpaly	palatally.
nd molar	post. superior alveolar nerve	post. superior alveolar nerve.	Greater palatine nerve.
rd molar	posterior superior alveolar nerve	posterior superior alveolar nerve.	Greater palatine nerve.

MANDIBLE.

TOOTH	BUCCAL.	PULPAL	LINGUAL.
dibular Incisor	Incisive & mental nerve	Lingual nerve	Inf. alv. nerve
Incisor	Incisive & mental nerve	Lingual nerve	Inf. alv. nerve.
anine	Incisive & mental nerve	Lingual nerve	Inf. alv. nerve
st premolar	Inferior alveolar nerve	Lingual nerve	Inf. alv. nerve
econd premolar	Inf. alv. nerve, plexus of mental nerve & long buccal nerve	Lingual nerve	Inf. alv. nerve
st molar	Inferior alveolar nerve. long buccal nerve.	Lingual nerve	Inferior alveolar nerve
econd molar	Inferior alveolar nerve long buccal nerve	Lingual nerve	Inferior alveolar nerve
hird molar.	Inf. alv. nerve long buccal nerve	Lingual nerve.	Inferior alveolar nerve.



Lateral view of the skull with the branches of the maxillary nerve.

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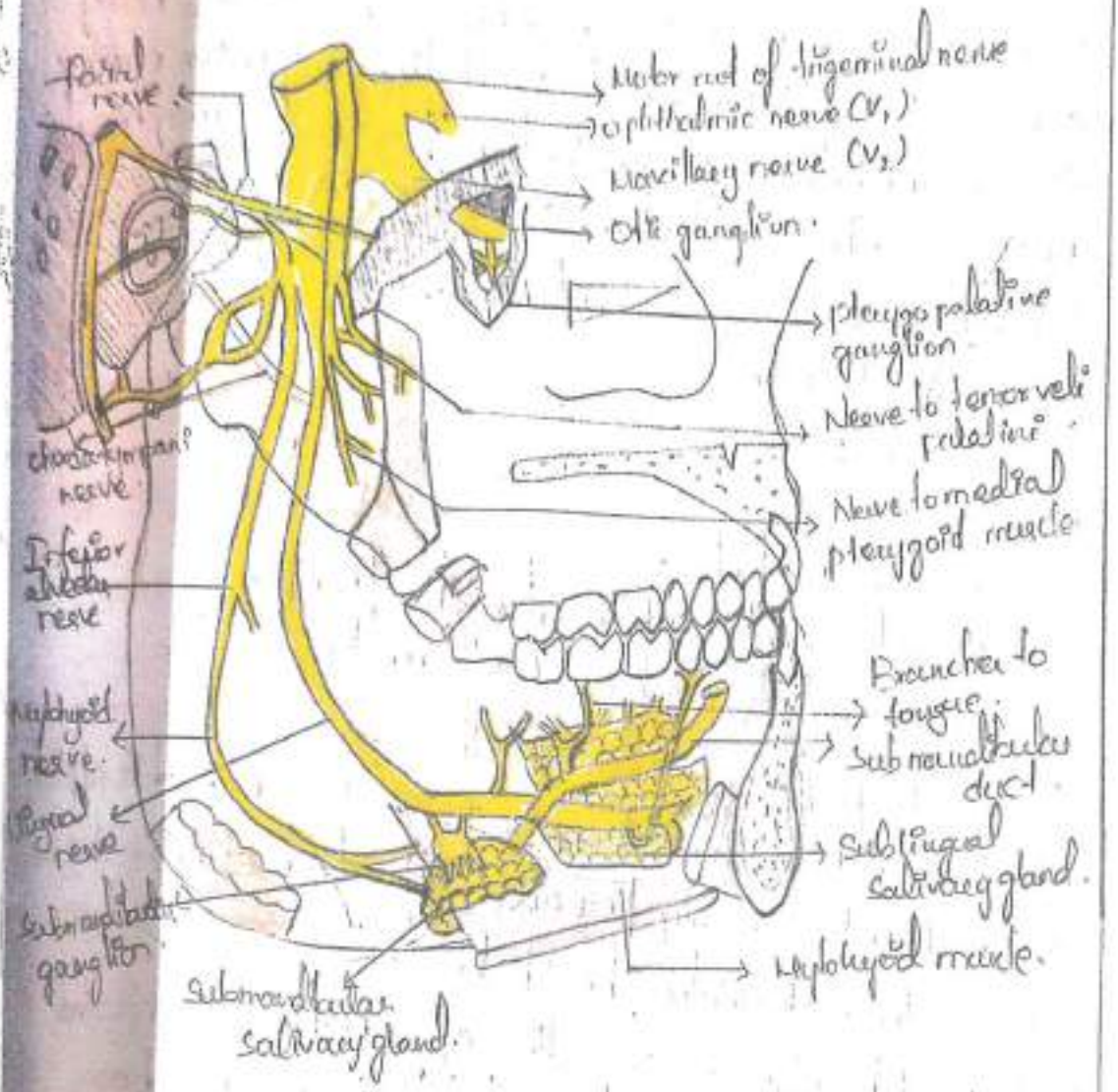


Pathway of Mandibular Nerve (CV_3)

of Trigeminal nerve.

INSTRUMENT FOR ELEVATING MUCOPERIOSTEUM.

After incision through mucoperiosteum has been made, Then the mucosa & periosteum should be reflected from the underlying bone. In a single layer with a periosteal elevator. This instrument has a sharp pointed end can be used to reflect soft tissues by three methods:-

First the pointed end can be used in a pulling motion to elevate soft tissue. This is most commonly used when elevating a dental papilla from b/w the teeth. The second method is push stroke and third method is pull (or) scalpel stroke.

MUCOPERIOSTEAL ELEVATOR

Instrument for retracting soft tissues: It is critical to have good vision & good access to perform good surgery. A variety of retractors have been designed to retract cheek, tongue, mucoperiosteal flaps. The 2 most popular cheek retractors are:

1. Right angled Austin retractor
2. Offset broad retractor.

Before the flap is incised the retractor is held loosely in cheek & once flap is reflected retractor is placed on bone & is used to retract the flap.

RIGHT ANGLE AUSTIN RETRACTOR

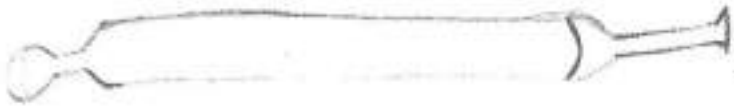
Instrument for removing bone:

Rongeurs: The most commonly used instrument for removing bone is Rongeur forceps. This has sharp blades that are squeezed together by handles, cutting & pinching through bone. Rongeur forceps have a leaf spring b/w handle that when hand forcep is released the instrument will open.

RONGEURS

Chisel & Mallet:- Bone is removed with a bone chisel & mallet. It is usually sectioned with fibre cutting chisel. A mallet with nylon facing faces less shock to patient & less noisy & is therefore usually recommended.

Final smoothening of bone before suturing of mucoperiosteal flap is done to perform is usually performed with a small bone file. The bone file is usually a double ended instrument with a small large end. They remove bone only on a pull stroke.



Instruments for suturing mucosa:-

Once a surgical procedure has been completed, the mucoperiosteal flap is returned to its original position to help in placing sutures.

Needle holder:-

Needle holder is an instrument with locking and a short beak for intraoral placement of a suture or a pinch to needle holder is usually recommended.

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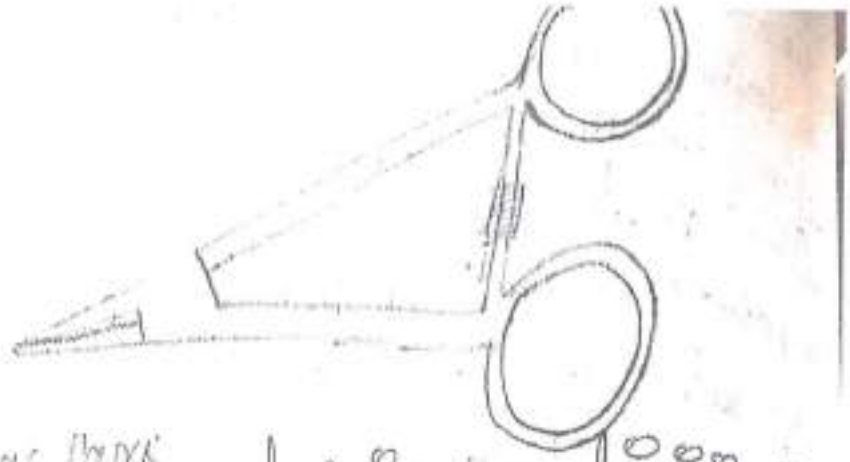

Needle: The needle is used during mucosal incision to usually a small half circle (or) 3/8 circle suture needle. It is curved to allow the needle to pass through a limited space where a straight needle can't reach the tips suture needle are either tapered such as sidecutting needle (or) have triangular tips.

Suture materials: Many types of suture materials are available the material are classified by size, reabsorbability & whether or not they are monofilaments (or) poly-filaments size of sutures designated by oral mucosa is 3.0 sutures may be resorbable non-resorbable suture material (silk, nylon, stainless steel).

Scissors: Final instruments necessary for placing sutures are suture scissors usually have relatively long handles so thumb & finger rings, most commonly used are beam scissors.

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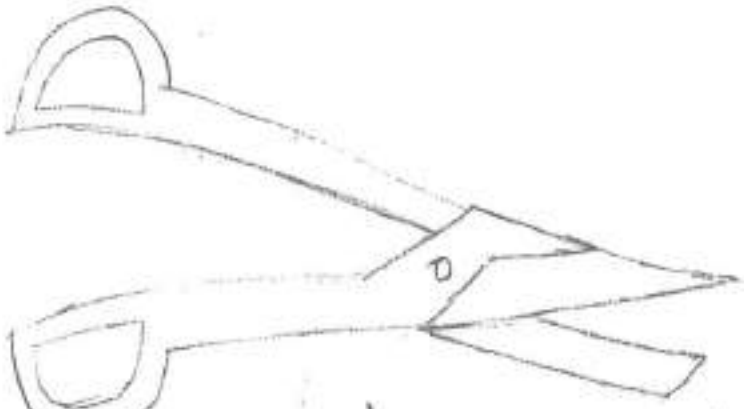
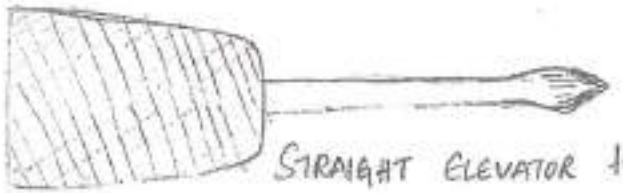


Dental elevators:- Dental elevator are used to luxate the teeth from the surrounding ~~teeth~~ bone. the 3 components of elevator are the handle, shank & blade. The 3 basic types of elevators are 1. straight 2. gauge type, triangular (or) permanent shape type and 3. the pick type.

COUPLAND'S ELEVATOR

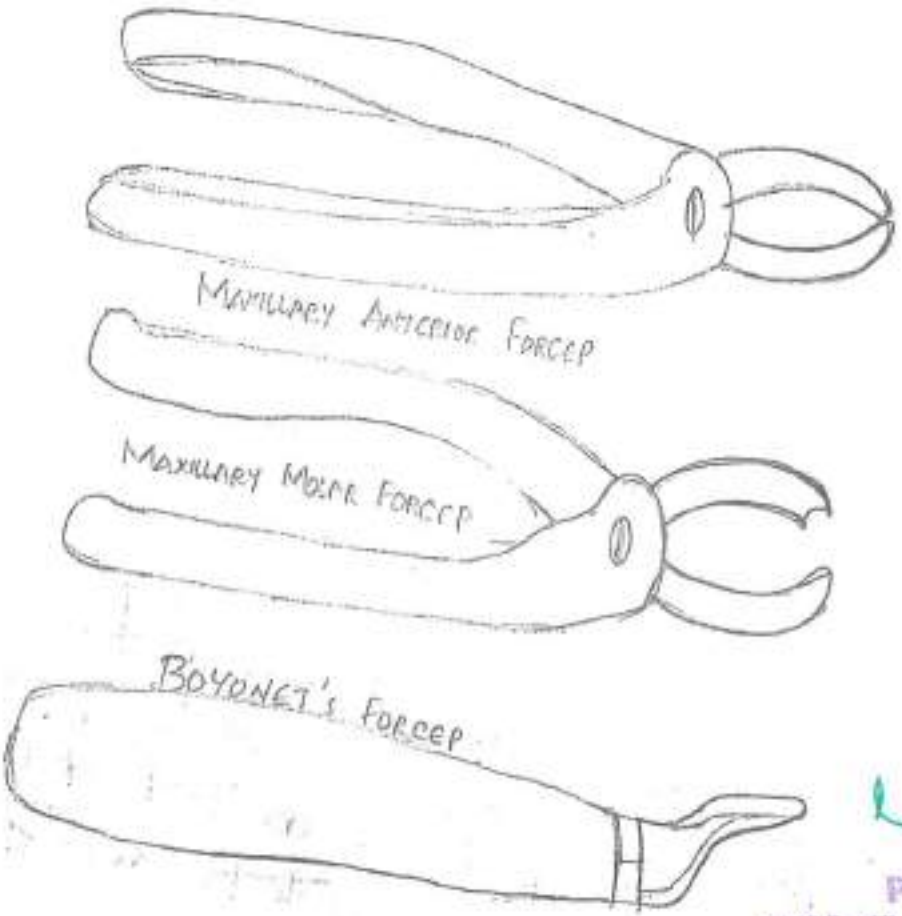


STRAIGHT ELEVATOR HOSPITAL PATTERN

CROSSBAR ELEVATOR

Extraction forceps:- These instruments are used for removing tooth from alveolar bone. components of forceps are handle, hinge axis & handles of forceps are held differently, depending on position of tooth to be removed.

Maxillary forceps:- Single rooted maxillary teeth are usually removed with maxillary universal forceps usually no.150. The beak forceps curve to meet only at tip, they are used for maxillary posterior teeth. The no. which are be used for maxillary canine & incisor or slightly curved forceps. The maxillary molar teeth are the rooted teeth with a single palatal root & a buccal bifurcation. The forceps that adapt to fit the maxillary molar must have a smooth concave surface for palatal root and a beak with a pointed tip that will fit in to buccal bifurcation on left buccal beak. The molar forceps which have a longer, more curved pointed beak formation. These forceps are known as upper cowhorn forceps. They are useful for maxillary molars where crown are severely decayed.



