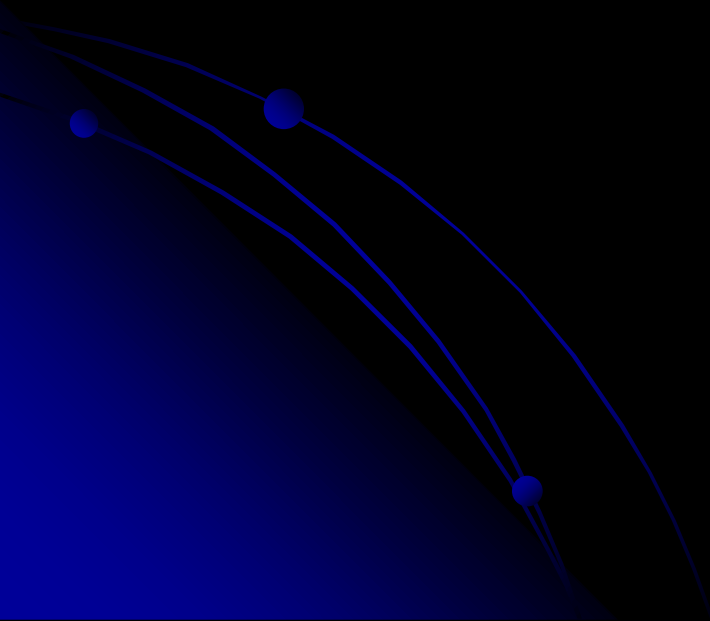


# CYSTS OF THE JAWS



# DEFINITION

➤ *KILLEY AND KAY (1966)*

“ABNORMAL CAVITY IN HARD OR SOFT TISSUES WHICH CONTAINS FLUID, SEMIFLUID OR GAS AND IS OFTEN ENCAPSULATED AND LINED BY EPITHELIUM.”

➤ *KRAMER (1974)*

A CYST IS A PATHOLOGICAL CAVITY HAVING FLUID, SEMIFLUID OR GASEOUS CONTENTS AND WHICH IS NOT CREATED BY ACCUMULATION OF PUS AND FREQUENTLY BUT NOT ALWAYS LINED BY EPITHELIUM

CYST

EPITHELIAL

NON EPITHELIAL

DEVELOPMENTAL

INFLAMMATORY

ODONTOGENIC

NON ODONTOGENIC

# I) CYSTS OF THE JAWS

## A. EPITHELIAL

- DEVELOPMENTAL

  - ODONTOGENIC

- GINGIVAL CYST OF INFANTS
- ODONTOGENIC KERATOCYST (PRIMORDIAL CYST)
- DENTIGEROUS (FOLLICULAR CYST)
- ERUPTION CYST
- LATERAL PERIODONTAL CYST
- GINGIVAL CYST OF ADULTS
- BOTRYOID ODONTOGENIC CYST
- GLANDULAR ODONTOGENIC
- CALCIFYING ODONTOGENIC CYST

## ➤NON-ODONTOGENIC

- NASOPALATINE DUCT (INCISIVE CANAL) CYST
- NASOLABIAL (NASOALVEOLAR) CYST
- MIDPALATAL RAPHE CYST OF INFANTS
- MEDIAN PALATINE, MEDIAN ALVEOLAR AND MEDIAN MANDIBULAR CYSTS
- GLOBULOMAXILLARY CYST

## •INFLAMMATORY

RADICULAR CYST, APICAL AND LATERAL

RESIDUAL CYST

PARADENTAL CYST AND MANDIBULAR INFECTED BUCCAL CYST

INFLAMMATORY COLLATERAL CYST

## B. NON-EPITHELIAL

SOLITARY BONE CYST (TRAUMATIC HEMORRHAGIC BONE CYST)

## II) CYSTS ASSOCIATED WITH MAXILLARY ANTRUM

- BENIGN MUCOSAL CYST OF THE MAXILLARY ANTRUM
- POSTOPERATIVE MAXILLARY CYST (SURGICAL CILIATED CYST OF MX)

## III) CYSTS OF SOFT TISSUES OF MOUTH, FACE AND NECK

- DERMOID AND EPIDERMOID CYSTS
- LYMPHOEPITHELIAL (BRANCHIAL CLEFT) CYST
- THYROGLOSSAL DUCT CYST
- ANTERIOR MEDIAN LINGUAL CYST
- ORAL CYSTS WITH GASTRIC / INTESTINAL EPITHELIUM (ALIMENTARY TRACT CYST)
- CYSTIC HYGROMA
- NASOPHARYNGEAL CYSTS
- THYMIC CYST
- CYSTS OF SALIVARY GLANDS, MUCOUS EXTAVASATION CYST, MUCOUS RETENTIAL CYST, RANULA, POLYCYSTIC DISEASE OF PAROTID
- PARASITIC CYSTS: HYDATID CYST, CYSTICERCUS CELLULOSAE: TRICHINOSIS

# CLASSIFICATION WHO- 1992

- EPITHELIAL CYSTS OF THE JAWS
  - DEVELOPMENTAL
  - INFLAMMATORY
- NONEPITHELIAL CYSTS OF THE JAWS (PSEUDOCYSTS)
  - ANEURYSMAL BONE CYST
  - SOLITARY BONE CYST (SIMPLE, TRAUMATIC, HEMORRHAGIC, IDIOPATHIC BONE CAVITY)
- OTHER CYSTS IN THE HEAD & NECK REGION
  - SOFT TISSUE CYSTS
  - PSEUDOCYSTS
  - MISCELLANEOUS

# CLASSIFICATION WHO- 1992

- EPITHELIAL CYSTS OF THE JAWS
  - DEVELOPMENTAL
    - GINGIVAL CYST OF INFANT ( EPSTEIN PEARLS)
    - GINGIVAL CYST OF ADULT
    - ERUPTION CYST
    - ODONTOGENIC KERATOCYST
    - DENTIGEROUS CYST
    - LATERAL P-D CYST/ BOTRYOID ODONTOGENIC CYST
    - GLANDULAR ODONTOGENIC (SIALO-ODONTOGENIC) CYST)
    - CALCIFYING ODONTOGENIC CYST (GORLIN'S CYST)
    - NASOLABIAL CYST (NASOALVEOLAR CYST)
    - NASOPALATINE DUCT CYST (INCISIVE CANAL CYST)

# CLASSIFICATION WHO- 1992

- EPITHELIAL CYSTS OF THE JAWS

- INFLAMMATORY

- RADICULAR CYST (PERIAPICAL / PERIRADICULAR)

- APICAL

- LATERAL

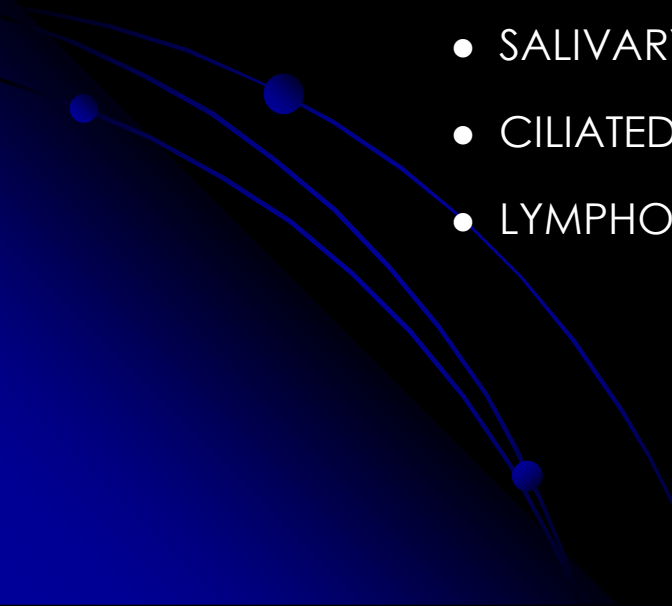
- RESIDUAL

- PARADENTAL CYST (MANDIBULAR INFECTED BUCCAL

- BIFURCATION CYST, INFLAMMATORY

- COLLATERAL CYST)

# CLASSIFICATION WHO- 1992

- OTHER CYSTS IN THE HEAD & NECK REGION
    - SOFT TISSUE CYSTS
      - EPIDERMOID CYST
      - THYMIC CYST
      - BRONCHOGENIC CYST
      - THYROGLOSSAL CYST
      - GASTRIC HETEROTROPHIC CYST
      - SALIVARY DUCT CYST
      - CILIATED CYST OF THE MAXILLARY ANTRUM
      - LYMPHOEPITHELIAL: ORAL CERVICAL
- 

## PSEUDOCYSTS

MUCUS RETENTION CYST

MUCOCELE OF THE SINUS

CYSTIC HYGROMA

## MISCELLANEOUS

DERMOID CYST

POLCYSTIC DISEASE OF PAROTID

HIV ASSOCIATED LYMPHOEPITHELIAL LESION

# HISTOGENETIC CLASSIFICATION OF ODONTOGENIC CYSTS :

## CYSTS DERIVED FROM RESTS OF MALASSEZ

- PERIAPICAL CYST
- RESIDUAL CYST

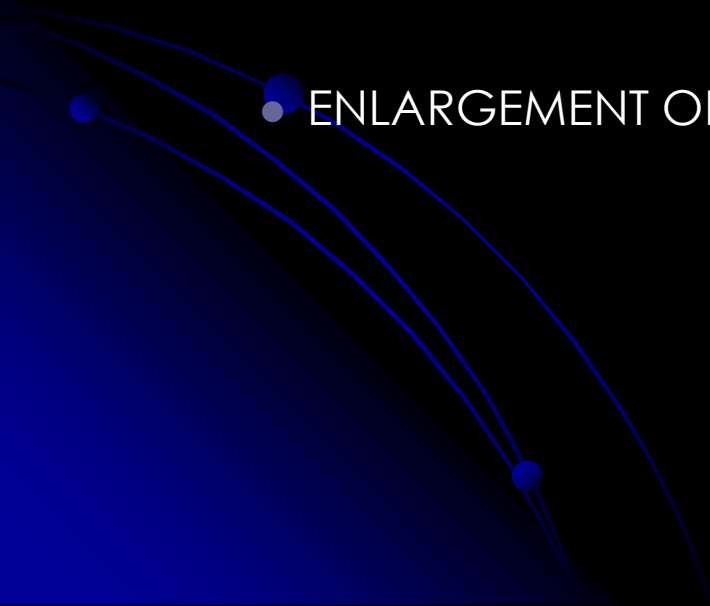
## CYSTS DERIVED REDUCED ENAMEL EPITHELIUM

- DENTIGENOUS CYST
- ERUPTION CYST
- PARADENTAL CYST

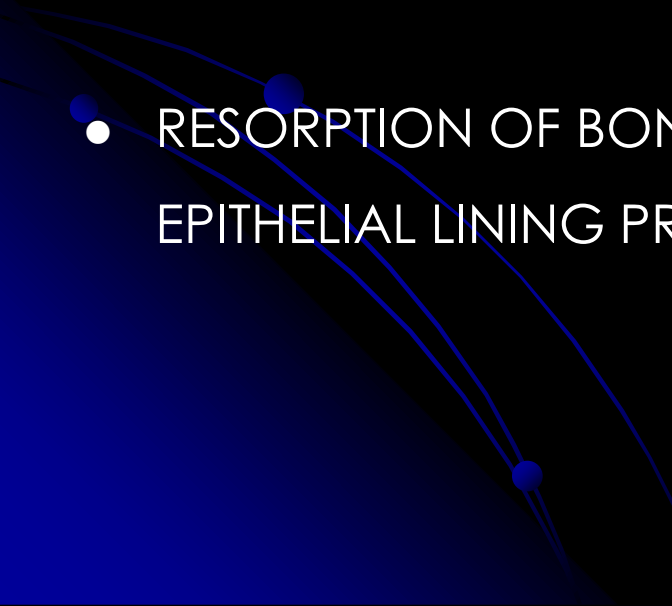
## CYSTS DERIVED FROM DENTAL LAMINA (RESTS OF SERRES)

- OKC
- LATERAL PERIODONTAL CYST POLYCYSTIC (BOTRYOID)
- GINGIVAL CYST OF ADULT
- DENTAL LAMINA CYST OF NEWBORN

# PATHOGENESIS OF A CYST

- IN GENERAL THERE ARE 3 PHASES IN A CYST PATHOGENESIS:
    - INITIATION
    - CYST FORMATION
    - ENLARGEMENT OR EXPANSION OF CYSTIC CAVITY
- 

