



# **DISEASES OF MAXILLARY SINUS -2**



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# **Learning outcomes**

**By the end of the lecture 1, students should be able to :**

- 1.Explain common diseases related to maxillary sinus.
- 2.Discuss the functional and clinical considerations of maxillary sinus

# DISEASES OF MAXILLARY SINUS

## Intrinsic diseases

- Inflammatory diseases

- **Mucositis**

- **Sinusitis**

- **Polyps**

- **Antroliths**

- Neoplasms

- **Benign neoplasms**

- Osteomas**

- **Malignant neoplasms**

- Squamous cell carcinoma**

# DISEASES OF MAXILLARY SINUS

## Extrinsic diseases

- **Inflammatory diseases**  
**Periostitis**
- **Benign Odontogenic cysts and tumors**  
**Odontogenic cysts**  
**Odontogenic tumors**
- **Traumatic injuries to paranasal sinuses**  
**Dental structures displaced into sinus**

## **DISEASES OF MAXILLARY SINUS**

- **Mucositis:**

- Thickened mucous membrane .
- The lining mucous membrane of the paranasal sinuses is composed of respiratory epithelium.
- It is normally about 1 mm thick.
- When the mucous membrane becomes inflamed from either an infectious or allergic process, it may increase in thickness 10 to 15 times(>3 mm)

**Causes-** Allergic conditions, Periodontal & Periapical disease

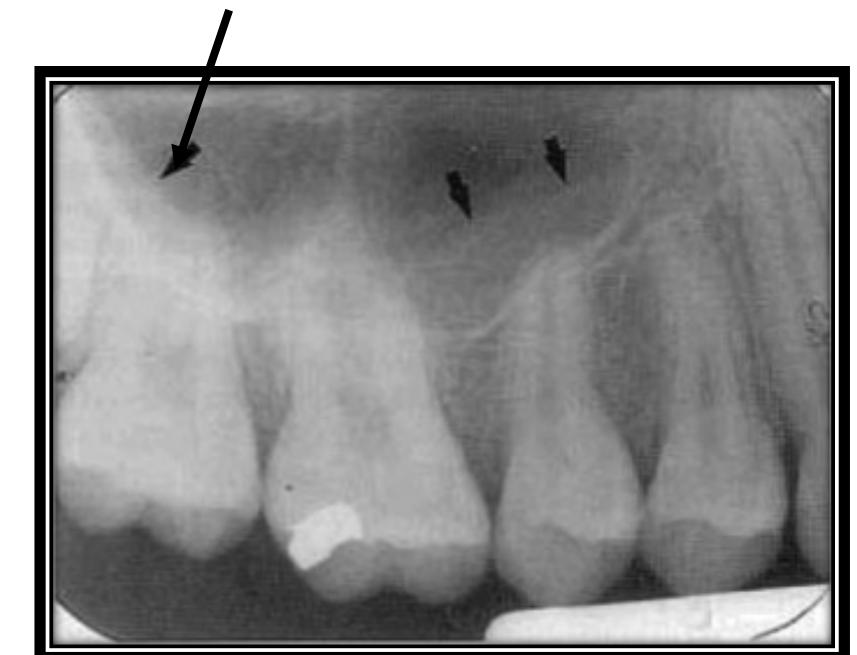
NORMAL IOPAR

**Clinical features:**

- Asymptomatic
- Discovered on routine radiograph

**Radiographic Features :**

- as a noticeably more radiopaque band , paralleling the bony wall of the sinus.