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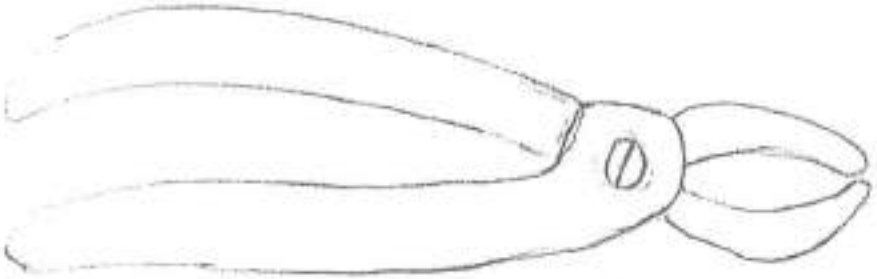
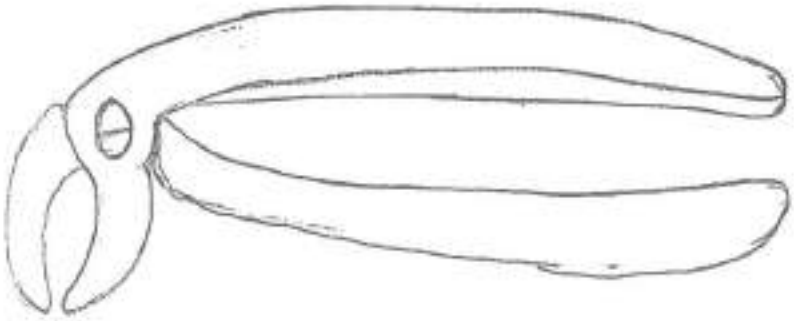


MAXILLARY PREMOLAR FORCEPS.



MANDIBULAR PREMOLAR FORCEPS.

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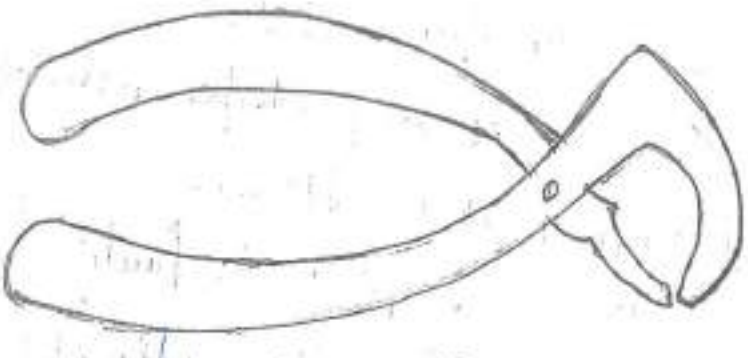
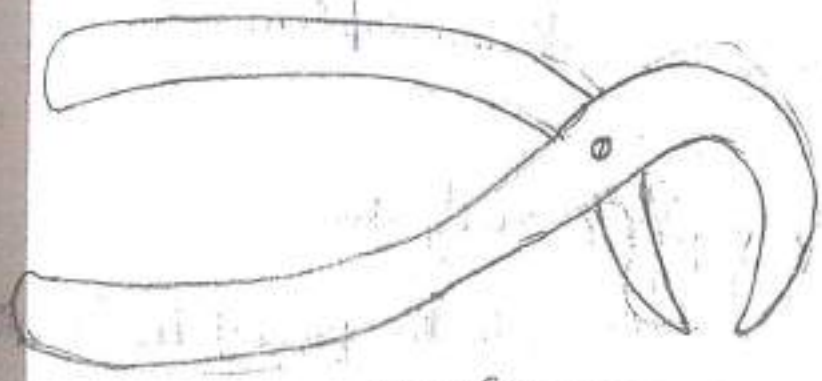
Mandibular forceps:- The forceps are most commonly used for simple rooted teeth are the lower forceps (or) No 151 beaks are smooth & relatively narrow to meet only at tip. The mandibular forceps beaks are set perpendicular to the handle.

- The mandibular molars are bifurcated 2 rooted teeth, that have the use of forceps that anatomically adapt to the
- In the most useful lower molar forceps are no. 17 these forceps are slightly have straight handle & beaks are set obliquely downwards. the beaks have bilateral pointed tips in central to adapt in to molar forceps is the no. 23. The so called cowhorn forceps. the quadrangular are designed with 2 pointed heavy beaks that entire fit to bifurcation of lower molars.



MANDIBULAR ANTERIOR FORCEP



MANDIBULAR MOLAR FORCEP

Oral Surgery Case History & Treatment
Exodontia (1)

Name of the patient: R. Laxmidevi

Date: 16/10/17
O.P.No. 296835

Age: 55yrs.

Sex: female.

Occupation: Housewife

Address: Maddur.
ph.no:- 9160567517.

Chief Complaint: pt. complains of mobility of teeth on the left side of upper tooth region.

History of Present illness: pt. c/o mobility of teeth on left side of maxillary anterior teeth since 3years.

Medical History: patient is known diabetic and since 1year and is on medication.

Dental History: patient visited dental hospital 8 days back and underwent extraction.

Personal & Family History: Diet - mixed
Smoking - No
Alcohol - NO

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General Physical Examination

Built - Normal

Gait - Normal

Cyanosis - Absent

Edema - Absent.

Skin Eruptions - Absent

Lymph Nodes - Not palpable.

Vital Signs

Blood Pressure - 130/80mmHg.

Heart Rate - 80 beats/min.

Respiratory Rate - 18 cycles/min.

Temperature - Afebrile.

ASA Classification

Tick the oppropriate	Class I	Class II	Class III	Class IV	Class V
		✓			

Extra oral examination :

Symmetry: No gross facial assymmetry.

Mouth opening Adequate.

T.M.J.: No clicking sounds heard.

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Local Examination

Soft Tissue Examination :

Lips - competent

Buccal Mucosa - No abnormalities detected.

Tongue - No abnormalities detected

Floor of the mouth - No abnormalities detected.

Hard palate - No abnormalities detected.

Soft Palate - No abnormalities detected.

Gingiva - No abnormalities detected.

Hard Tissue Examination

No. of teeth present - 4

No. of missing teeth - 28

Decayed Teeth -

Root Stumps -

Mobility Grade III ⌊2345.

PROVISIONAL DIAGNOSIS Chronic generalized periodontitis.

INVESTIGATIONS RBS - 143 mg/dl.

FINAL DIAGNOSIS Chronic generalized periodontitis.

TREATMENT Extraction of ⌊2345 ↓ LA.

post operative Instructions given.

POSTOP MEMO:

℞ 1) TAB. PARACETAMOL (325mg) + IBUPROFEN (400mg) — (TAB. COMBIFLAM) (325mg) — ⑥. BID x 3 days.

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CERTIFICATE

This is to Certify that Mr. / Miss K-Shiny Sharon *has done the following Clinical Work in Dept. of Oral Medicine, Diagnosis & Radiology during the academic year* 2020-21

1. *Case Presentation* _____
2. *Radiographs* _____

His / Her work has been found satisfactory during the period.

Date :

Professor

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ORAL MEDICINE, DIAGNOSIS & RADIOLOGY

CASE SHEET

Name Niranjan Reddy **Date :**

Address : **Age :** 50 **Sex :** Male

Chief Complaint : patient complains of pain in the lower left back tooth region since 20 days.

History of Present illness :
patient was apparently asymptomatic 20 days ago. later he developed pain in the lower left back tooth region, which is gradual in onset. throbbing type, intermittent, aggravates on taking food with no relieving factors.

History of Past illness : 1st visit

- **Medical & Drug History :** No relevant medical history
- **Family History :**
- **Personal and Social History :**

  (a) **Marital Status :**
  (b) **Habits :** adverse habits - no -
  (c) **Occupation :** private employee
  (d) **Weight :**

+ **Systems Review**
+ **CLINICAL EXAMINATION :**
+ **General Examination**
+ **General Appraisal**
  (Including Vital Signs when indicated)
+ **Head :** **Skull**

  Eyes

  Nose - No abnormality detected
+ **Skin :** —
+ **Neck :**
+ **Jaws :**

Intra Oral Examination :

(i) Lips : competent

(ii) Labil / Buccal & Muscosa :

(iii) Palate :

(iv) Oropharynx :

(v) Floor of the Mouth :

(vi) Tongue :

No abnormality detected

(vii) Gingiva : color - Generalized erythematous
contour - localized scalloping i.r.t $\frac{3|}{1|543}$

(viii) Teeth : -32 consistency - Generalized edematous.

(ix) Oclnsion : Angles class -I malocclusion.

(x) Edentrulous Mouth :

(xi) Partal Edentrulous Mouth

Local Examination of the Lesion :

+ **Summary :** A 50yr old male patient named Niranjan Reddy, come to the departme-nt of OMR with a cheif complaint of pain in the mandibular left posterior tooth region since 2days which was gradual in onset, throbbing type, intermittent, aggravate on taking food with no relieving factors. on intra oral examination there is generalized erythematous & edematous gingiva, with loss of scalloping w.r.t $\frac{3}{1}\frac{}{345}$ and decayed teeth w.r.t $\frac{8}{8}\frac{}{56}$. There is tenderness on vertical percussion w.r.t $\frac{}{56}$. chronic apical periodontitis w.r.t $\frac{}{56}$ with class-II DC w.r.t $\frac{8}{8}$, chronic generalized gingivitis.

+ **Provisional Diagnosis :** Chronic apical periodontitis $\frac{}{56}$

Class-II DC w.r.t $\frac{8}{8}$

Chronic Generalized gingivitis.

+ **Differential Diagnosis :**

+ **Investigation :** RVG $\frac{}{56}$

+ **Final Diagnosis :** Chronic peri apical abscess $\frac{}{56}$

Chronic reversible pulpitis $\frac{}{8}$

Chronic Generalized gingivitis with localized gingival recession $\frac{3}{1}\frac{}{345}$

+ **Treatment Plan**

Signature of the Staff

ORAL MEDICINE, DIAGNOSIS & RADIOLOGY

RADIOGRAPHS

Sl. No.	Date	Name	Age / Sex	Type of Radiographs	Interpretation	Sign. of Staff
1.	13/2/2021	Nirjan Reddy	50yrs Male	RVG	Chronic apical periodontitis $\frac{1}{5}$ and chronic periapical abscess w.r.t $\frac{1}{6}$ involving mesial & distal root suggestive of external root resorption in apical ⅓rd of root	
2.	15/2/2021	Sandya	28yrs female	RVG	chronic apical periodontitis $\frac{}{7}$	
3.	16/2/2021	Satibabu	59yrs Male	RVG	Chronic periapical abscess w.r.t $\frac{5}{}$	
4.	16/2/2021	Nagesh	29yrs Male	RVG	chronic periapical abscess $\frac{}{9}$	
5	16/2/2021	pradeep kumar	20yrs male	RVG	Chronic apical periodontitis w.r.t $\frac{6}{}$	
6.	16/2/2021	Abdul Javeed	21yrs Male	RVG	Chronic periapical abscess $\frac{}{76}$	
7.	17/2/2021	Anandatti	46yrs female	RVG	Periendolesion $\frac{1}{2}$	

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ORAL MEDICINE, DIAGNOSIS & RADIOLOGY

RADIOGRAPHS

Sl. No.	Date	Name	Age / Sex	Type of Radiographs	Interpretation	Sign. of Staff
8.	18/2/2021	Abhishek	44yrs	RVG	chronic periapical abscess 1.7.t 8	
9.	18/2/2021	pallavi	29yrs	RVG	Moderate class-II dental caries 1.8.t 7 t	
10.	18/2/2021	Ramulu	45yrs	RVG	Sclerosing osteitis 1.7.t 6	

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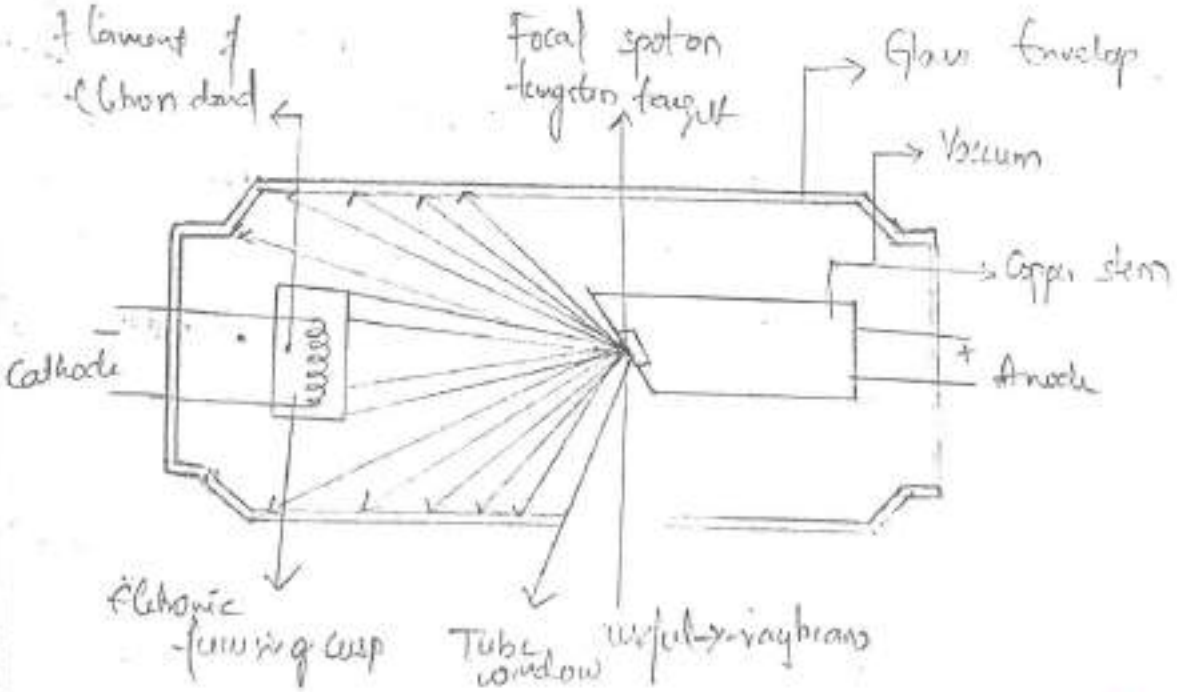
X-RAY MACHINE

X-ray machines produce x-rays that pass through patients tissues and strike a digital receptor / film to make radiographic image. The primary components of an x-ray machine are the x-ray tube and its power supply, positioned within the tube head. For intraoral x-ray units, the tube head is typically supported by an arm that is usually mounted on a wall. A control panel allows the operator to adjust the duration of exposure, and often the energy and exposure rate, of the x-ray beam. An electrical insulating material, usually oil surrounds the tube and transformers. often the tube is recessed within the tube head to increase the source-to-object distance and minimize distortion.