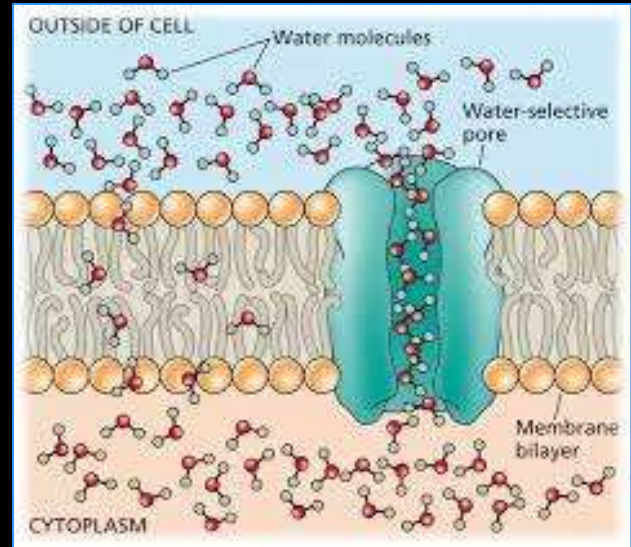
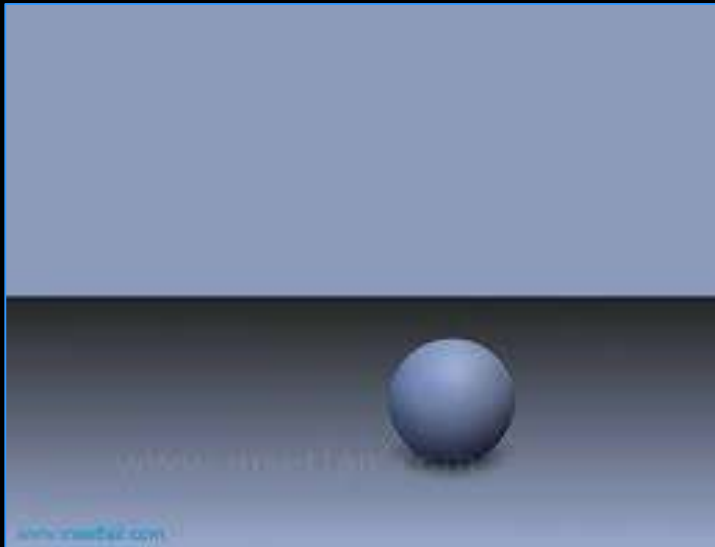
# FACTORS RESPONSIBLE FOR CYST FORMATION

- PROLIFERATION OF EPITHELIAL LINING
  - INTRA CYSTIC FLUID ACCUMULATION
  - RESORPTION OF BONE AS FLUID ACCUMULATES AND EPITHELIAL LINING PROLIFERATES
- 

# EXPANSION OF CYST – DUE TO

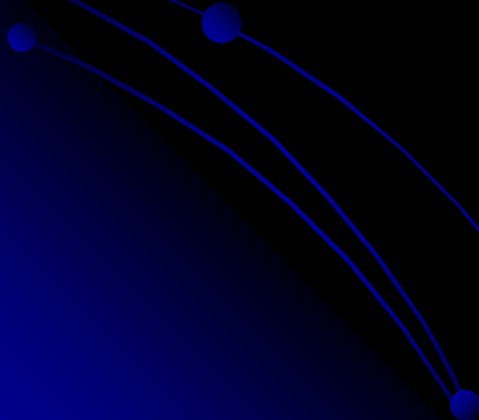
- INCREASED HYDROSTATIC PRESSURE
- INCREASED OSMOTIC PRESSURE
- INCREASE IN SURFACE AREA OF LINING “MURAL” FACTOR
- DISPLACEMENT OF SURROUNDING SOFT TISSUES OR RESORPTION

HYDROSTATIC PRESSURE IS THE PRESSURE THAT IS **EXERTED BY A FLUID** AT EQUILIBRIUM **AT A GIVEN POINT** WITHIN THE FLUID, DUE TO THE FORCE OF **GRAVITY**. HYDROSTATIC PRESSURE **INCREASES IN PROPORTION TO DEPTH** MEASURED FROM THE SURFACE BECAUSE OF THE INCREASING WEIGHT OF FLUID EXERTING DOWNWARD FORCE FROM ABOVE.

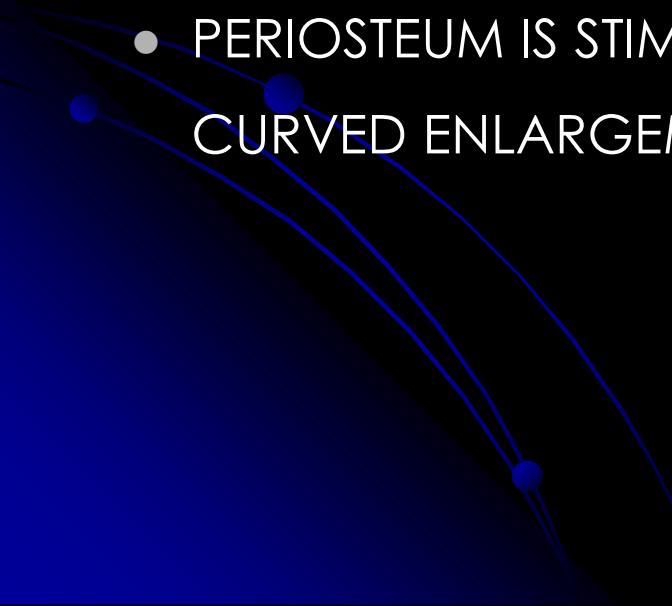


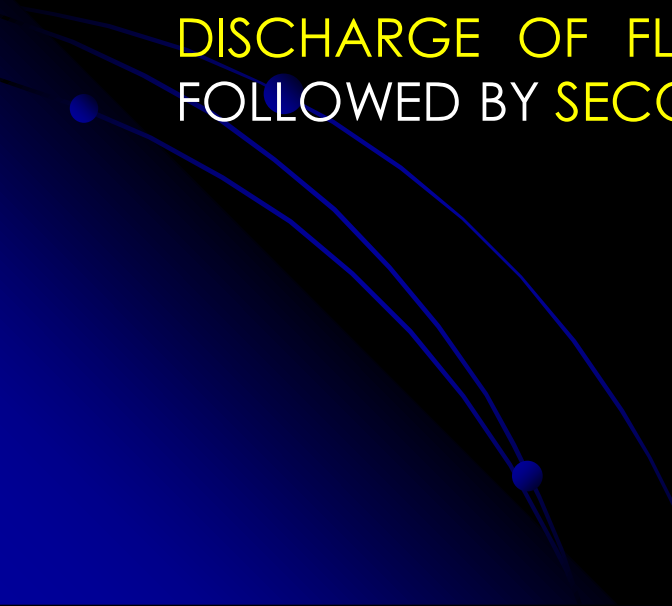
# INCREASE IN SURFACE AREA & LINING:

*IN FEW CYSTS LIKE OKC, KERATIN FORMATION IS MORE THAN HYDROSTATIC AND OSMOTIC FACTORS. IN SUCH CASES, INSTEAD OF UNIFORM EXPANSION, THERE ARE FINGER LIKE PROJECTIONS INTO THE SURROUNDING BONE. THIS FACTOR MIGHT DETERMINE THE RECURRENCE & AGGRESSIVENESS OF A CYST.*



# SIGNS AND SYMPTOMS

- PHYSICAL SIGNS DEPEND ON THE SIZE OF A CYST. IF THE CYST IS SMALL WITH NO ALVEOLAR EXPANSION, THERE IS ABSENCE OF SIGNS. AS THE CYST BECOMES LARGER EXPANSION OF ALVEOLAR BONE OCCURS. **CLINICALLY SWELLING SEEN**
  - PERIOSTEUM IS STIMULATED TO FORM NEW BONE PRODUCING A CURVED ENLARGEMENT. **HISTOLOGICALLY R/O CORTEX**
- 

- INITIALLY LATERAL BONE EXPANSION TURNS TO **THINNING OF CORTEX** & CAN BE DEPRESSED LIKE A TENNIS BALL OR **EGG SHELL CRACKLING TO PALPATION**
  - LATER FRAGMENTED OUTER SHELL DISAPPEAR AND THE CYST LINING IS BENEATH ORAL MUCOSA
  - **FLUCTUATION** CAN BE ELICITED
  - GREATER DISTENSION OF CYSTIC WALL LEADS TO EVENTUAL **DISCHARGE OF FLUID** INTO MOUTH, WHICH IS FREQUENTLY FOLLOWED BY **SECONDARY INFECTION** AND ABSCESS
- 

# SYMPTOMS

- SMALL CYSTS ARE USUALLY **ASYMPTOMATIC** & ONLY IF INFECTED, **DISCHARGE** FROM CYST INTO MOUTH & PRODUCE A **NASTY TASTE**.  
EX: FISSURAL CYST – SALTY TASTE WHEN A SINUS IS PRESENT.
- EDENTULOUS PATIENT – COMPLAINS OF DISPLACEMENT OF DENTURE;  
DENTURE ULCER
- NON VITAL TOOTH ASSOCIATED WITH **PERIAPICAL CYST** – **DISCOLORATION**  
**OR LOOSE TOOTH / TEETH**.
- IF THERE IS A **TOOTH MISSING**- PATHOLOGY CAN BE SUSPECTED.  
EX: **DENTIGEROUS CYST**.

# ERUPTION CYST

ASSOCIATED WITH ERUPTING DECIDUOUS/ PERMANENT TEETH IN CHILDREN.

DILATION OF NORMAL FOLLICULAR SPACE ABOUT CROWN OF ERUPTING

TOOTH CAUSED BY ACCUMULATION OF TISSUE FLUID OR BLOOD.



CLINICALLY LESION APPEARS AS A CIRCUMSCRIBED, FLUCTUANT, OFTEN

TRANSLUCENT SWELLING OF ALVEOLAR RIDGE OVER SITE OF ERUPTING TEETH

# CALCIFYING EPITHELIAL ODONTOGENIC CYST (GORLIN CYST)


DEVELOPMENT ODONTOGENIC CYST, FIRST DESCRIBED BY GORLIN AND ASSOCIATES IN 1962.

INCIDENCE: VERY FEW CASES HAVE BEEN REPORTED

- NO SEX PREDILECTION
- MORE COMMON IN CHILDREN, YOUNG ADULTS.

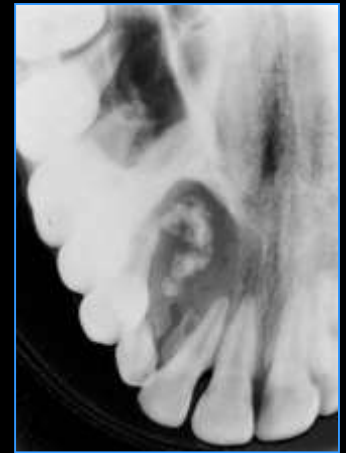
SITE: - COMMON SITE OF OCCURRENCE IS ANT. PART OF MANDIBLE.

# CLINICAL FEATURES (GORLIN CYST)

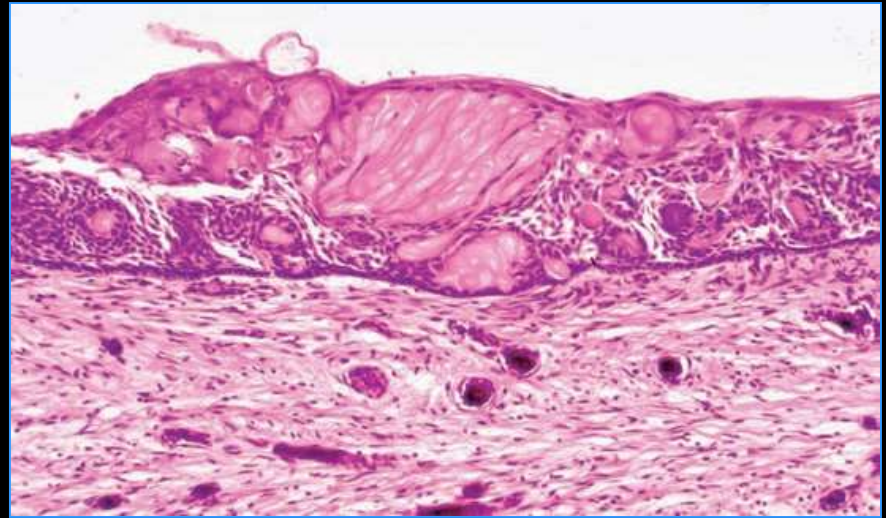
- 📖 MOSTLY SYMPTOMLESS AND DISCOVERED ACCIDENTALLY.
  - 📖 SWELLING IS A FREQUENT COMPLAIN
  - 📖 A PERIPHERAL OR INTRAOSSEOUS LESION MAY BE SEEN.
  - 📖 PRODUCE A HARD BONY EXPANSION.
- 

# RADIOLOGICAL FEATURES (GORLIN CYST)

- PERIPHERY MAY BE WELL DEMARCATED OR IRREGULAR
- CORTICAL PERFORATION MAY BE SEEN
- CALCIFICATION AS IRREGULAR RADIO-OPAQUE SPECKS MAY BE SEEN IN CAVITY.



## PALISADE: FENCE



THE EPITHELIAL LINING PROMINENT BASAL LAYER CONSISTING OF **PALISADED COLUMNAR OR CUBOIDAL CELLS** AND **HYPERCHROMATIC NUCLEI** WHICH ARE POLARISED AWAY FROM BASEMENT MEMBRANE.

**EPITHELIUM 6–8 CELLS THICK** OVER PART OF ITS LENGTH.

BUDDING FROM BASAL LAYER INTO ADJACENT CT & EPITHELIAL PROLIFERATIONS INTO LUMEN ARE FREQUENTLY SEEN.