**Treatment:**

- Removal of cause

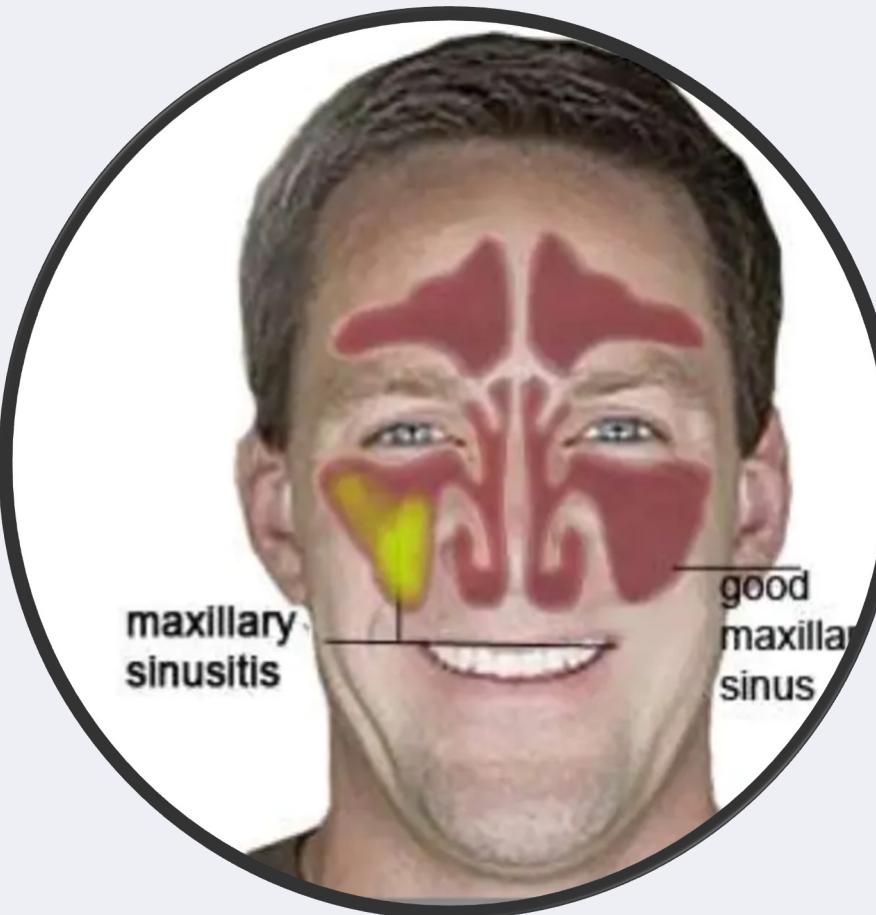
## **DISEASES OF MAXILLARY SINUS**

**Sinusitis – Inflammation of mucosa of the Sinus.**

- Maxillary sinusitis –**inflammation of mucosa of maxillary sinus**
- Pansinusitis- inflammation of mucosa of all sinuses simultaneously.

## Maxillary Sinusitis:

- **Acute (up to 4 weeks)**
  - **Sub acute (4-12 weeks), or**
  - **Chronic (over 12 weeks).**
- 
- ETIOLOGY:
    - Allergic, and viral insults,
    - Hemophilus influenza , Streptococcus pneumonia
    - Infected Maxillary Premolar, first molars
    - Complication of common cold



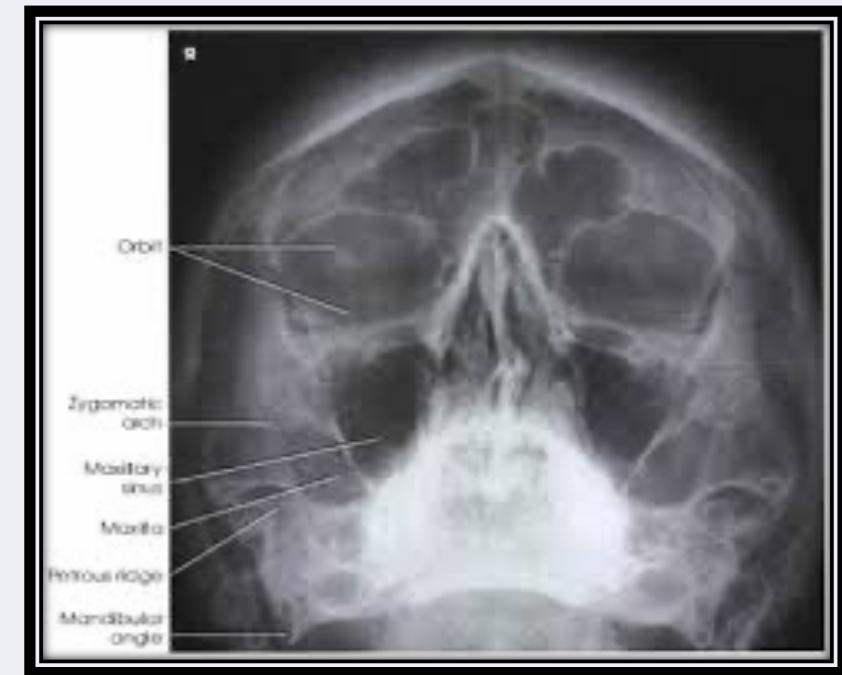
- **Clinical features:**

- ✓ A sense of fullness and pain on cheek on bending forward
- ✓ Nasal block secondary to rhinitis
- ✓ Pain: situated over upper jaw but may be referred to gums or teeth - maxillary Premolars & molars.
- ✓ Nasal discharge ,Cough
- ✓ Tenderness: Pressure on tapping over anterior wall of antrum produces pain.
- ✓ **Constitutional symptoms:** fever, malaise & body ache