X-RAY TUBE:- An x-ray tube is composed of a cathode and anode situated within an evacuated glass envelope / tube. to produce x-rays, electrons stream from the filament in the cathode to the target in the anode where the energy from the source/some electrons is converted into x-rays.



X-RAY TUBE

CATHODE:- The cathode in an x-ray tube consists of a filament and a focusing cup. The filament is the source of electrons within the x-ray tube. It is a coil of tungsten wire approximately 2mm in diameter and 1 cm / less in length. Filaments typically contain approximately 1% thorium which greatly increases the release of electrons from the heated wire. The filament is heated to incandescence with a low-voltage source and emits electrons at a rate proportional to the temperature of the filament. The filament lies in a focusing cup a negatively charged concave molybdenum bowl. The parabolic shape of the focusing cup electrostatically focuses the electrons emitted by the filament into a narrow beam directed at a small rectangular area on the anode called the focal spot. The electrons move to the focal spot because they are both repelled by the negatively charged cathode, move to the positively charged anode. The x-ray tube is evacuated to prevent collision of the fast-moving electrons with gas molecules, which would significantly reduce their speed. The vacuum also prevents oxidation/ burnout of the filament.

ANODE:- the anode in an x-ray tube consists of a tungsten target embedded in a copper stem. the purpose of the target in an x-ray tube is to convert the kinetic energy of the colliding electron into x-ray photons in an inefficient process with more than 99% of the electron kinetic energy converted to heat.

Target is made of tungsten, an element that has several characteristics of an ideal target material, including the following:

→ High atomic number (74)

→ High melting point (3422°c)

→ High thermal conductivity (173 W m^{-1} k^{-1})

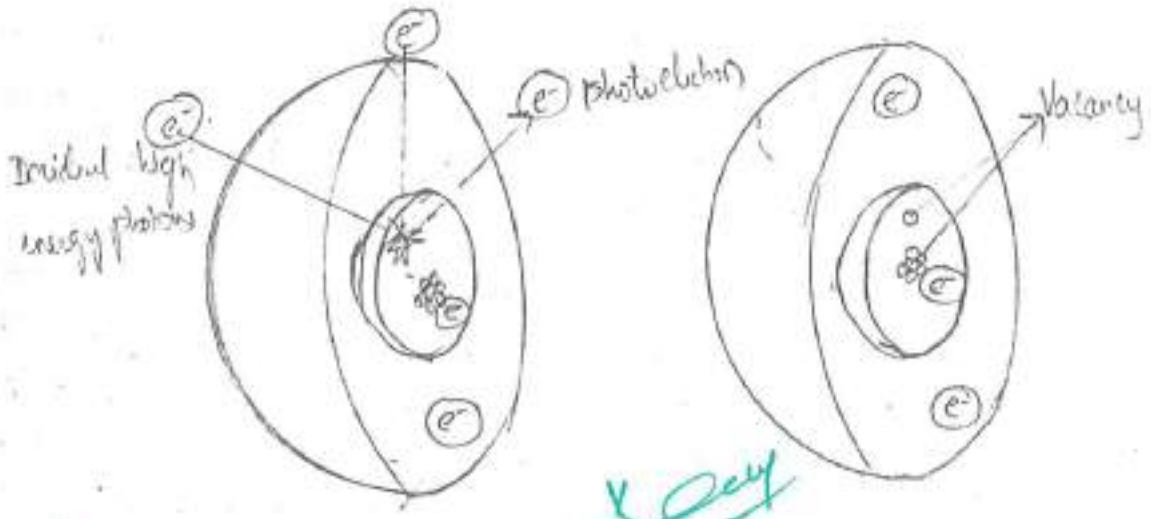
→ Low vapour pressure at working temperature of an x-ray tube.

The tungsten target is typically embedded in a large block of copper which functions as a thermal conductor to remove heat from the tungsten, reducing the risk of the target melting. The focal spot is the area on the target to which the focusing cup directs the electrons and from which x-rays are produced. The size of the focal spot is an important technical parameter of image quality- a smaller focal spot yields a sharper image. A limitation to reducing focal spot size is the heat generated. to overcome this limitation

x-ray tubes use one of the two anode configurations.

Stationary anode: In this configuration, the target is placed at an angle to electron beam. Typically the target is inclined approximately 20° to the central ray of the x-ray beam. When viewed through the aiming ring, the area from which the photons of the useful x-ray beam originate appears smaller, making the effective focal spot smaller than the actual focal spot size. This allows production of x-rays from a larger area, allowing better heat distribution while maintaining the image quality benefits of a small focal spot. In the example shown, the effective focal spot is approximately 1mm x 1mm, as opposed to the actual focal spot, which is approximately 1mm x 3mm. This smaller effective focal spot results in a small apparent source of x-rays.

Rotating anode: In this design, the tungsten target is in the form of a beveled disk that rotates during the period of x-ray production. As a result, the electrons strike successive areas of the target disk, distributing the heat over this extended area of the disk. However, at any given time, x-rays are produced from a small spot on the target. x-ray tubes with rotating anode can be used with longer exposures and with higher tube currents of 100 to 500 milliamperes (mA), which is 10 to 50 times that possible with stationary targets. The target and rotor of the motor lie within the x-ray tube, & the stator coils lie outside the tube. Such rotating anodes are not used in intra-oral dental x-ray machines that are occasionally used in cephalometrics units; are usually used in cone beam machines; and are always used in multidetector computed tomography x-ray machines, which requires high radiation output for longer, sustained exposures.



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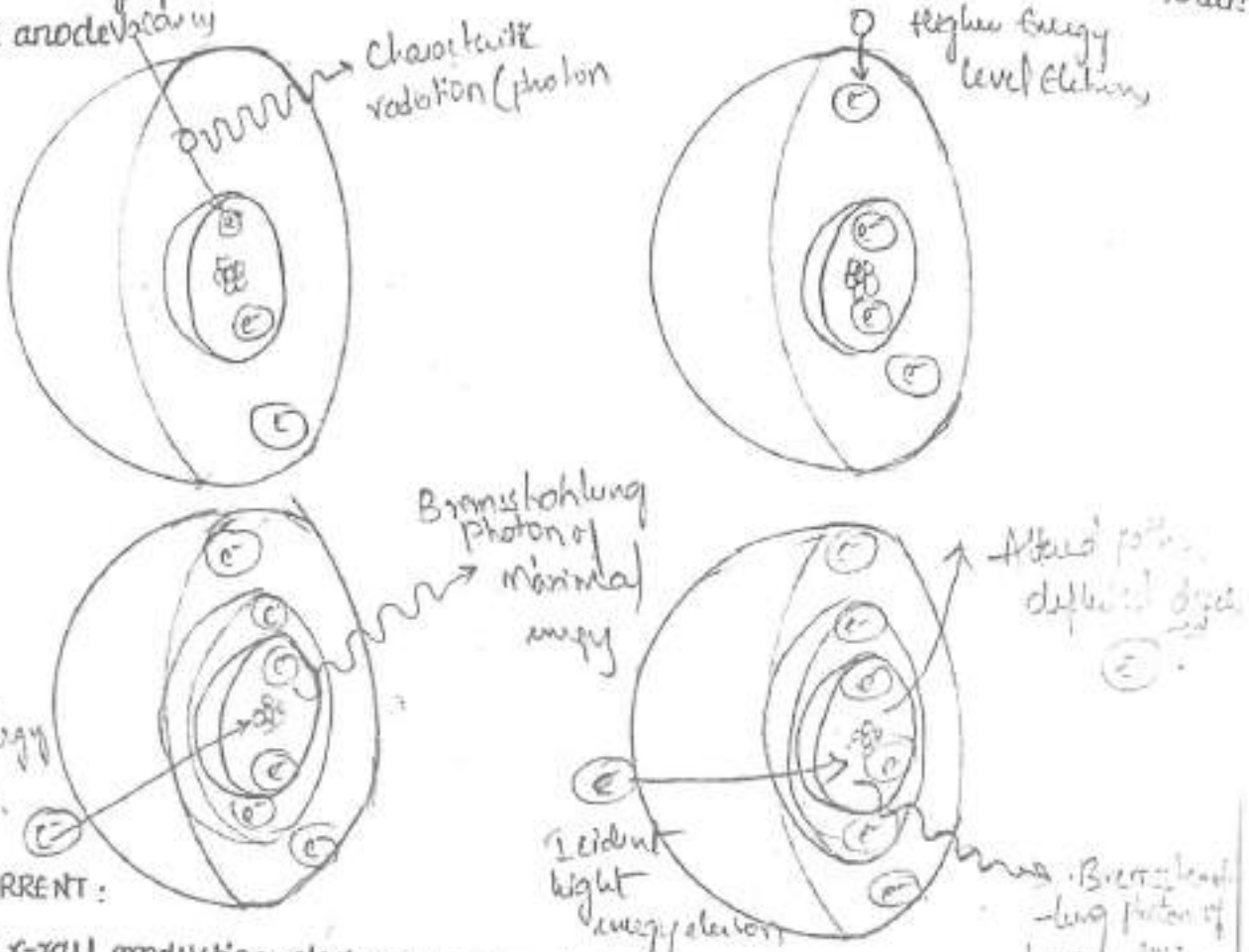
power supply:- The x-ray tube and two transformers are within an electrically g
-ded metal housing called the head of the x-ray machine. The primary functions of t
power supply transformers of an x-ray machines are to:

- provide a low voltage current to heat the x-ray filament
- Generate a high potential difference to accelerate electrons from the cathode to the focal
on the anode



TUBE CURRENT:

During x-ray production, electrons produced at the filament are attracted to the anode. This flow of electrons from the cathode to the anode generates a current acro
-ss the x-ray tube and is called the tube current. the magnitude of this current is regulated by the milliampere control, which adjusts the resistance and the current flow through the filament, there by regulating the number of electrons produced. for many intra-oral dental x-ray units, the mA setting is fixed, typically at 7 to 10 mA. some units offer the flexibility of a selection of mA setting ranging from 2 to 10mA.

TUBE VOLTAGE: A high voltage is required between the anode and cathode to give electro
-ns sufficient energy to generate x-rays. the kilovolt peak (kvp) selector adjusts the high voltage transformer to boost the peak voltage of the incoming line current (110/220V). Typi
-cally, intra-oral, panoramic, and cephalometric machines operate between 50 and 90 kvp whereas computed tomographic machines operate at 90 to 120 kvp and higher.

Alternating current x-ray Generators: For an incoming line with alternating current

(AC), the polarity of the line current alternates, and the polarity of the x-ray tube alternates at the same frequency the polarity of the voltage applied across the tube causes the target anode to be positive and the filament to be negative. the electrons drawn the filament accelerate toward the positive target, and x-rays are produced. when the voltage across the cathode and anode is highest, the efficiency of x-ray production is highest and thus the intensity of x-ray pulses peaks at the center of each cycle. During the following half of each cycle, the filament becomes positive and the target becomes negative. At these times, the electrons do not flow across the gap between the 2 powered with 60-cycle AC, 60 pulses of x-rays are generated each second, each having duration of 1/120 second. Thus when using a power supply with AC, x-ray production is limited to half the cycle. Such x-ray units are referred to as self rectified / half wave rectified. many conventional dental x-ray machines are self rectified constant potential (direct current) x-ray generators. Some dental x-ray manufacturers produce machines that replace the conventional 60-cycle Ac, half-wave rectified power supply with a high frequency power supply that provides an almost direct current. This results in an essentially constant potential between the anode and cathode and x-rays are produced through the entire cycle. This almost constant voltage yields x-rays with a narrow spectrum of energies, and the mean energy of the x-ray beam produced by these x-ray machines is higher than the mean energy from a conventional x-ray machines is higher than the mean energy from a conventional half-wave rectified machine operated at the same voltage.

* practical implications with the use of constant potential intra-oral x-ray units are as follows:

* Because x-ray production occurs during the entire voltage cycle, constant potential units require shorter exposure times to produce the same number of x-ray photons, minimizing patient motion. The intensity of x-ray photons produced is more consistent and reliable, especially with short exposure-times. This is of practical importance when using digital receptors that require less radiation.

* when operated at the same kvp, the x-ray beam produced by constant potential units has a higher mean energy, which decreases radiographic image contrast. To offset this

effect, constant potential x-ray units are typically operated at a slightly low kVp, typically 60 to 65 kVp. The narrower spectrum of energies, with fewer l energy photons, lowers the patient radiation dose by 35% to 45%. compared with conven nc x-ray generators.

TIMER:- A Timer is built into high-voltage circuit to control the duration of the x exposure. The electronic timer controls the length of time that high voltage is applied to t tube and thus the time during which x-rays are produced. However before the high voltage is applied across the tube, the filament must be brought to operating temperature to ensure an adequate rate of electron emission. Subjecting the filament to continous heating at normal operating current shortens its life. To minimize filamen damage, the timing circuit first sends a current through the filament for approxim half a second to bring it to the proper operating temperature and then applies power the high-voltage circuit. In some circuit designs, a continous low-level current pas through the filament maintains it at a safe low temperature, further shortening the delay to preheat the filament. For these reasons an x-ray machine may be on continously during working hours.

Some x-ray machine timers display the exposure time in fractions of a secon In some intraoral units, the exposure times are present for different anatomi areas of the jaws. In some units, the exposure time is expressed as number o pulses in an expressed as number of pulses in a exposure. The number of pu divided by 60 gives the exposure time in seconds. A setting of 30 pulses means that there will be 30 pulses of radiation, equivalent to a 0.5-second exposu

Tube Rating and duty cycle:- x-ray tubes produce heat at the target while in operation. the heat build up at the anode is measured in heat units (HU), where HU = KVP x mA x seconds. the heat storage capacity for anodes of dental diagnostic tubes is approximately 20K HU. Heat is removed from the target by conduction to the copper anode and then to the surrounding oil and tube housing and by convection to the atmosphere.