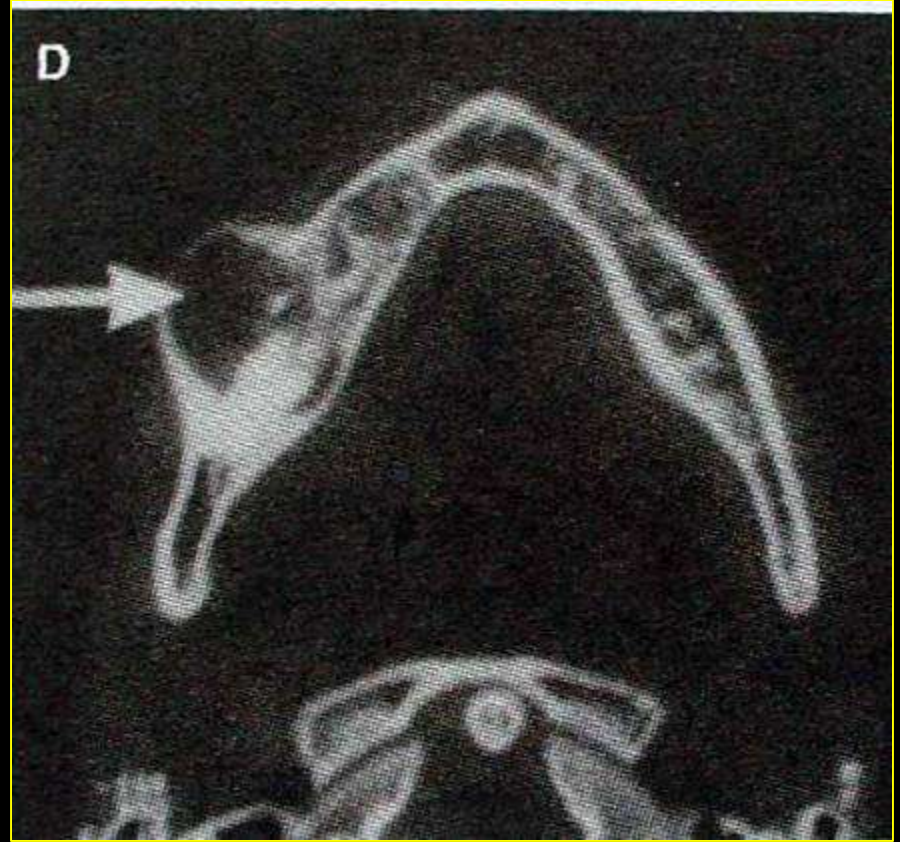
**MELANIN DEPOSITS** SOMETIMES PRESENT IN EPITHELIAL LININGS.

PRESENCE OF **GHOST CELLS**, FOUND IN GROUPS, PARTICULARLY IN THICKER AREAS OF EPITHELIAL LINING.

SPINOUS CELLS WIDELY SEPARATED BY INTERCELLULAR OEDEMA & EPITHELIUM AROUND GHOST CELLS IS OFTEN CONVOLUTED

GHOST CELLS ARE ENLARGED, BALLOONED, OVOID OR ELONGATED ELLIPTOID EPITHELIAL CELLS. EOSINOPHILIC & CELL OUTLINES ARE USUALLY WELL-DEFINED. MAY CONTAIN NUCLEAR REMNANTS BUT IN VARIOUS STAGES OF DEGENERATION & ONLY A FAINT OUTLINE OF ORIGINAL NUCLEUS.

**GHOST CELLS REPRESENT AN ABNORMAL TYPE OF KERATINISATION AND HAVE AN AFFINITY FOR CALCIFICATION.**



# GINGIVAL (ALVEOLAR) CYST OF THE NEWBORN :

SMALL, SUPERFICIAL, KERATIN-FILLED CYSTS

FOUND ON ALVEOLAR MUCOSA OF INFANTS.

ARISE FROM REMNANTS OF DENTAL LAMINA.



COMMON LESIONS, HAVING BEEN REPORTED IN 50% ALL NEWBORNS.

DISAPPEAR SPONTANEOUSLY BY RUPTURE INTO ORAL CAVITY, INCLUSION

CYSTS (E.G. EPSTEIN'S PEARLS AND BOHN'S NODULES) ARE FOUND IN MIDLINE

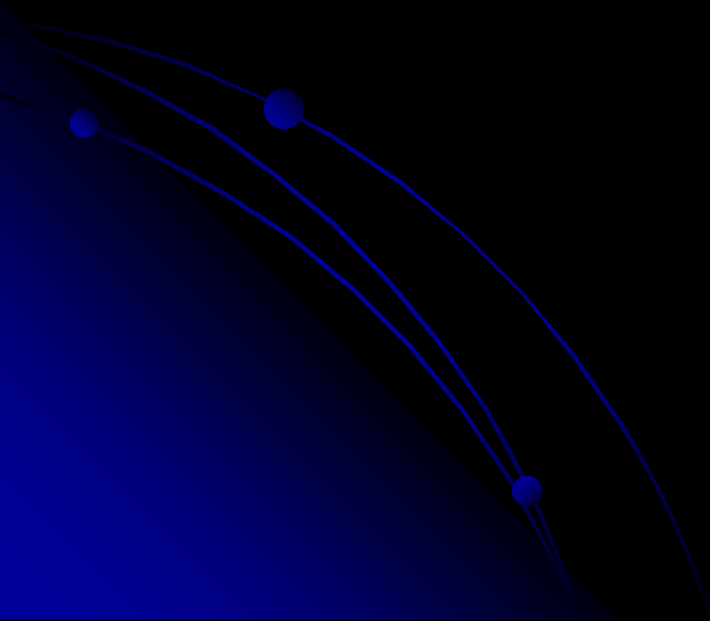
OF PALATE OR Laterally ON HARD & SOFT PALATE.

## CLINICAL FEATURES :

APPEAR AS SMALL, USUALLY MULTIPLE **WHITISH PAPULES** ON MUCOSA  
OVERLYING ALVEOLAR PROCESSES OF NEONATES.

INDIVIDUAL CYSTS ARE **2 TO 3 MM** IN DIAMETER.

**MAXILLARY ALVEOLUS** IS MORE COMMONLY INVOLVED THAN MANDIBULAR.





## HISTOPATHOLOGIC FEATURES :

SHOWS A THIN, FLATTENED EPITHELIAL LINING WITH A PARAKERATOTIC SURFACE.

LUMEN CONTAINS KERATINACEOUS DEBRIS.

## TREATMENT AND PROGNOSIS :

NO TREATMENT IS INDICATED BECAUSE LESIONS SPONTANEOUSLY INVOLUTE AS A RESULT OF RUPTURE OF CYSTS & RESULTANT CONTACT WITH ORAL MUCOSAL SURFACE.

LESIONS ARE RARELY SEEN AFTER 3 MONTHS OF AGE.



## GINGIVAL CYST OF THE ADULT :

- UNCOMMON LESION.

SOFT TISSUE COUNTERPART OF LATERAL PERIODONTAL CYST.

DIAGNOSIS RESTRICTED TO LESIONS WITH SAME HISTOPATHOLOGIC FEATURES AS THOSE OF THE LATERAL PERIODONTAL CYST.

# CLINICAL FEATURES :

MANDIBULAR CANINE & PREMOLAR AREA (60%-75%).

FIFTH AND SIXTH DECADES OF LIFE.

LOCATED ON FACIAL GINGIVA OR ALVEOLAR MUCOSA.

MX GINGIVAL CYSTS ARE USUALLY FOUND IN THE INCISOR, CANINE AND PREMOLAR AREAS.

PAINLESS, DOMELIKE SWELLINGS, USUALLY LESS THAN 0.5 CM IN DIAMETER, ALTHOUGH RARELY SOMEWHAT LARGER. OFTEN BLUISH OR BLUISH-GRAY.

MAY CAUSE A SUPERFICIAL "CUPPING OUT" OF THE ALVEOLAR BONE, WHICH IS USUALLY NOT DETECTED ON A RADIOGRAPH BUT IS APPARENT WHEN CYST IS EXCISED.

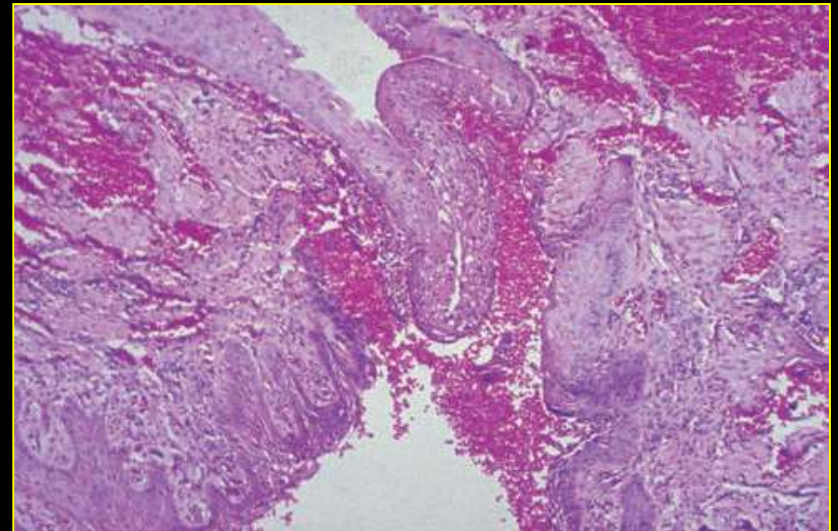
**HISTOPATHOLOGIC FEATURES:** THIN EPITHELIUM, CLOSELY RESEMBLING REE, WITH 1–3 LAYERS OF FLAT TO CUBOIDAL CELLS CONTAINING DARKLY STAINING NUCLEI. EPITHELIAL LINING MAY BE THICKER, STRATIFIED, SQUAMOUS NATURE WITHOUT RETE RIDGES.

PYKNOTIC NUCLEI & PERINUCLEAR CYTOPLASMIC VACUOLATION. LOCALISED AREAS OF THICKER EPITHELIUM MAY OCCUR.

**TREATMENT AND PROGNOSIS :**

SURGICAL EXCISION.

PROGNOSIS IS EXCELLENT.



# LATERAL PERIODONTAL (BOTRYOID ODONTOGENIC) CYST

DEVELOPMENTAL ODONTOGENIC CYST,

OCCURS ALONG LATERAL ROOT SURFACE OF A TOOTH.

BELIEVED TO ARISE FROM RESTS OF DENTAL LAMINA.

LESS THAN 2% OF ALL EPITHELIUM-LINED JAW CYSTS.

## CLINICAL AND RADIOGRAPHIC FEATURES :

OFTEN ASYMPTOMATIC, DETECTED DURING RADIOGRAPHIC EXAMINATION.

5<sup>TH</sup>-7<sup>TH</sup> DECADES OF LIFE; RARELY IN YOUNGER THAN AGE 30.

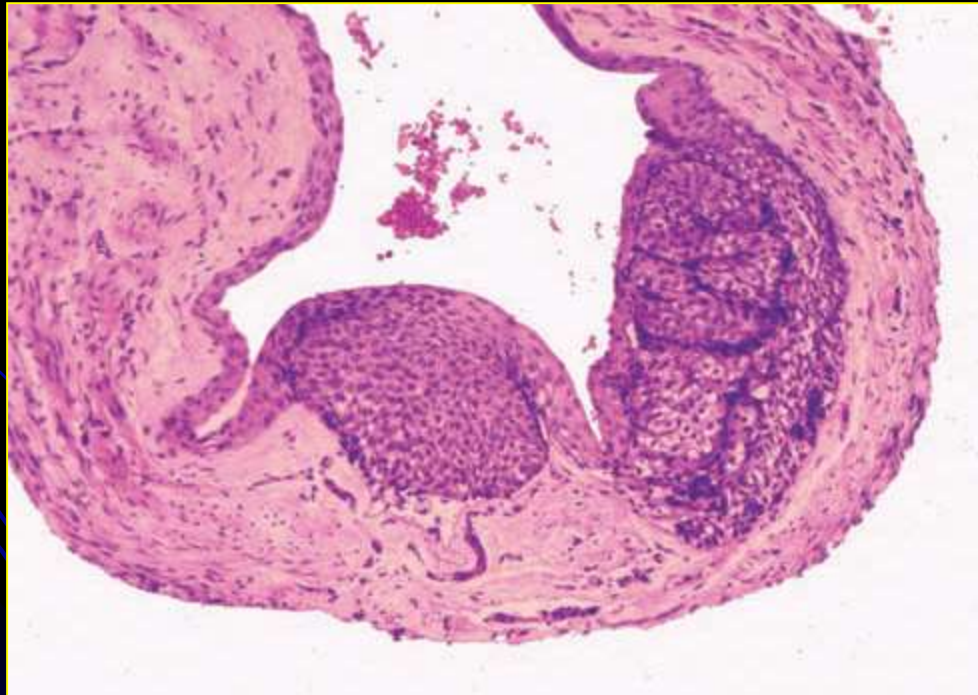
75%-80%: OCCUR IN Mn PREMOLAR-CANINE LATERAL INCISOR AREA.



RADIOGRAPHICALLY, WELL-CIRCUMSCRIBED RADIOLUCENT AREA  
LOCATED LATERALLY TO ROOTS OF VITAL TEETH.

## HISTOPATHOLOGIC FEATURES :

THIN, NONINFLAMED, FIBROUS WALL WITH AN EPITHELIAL LINING THAT IS ONLY 1 TO 3 CELLS THICK IN MOST AREAS. CONSISTS OF FLATTENED SQUAMOUS CELLS. FOCI OF GLYCOGEN RICH CLEAR CELLS MAY BE INTERSPERSED AMONG. SOME CYSTS SHOW FOCAL NODULAR THICKENINGS OF THE LINING EPITHELIUM, WHICH ARE COMPOSED CHIEFLY OF CLEAR CELLS.