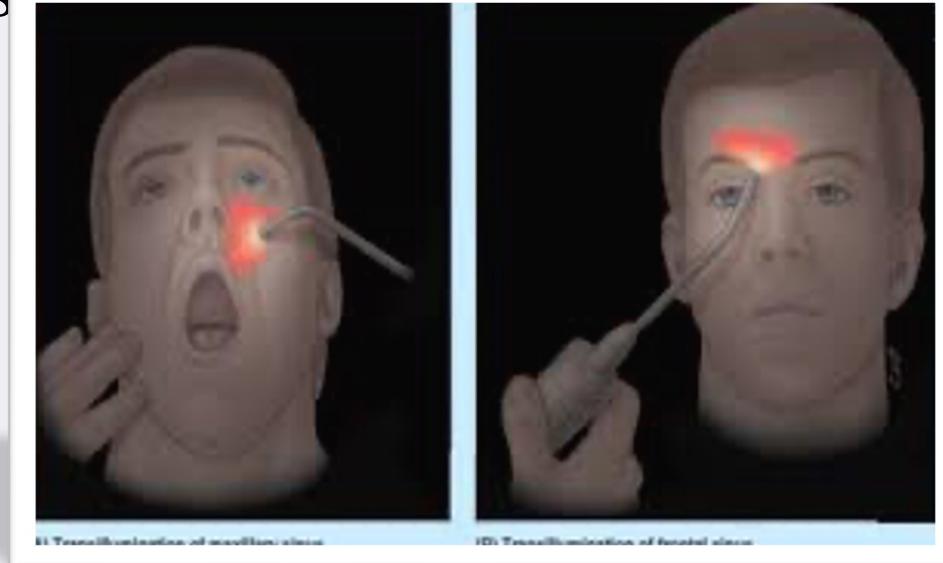


## Diagnosis:

1. Water's (Occipitomental) view radiograph

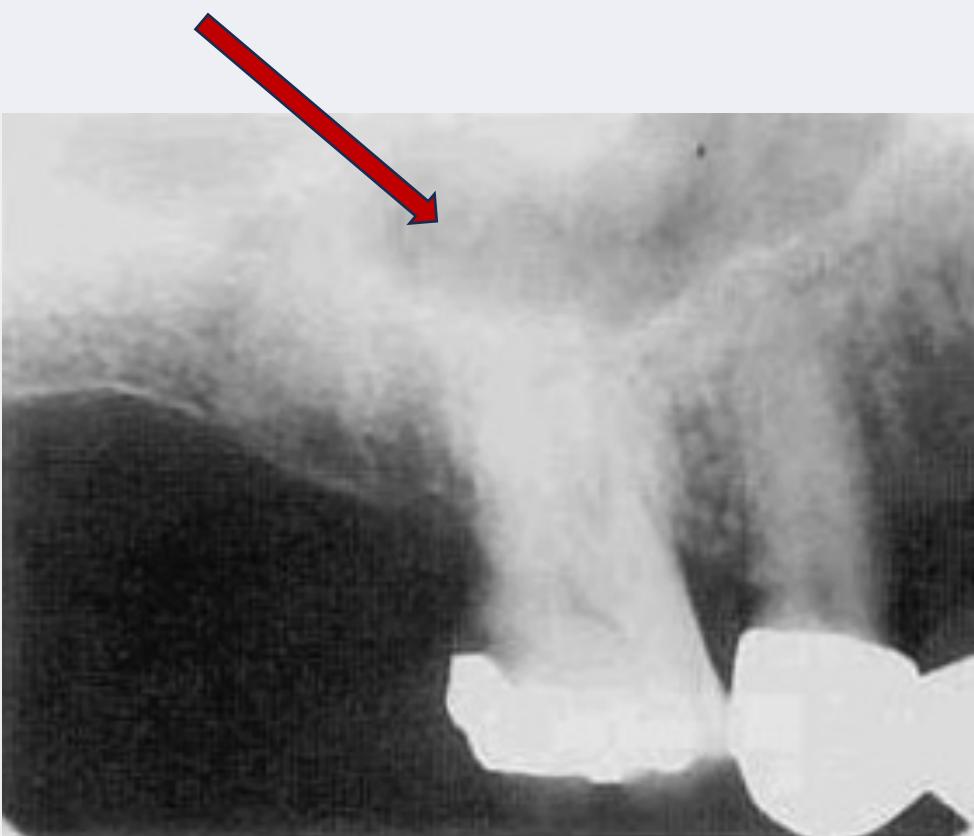