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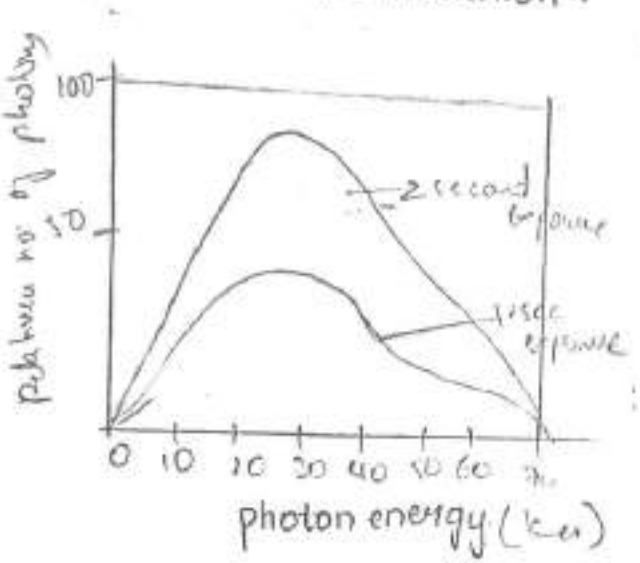
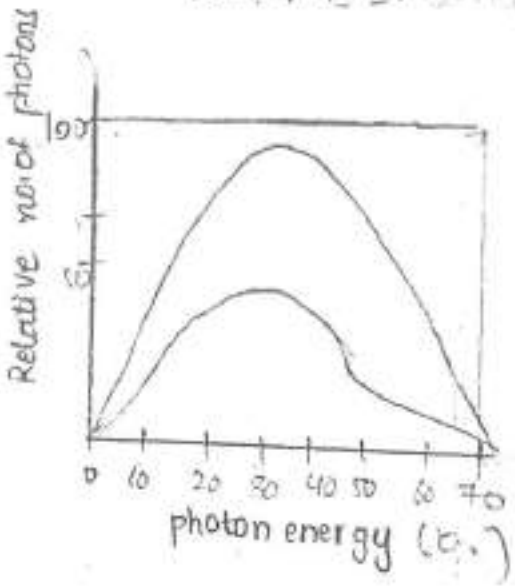
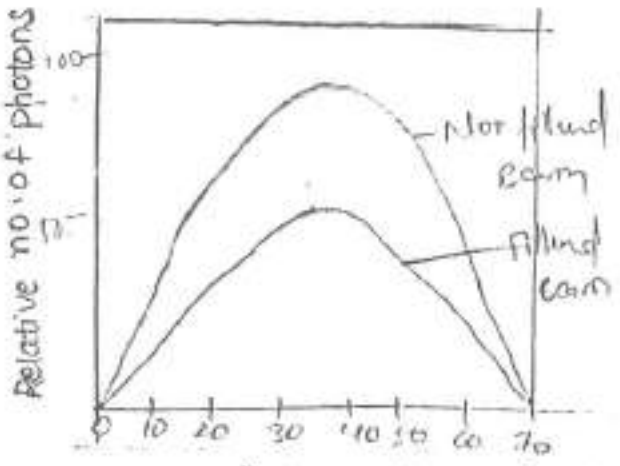
Each x-ray machine comes with a tube rating chart that describes the longest exposure time the tube can be energized for a range of voltages (kVp) and tube current (mA) values without risk of damage to the target from overheating. These tube ratings generally do not restrict tube use for intra-oral radiography. duty cycle relates to the frequency which successive exposure can be made without overheating the anode. The interval between successive exposure must be long enough for heat dissipation. This characteristic is a function of the size of anode, the exposure kVp and mA, and the method used to cool the tube. A duty cycle of 1:60 indicates that one could make a 1-second exposure every 60seconds. Direct hit interaction.

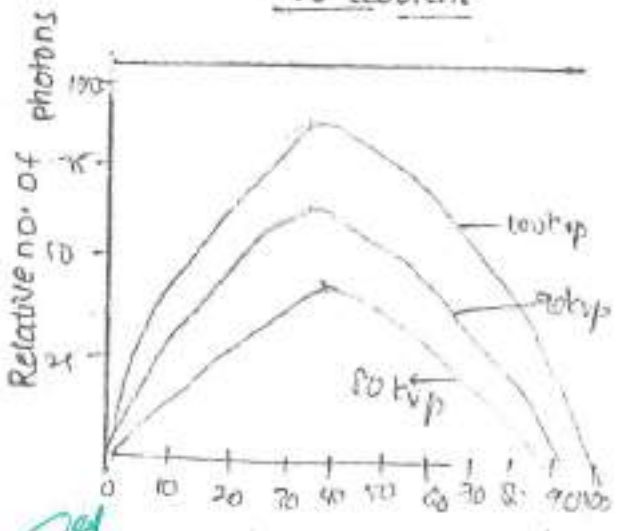




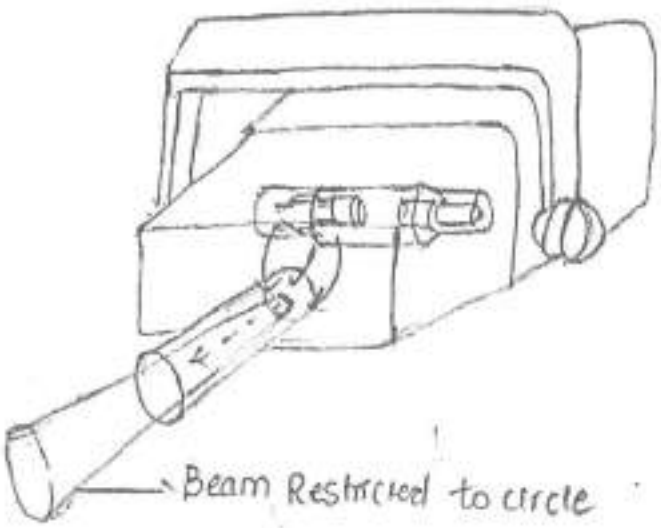
Exposure Time

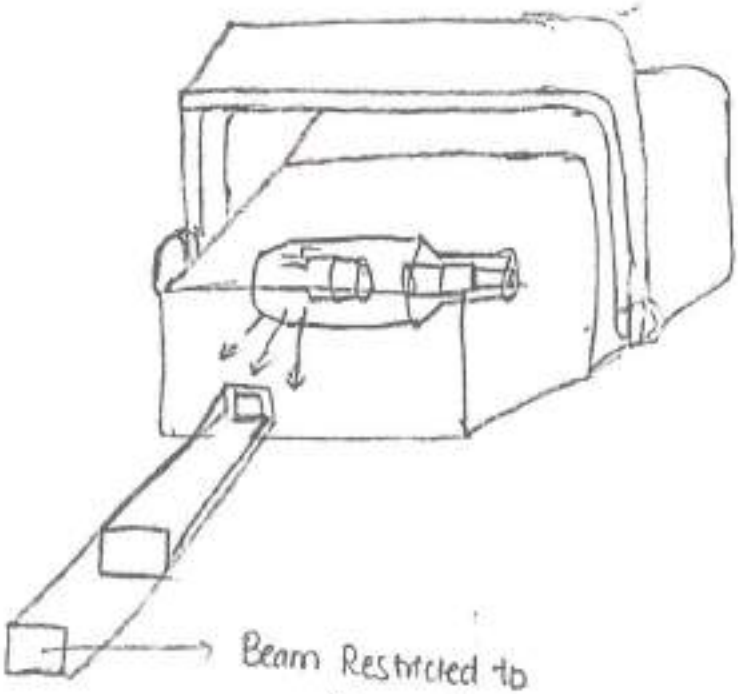


Tube current



Collimation of X-Ray Beam





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DEPARTMENT OF ORAL & MAXILLOFACIAL PATHOLOGY

Certificate

This is to certify that P. SUDEENDRA has satisfactorily completed the record work that has been prescribed by

NTR UNIVERSITY OF HEALTH SCIENCES in

DEPARTMENT OF ORAL & MAXILLOFACIAL PATHOLOGY,

for III rd year BDS During the year 20 15 to 20 20.

Date: 22/1/20

Reg No: 160210660-15

DEPARTMENT OF ORAL & MAXILLOFACIAL PATHOLOGY
SVS Institute of Dental Sciences
Mahabubnagar-509 001 A.P.

Staff Incharge
Dept of Oral & Maxillofacial Pathology

Prof & HOD
Dept of Oral & Maxillofacial Pathology

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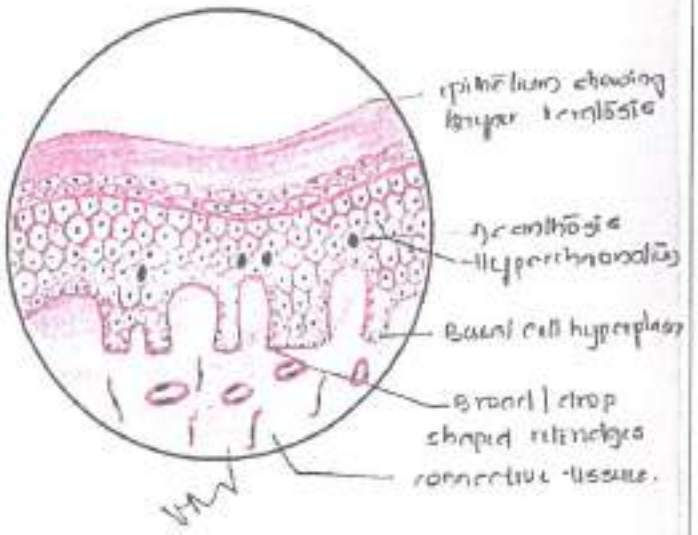
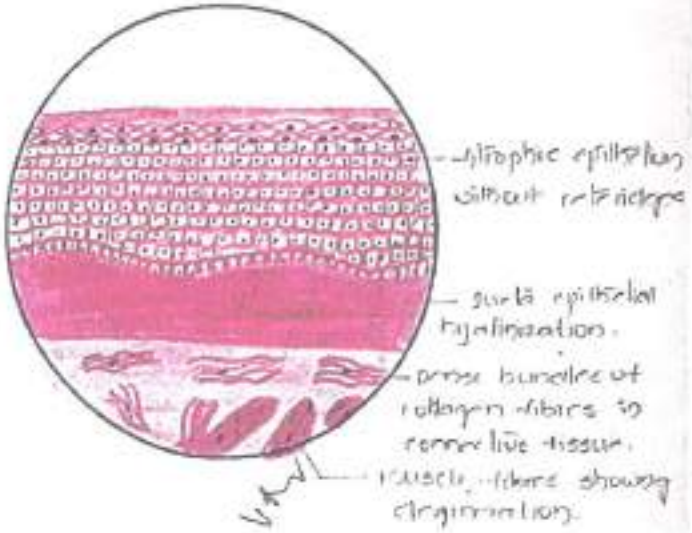
1 LEUKOPLAKIA



- Leukoplakia is characterized by a thickened layer of surface epithelium with (without a thickened spinous layer (acanthosis)
- the keratin layer may consist parakeratin (hyper parakeratosis), orthokeratin (hyper ortho keratosis) or combination of both.
- with parakeratin there is no granular cell layer and the epithelial nuclei are retained in the keratin layer.
- with orthokeratin, the epithelium demonstrates a granular cell layer and nuclei are lost in keratin layer.

2 ORAL SUBMUCOUS FIBROSIS



- microscopically, oral submucous fibrosis reveals following features:
→ the overlying hyperkeratinized, atrophic epithelium often shows flattening and shortening of rete pegs.
- there can be variable degree of cellular atypia | epithelial dysplasia.
- in oral submucous fibrosis, dysplastic changes that are found in the epithelium include marked irregular epithelial stratifications, nuclear pleomorphism and severe intercellular edema etc.

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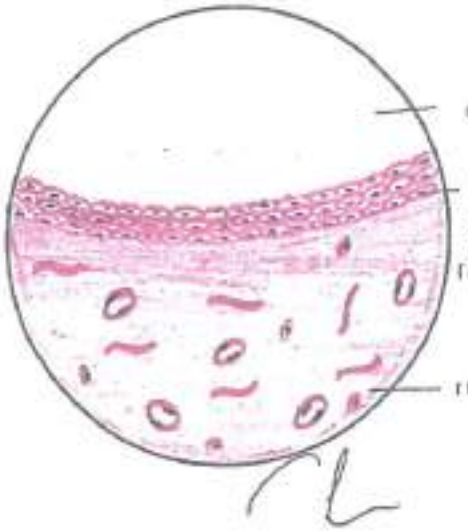
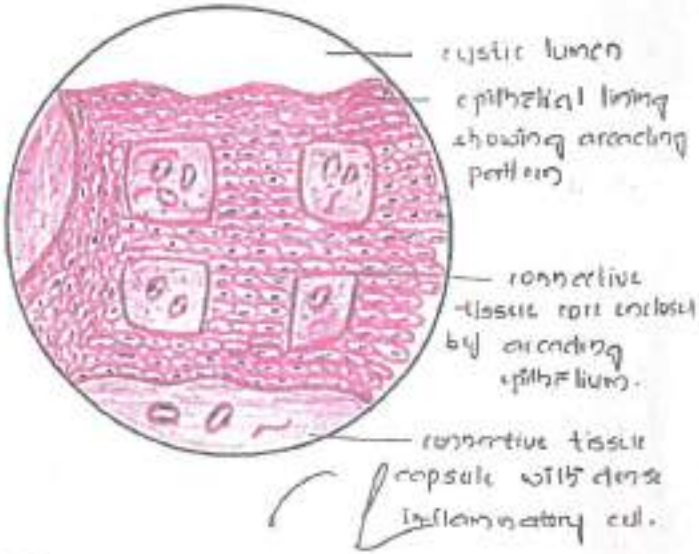
17. DENTIGEROUS CYST



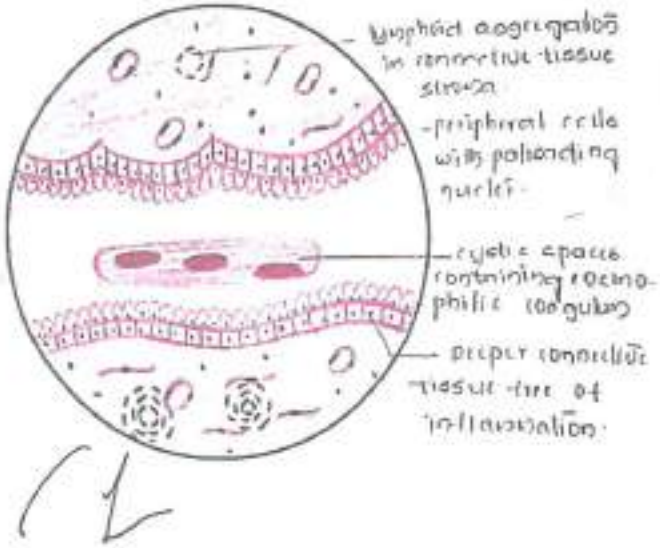
- It is composed of thin layer of stratified squamous epithelium lining the lumen.
- Rete peg formation is absent.
- Presence of Rushon bodies within the lining epithelium
- cystic lumen is usually thin, watery, yellow fluid, occasionally blood tinged.
- Presence of varying number of island of odontogenic epithelium.