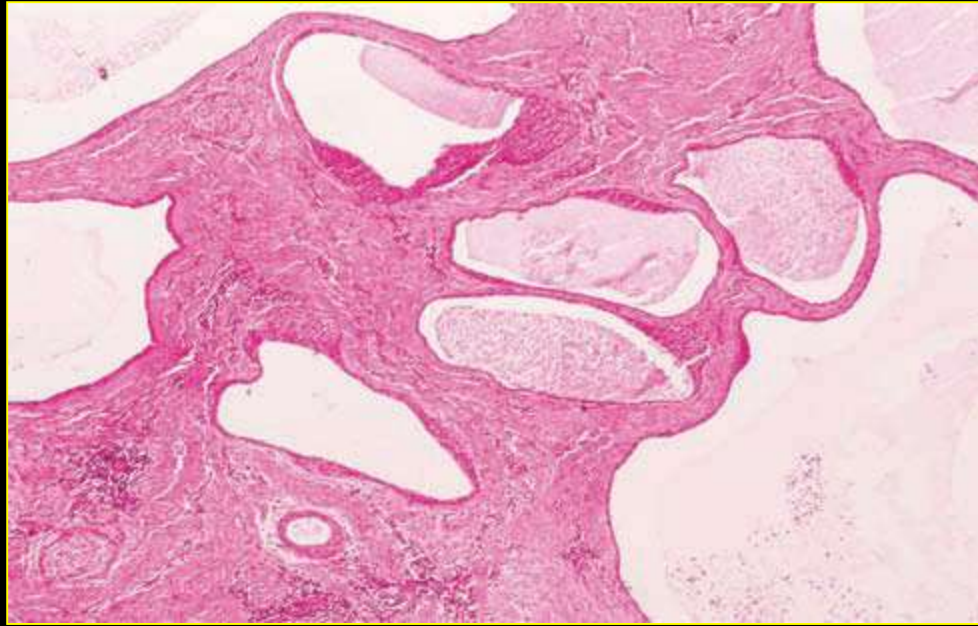


OCCASIONALLY, **POLYCYSTIC APPEARANCE**; **BOTRYOID ODONTOGENIC CYSTS**. GROSSLY AND MICROSCOPICALLY, **GRAPELIKE CLUSTER** OF SMALL INDIVIDUAL CYSTS.

CONSIDERED A VARIANT OF LATERAL PERIODONTAL CYST, POSSIBLY **RESULT OF CYSTIC DEGENERATION** AND SUBSEQUENT FUSION OF ADJACENT FOCI OF DENTAL LAMINA RESTS.

**DIFF. DIAGNOSIS** RADIOGRAPHIC FEATURES NOT DIAGNOSTIC; AN **OKC** THAT DEVELOPS BETWEEN THE ROOTS OF ADJACENT TEETH MAY SHOW IDENTICAL RADIOGRAPHIC FINDINGS. AN INFLAMMATORY **RADICULAR CYST** THAT OCCURS Laterally TO A ROOT IN RELATION TO AN ACCESSORY FORAMEN MAY SIMULATE A LATERAL PERIODONTAL CYST RADIOGRAPHICALLY.





## TREATMENT AND PROGNOSIS :

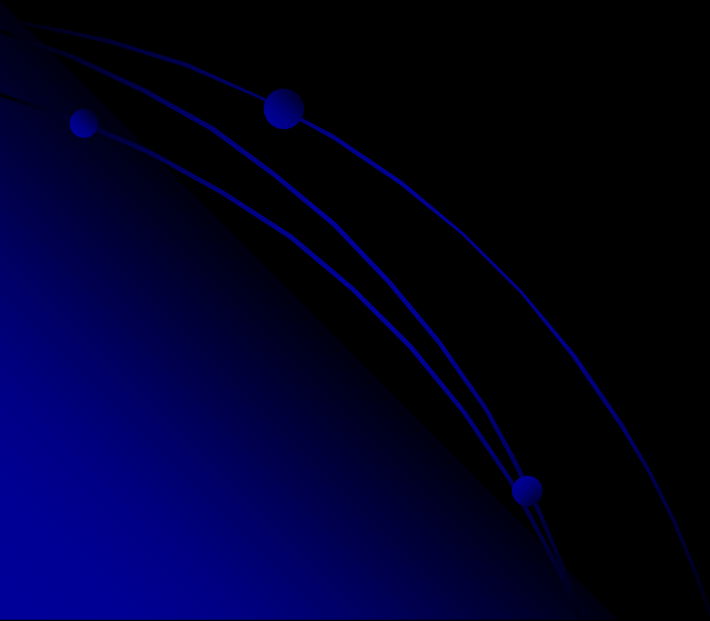
CONSERVATIVE ENUCLEATION WITHOUT DAMAGE TO THE ADJACENT TEETH. RECURRENCE REPORTED WITH BOTRYOID VARIANT, BECAUSE OF ITS POLYCYSTIC NATURE.

CASE OF SCC, APPARENTLY ORIGINATED IN A LATERAL PERIODONTAL CYST HAS BEEN REPORTED.

# GLANDULAR ODONTOGENIC CYST (SIALO-ODONTOGENIC CYST)

RARE AND CAN SHOW AGGRESSIVE BEHAVIOR.

ODONTOGENIC ORIGIN, BUT ALSO SHOWS GLANDULAR OR SALIVARY  
FEATURES INDICATING PLURIPOTENTIALITY OF ODONTOGENIC EPITHELIUM.



# CLINICAL AND RADIOGRAPHIC FEATURES

MIDDLE-AGED ADULTS WITH MEAN AGE OF 49 YEARS. NEARLY 85% CASES IN MANDIBLE. STRONG PREDILECTION FOR ANTERIOR REGION OF JAWS, MANDIBULAR LESIONS MAY CROSS MIDLINE.

SMALL CYSTS MAY BE ASYMPTOMATIC; HOWEVER, LARGE CYSTS PRODUCE CLINICAL EXPANSION, ASSOCIATED WITH PAIN OR PARESTHESIA.

RADIOGRAPHICALLY, UNI OR MULTILOCULAR RADIOLUCENCY. MARGINS OF RADIOLUCENCY USUALLY WELL DEFINED WITH SCLEROTIC RIM.

# HISTOPATHOLOGIC FEATURES :

LINED BY SQUAMOUS EPITHELIUM OF VARYING THICKNESS.

INTERFACE BETWEEN EPITHELIUM & FIBROUS CONNECTIVE TISSUE WALL IS

GENERALLY FLAT.

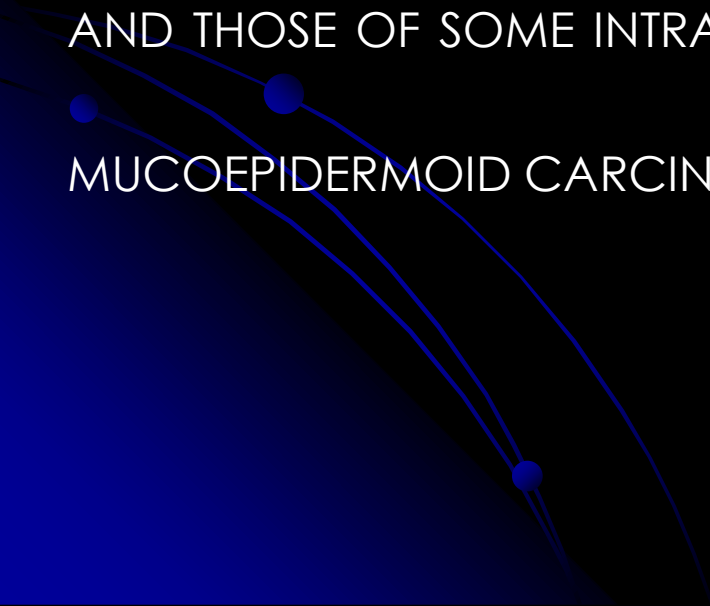
CYST WALL DEVOID OF ANY INFLAMMATORY CELL INFILTRATE.

EPITHELIAL CELLS, CUBOIDAL TO COLUMNAR & HAVE AN IRREGULAR AND

SOMETIMES PAPILLARY SURFACE. OCCASIONALLY, CILIA MAY BE NOTED.


POOLS OF MUCI-CARMINOPHILIC MATERIAL ARE OFTEN PRESENT WITHIN THE EPITHELIUM. CUBOIDAL CELLS USUALLY LINE THESE POOLS. MUCOUS CELLS MAY OR MAY NOT BE PRESENT WITHIN THE EPITHELIUM.

HISTOPATHOLOGIC OVERLAP BETWEEN GLANDULAR ODONTOGENIC CYST AND THOSE OF SOME INTRAOSSEOUS, LOW-GRADE, PREDOMINANTLY CYSTIC MUCOEPIDERMOID CARCINOMAS.



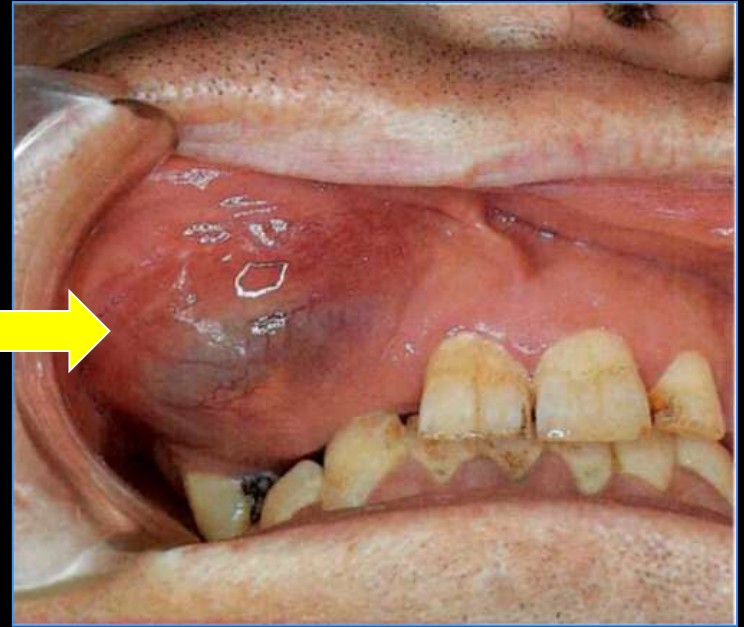
# TREATMENT AND PROGNOSIS :

ENUCLEATION OR CURETTAGE. SHOWS A PROPENSITY FOR RECURRENCE, WHICH IS OBSERVED IN 30% CASES. BECAUSE OF ITS POTENTIALLY AGGRESSIVE NATURE AND TENDENCY FOR RECURRENCE, SOME AUTHORS HAVE ADVOCATED EN BLOC RESECTION FOR MANY OF THESE LESIONS.



# RADICULAR CYST

- MOST COMMON, FREQUENCY 68%
- ASSOCIATED WITH NONVITAL TEETH
- AGE-3<sup>RD</sup> TO 4<sup>TH</sup> DECADE
- MALES MORE THAN FEMALES (60%)
- SITE- MAXILLARY ANTERIOR TEETH MORE COMMON FOLLOWED BY MANDIBULAR POSTERIORES



# CLINICAL FEATURES

M/C CAUSE OF **SWELLING OF JAWS** & SLOWLY ENLARGING SWELLINGS.

AT FIRST ENLARGEMENT IS **BONY HARD** BUT AS CYST INCREASES IN SIZE, THE COVERING BONE BECOMES VERY THIN & SWELLING THEN EXHIBITS '**SPRINGINESS**' OR '**EGG SHELL CRACKLING**'.

ONLY WHEN THE CYST HAS COMPLETELY ERODED THE BONE WILL THE LESION BE **FLUCTUANT**.

IN **MAXILLA**, BUCCAL OR PALATAL ENLARGEMENT, IN **MANDIBLE** LABIAL OR BUCCAL & ONLY RARELY LINGUAL.

**PAIN AND INFECTION.**

*SINE QUA NON FOR DIAGNOSIS:* PRESENCE OF TOOTH WITH A **NON-VITAL PULP**. OCCASIONALLY, A **SINUS TRACT** MAY BE SEEN.

## RADIOLOGICAL FEATURES-

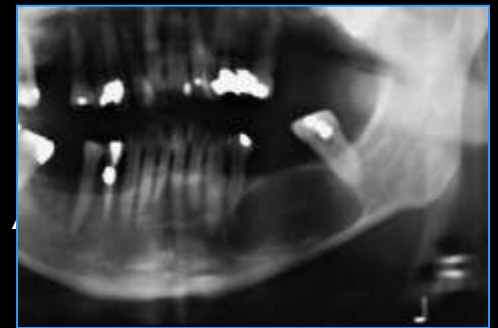
WELL CIRCUMSCRIBED UNILOCULAR **RADIOLUCENCY** AT **APEX/LATERAL ASPECT OF ROOT**



D/D-PERIAPICAL GRANULOMA

BIOCHEMICAL PROCEDURES TO DIFFERENTIATE BETWEEN PERIAPICAL CYSTS & GRANULOMAS *ASPIRATES OF ROOT CANAL FLUIDS* WITH CYSTS SHOWS **INTENSE ALBUMIN PATTERN** & DEFINITE PATTERNS IN GLOBULIN ZONES, ON **POLYACRYLAMIDE-GEL ELECTROPHORESIS**.

FLUIDS IN PERIAPICAL GRANULOMAS, SHOWS ONLY FAINT TO MODERATE PATTERN IN ALBUMIN ZONE.



# PATHOGENESIS

THREE PHASES: PHASE OF INITIATION, PHASE OF CYST FORMATION & PHASE OF ENLARGEMENT.

## THE PHASE OF INITIATION

EPITHELIAL LININGS DERIVED FROM EPITHELIAL CELL RESTS OF MALASSEZ IN PDL.  
ENDOTOXINS & INFLAMMATORY CYTOKINES MAIN STIMULATORS OF EPITHELIAL PROLIFERATION

POSITIVE STAINING FOR IL-1A, IL-1B & IL-6 IN EPITHELIAL LINING & VASCULAR ENDOTHELIAL CELLS. TUMOUR NECROSIS FACTOR (TNF) & IL-8 OCCASIONALLY SEEN.