2. Transillumination test: shows opacity involved sinus



3. Culture: Nasal secretion for culture sensitivity test to see organisms involved.

# IOPA Radiograph

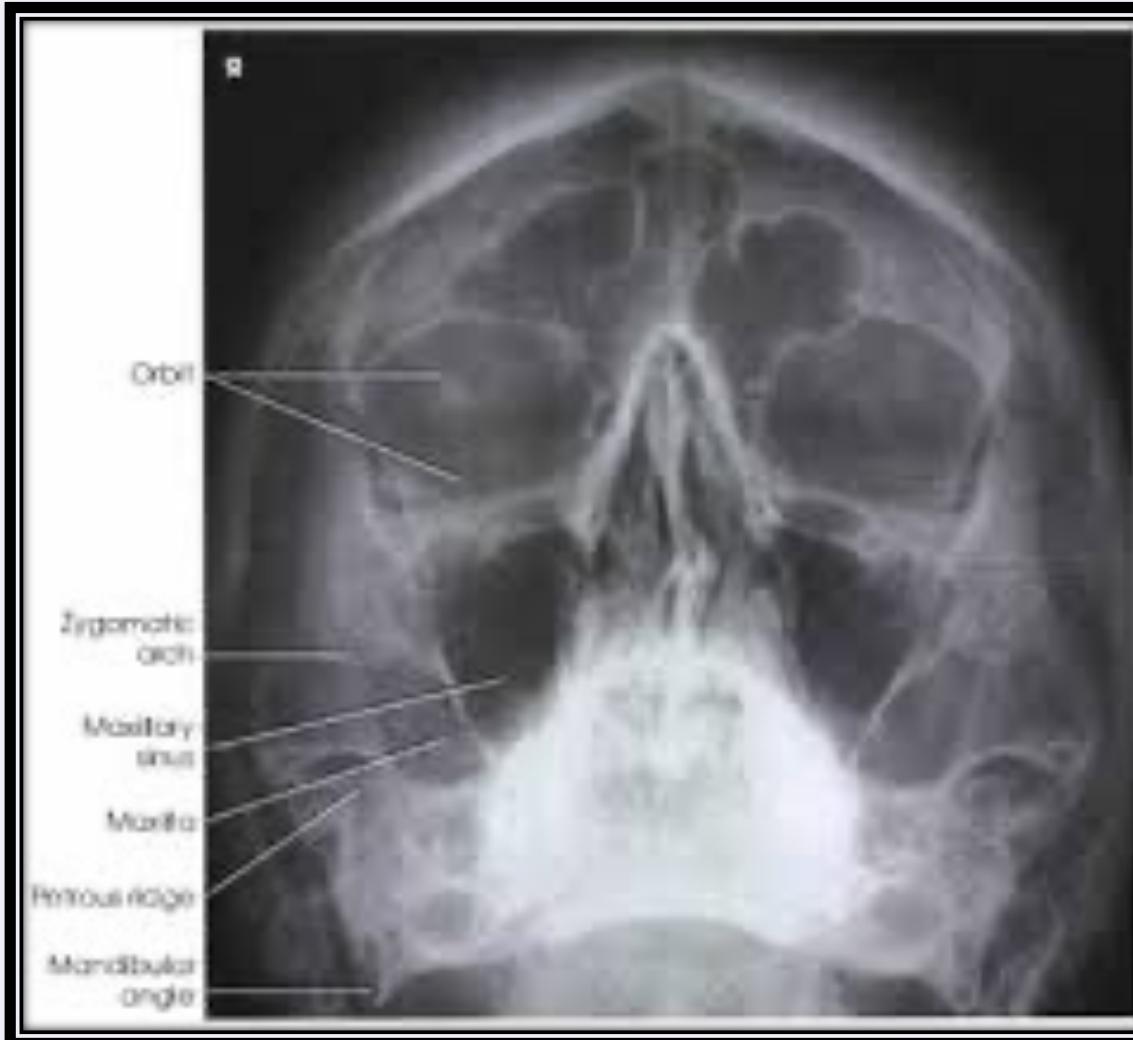


Maxillary right molar periapical

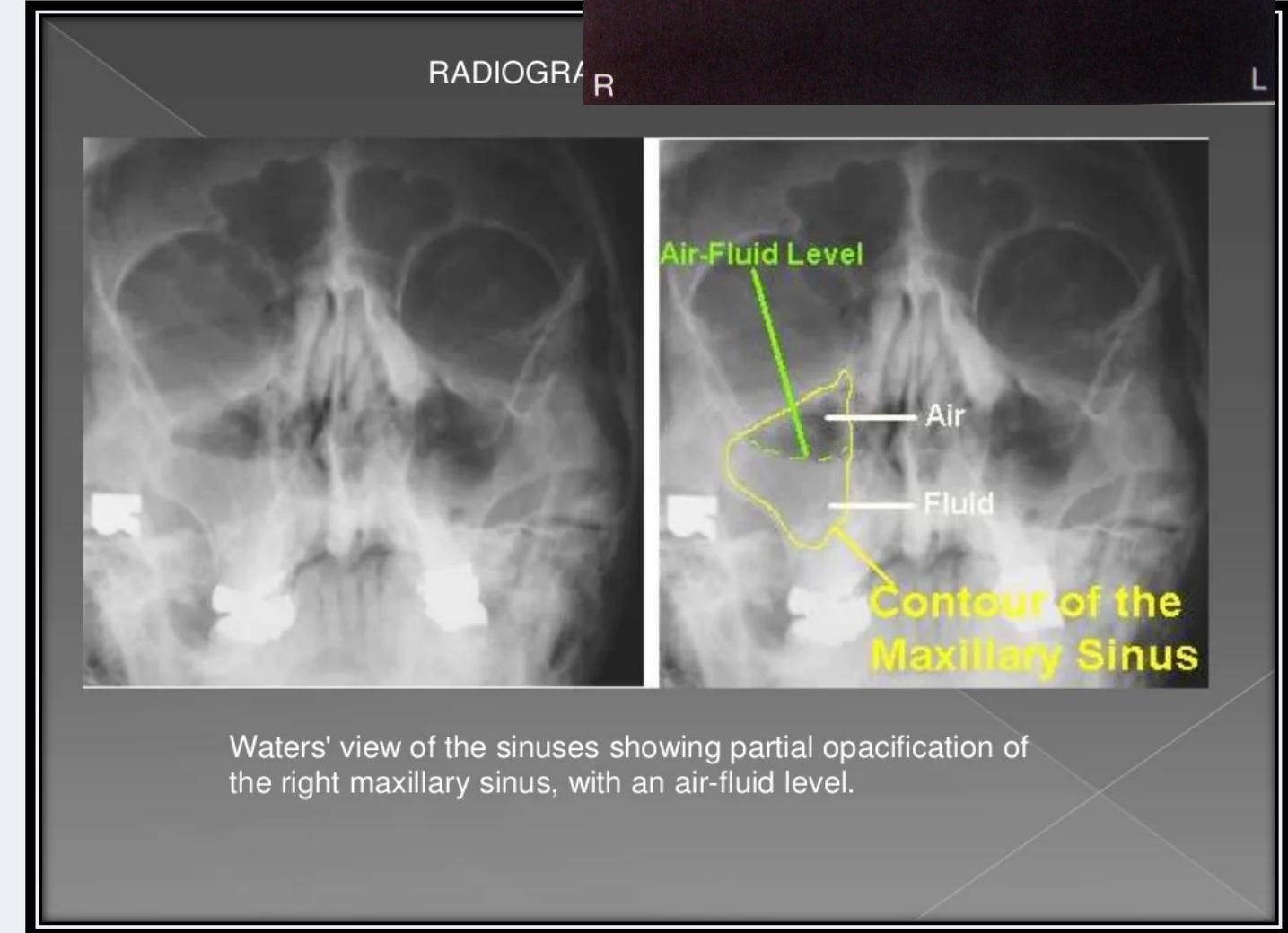