18. RADICULAR CYST



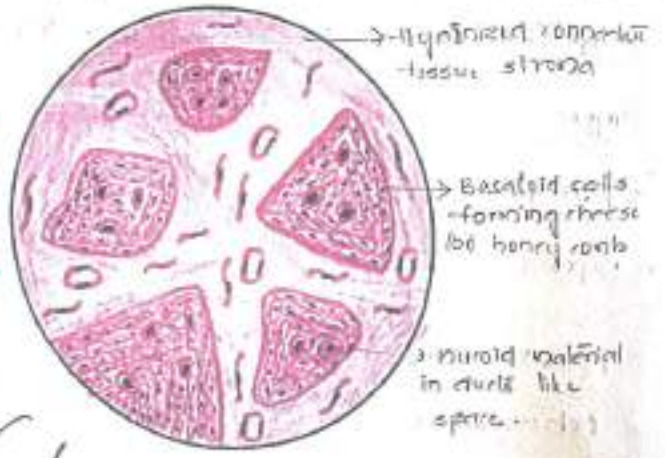
- It is lined by stratified squamous type of epithelium.
- It is seldom exhibit keratin formation.
- occasionally the cyst is lined by pseudo stratified ciliated columnar (or) respiratory type.
- cystic lumen may from watery straw coloured blood tinged fluid to semisolid material.

21. WARTHIN'S TUMOR



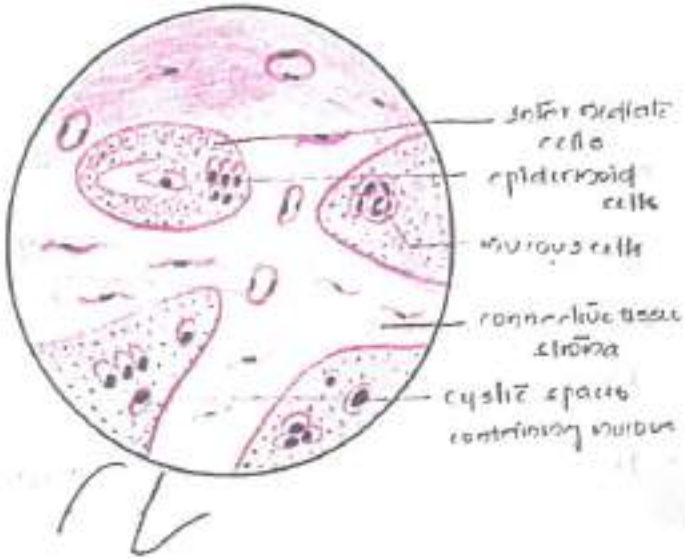
- also called papillary cystadenoma lymphomatosum and adenolymphoma.
- it is second most common benign salivary neoplasm characterised by proliferation of both luminal and non-luminal cells.
- it appears as a slow growing painless nodular mass on palpitation they consistency (or) fluctuant.
- it is can occur as bilateral lesion.

22. ADENOID CYSTIC CARCINOMA



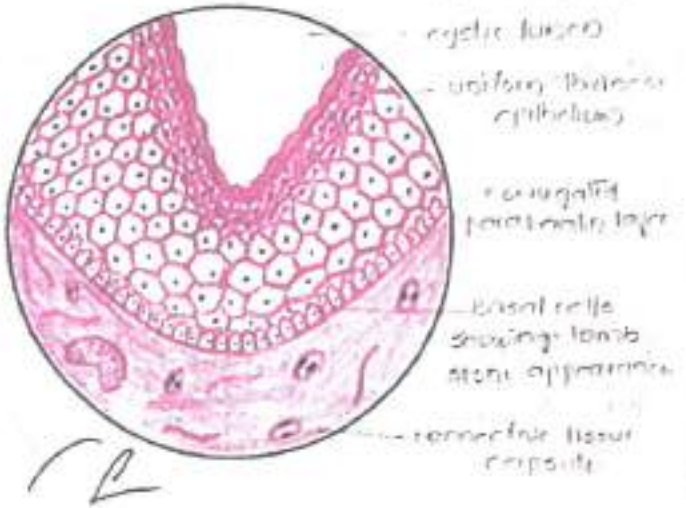
- cylindroma, adenocystic basal cell carcinoma basaloid mixed tumor.
- it is a slow growing but aggressive neoplasm with a remarkable capacity of recurrence.
- invasion into surrounding structures is also evident.
- pain may be evident even before a visible swelling due to perineural invasion.

23. MUCOEPIDERMOID CARCINOMA.



- It is a malignant salivary gland tumour, which is characterized histopathologically by the presence of three cell types, mucous, intermediate and epidermoid cells.
- Mucoepidermoid carcinomas are thought to arise from the excretory duct cells.
- excretory ducts are structures devoid of myoepithelial cells, hence mucoepidermoid carcinomas are divided from single parent cell, probably the basal cells of excretory duct.

24. UNICYSTIC AMELOBLASTOMA



- It is cyst derived from remnants of dental lamina with biological behaviour similar to benign neoplasm with a distinctive lining of epithelium in thickness and that exhibits a basal cell layer of palisaded cells and a surface of corrugated parakeratin.

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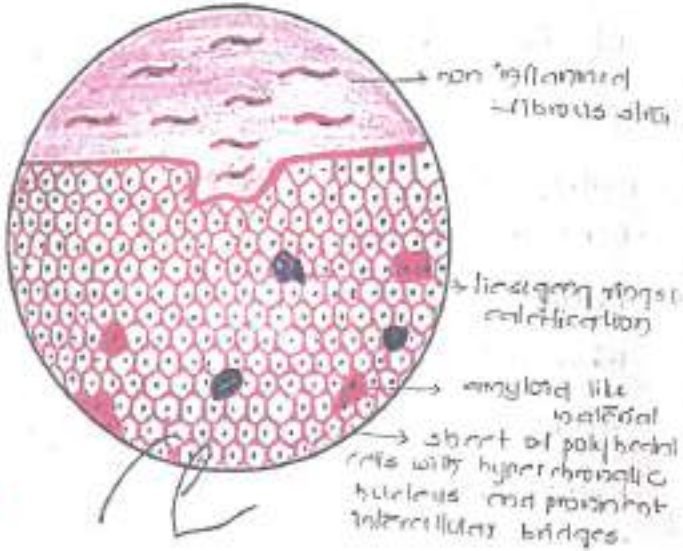
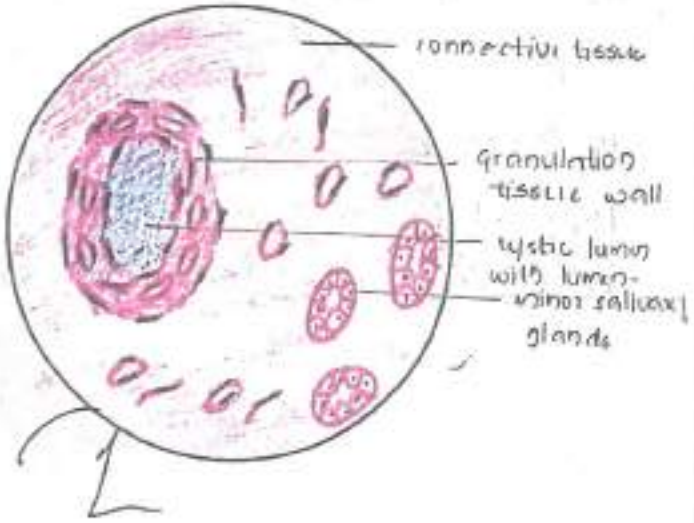
25. CALCIFYING EPITHELIAL ODONTOGENIC CYST

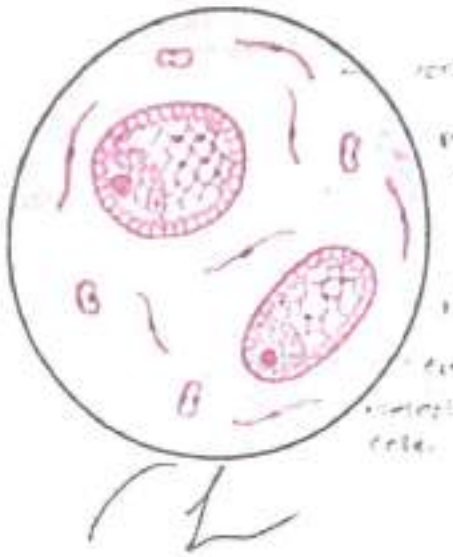


- the calcifying epithelial odontogenic cyst is a developmental odontogenic cyst.
- it usually occurs as an intra-osseous lesion but may occasionally occur as an extra osseous.
- it is also called dentinogenic ghost cell tumour.
- usually unicystic, well defined radiolucency with focal opacification.

26. MUCOCELE



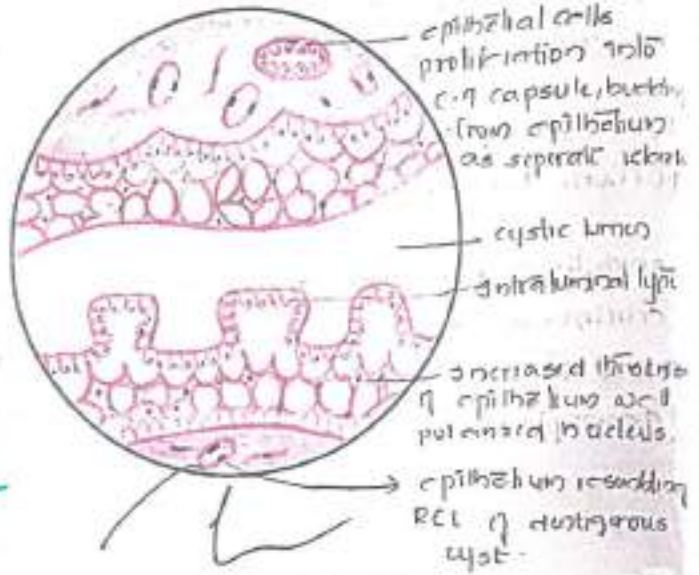
- the calcifying epithelial the extravasation cyst of a circumscribed cavity in the connective tissue and submucosa.
- the cavity is not lined by epithelium hence it is not a true cyst.
- the wall is made up of a lining of compressed fibrous connective tissue and fibroblasts.
- occasional mucocele demonstrate an inner flattened epithelial lining.



- an acanthomatous ameloblastoma, the cells occupying the position of the stellate reticulum undergo squamous metaplasia sometimes with keratin formation in central position
- occasionally epithelium do keratin formation in central portion, keratin pearls may be observed.
- sometimes, it can masquerade a squamous cell carcinoma and also appear as a hybrid ameloblastoma admixed with a pronounced desmoplastic pattern.

- the epithelium seems is squeezed and fragmented by dense stroma and epithelium stretched out- ina -tail like appearance.
- it characteristically consist of dense collagenous stroma that appear hyalinized and hypo cellular.
- larger tumor island may appear irregular with stellate appearance, occasionally exhibit typical animal like configuration.

UNICYSTIC AMELOBLASTOMA

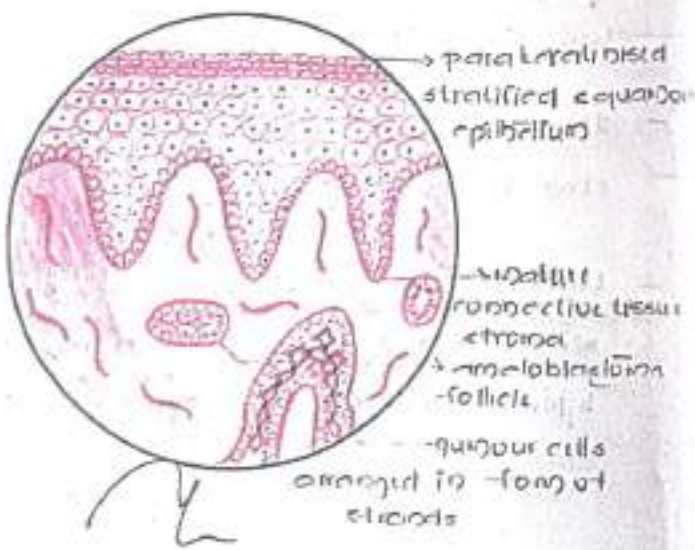


--Histologically lining epithelium show 3 alterations they are:-

- luminal unicystic ameloblastoma
- intraluminal / plexiform unicystic ameloblastoma
- mural unicystic ameloblastoma.

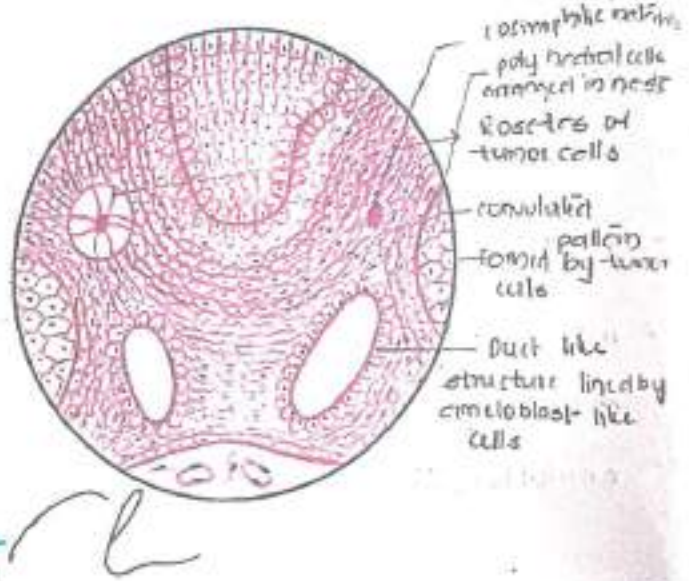
- the epithelium lining a cystic cavity of neoplasm shows typical cytomorphologic features of all ameloblastoma.