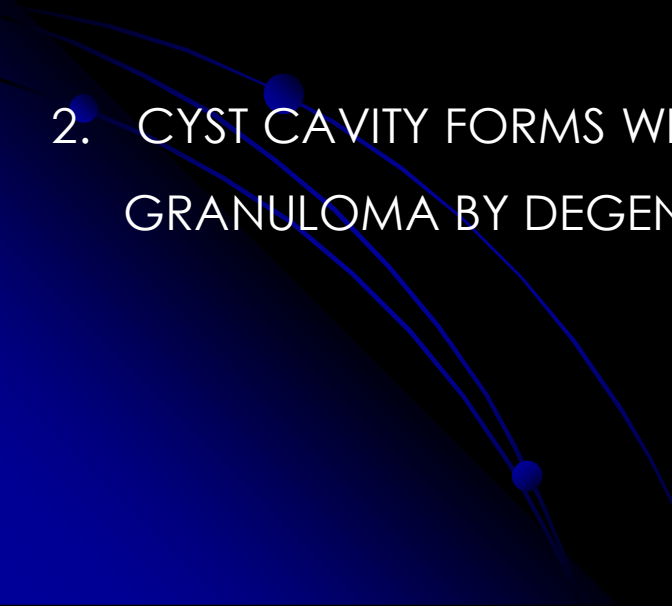
CELL ADHESION MOLECULES ICAM-1 & ELAM-1 ALSO IDENTIFIED

HIGH CARBON DIOXIDE TENSION RESULTS IN LOCAL REDUCTION IN PH & CAUSES PROLIFERATION OF REST CELLS OF MALASSEZ.

# PHASE OF CYST FORMATION

PROCESS BY WHICH CAVITY COMES TO BE LINED BY PROLIFERATING ODONTOGENIC EPITHELIUM.

TWO HYPOTHESIS.

1. EPITHELIUM PROLIFERATES & COVERS BARE CT SURFACE OF AN ABSCESS CAVITY OR A CAVITY WHICH MAY OCCUR AS A RESULT OF CT BREAKDOWN BY PROTEOLYTIC ENZYME ACTIVITY.
  2. CYST CAVITY FORMS WITHIN PROLIFERATING EPITHELIAL MASS IN AN APICAL GRANULOMA BY DEGENERATION & DEATH OF CELLS IN CENTRE.
- 

PROLIFERATING EPITHELIAL MASSES SHOW CONSIDERABLE **INTERCELLULAR OEDEMA**, COALESCE TO FORM **MICROCYSTS** CONTAINING EPITHELIAL & INFLAMMATORY CELLS.

HIGH LEVELS OF **ACID PHOSPHATASE** ACTIVITY IN CENTRAL CELLS.

**WEAK PROTEOLYTIC ACTIVITY** PRESENT CENTRALLY WITHIN PROLIFERATING EPITHELIUM, SUGGESTING AUTOLYSIS.

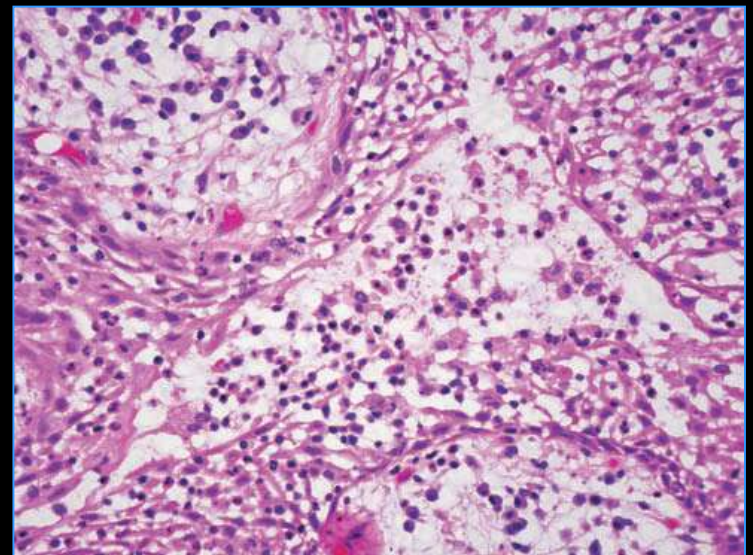
ULTRASTRUCTURALLY, PRESENCE OF **FEWER DESMOSOMES** THAN IN NORMAL SQUAMOUS EPITHELIUM

**DEGENERATION OF CELLS IN CENTRE OF MASS.**

**INTENSE INFILTRATION OF LYMPHOCYTES & PMN.**

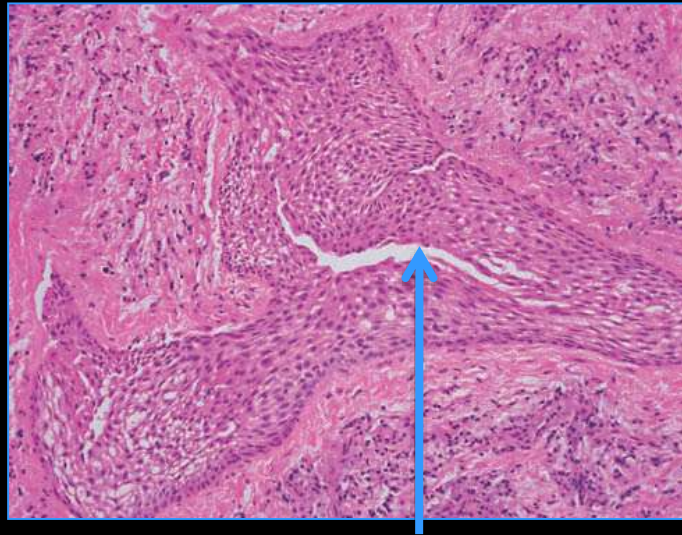
**ACCUMULATIONS OF INTERCELLULAR FLUID**

**COALESCE TO FORM A MICROCYST**



IT IS NOT LACK OF BLOOD SUPPLY THAT ACCOUNTS FOR DEATH OF CENTRAL EPITHELIAL CELLS IN AN APICAL LESION, BUT ARE MEDIATED BY IMMUNOLOGICAL REACTIONS.

MMP-13 MAY BE INVOLVED IN DEGRADATION OF MATRIX & MAY HAVE ROLE IN PATHOGENESIS OF CYSTS BY FACILITATING EPITHELIAL CELL PROLIFERATION & INVASION OF GRANULATION TISSUE.



SHEET OF EPITHELIAL CELLS IN PERIAPICAL LESION.  
DISTINCT CLEFT HAS FORMED & MAY INITIATE A RADICULAR CYST

# GROWTH AND ENLARGEMENT OF THE RADICULAR CYST

OSMOSIS MAKES A CONTRIBUTION TO INCREASE IN SIZE OF CYSTS.

MEAN OSMOLALITY OF CYSTIC FLUID  $290 \pm 14.93 \text{ MOSM}$ , GREATER THAN MEAN SERUM OSMOLALITY OF  $279 \pm 4.68 \text{ MOSM}$ .

LYTIC PRODUCTS OF EPITHELIAL & INFLAMMATORY CELLS IN CYST CAVITY PROVIDES GREATER NUMBERS OF SMALLER MOLECULES WHICH RAISES OSMOTIC PRESSURE OF CYST FLUID.

PERMEABILITY IN MOST CYSTS CLOSE TO MOLECULAR SIZE OF ALBUMIN (MOLECULAR WT 69 KDA) & PARTICLES OF LARGER SIZE FINDS DIFFICULTY IN DIFFUSING ACROSS CYST LINING.

ELECTROPHORETIC STUDIES HAVE DEMONSTRATED THAT RADICULAR CYST FLUIDS CONTAINS FEWER  $\Gamma$ -GLOBULIN.

SMALL MOLECULAR SIZED ALBUMIN & B1-GLOBULIN PRESENT IN QUANTITIES COMPARABLE WITH SERUM, B2-GLOBULIN USUALLY ABSENT

BONE RESORPTION IS A COMPLEX PROCESS INVOLVING HIGHLY COORDINATED INTERACTIONS BETWEEN OSTEOLASTS & OSTEOCLASTS THAT ARE MODULATED BY RANKL/RANK SYSTEM.

COLLAGENASES CONTRIBUTE TO BREAKDOWN OF CT & HAS COLLAGENOLYTIC ACTIVITY



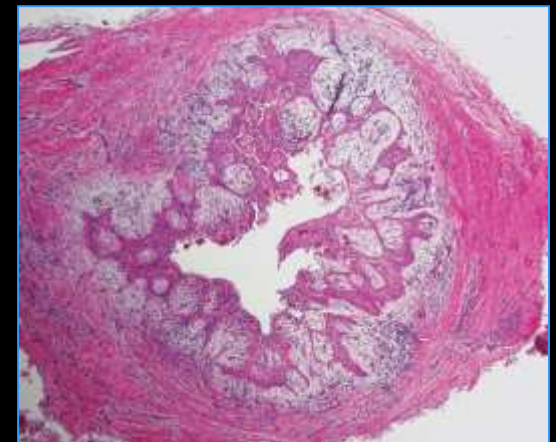
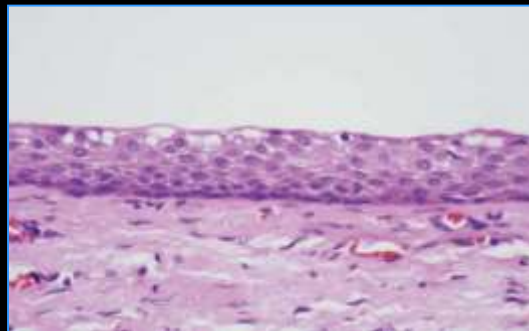
FLUID CONTENTS USUALLY BROWN FROM BREAKDOWN OF BLOOD, CHOLESTEROL CRYSTALS IMPART A SHIMMERING GOLD OR STRAW COLOUR.

LINED BY STRATIFIED SQUAMOUS EPITHELIUM. 6-20 CELL LAYERS THICK

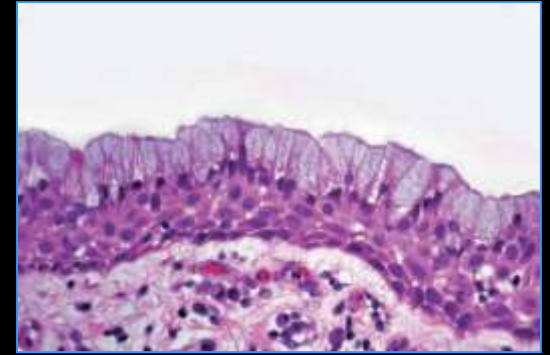
NATURE OF LINING DEPEND ON AGE OR STAGE OF DEVELOPMENT OF CYST, OR ON INTENSITY OF THE INFLAMMATION.

IN EARLY CYSTS, EPITHELIAL LINING MAY BE PROLIFERATIVE BUT AS CYST ENLARGES LINING BECOMES QUIESCENT.

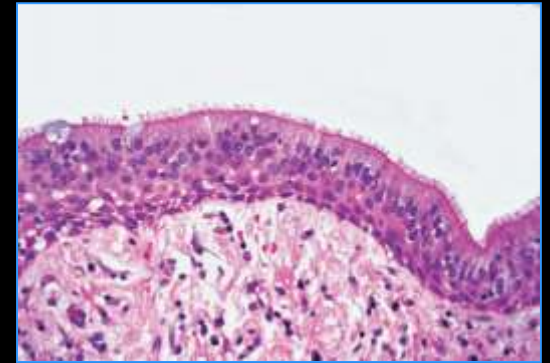
KERATIN FORMATION SEEN IN ABOUT 2% OF RADICULAR CYSTS. ORTHOKERATINISATION MOST COMMON, BUT PARAKERATINISATION MAY BE SEEN



**METAPLASTIC CHANGES**, IN FORM OF MUCOUS CELLS OR CILIATED CELLS FREQUENTLY FOUND IN EPITHELIAL LININGS OF RADICULAR CYSTS



**RUSHTON'S HYALINE BODIES** FOUND IN EPITHELIAL LININGS (10%). MEASURE UP TO 0.1MM ARE LINEAR, STRAIGHT OR CURVED OR OF HAIRPIN SHAPE & CONCENTRICALLY LAMINATED.



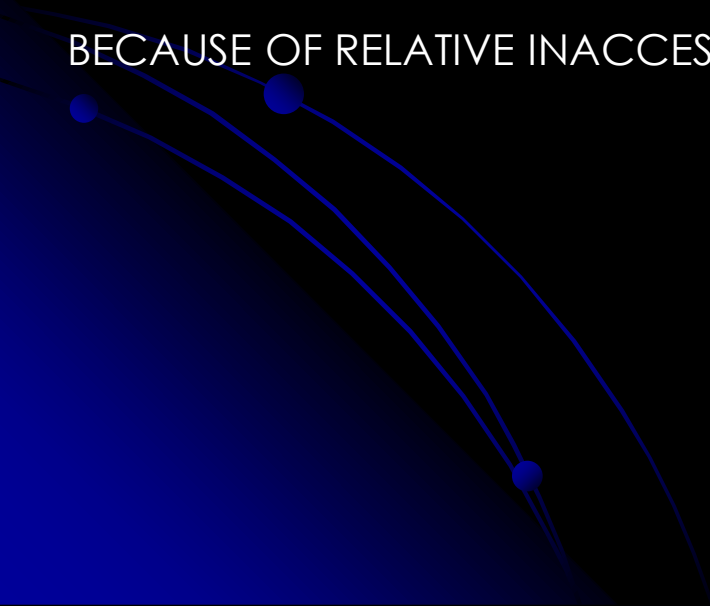
BRITTLE AND FREQUENTLY FRACTURE.

CONTAINS CYSTINE & OF ODONTOGENIC EPITHELIAL ORIGIN & PROBABLY FORM OF KERATIN.