Maxillary left molar periapical

# Waters view radiograph

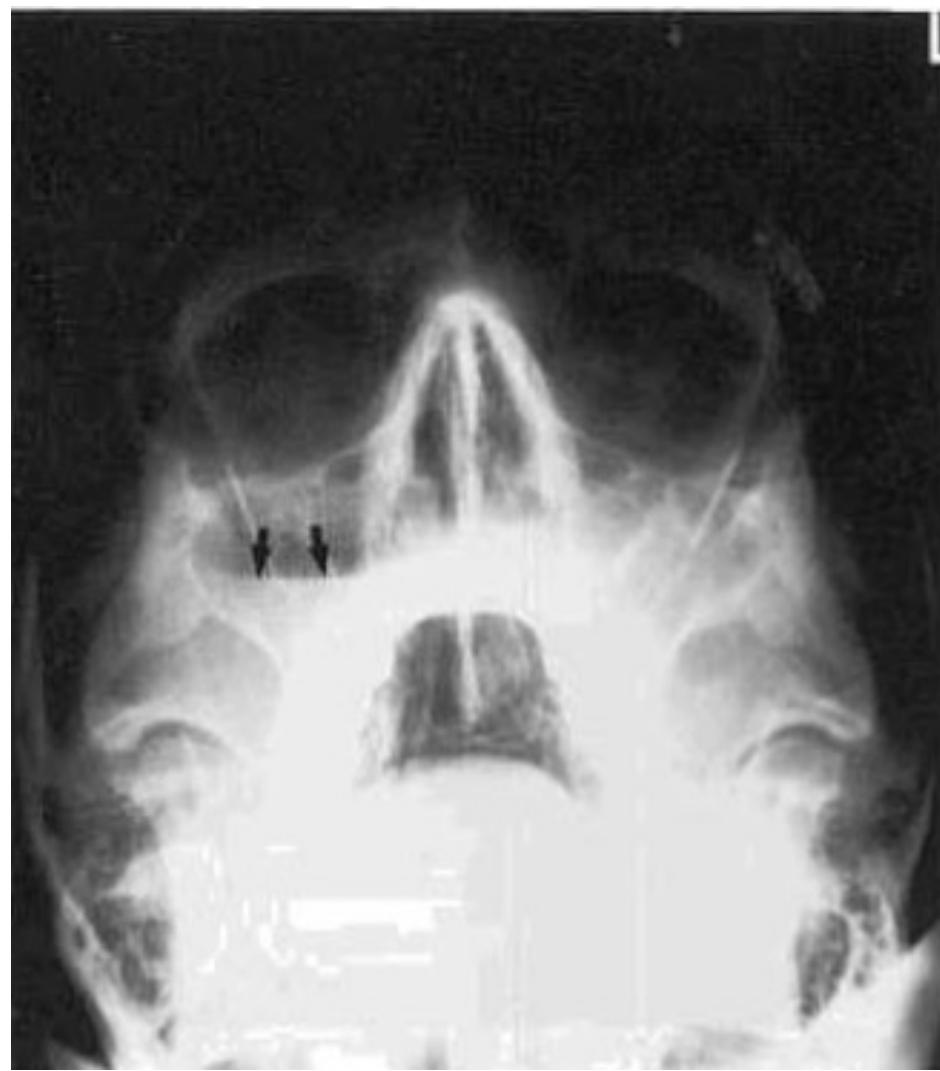
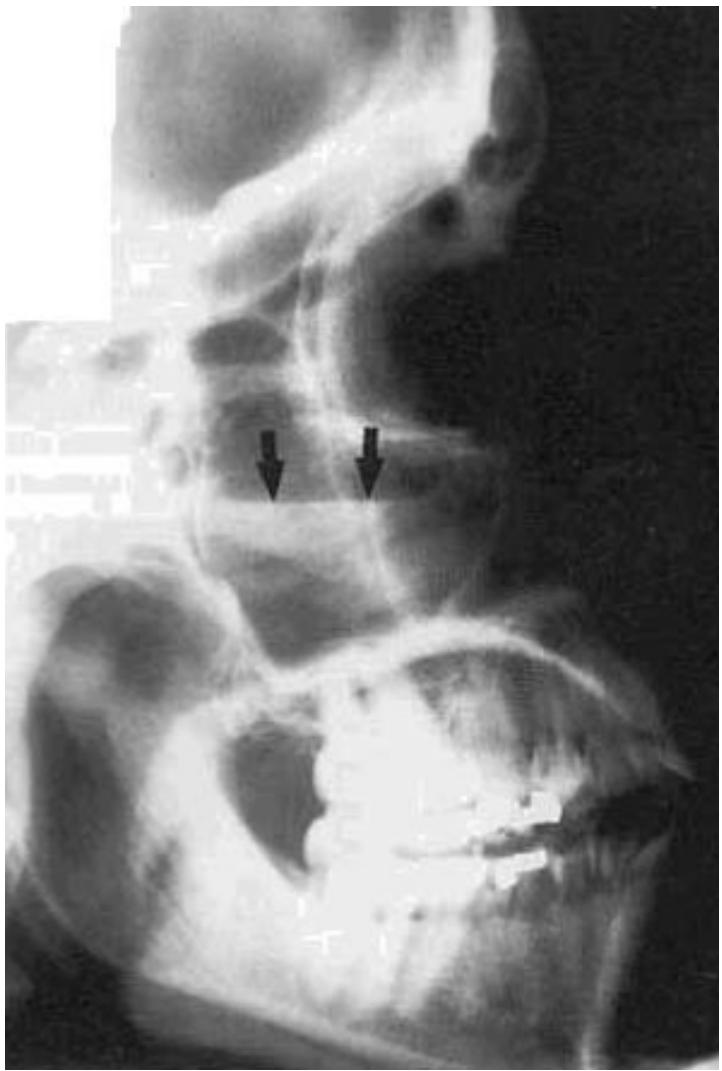
**Normal**