PERIPHERAL AMELOBLASTOMA



- the darkly stained periphery is compound of tall columnar cells with hyperchromatic nuclei.
- the nuclei tend to be round to oval in shape.
- six histologic subtypes are recognised.
  - (i) follicular
  - (ii) plexiform
  - (iii) Acanthomatous
  - (iv) Desmoplastic
  - (v) Basal cell
  - (vi) Granular cell.

ADENOMATOID ODONTOGENIC TUMOUR.

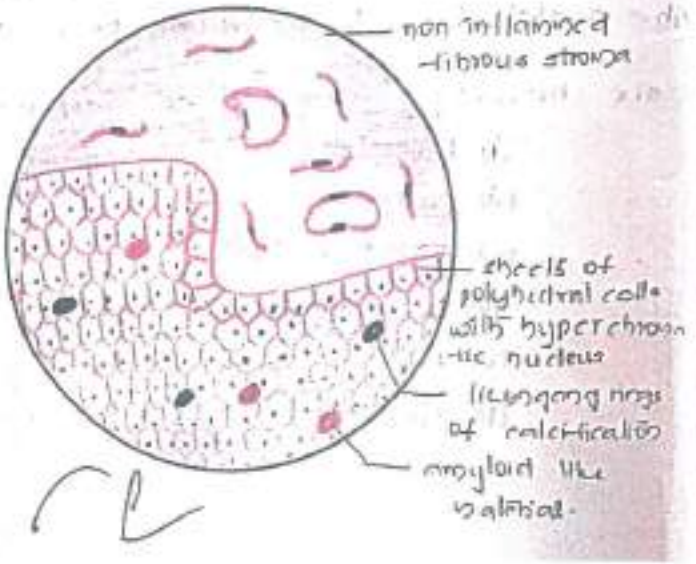


- It is a benign hamartomas lesion, composed of odontogenic epithelium in a variety of architectural pattern embedded in mature connective tissue stroma.

two forms:-

- central intraosseous variant
- peripheral extraosseous variant
- solid pattern.
- tubular ductal pattern.

PINDBERG'S TUMOR.



- It is locally invasive epithelial odontogenic neoplasm, characterized by presence of amyloid material that may become calcified
- usually calcified occurs as dark haematoxyphilic concentrically laminated calcified masses like gang rings.
- clear cell variant: In this type the tumour cell exhibit a clear vacuolated cytoplasm.

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CERTIFICATE

This is to certify that Mr / Ms.....J.....Priyanka.....

has satisfactorily completed the practicals / clinical work in Orthodontics prescribed

by the university of..DR..NTR....University..... for the Bachelor of Dental

Surgery Course for the year 2019 2020

Date..11..02..2020

STAFF IN CHARGE

GRADE

Department of Orthodontics
SVS Institute of Dental Sciences
MAHABUBNAGAR

Prof. and Head
Dept. of Orthodontics

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THIRD YEAR B.D.S.

BASIC WIRE BENDING EXERCISES

Ex. No.	Description of work	Diameter of Wire in mm.	Date of Submission	Grade	Signature of Staff
1)	Fabrication of straight wire.	19mm 15cm	18/08/18	A	
2)	Fabrication of straight wire.	20mm 15cm	25/08/18	B++	
3)	Fabrication of Triangle	19mm 12cm	27/08/18	A	
4)	Fabrication of Triangle	20mm 12cm	28/08/18	B+	
5)	Fabrication of Square.	19mm 16cm	30/08/18	B+	
6)	Fabrication of Square	20mm 16cm	10/09/18	6++	

THIRD YEAR B.D.S.

BASIC WIRE BENDING EXERCISES

Ex. No.	Description of work	Diameter of Wire in mm.	Date of Submission	Grade	Signature of Staff
7)	Fabrication of Rectangle	20mm 12cm (4x4x2x2)	31/08/18	A	
8)	Fabrication of Rectangle.	19mm (4x4x2x2) 12cm	04/09/18	B	
9)	Fabrication of Circle	22mm Radius (3cm)	14/09/18	B+	
10)	Fabrication of U.U	20mm 0.9cm	15/09/18	A	
11)	Fabrication of V.V	20mm 0.9cm	15/09/18	B++	
12)	Fabrication of U.V	20mm (0.9cm)	01/12/18	B++	

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CLASPS

Ex. No.	Description of work	Diameter of Wire in mm.	Date of Submission	Grade	Signature of Staff
1)	Fabrication of 'c' clasp Mandible rt — 6	20mm 0.9cm	12/09/18	A	
2)	Fabrication of 'c' clasp Maxilla rt 6	20mm 0.9cm	13/09/18	B	
3)	Fabrication of 'U' clasp Maxilla rt 6	20mm 0.9cm	13/09/18	B+	
4)	Fabrication of 'U' clasp Mandible rt 6	20mm 0.9cm	14/09/18	B+	
5)	Fabrication of Adam's clasp Maxilla rt 6	20mm 0.7cm	16/09/18	B+	
6)	Fabrication of Adam's clasp Mandible rt 6	21mm 0.7cm	16/09/18	A	
7)	Fabrication of Adam's with incorporated helix Maxilla rt 6	22mm 0.7cm	17/09/18	B	
8)	Fabrication of Adam's with incorporated helix Mandible rt 6	22mm 0.7cm	18/09/18	B	

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Clasps

Adequate retention of a removable appliance is achieved by incaporating certain wire components that Engage undercuts on teeth. These wire components that aid in retention are called clasps.

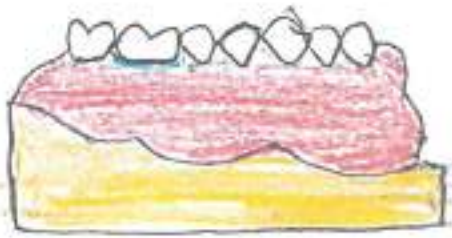
Requirements of an Ideal clasp:-

→ offer adequate retention.
→ permit usage in fully erupted as well as partially erupted teeth.
→ offer adequate retention Even in presence of shallow undercuts.
→ Easy to fabricate & not impinge on soft tissues.
→ should not interfere with normal occlusion.

1) Circumferential clasp:- Also known as three quarter clasp (or) C- clasp simple clasps. They are designed to Engage to bucco-cervical undercuts.

Advantages: Simplicity of design
Easy to fabricate.

Disadvantages: Can't be used in partially erupted tooth where in the cervical undercuts is not available for clasp retention.



5) Adam's clasp:

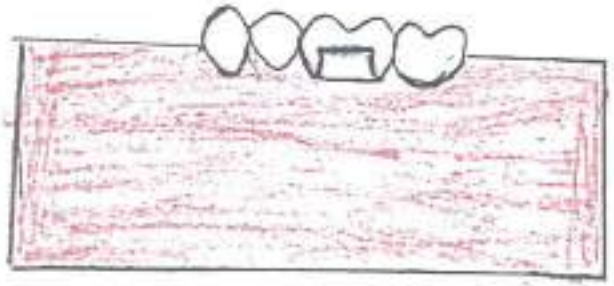
> also known as lever, poor clasp, universal clasp & modified arrow ahead clasp. It offers minimum retention.

Constructed using a 0.7mm hard stainless steel wire.

arts: two arrow heads.
Bridge
two retentive arms.

vantages:

It is rigid & offers Excellent retention.
fabricated on deciduous as well as permanent teeth.
an be used on partially or fully Erupted teeth.
sed on molars, premolar & incisors.



Adam's clasp

Adam's Classification :-

1) Adam's with single arrow head :- Indication on partially Erupted teeth Single arrow head is mad
Engage the mesioproximal undercut of last Erupted molar, Simple arrow head is made
is made to encircle the tooth distally & Endo on partially aspects as a retentive arm.

2) Adam's with J hook : 'J' hook is soldered onto the ridge of Adam's clasp useful in Eng
Elastics.

3) Adam's with additional arrow head :- The additional arrow head Engages the proximal undercu
of the adjacent tooth & is soldered onto bridge offers additional retention.

4) Adam's with incorporated helix :- A helix is incorporated into bridge of adam's clasp help
Engaging elastics.

5) Adam's with soldered Buccal tube :- A Buccal tube can be soldered onto the bridge. pe
use of the Extra oral anchorage using facebow head gear assembly.

6) Adam's with distal Extension :- Distal arrow head has a small Extension incorporate dist
helps in Engaging elastics.

7) Adam's with incisors & premolars :- When Extension on incisors & premolars are required.

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Adam's with single arrow head

Adams with I hook

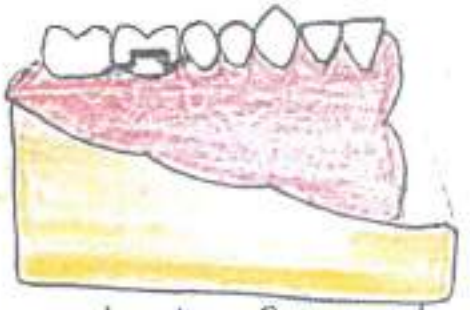
Adam's with additional arrow head

4) Southened clasp: used when retention is required in anterior region wire is adapted along the cervical margin of both central incisors.

5) Triangular clasp :- Small triangular clasps that are used between two changes adjacent posterior teeth. Indicated when additional retention is needed.

Adam with incorporated helix

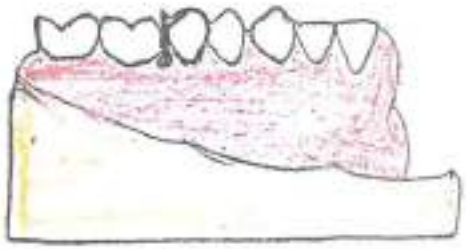
Adam's with distal Extension



Adam's with soldered buccal tube.

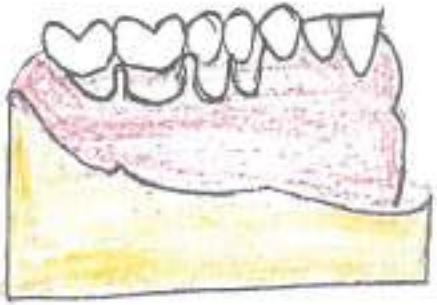
6) Ball End clasp:

→ Fabricated using stainless steel wires having knob (or) a ball like structure on one.
→ preformed wires having a ball at one end & are also available.
→ Indicated when addition retention is required.



7) Schwatz clasp: predecessors of adam's clasp.

→ It. of arrow head Engage the molar & premolar & between molars.



FINAL YEAR B.D.S.

SPRINGS

Ex. No.	Description of work	Diameter of Wire in mm.	Dental Nomenclature	Date of Submission	Grade	Signature of Staff
1)	Fabrication of Finger Spring with [illegible]	23mm (0.6cmm)	[illegible]	20/09/19	A	
2)	Fabrication of Finger spring with [illegible]	23mm (0.6Cm)	[illegible]	23/09/19	A+	
3)	Fabrication of 'Z' Spring with [illegible]	23mm (0.6Cm)	[illegible]	23/09/19	A	

CASE RECORD 1

Patient's Name : Yadagiri 13yrs / male.

Date of Birth : 20 - 10 - 2006 Ortho No. : O.P. No. :

Postal Address : Bandomedpally MBNR District Ethnic Origin : Religion : Hindu

Father / Guardian's Name : Lallaiah Occupation : Student Diet : Mixed

HISTORY

1. **CHIEF COMPLAINT** patient complains of spacing in upper front teeth.

2. **PRE-NATAL HISTORY**

   Informer : patient.

   Condition of Mother during Pregnancy : Normal

   Delivery : Full term

   Type :

3. **POST-NATAL HISTORY**

   Feeding : Mother feeding (breast)

   Duration and Frequency, of bottle feeding: 2½ years

   Milestones of Development : Normal.

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4. **CHILDHOOD DISEASES** No

5. **HABITS** No relevant history

6. **INJURIES** —

7. **FAMILIAL MALOCCLUSION HISTORY** His mother has similar type of malocclusion

Parents: ✓ Siblings :

8. **GENERAL HISTORY**

Reasons for taking Orthodontic Treatment
Esthetics / Functional / Speech / Hygiene : Esthetics
Patient's Concern for Orhtodontic Treatment : Good
Attitude of patient to treatment : +ve / -ve / to be motivated +ve

9. **PUBERTAL STATUS** : past pubertal by 1yr [Growing]

10. **ANY OTHER INFORMATION** —

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CLINICAL EXAMINATION

1. PHYSICAL STATUS :

Build : Altered Height : 5'2 Weight : 40kgs Body Type : Moderate.

2. EXTRA ORAL EXAMINATION

Shape of Head	: Mesiocephalic	Interlabial Gap	: 1mm
Facial Form	: Mesoprosopic	Lip Posture and Tonicity	: Competent lips
Faciol Profile	: Mild Convex.	Mento Labial Sulcus	: Normal
Facial Divergence	: Straight/ortho gnathic	V.T.O.	:

3. FUNCTIONAL EXAMINATION

Respiration	: Oronasal	Deglutition	: Mature swallowing
Mastication	: Normal	Speech	: Normal
Postural Rest Position	: Normal	Hyperactive Mentalis / Hypotonic Upperlip	
Perioral Muscle Activity	: Normal	During Speech 2-3 m.m.	
Amount of incisor exposure	:	During Smile 3-4 m.m.	

T.M.J. Bilateral, synchronous movements with no clicking sounds are heard.

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Others

4. INTRAORAL EXAMINATION

Soft Tissues :

Oral Hygiene Status : Stain – + Calculus – + Good

Gingiva : Normal / Oedematous / Fibrous

Brushing Habits : Good / Satisfactory / poor

Position of Mucogingival Junction : Normal

Frenal Attachment Upper / Lower : Upper – papillary, Lower – labial mucosal. Lingual mucosal

Tongue : Size Normal

Shape 'V' shaped

Movements Normal

Oral Mucosa : No abnormality detected

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Hard Tissues :

Number of teeth present : 28

7	6	5	4	3	2	1	1	2	3	4	5	6	7
7	6	5	4	3	2	1	1	2	3	4	5	6	7

Number of unerupted teeth : Erupting 27, 37.