1. HYALINE BODIES ARE A **SECRETORY PRODUCT** OF ODONTOGENIC EPITHELIAL CELLS FORMED IN SAME WAY AS SECONDARY ENAMEL CUTICLE
2. HAEMATOGENOUS ORIGIN & ARE DERIVED FROM THROMBI IN VENULES OF CT THAT HAD BECOME VARICOSE & STRANGLLED BY EPITHELIAL CUFFS

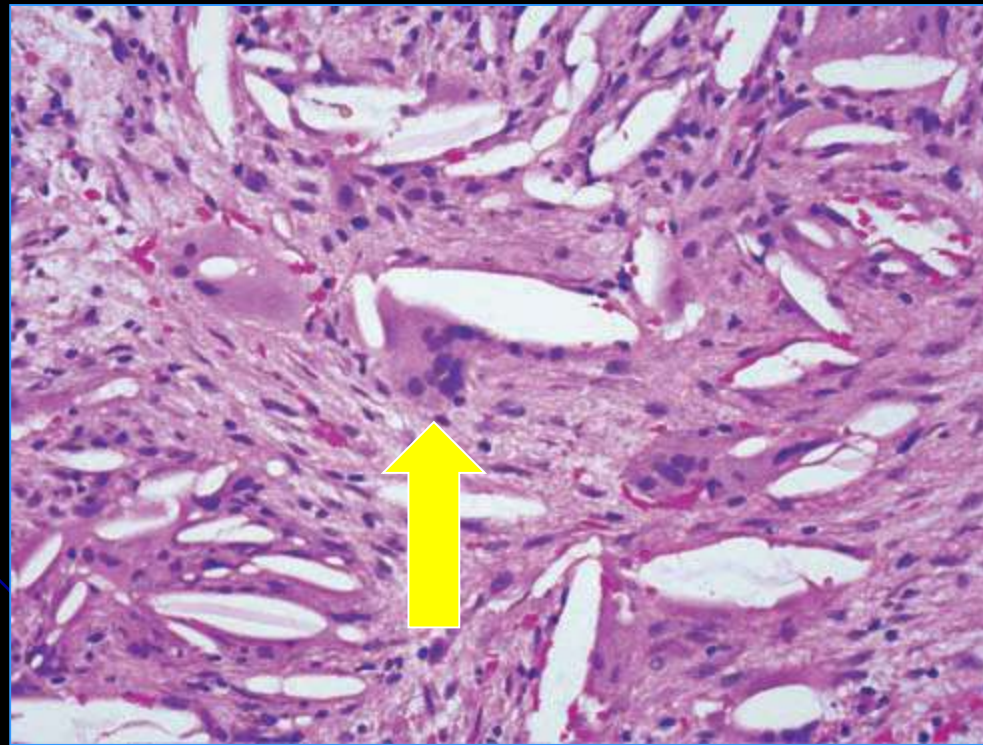
MAIN SOURCE OF **CHOLESTEROL** IS FROM **DISINTEGRATING RED BLOOD CELLS** IN A FORM THAT READILY CRYSTALLISES IN TISSUES.

CHOLESTEROL FROM THIS SOURCE & ALSO FROM SERUM ACCUMULATES IN TISSUES BECAUSE OF RELATIVE INACCESSIBILITY OF NORMAL LYMPHATIC DRAINAGE.

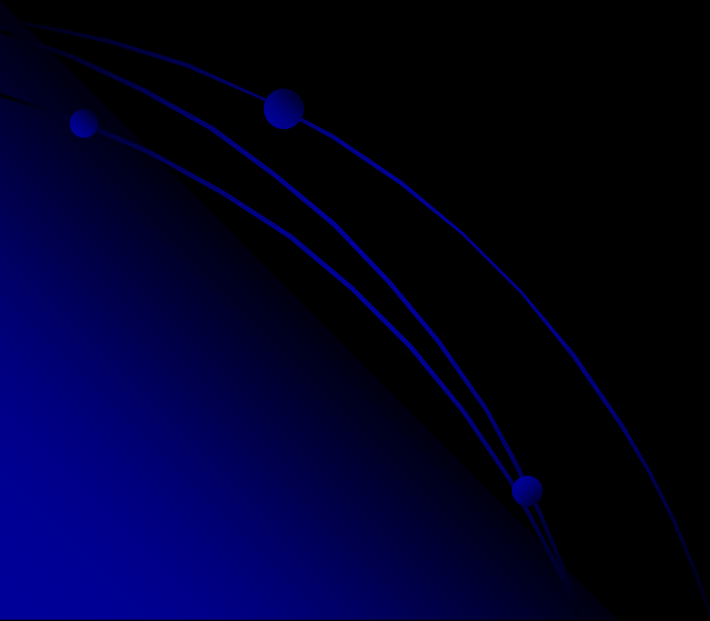


ONCE CHOLESTEROL CRYSTALS HAVE BEEN DEPOSITED IN FIBROUS CAPSULES OF CYSTS, THEY BEHAVE AS FOREIGN BODIES & EXCITE A FOREIGN BODY GIANT CELL REACTION.

IN HISTOLOGICAL SECTIONS, CHOLESTEROL CRYSTALS ARE DISSOLVED OUT & CLEFTS ARE SEEN SURROUNDED BY DENSE AGGREGATIONS OF MULTINUCLEATE GIANT CELLS

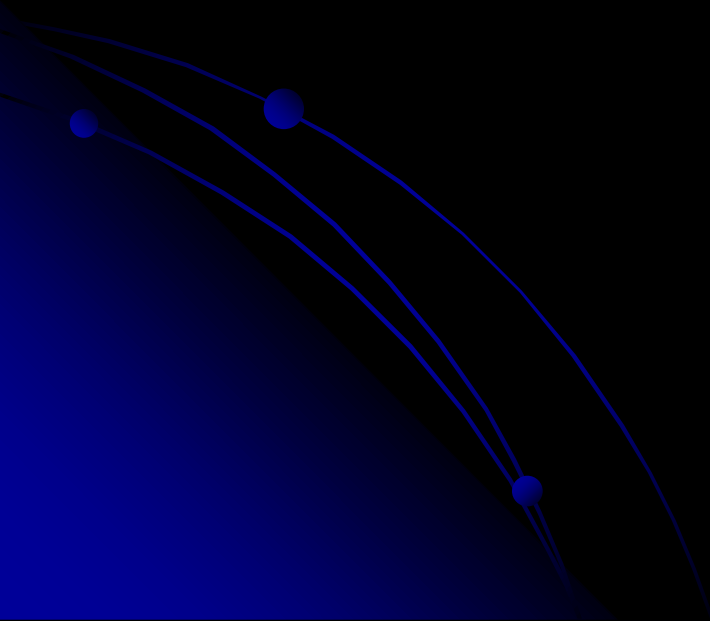


# TRUE RADICULAR CYST & PERI-APICAL POCKET CYST



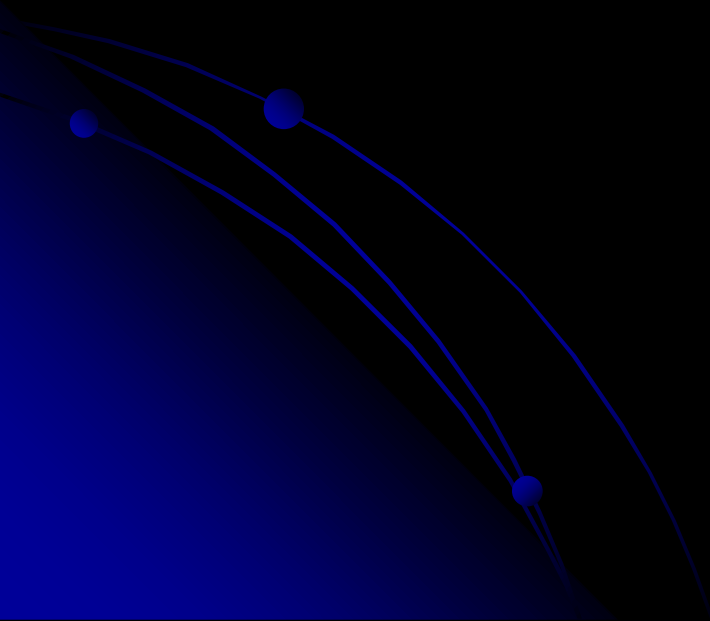
# TREATMENT (RADICULAR CYST)

- ENUCLEATION
- IF CYST IS ASSOCIATED WITH AN ODONTOGENIC TUMOR A WIDE EXCISION IS DONE



# BONE CYSTS

- SOLITARY BONE CYST
- LINGUAL MANDIBULAR BONE DEFECT
- ANEURYSMAL BONE CYST



# SOLITARY BONE CYST

## OTHER SYNONYMS:

- TRAUMATIC BONE CYST, SIMPLE, HAEMORRHAGIC BONE CYST

## PATHOGENESIS:

- TRAUMA
- TRAUMA => INTRAMEDULLARY HAEMORRHAGE => FAILURE OF EARLY ORGANISATION OF BLOOD CLOT => TRAUMATIC BONE CYST.

## CLINICAL FEATURES:

- **FREQUENCY:** 1 % OF JAW CYSTS
- **AGE :** 7-75 YEARS

MOSTLY SEEN IN SECOND DECADE

- **SEX:** MALE :FEMALE RATIO 1.6:1

- **SITE:** MANDIBLE > MAXILLA

MANDIBLE- BODY AND SYMPHYSEAL REGION.

MAXILLA- ANTERIOR REGION

## CLINICAL PRESENTATION:

- HISTORY OF TRAUMA
- PAIN, SWELLING
- PARAESTHESIA

## RADIOLOGICAL FEATURES:

- RADIOLUCENT AREA WITH AN IRREGULAR BUT DEFINITE EDGE AND SLIGHT CORTICATION.
- SCALLOPING
- LAMINA DURA MAY OR MAY NOT BE LOST
- ROOT RESORPTION

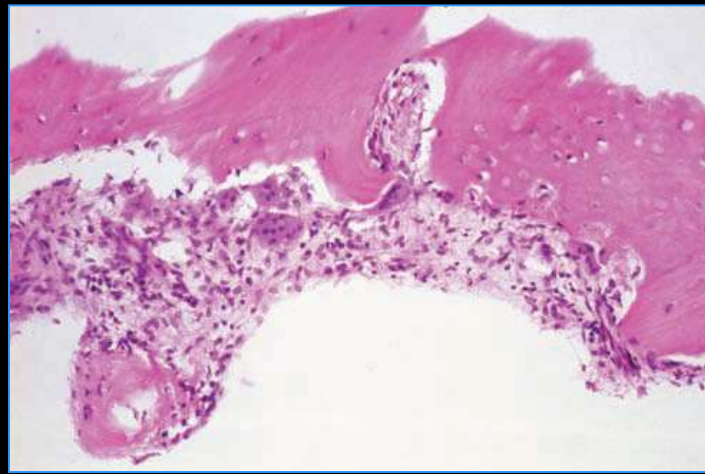


## PATHOLOGY:

- CYSTIC CAVITY IS EMPTY
- BLOOD, SEROSANGUINOUS FLUID OR SEROUS FLUID MAY BE PRESENT.

## ULTRA STRUCTURAL STUDY:

- ABSENCE OF EPITHELIAL LINING.
- 

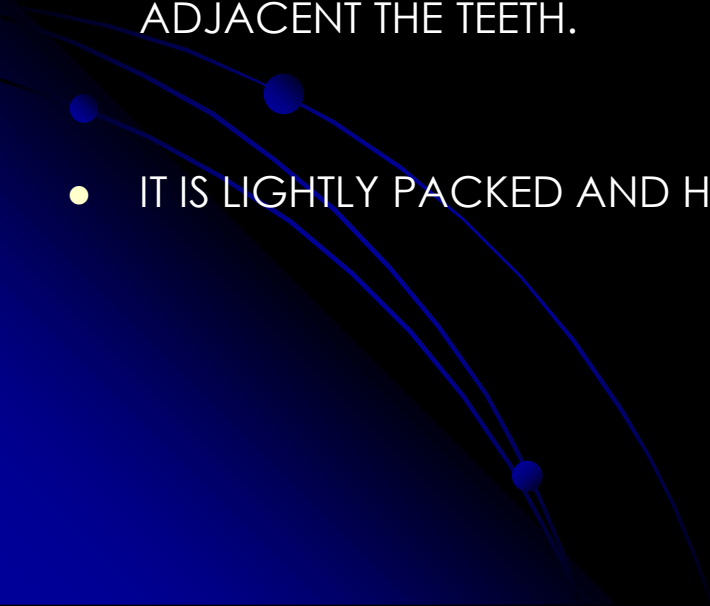


## HISTOPATHOLOGICAL FEATURES:

- LOOSE VASCULAR FIBROUS TISSUE MEMBRANE OF VARIOUS THICKNESS WITH NO EPITHELIAL LINING.
- HEAMORRHAGE OR HAEMOSIDERIN PIGMENT.
- MULTINUCLEATE CELLS
- MYXOID DEGENERATION
- ASSOCIATED WITH FLORID-OSSEOUS DYSPLASIA OR CEMENTO-OSSEOD DYSPLASIA

# TREATMENT:

## ADULTS:

- SUITABLE FLAP SHOULD BE RAISED.
  - OUTER BONY WALL IS OUTLINED AND SENT FOR HISTOPATHOLOGICAL EXAMINATION.
  - THE REST OF THE INSIDE OF CAVITY SHOULD NOT BE SCRAPED TO AVOID DAMAGE TO THE INFERIOR DENTAL NERVE OR ANY TINY NEUROVASCULAR BUNDLES TO ADJACENT THE TEETH.
  - IT IS LIGHTLY PACKED AND HEAMOSTATIS IS ACHIEVED AND THE WOUND IS CLOSED.
- 

## CHILDREN:

- THE CAVITY MAY FILL IN COMPLETELY OR THERE MAY BE A RESIDUAL RADIOGRAPHIC DEFECT OR THE CYST MAY RECUR.
- ONCE THE DIAGNOSIS IS ESTABLISHED BEYOND DOUBT BY THE OPERATION THE LESION CAN BE KEPT UNDER OBSERVATION .
- AFTER SOME YEARS IT MAY REGRESS AS THE CHILD BECOMES ADULT. IF IT DOESN'T REGRESS IT CAN BE REOPENED AND PACKED.
- A LAYER OF SURGICEL SHOULD BE PLACED TO LINE THE WALL AND PROTECT IT FROM THE PACK.
- THE LARGE MULTILOCULAR BONE CYST SHOULD BE REMOVED PIECEMEAL TO SAUCERIZE THE AFFECTED AREA.