**Sinusitis**

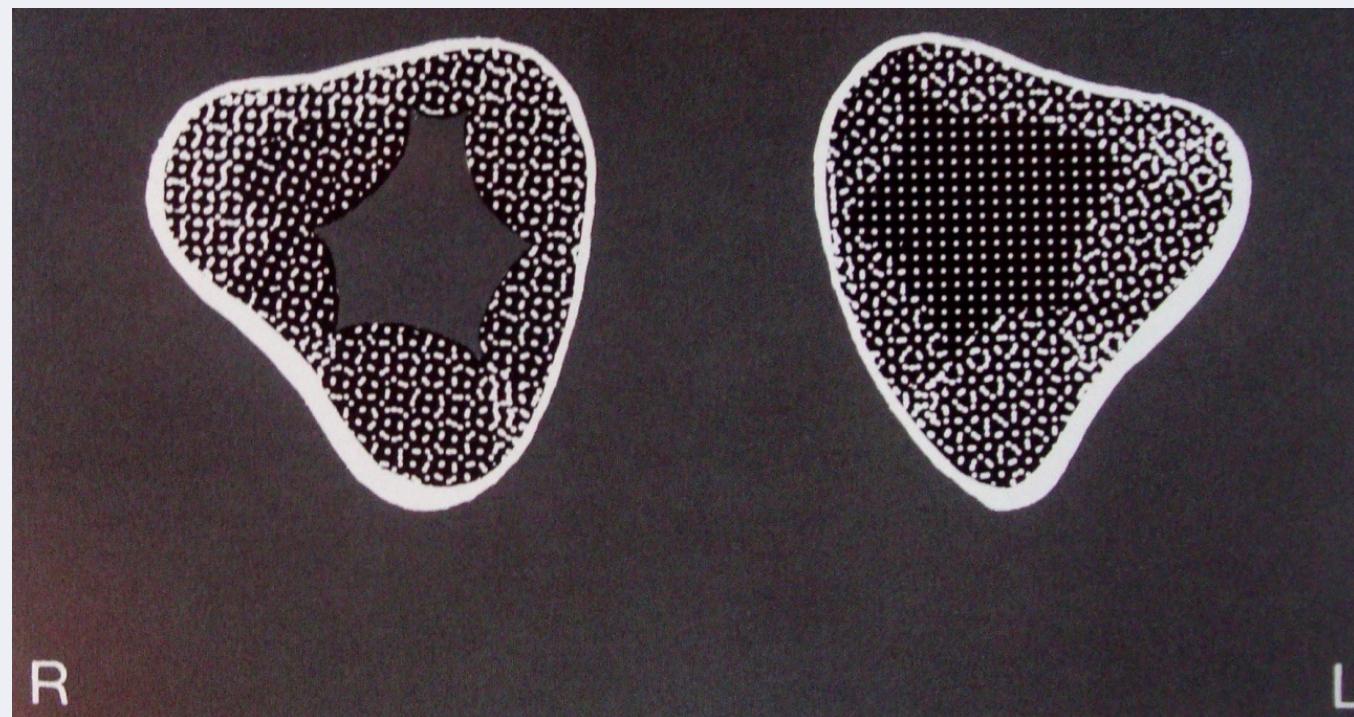


- ✓ Air –fluid level: fluid occupies the inferior aspect of the sinus and appears radiopaque.
- ✓ The border b/w the radiopaque fluid and the relatively radiolucent antrum is horizontal.