Supernumerary / Missing teeth : —

Size, form of teeth : Microdontia in 13, 12, 22

Texture : —

Caries : —

Endodontically Treated : —

Occulusal Facts wear : —

Maxillary Arch :

Shape :

Arch Symmetry : Average / 'V' - Shaped / 'U' - Shaped / Square

Arch Alignment : Symmetrical / Asymmetrical
→ Spacing present in upper anterior teeth.

Palatal Contour : Normal

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Mandibular Arch :

Shape : Average / 'V' Shaped / 'U' Shaped /Square

Arch Symmetry : Symmetrical / Asymmetrical

Arch Alignment : Spacing seen in lower anterior teeth

Relation of Mandibular to

Maxillary Arch :

Maximum Opening (Incisal edges) : 45 mm

Freeway space : 2mm

Curve of space : 1mm

Midline : Upper : Shifted towards left by 2m Lower : Shifted towards right by 1mm Functional : —

Antero-Posterior Relationship :

Molar Relation : Class I bilateral

Canine Relation : Class I bilateral Classification :

Incisor Relation : Class I Overjet 1 m.m.

Vertical Relationship : Overbite 2 m.m $2/8 \times 100 = 25\%$ precentage

Transverse Relationship : Crossbite / Scissor bite etc., No.

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DIAGNOSIS & TREATMENT PLAN

Diagnosis : A 13yrs old male patient named Yadagiri has been diagnosed as Angle's class I malocclusion with mid line diastema and uppar and lower anterior teeth spacing.

Treatment Objectives : 1) To maintain class I molar relation bilaterally.
2) To Correct / close spacing in upper & lower anterior teeth
3) To do frenectomy
4) To Correct microdontia in 13, 12, 22
5) To match midline 6) To achieve orthognathic profile

Type of Appliance (Mechanotherapy) : fixed appliance therapy with frenectomy followed by Hawley's retainer appliance

Design of Appliance :

M.D. 12/10/19

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CANINE RETRACTORS

Ex. No.	Description of work	Diameter of Wire in mm.	Dental Nomenclature	Date of Submission	Grade	Signature of Staff
1)	Fabrication of 'U' loop canine retractor.	23mm [0.6cm]	13	30/09/19	A	
2)	Fabrication of helical canine retractor	23 mm [0.6cm]	13	01/10/19	B++	
3)	Fabrication of Buccal canine retractor	22mm [0.7cm]	13	01/10/19	A	
4)	Fabrication of palatal canine retractor	22 mm [0.7cm]	13	01/10/19	A	

BOWS

Ex No.	Description of work	Diameter of Wire in mm.	Dental Nomenclature	Date of Submission	Grade	Signature of Staff
1)	Fabrication of short labial bow	22mm [0.7cm]	321/123	25/09/19	A+	25/9
2)	Fabrication of short labial bow	22mm [0.7cm]	321/123	26/09/19	A	26/9.
3)	Fabrication of long labial bow	22mm [0.7cm]	4321/1234	27/09/19	A	27/9.
4)	Fabrication of long labial bow	22mm [0.7cm]	4321/1234	28/09/19	A	

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APPLIANCES

Ex. No.	Description of work	Date of Submission	Grade	Signature of Staff
17	Fabrication of Hawley's Appliance.	14/10/19	A	

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DEPARTMENT OF PERIODONTICS

Certificate

Certified that this is the Bonafide Record work done by Miss / Mr / Mrs T. Nandini Prasad in Periodontics, the year 2019 to 2020

Hall Ticket No 160206092

Date :

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Signature of the HOD

Signature of the Examiners

Sl.No.	Date	O.P.D. No.	Name of the Patient	Age	Sex	Diagnosis	Treatment Done	Signature of Staff
1.	21.1.2020	205241	Anjaneyulu Goud	46	M	Chronic Generalised Gingivitis	Partial supragingival hand scaling done	
2.	29.1.2020	206431	Naradevi	40	F	Chronic Generalised Gingivitis	Partial supragingival hand scaling done.	
3.	31.1.2020	206533	Manipal	25	M	Chronic Generalised Gingivitis	Partial supragingival hand scaling done.	
4.	01.2.2020	206533	Manipal	25	M	Chronic Generalised Gingivitis	Complete supragingival handscaling done.	
5.	6.2.2020	1992574	Ramanjaneyulu	28	M	Chronic Generalised Gingivitis	Partial supragingival hand scaling done.	
6.	7.2.2020	2010559	Thimpathamma	38	F	Chronic Generalised Gingivitis	Partial supragingival hand scaling done.	
7.	8.2.2020	2010837	Nandu	26	M	Chronic Generalised Gingivitis	Partial supragingival handscaling done	
8.	10.2.2020	2011276	Vanishini	19	F	Chronic Generalised Gingivitis	Full mouth Supragingival hand scaling done.	
9.	13.2.2020	2011338	Venkatesh	23	M	Chronic Generalised gingivitis	Partial Supragingival hand scaling done.	

Case - History

Name of the Patient : M.Murali

Date : 22/8/18

Age : 31

O.P.D. No. : 837968

Sex : Male

Occupation : Engineer

Address : Jadcherla

Chief Complatiant : Patient complains of Bleeding gums in the lower front tooth region since 2 months

history of present illness : Patient was apparently asymptomatic 2 months back then she noticed bleeding gums in lower front tooth region which is intermittent in nature & aggresive on brushing

Past Dental History : No previous dental history

Medical History : No Relevant Medical history

Family History : No Relevant family history

Personal History

Diet : Mixed diet

Oral Hygine habits : Brushing twice daily with toothbrush & colgate tooth paste in horizontal motion for 10 minutes & changes brush every 1 month

Adverse habits :

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General Examination :

Local Examination :

Extra Examination :

Face : NO gross facial asymmetry

TMJ : Bilateral synchronous movements present

Lips : Incompetent

Lymph Nodes : Not palpable.

Introral Examination :

Soft tissue Examination :

- Buccal mucosa
- Palete
- Floor of the mouth
- Vestibule
- Tongue

} NO abnormality detected

- Frenal Attachment Maxillary - Mucosal

Gingival Status

Colour - Pale pink with melanin pigmentation

Contour exaggerated irt $\frac{}{321 \mid 123}$

Consistency Soft & edematous irt $\frac{321 \mid 12}{321 \mid 123}$

Size Grade II Gingival enlargement irt $\frac{}{321 \mid 123}$

Shape Surface texture Stippling absent irt $\frac{21 \mid 12}{321 \mid 123}$

Position Coronal to CEJ irt $\frac{}{321 \mid 123}$

Bleeding on probing - Present & spontaneous irt $\frac{321 \mid 12}{321 \mid 123}$

Exudation on pressure - A -

Width of attached gingiva - Adequate

Tension test - Negative.

OHIs Index (Simplified) -

Debries Index

16	11	26
1	1	1
1	1	1
46	41	36

Calculus Index

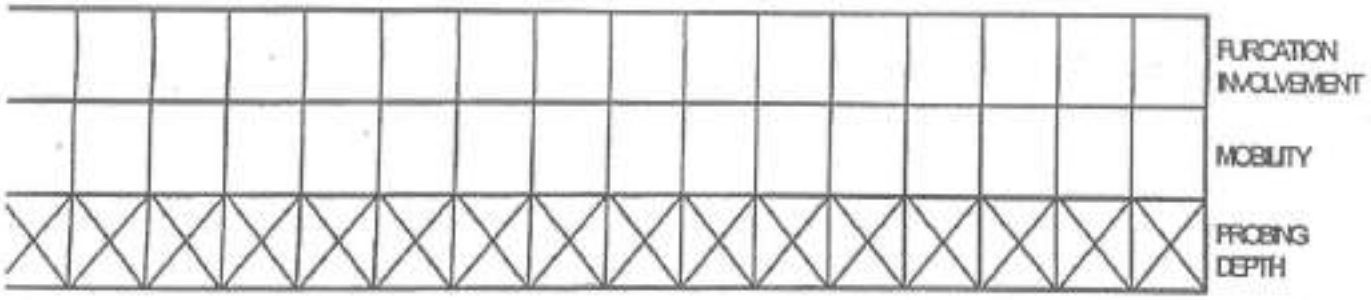
16	11	26
0	1	0
0	1	0
46	41	36

Debris Score = 6/6 = 1

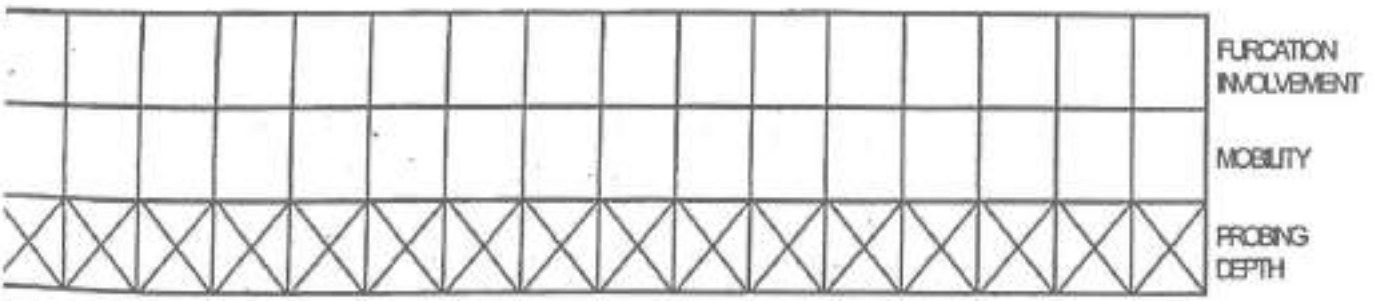
Calculus Score = 2/6 = 0.33

O.H.I. Score = 1 + 0.33 = 1.33 (Fair)

Periodontal Status



8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8



Gingival Recession

Pathological Migration

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Hard tissue Examination

Number of the teeth present : 28 — 7654321 | 1234567 / 7654321 | 1234567

Missing teeth : –
Teeth loss due to

Carious teeth : –

Filled teeth

Over hanging restoration : –

Occlusion :

Classification : Class I Angle's Molar Relation

Prematurities : –

Fremitus test : Negative

Wear facets : –

Wasting disease :

Attrition : –

Abrasion : –

Erosion : –

Proximal Contact : –

Food Impaction : –

Dentinal hypersensitivity : –

Provisional diagnosis : Chronic generalised gingivitis with localised periodontitis wrt 31/2 | 2
Chronic Inflammatory gingival enlargement wrt 321 | 1

Investigations :

Radiographs :

Others :

Final Diagnosis —

Chronic generalised gingivitis with localised periodontitis i>t $\frac{31}{2 \mid 2}$

Chronic hyperplastic inflammatory gingival enlargement i>t $\frac{}{321 \mid 123}$

prognosis

Overall Good prognosis

Individual – Good prognosis i>t $\frac{1}{}$

Fair prognosis i>t $\frac{3}{321 \mid 123}$

Treatment Plan :

Preliminary phase :

Phase I : Patient motivation & Education

Oral hygiene Instructions given

Scaling & Root planning

Maintenance of Phase I : Patient is recalled after 4-6 weeks to evaluate gingival & periodontal status

Phase II Flap surgery in $\frac{31}{}$

Gingivectomy in $\frac{321}{123}$

Phase III :

Phase IV : Patient is recalled after 3-4 months to evaluate gingival & periodontal status.

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Scaling And Root Planning

Scaling: It is the process by which biofilm & calcus are removed from supragingival & subgingival tooth surface along with calculus

Root planning: It is the process by which residual embedded calculus & portion of cementum are removed from the roots to produce a smooth clean surface.

Detection Skills

Visual examination: of supragingival & subgingival calculus just below the gingival margin is not difficult with good lighting & a clean field; compressed of air may be used to dry supragingival calculus.

Tactile exploration: of tooth surface in supra-gingival area of pocket depth, furcations & developmental depression is much more difficult than visual examination of supragingival areas & requires the skilled use of fine pointed explorers.

Instrument Sharpening:

Evaluation of sharpness: when a dull instrument is held under a light back to the observed.

* It appears as bright line running the length of the cutting edge, results light back to the observer.

* Tactile examination of sharpness is performed by drawing the instrument lightly across an acrylic rod known as "sharpening test stick".

Objectives of sharpening: It is to restore the fine thin linear cutting edge of instrument. It is done by grinding the surface blade until their function is sharp.

- Sharpening stones may be acquired from natural mineral deposits or produced artificially surface is made of abrasive crystals that are harder than metal.

Principles of sharpening:

* Choose a stone suitable for the instrument to be sharpened.
* Use a sterilized sharpening stone.
* Establishing proper angulation b/w sharpening stone & surface.
* Maintain a stable firm grasp of both the instruments & sharpening stone
* Avoid excessive pressure
* Lubricate the stone during sharpening
* Sharpen instruments at first sign of dullness.

As a specific curettes has an angle of 70-80° b/w the face & lateral surface of its blade. Therefore the technique is described for sharpening.

Sickle scaler: angle b/w face & surface 70-80°

Chisel & hoe: To sharpen a chisel, stabilize or flat sharpening stone on a flat surface.

Periodontal knives:

- Flat bladed gingivectomy knives
- Interproximal knives
- Stationary stone technique
- Stationary instrument technique.

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Clinical features of Gingivitis

Localized marginal gingivitis confined to one/more areas of marginal gingiva.

•Localized diffuse gingivitis. Extends from the margin to mucobuccal fold in a limited area.

•Localized papillary gingivitis & it is confined to one/more interdental spaces in a limited area.

•Generalized marginal gingivitis, involves the gingival margin in relation to all the teeth & interdental papillae are affected.

•Generalized diffuse gingivitis - involves the entire gingiva, alveolar mucosa & the attached gingiva are affected.

Gingival bleeding on probing

The two earliest signs of gingival inflammation that precede ① Increased gingival crevicular fluid production ② Bleeding from gingival sulcus on probing.

Chronic & recurrent bleeding:

The most common cause of abnormal gingival bleeding on probing in chronic inflammation.

-The severity of bleeding & ease of prevention depends on intensity of inflammation.

Acute bleeding

Acute episodic of gingival bleeding are caused by injury & they can occur on spontaneous episodes, in patients with gingival diseases

Colour changes with gingivitis is an important clinical sign of gingival diseases normal contour is coral pink with acute necrotising ulcerative gingivitis, the involvement is marginal with hepatic gingivostomatitis.

-Its diffuse & with acute reaction to chemical irritation it is patch like / diffuse metallic pigmentation

• They typically produce a black (or) bluish line in the gingiva that follows the contour of margins.