# ANEURYSMAL BONE CYST

THE TERM WAS SUGGESTED BY JAFFE AND LICHTENSTEIN IN 1942 TO DESCRIBE CHARACTERISTIC BLOW OUT OF THE BONE SEEN IN RADIOGRAPH.

## CLINICAL FEATURES:

- **FREQUENCY:** 0.5%
- **AGE:** PEAK INCIDENCE IN SECOND DECADE
- **SEX:** FEMALE > MALE
- **SITE:** MANDIBLE > MAXILLA
- MOSTLY SEEN IN MOLAR REGION OF MAXILLA AND MANDIBLE . MANDIBULAR CASES EXTENDING POSTERIORLY TO INVOLVE THE ANGLE AND ASCENDING RAMUS.

## CLINICAL PRESENTATION:

- FIRM PAINFUL SWELLING
- RATE OF ENLARGEMENT IS RELATIVELY RAPID.
- DISPLACEMENT OF TEETH WHICH ARE VITAL
- EGGSHELL CRACKLING
- BRUITS ARE NOT HEARD.
- SOMETIMES TRISMUS.



## RADIOLOGICAL FEATURES:

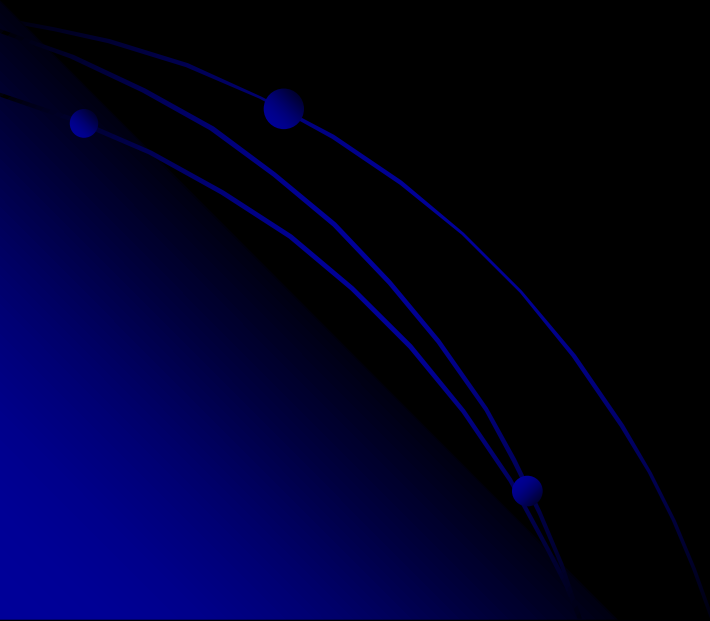
USUALLY UNILOCCULAR, SOMETIMES MULTILOCULAR WITH HONEYCOMB APPEARANCE.

IT PRODUCES AN OVOID OR FUSIFORM EXPANSION OF THE BONE AND MAY BALLOON THE CORTEX.



## PATHOGENESIS:

- VASCULAR DISTURBANCE IN THE FORM OF SUDDEN VENOUS OCCLUSION OR THE DEVELOPMENT OF ARTERIOVENOUS SHUNT.
- HISTORY OF TRAUMA
- RELATIONSHIP WITH GIANT CELL LESION

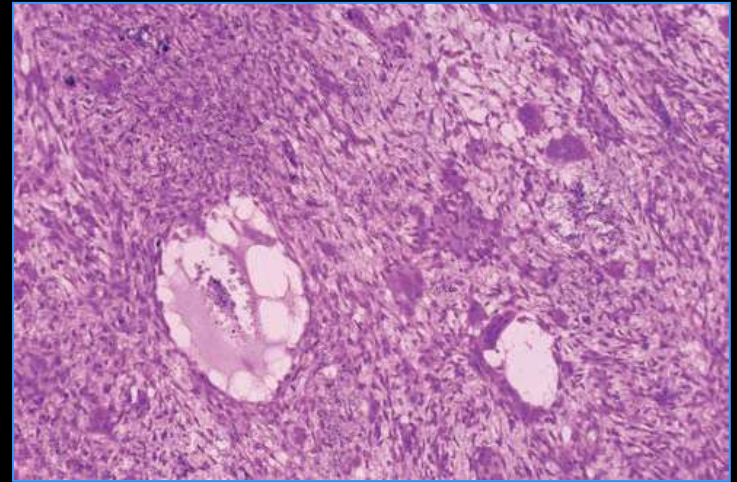


## HISTOLOGICAL FEATURES:

- MANY CAPILLARIES AND BLOOD FILLED SPACES LINED BY FLAT SPINDLE CELLS
- MULTINUCLEATE GIANT CELLS, FIBROBLASTS WITH HEAMORRHAGE.
- THE BLOOD FILLED SPACES HAVE NO ELASTIC TISSUE OR SMOOTH MUSCLE AROUND THEM

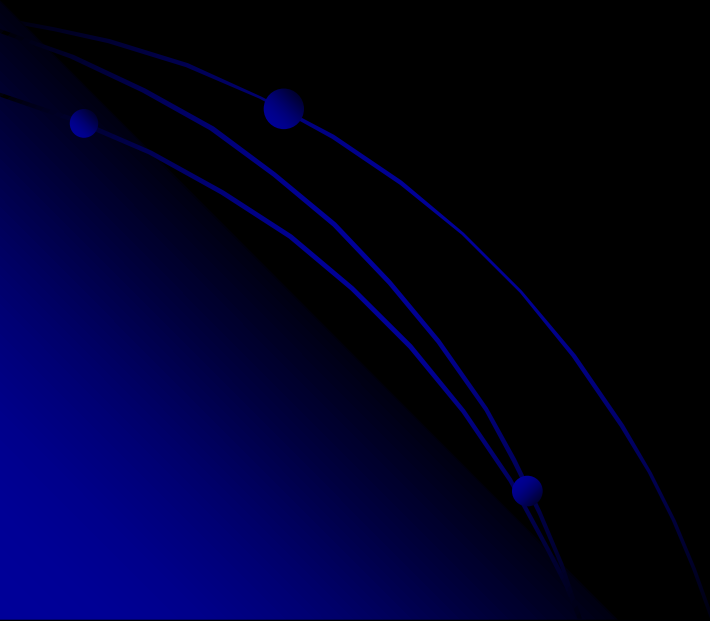
## ASPIRATION

- DARK VENOUS BLOOD



## TREATMENT:

- CURETTAGE AND BONE GRAFTING.
- RARELY RADIOTHERAPY CAN BE ADVISED IF IT DEVELOPS SECONDARY TO MALIGNANT TUMOR.



# CYST ASSOCIATED WITH Mx ANTRUM

## SURGICAL CILIATED CYST OF Mx

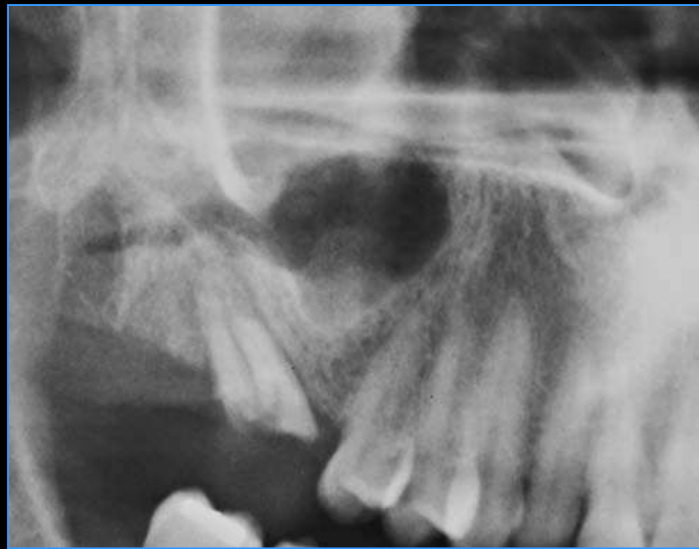
IATROGENIC H/O SURGERY OF Mx SINUS

CLOSELY ASOCIATED WITH SINUS BUT NO COMMUNICATION

### CLINICAL PRESENTATION

PAIN, DISCOMFORT OR SWELLING IN THE CHEEK OR FACE, OR  
INTRA-ORALLY IN THE PALATE OR ALVEOLUS. PUS MAY BE  
DISCHARGED.



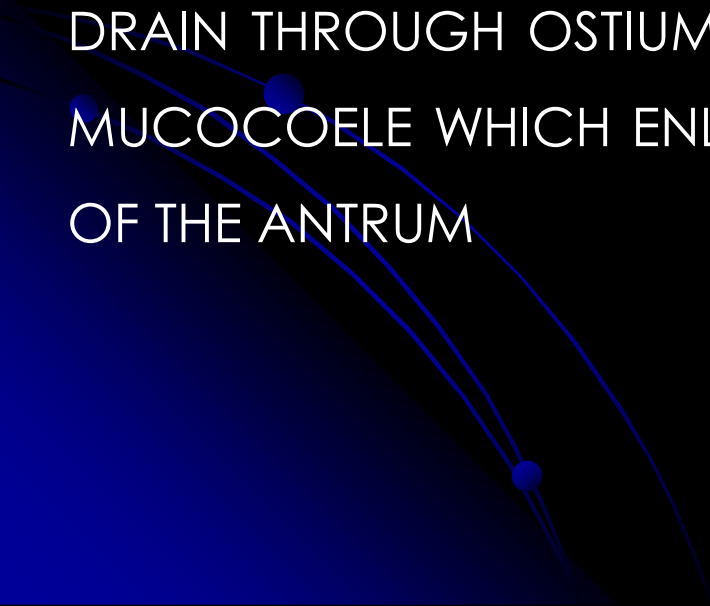


## RADIOLOGICAL FEATURES

WELL-DEFINED RADIOLUCENT AREA CLOSELY RELATED TO MAXILLARY SINUS  
OCCASIONALLY, THE CYSTIC AREA APPEARS TO ENCROACH ON THE SINUS  
ITSELF BUT LACK OF COMMUNICATION BETWEEN THE TWO HAS BEEN  
DEMONSTRATED BY INJECTING THE SINUS WITH A RADIOPAQUE MATERIAL

## PATHOGENESIS

CYSTS ARE DERIVED FROM THE EPITHELIAL LINING OF MAXILLARY SINUS WHICH IS TRAPPED IN THE WOUND DURING CLOSURE OF THE CALDWELL-LUC INCISION, AND SUBSEQUENTLY BEGINS TO PROLIFERATE. BY FORMING A CLOSED SAC WHICH IS UNABLE TO DRAIN THROUGH OSTIUM INTO THE NOSE, IT CONSTITUTES A CYST OR MUCOCOELE WHICH ENLARGES AND MAY RESORB THE BONY WALLS OF THE ANTRUM



# HISTOLOGIC FEATURES

CYSTS ARE LINED BY PSEUDOSTRATIFIED CILIATED COLUMNAR EPITHELIUM, WITH SQUAMOUS METAPLASIA IN CHRONICALLY INFLAMED AREAS.

COMBINATIONS OF CILIATED, CUBOIDAL AND SQUAMOUS EPITHELIUM WITH VARYING NUMBERS OF MUCOUS CELLS MAY BE SEEN.

CILIATED EPITHELIUM IS THE TYPE MOST COMMON.

CONNECTIVE TISSUE MAY BE CELLULAR OR FIBROTIC.

FOAM CELLS, CHOLESTERIN CLEFTS, HAEMOSIDERIN & FOCI OF CALCIFICATION MAY BE PRESENT.

*WELL-DEFINED ACELLULAR LAYER IN CAPSULE, BELOW & PARALLEL TO SURFACE, EITHER HYALINE OR MUCOID IN APPEARANCE. A CELLULAR LAYER OF FIBROUS TISSUE INTERPOSED BETWEEN THIS LAYER & EPITHELIUM.*



# BENIGN MUCOSAL CYST OF MX ANTRUM

AETIOLOGY: INFECTION OR INFLAMMATION OF DUCT

C/F: LOCALISED DULL PAIN IN ANTRAL REGION, OR FULLNESS OR NUMBNESS OF CHEEK, NASAL OBSTRUCTION, POSTNASAL DRIP & COPIOUS DISCHARGE OF YELLOW FLUID FROM THE NOSTRILS.

R/F: SPHERICAL, OVOID OR DOME-SHAPED RADIOPAACITIES WHICH HAVE A SMOOTH AND UNIFORM OUTLINE



# NON-ODONTOGENIC FISSURAL CYST

## ANTERIOR MEDIAN LINGUAL CYST

C/F

PATHOGENESIS: ENTRAPPED EPITHELIUM BETN LATERAL

TUBERCLES

TREATMENT



# NASOLABIAL CYST

**PATHOGENESIS:** REMNANT OF N-L DUCT ARISING FROM EPITHELIAL LINING FLOOR OF NOSE WITHIN MUCOUS GLANDS IN LABIAL SULCUS

**C/F:** COMPLAIN OF DEFORMITY & NASAL OBSTRUCTION. PRESENT AS SMOOTH, FLUCTUANT SOFT-TISSUE MASSES BETWEEN UPPER LIP & NASAL APERTURE, WITH OBLITERATION OF N-L FOLD & ELEVATION OF NASAL ALA.

BILATERAL CYSTS ARE RARE

SLOW PAINLESS ENLARGEMENT OF SWELLING MAY DEVELOP

OVER SEVERAL YEARS,

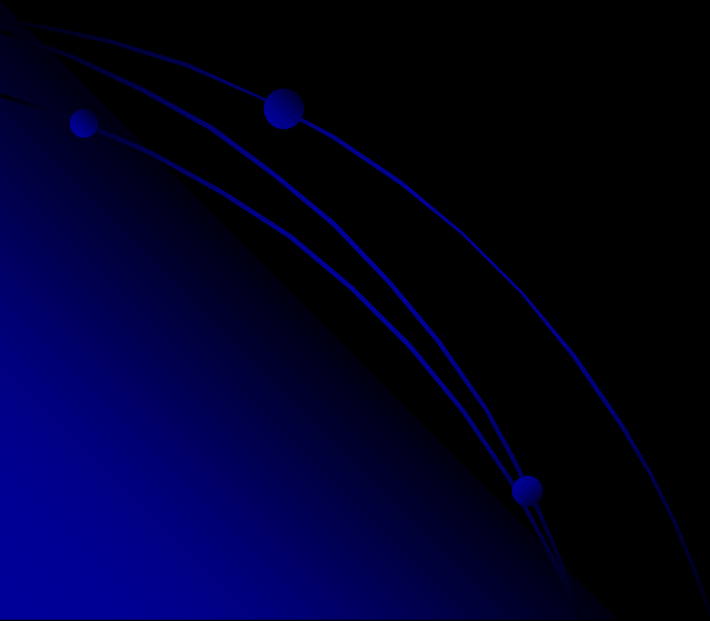
PAINFUL SWELLING IF THE CYST BECOMES INFECTED.



# PATHOGENESIS

CYSTS ARISE AS INCLUSION CYSTS DERIVED FROM EPITHELIAL CELLS THAT ARE RETAINED IN MESENCHYME AFTER FUSION OF MEDIAL AND LATERAL NASAL PROCESSES & MAXILLARY PROMINENCE IN DEVELOPING FACIAL SKELETON.

SECOND PROPOSES THAT CYSTS ARE DERIVED FROM PERSISTENCE OF EPITHELIAL REMNANTS FROM N-L DUCT THAT EXTEND BETWEEN LATERAL NASAL PROCESS & MAXILLARY PROMINENCE.



## CLINICAL PRESENTATION

M/C SWELLING IN ANTERIOR REGION OF MIDLINE OF PALATE OR LABIAL ASPECT OF ALVEOLAR RIDGE AND IN SOME CASES 'THROUGH & THROUGH' FLUCTUATION BETWEEN LABIAL & PALATAL SWELLINGS.

PRODUCE BULGING OF FLOOR OF NOSE.

PAIN THROUGH PRESSURE ON NASOPALATINE NERVES;

DISCHARGE MAY BE MUCOID WITH A SALTY TASTE, OR PURULENT WITH FOUL TASTE

DISPLACEMENT OF TEETH



INCISIVE CANAL CYSTS ARE FOUND IN MIDLINE OF THE PALATE ABOVE OR BETWEEN ROOTS OF CENTRAL INCISORS.

LESIONS ARE ROUND OR OVOID & MAY APPEAR HEART-SHAPED, EITHER BECAUSE THEY BECOME NOTCHED BY NASAL SEPTUM OR BECAUSE NASAL SPINE IS SUPERIMPOSED ON RADIO- LUCENT AREA, OR IF THERE ARE BILATERAL CYSTS.

CYSTS MAY DEVELOP BILATERALLY IN BOTH STENSON CANALS AND IN SOME INSTANCES THE RADIO- LUCENCY MAY BE SEEN LATERALLY IF A SINGLE CYST DEVELOPS IN ONE OF THE MAJOR LATERAL CANALS OF STENSON



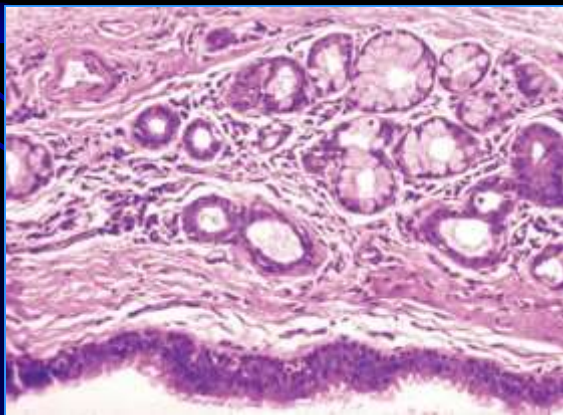
## HISTOLOGICAL FEATURES

STRATIFIED SQUAMOUS, PSEUDOSTRATIFIED COLUMNAR, CUBOIDAL, COLUMNAR, OR PRIMITIVE FLAT EPITHELIUM MAY BE SEEN.

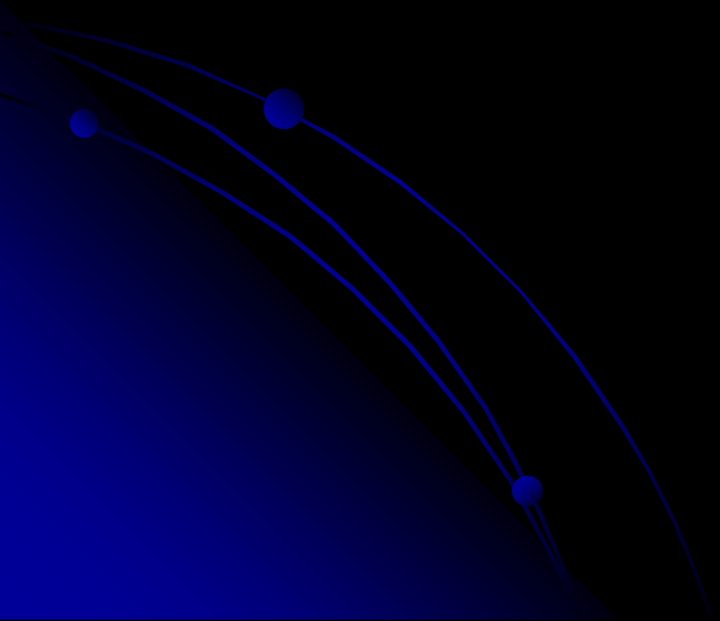
GOBLET CELLS MAY BE FOUND IN PSEUDOSTRATIFIED COLUMNAR EPITHELIAL LININGS AND CILIA

PRESENCE OF NERVES AND BLOOD VESSELS IN FIBROUS CAPSULE

PRESENCE OF MUCOUS GLANDS



# diagnosis



# CLINICAL FINDINGS

NON VITAL TOOTH

EXPANSION OF THE JAW

PERCUSSION OF THE TEETH

NEURAPRAXIA OF IAN

SINUS TRACT

MAXILLARY SINUSITIS

LOCATION OF CYST:

DENTIGEROUS CYST, NASOPALATINE CYST, STAFNE CYST, OKC

LOOSENING OF TEETH

MISSING TEETH

# RADIOGRAPHIC FEATURES

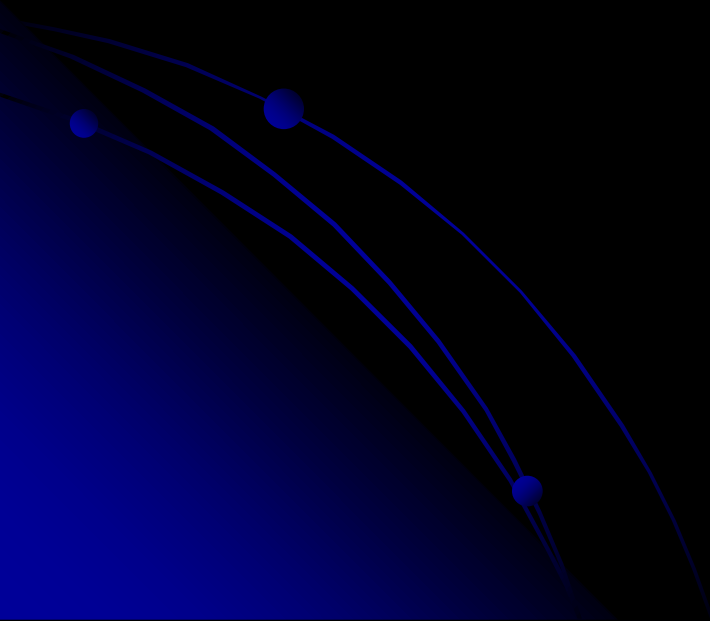
PERI APICAL RADIOGRAPHS

OCCLUSAL RADIOGRAPHS

OPG

EXTRA ORAL RADIOGRAPHS: WATERS VIEW, LATERAL OBLIQUE

CONTRAST MEDIUM STUDY



# ASPIRATION

**DENTIGEROUS CYST:** CLEAR STRAW COLORED FLUID. TOTAL PROTEIN >4G/100ML

**OKC:** CREAMY VISCOUS FLUID. TOTAL PROTEIN < 5G/100ML

**INFECTED CYST:** CONTAINS PUS/ SEROSANGUINEOUS FLUID

**MUCOCELE/ RANULA:** MUCOUS ASPIRATE

**HEMANGIOMA:** DARK VENOUS/ BRIGHT RED BLOOD

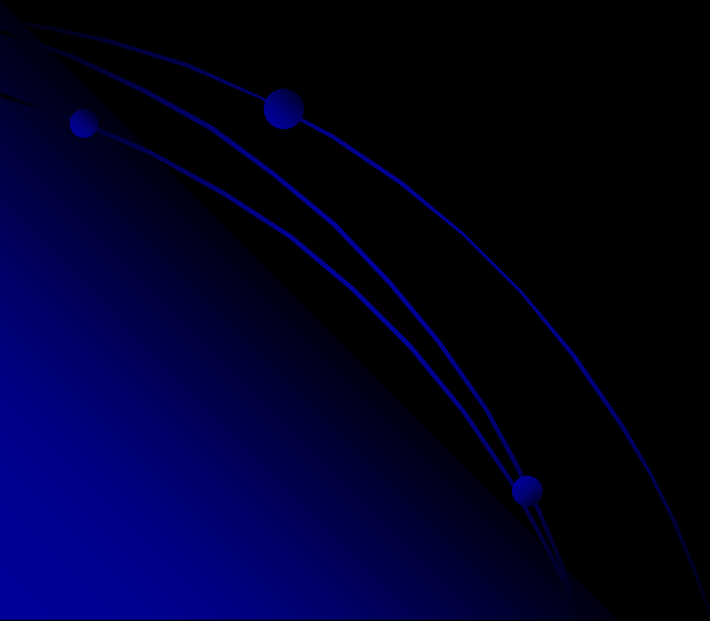
**STAFFNE CYST:** EMPTY CAVITY

# BIOPSY



# OBJECTIVES OF TREATING CYST

1. ELIMINATION OF LESION
2. MINIMAL DAMAGE TO ADJACENT STRUCTURES
3. RESTORE FUNCTION



# CONSIDERATIONS BEFORE SELECTION OF TREATMENT

## RELATED TEETH

TEETH CLOSELY ASSOCIATED WITH CYST SHOULD BE TESTED FOR PULP VITALITY

CYST SHOULD BE CAREFULLY SEPARATED FROM BONE SURROUNDING THE APICES OF TEETH

RETAIN THE TEETH FOR STIMULUS TO ALVEOLAR AND BASAL BONE FORMATION

IN OKC AGGRESSIVE PROTOCOL REQUIRED

## RISK OF FRACTURE

SLIGHT CLICK, INCREASED PAIN OR MENTAL NERVE PARAESTHESIA INDICATE PATHOLOGICAL /  
INTRA OP FRACTURE

BONE GROWTH OCCURS ONCE INTRACYSTIC PRESSURE IS RELEASED

CONSIDERATION FOR BONE GRAFTING AND RECONSTRUCTION PLATE TO BE GIVEN

## INFERIOR ALVEOLAR NERVE INVOLVEMENT

SEPARATION OF CYST FROM IANV BUNDLE CAN BE DONE WITH TEMPORARY OR NO  
INTERRUPTION OF NERVE FUNCTION

# TREATMENT OPTIONS FOR CYST

1. MARSUPIALIZATION

2. ENUCLEATION

3. RESECTION



# MARSUPIALIZATION

FIRST DESCRIBED BY PARTSCH IN 1892

WINDOW OF 1 CM IS CREATED IN CYST AND LINING IS SUTURED TO THE EPITHELIUM TO CONVERT CYST INTO POUCH

CYST IS DECOMPRESSED

MANDIBULAR CYST IS OPENED IN ORAL CAVITY WHILE MAXILLARY CYST IS OPENED IN SINUS OR NASAL CAVITY

CAVITY IS REGULARLY PACKED WITH IODOFORM GAUZE COATED WITH BETADINE

OSTIUM IS MADE AS LARGE AS DIAMETER OF CYST TO PREVENT PREMATURE CLOSURE

# INDICATION FOR MARSUPIALIZATION

YOUNG CHILDREN: PRESERVES TOOTH GERM AND HELPS IN NORMAL ERUPTION OF TEETH

EVEN IN ADOLESCENTS IT HELPS IN ERUPTION OF UNERUPTED TEETH

TO PRESEVE BONE INTEGRITY AND PREVENT PATHOLOGICAL FRACTURES

TO PRESERVE VITAL STRUCTURE INTEGRITY EG NERVE, SINUS, NASAL CAVITY OT TOOTH

VITALITY