Changes in consistency: Chronic gingivitis swelling, loss of stippling, discolouration occurs when inflammatory exudate & edema are the predominal changes, the gingiva is soft & bleeds easily.

• Firm gingiva is produced when usually predominates in the inflammatory proces

Changes in position: Traumatic lesions - Thermal injury can result from hot drinks & foods.

• In acute cases, the appearance of slough, erosion, ulceration & accompanying erythema are common features.

• In chronic cases, permanent gingival defects are usually present in the form of gingival recession.

Gingival recession: is an exposure of root surface by an apical shift in the position of gingiva.

• Recession refers to location of gingiva rather than its condition

• Stillman clefts are specific type of gingival recession that consists of a narrow triangular shaped gingival recession.

Classification of Periodontal diseases

Gingival diseases:

Dental plaque induced:

- Gingivitis associated with dental plaque only
  - → without local contributing factors
  - → with local contributing factors
- Gingivitis diseases modified by systemic factors
  - → Associated with endocrine system
  - → Associated with blood dyscrasias

Puberty-associated; leukaemia-associated;

Pregnancy-associated; other

① Gingivitis

② Pyogenic granuloma

- Gingival diseases modified by medications
  - → Drug induced diseases
    - ① Gingival enlargement
    - ② Gingivitis (oral contraceptives)
- Gingival diseases modified by malnutrition
  - ① Ascorbic acid-deficiency gingivitis
  - ② Others

Non plaque induced

- Gingival diseases of specific bacterial origin

Neisseria gonorrhea

Treponema pallidum

Streptococcus species

Others

- Gingival diseases of specific origin (viral)

Herpes virus infection

Others.

- Gingival diseases of fungal origin
  - Candida species
  - linear gingival erythema
  - Histoplasmosis
  - Others
- Gingival diseases of genetic origin
  - Hereditary gingival fibromatosis
  - Others
- Gingival manifestation of systemic condition
  - mucocutaneous lesion
    - lichen planus
    - Pemphigoid
    - Pemphigus vulgaris
    - erythema multiforme
- Allergic reactions
  - Dental restorative materials Hg, Ni, Acrylic, other
- Traumatic lesions: Chemical, physical, trauma
- Foreign body rxn

Chronic Periodontitis

Localized form - < 30% Sites involved

Generalized form - >30% sites involved

Characterized as slight - 1-2mm CAL (Clinical attachment loss)

Moderate - 3-4mm CAL

Severe - >5mm CAL

Aggressive Periodontitis:

① Localized form - Effects first molar & incisor disease with proximal attachment loss on atleast two permanent teeth one of which is 1st molar.

② Generalized form - Generalized proximal attachment loss affecting atleast three others than 1st molars & incisors

→ Seen in clinically healthy pts & familial aggregation of diseased individual.

→ Rapid attachment loss & bone destruction

Periodontitis as a manifestation of systemic diseases

① Hematologic disorders
- Acquired neutropenia
- Leukaemias
- Others

② Genetic disorders
- Familial & cyclic neutropenia
- Down's Syndrome
- Leukocyte adhesion deficiency Syndrome
- Papillon - Lefevre syndrome
- Histiocytosis syndrome
- Glycogen storage disease
- Infantile genetic agranulocytosis
- Cohen syndrome
- Ehlers-Danlos Syndrome

- Periodontitis
  - necrotizing periodontal disease
  - periodontitis
  - periodontitis as a manifestation of systemic D's
- Other conditions affecting the periodontium
  - ① systemic disease / conditions affecting the periodontal supporting tissue
  - ② Periodontal abscess & endodontic-periodontal lesion
  - ③ Mucogingival deformities & conditions
  - ④ Traumatic occlusal force
  - ⑤ Tooth & prosthesis related factor
- Peri implant disease & conditions
  - (I) Peri implant health
  - (II) Peri implant mucositis
  - (III) Peri implantitis
  - (IV) Peri implant soft & hard deficiencies.

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Abscess of periodontium
- Gingival abscess
- Periodontal abscess
- Pericoronal abscess

Periodontitis associated with endodontic lesion

Endo-perio
Perio-Endo } lesions
Combined

Developmental (or) Acquired deformities & conditions:
- localized tooth related factors that modify (or)
- predispose to plaque induced gingival disease (or)
- periodontitis
- Mucogingival deformities & conditions around teeth
- Mucogingival deformities & condition on edentulous ridges
- occlusal trauma { 1°, 2°

Classifica° of periodontal & periimplant disease conditions.
- Periodontal disease & condition

I) Periodontal health, gingival health
- gingival disease

→ Dental biofilms induced
→ Nondental biofilms induced.

WORK COMPLETION CERTIFICATE

This is to certify that Mr. / Ms. E. T. Chandrika.
has completed the stipulated exercises in **III B.D.S.** Clinical Conservative Dentistry satisfactorily

Year of Admission (1st BDS) : 2016 - 2021

Date of Approval | Verified by Staff | Signature of HOD | Department Seal

III BDS Exercises

Exercises on Patients

1.	Class I - Silver Amalgam	-	15
2.	Class III (distal of canine) - Silver Amalgam	-	1
3.	Class III - Glass Ionomer / Composite	-	2
4.	Class V / Buccal Pit - Glass Ionomer	-	3

Exercises on Extracted teeth

1.	Class I - Silver Amalgam	-	4
2.	Class II - Silver Amalgam	-	2
3.	Class III, Class V / Buccal pit - Glass Ionomer	-	2
4.	Class I - Composite	-	1
5.	Class IV - Composite	-	1
6.	Vertical sectioning of 2 extracted teeth	-	2

(a) Maxillary 1st Premolar - Bucco - Lingual sectioning

(b) Mandibular Molar - Mesio - Distal sectioning.

Note : (Vertical sectioning to be done in the Pre-clinical conservative lab only using diamond disc or carborandum disc mounted on a Micromotor Contrangle handpiece)

CAVITY PREPARATION & RESTORATION ON PATIENTS

Date	Tooth Number & Exercise		Cavity Preparation	Base & Matrix	Restoration
8/02/2020	Tooth Number: Exercise: cervical abrasion done in 33 34 35 36 with GIC	Grade	—	—	B
		Signature	—	—	Deepl
26/02/2020	Tooth Number: Exercise: class I cavity — 7 done Amalgam restoration done	Grade	B	B	B
		Signature	Deepl		Deepl
28/02/2020	Tooth Number: Exercise: Class I cavity — 8 done composite restoration done	Grade	B		B
		Signature	Deepl		Deepl

CAVITY PREPARATION & RESTORATION ON GIC COMPOSITE ON PATIENTS

Date	Tooth Number & Exercise		Cavity Preparation	Base & Matrix	Restoration
15/02/2020	Tooth Number: cavity Preparation for 8 done Exercise: dycal placed, GIC placed, composite restoration done 8	Grade	(B)		(B)
		Signature	Deepti		Deepti
25/02/2020	Tooth Number: Buccal pit Exercise: 6 done GIC applied restoration done	Grade	(B)		(B)
		Signature	Deepti		Deepti
	Tooth Number: Exercise:	Grade			
		Signature			

ROOT CANAL TREATMENT ON SINGLE ROOTED EXTRACTED TO

			Staff signature
1	Pre-operative radiograph (Diagnostic)		
2	Access cavity & pulp extirpation		Deepti
3	**Working length determination** (Ingle's technique)		
	- Pre - operative radiographic length of tooth	23 mm	
	- Safety measure (minus 1mm)	22 mm	
	- Tentative working length	22 mm	
	- Size of root canal file	15 K- file	
	- Reference point	Incisal edge	
	- After taking radiograph with instrument and if instrument is short by 1.5 mm, add 1.5 mm & Viceversa	mm	
	- Adjustment for apical termination (minus 1mm)	23 mm	
	- **Final Working length**	23 mm	
4	Biomechanical preparation (master apical file)	70 K file	
	- Step - back preparation (yes /no)	yes	
		(size)	
5	Selection of guttapercha master cone & confirmation radiograph	70 (size)	
6	Obturation (lateral condensation technique)		
7.	Final post obturation radiograph		
8.	Post Endodontic Restoration.		

Date of Completion .....

Diagramatic reprasentation of access cavity preparation

1) Maxillary Incisor

In maxillary incisor, the access shape is slightly triangular, with the base of Δle toward the incisal edge.

Maxillary lateral incisor.

→ The access opening of the maxillary lateral incisor, similar to that of maxillary central incisor, but its smaller & usually more ovoid

2) Mandibular Incisor

Shape of access opening of mandibular incisor is long and oval, with its greatest dimension oriented incisogingivally.

Mandibular lateral incisor -

→ The access opening is made in the same manner as for the mandibular central incisor

3) Maxillary canine

The access opening for the maxillary canine is basically the same as that for the maxillary central and lateral incisors. The only variation is that shape of the access opening is circular to avoid as dictated by pulp chamber anatomy

Access opening in maxillary canine tooth

4) Mandibular canine

→ The access opening of the mandibular canine invade in a similar manner as for the maxillary canine, with the variations dictated by a smaller anatomic dimension

5) Maxillary Premolar

- The internal anatomic structure of pulp chamber of maxillary first premolar dictates the shape & size of access opening.
- The endodontic preparation runs ovoid in a buccolingual direction & permits direct access to the root canal.

Access opening of a maxillary first premolar

Maxillary second premolar:-

- The access opening for maxillary second premolar is basically the same as that for maxillary first premolar.

6) Mandibular Premolar

The access cavity of mandibular 1st premolar is ovoid with the walls of pulp chamber confluent with access cavity & divergent occlusally.

Mandibular second premolar:- The access opening for the mandibular second premolar is basically the same as for mandibular first premolar and the ovoid access cavity is wider mesiodistally as dictated by the wider pulp chamber.

Access opening of mandibular first premolar

7) Maxillary Molar

The access opening is usually 0^4 with round corners extending toward, but not including, the mesiobuccal cusp, marginal ridge & oblique ridge.

Maxillary second molar : The maxillary second molar access opening is basically the same as that for maxillary first molar, with variation that anatomic structure dictate.

Maxillary third molar :- The access opening is similar to that for the maxillary second molar, with modification for variation in anatomic structure.

Access opening of a maxillary third molar

6) Mandibular Molar

The access opening is usually trapezoidal with round corners or rectangular if a second distal canal is present

Access opening of mandibular third molar.

Mandibular second molar : The access opening for the second molar is same as that third molar

Mandibular third Molar : The access opening for the Mandibular third molar is created as for the Mandibular first and second molar, with the variations that anatomic structure dictates

- Various isolation methods are :-

1. Rubber dam Isolation
2. cotton roll Isolation and cellulose wafers.
3. throat shields.
4. High-volume evacutors and saliva ejectors
5. Retraction cord.
6. mouth props.
7. mirror and evacuator tip retraction.
8. Drugs.

Rubber dam Isolation.

→ use of rubberdam ensures appropriate dryness of teeth & improves the quality of clincal restorative dentistry.

Advantages

1. A dry clean operating field.
2. Improved access and visibility
3. potentially improved properties of dental materials.
4. It's an effective Infection control barrier for dental office

5. It increases the quantity & quality of restoration services.

Disadvantages

1. Time consumption
2. Patient objection.

Materials and Instruments

→ latex and non latex.

→ It's has a shiny side

Various obturation techniques

1. Cold lateral compaction
2. Warm compaction (warm gutta-percha)
   a. vertical
   b. Lateral.
3. Continuous wave compaction technique.
4. Thermoplasticized gutta-percha injection.
5. Carrier-based gutta percha
   a. Thermafil thermoplasticized.
   b. Simplifill sectional obturation.
6. MC Spadden thermomechanical compaction.
7. Chemically plasticized / gutta percha.
8. Custom cone.

Lateral condensation

- Technique :-

Isolation and drying the canal with paper point → selection of master cone → checking for apical "TUG BACK".

→ Radiographic verification of master cone fit

Inadequate fit - beyond the apex.
↓
Beyond the apex
If the master cone extends beyond the working length, the tip should be cut off so that the re-inserted primary cone fits snugly at WL & the next larger size ip cone is inserted & verified radiographically

At working length
↓
sealer manipulated and the canal is coated with sealer using master cone & with a lentulo spiral
↓
master cone inserted till WL and a hand spreader is inserted alongside master cone to a level 1 mm short of working length.
↓
The spreader is dislodged from the cone by rotating it between finger tips & by rotating the handle in an arc ↓
Placement of sequential accessory cones by lateral compaction until complete obturation of radicular pulp space ↓
Post obturation radiograph

Inadequate fit - short of apex
↓
short of apex.
If the initial fit is short of the WL, then patency has to be established to the corrected length followed by sequential irrigation, recapitulation and shaping of canal to the master apical file size.
Another primary gutta percha cone is fitted to the corrected working length for radiographic verification.

Warm Vertical Compaction [WARM GUTTA PERCHA]

A. WARM Vertical compaction

It includes, using heated pluggers, of application pressure in a vertical direction to the heat-softened gutta percha and thereby causes it to flow & to fill the entire lumen of the canal.

SCHILDER'S OBJECTIVES

→ Schilders described the steps in shaping & cleaning of root canal in preparation for obturation by the warm vertical compaction method.

The requirements are as follows.

- A continuous tapering funnel should be present from the root canal orifice to the root apex
- The root canal should be prepared so that it flowed with shape of original canal.
- The shape of the apical foramen should not be changed or moved.
- The apical foramen should be kept as small as practical so that excess gutta-percha will not be forced through it during vertical compaction.

TECHNIQUE:-

The steps in warm vertical compaction are as follows:-

- A primary non-standardized or grater taper gutta percha cone corresponding to the last instrument used is fitted in the canal in the usual manner

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• The primary gutta-percha cone or master cone is inserted upto working length.
• The coronal end of the cone is cut off with a heated instrument.
• The coronal gutta percha is sealed off by the plugger as it is removed from the canal.
• The vertical condenser or plugger of suitable size is inserted & vertical pressure is applied to the heated gutta percha to force the plasticized material apical.

Advantages
• Excellent seal of the canal apically & laterally
• Obturation of large lateral & accessory canals

B. Warm lateral compaction
• The technique involves placement of the master cone and lateral compaction using heat carriers such as Endotec II tips & Endo Twin tips.
The device is placed beside the Master cone & activated followed by placed of an unheated spreader in the space previously occupied by heat carrier.
• Accessory cones are then placed and the process repeated until canal is filled.

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