## **Subacute maxillary sinusitis**

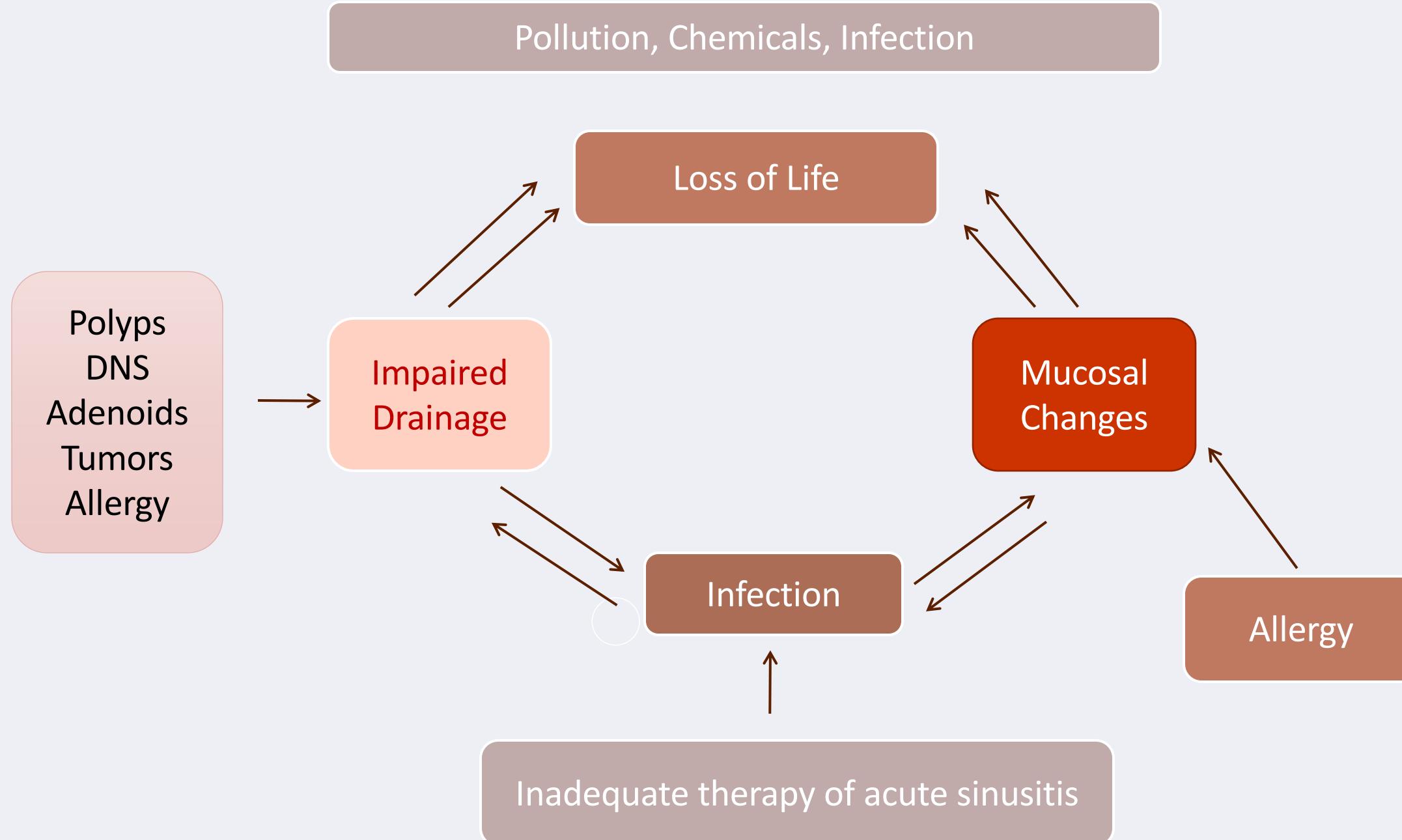
- Intermediate stage between acute and chronic sinusitis
- Local discomfort
- Persistent nasal discharge
- Sore throat, constant cough
- Difficulty in sleeping
- Weeks to months



## Chronic sinusitis :

Infection that lasts for months or year

Acute sinusitis Failed to resolve completely



## **Clinical features of chronic sinusitis:**

- Symptoms Nonspecific
- No Pain
- Purulent Discharge-foul Smelling
- Nasal Blockage,
- Change in voice due to loss of resonance
- Insomnia

## **Diagnosis:**

1. Waters view radiograph
2. Computed tomography – in evaluating chronic sinusitis
3. Transillumination test: shows opacity involved sinus
4. Culture: Nasal secretion for culture sensitivity test to see organisms involved.

## **ELEVATED LEUCOCYTE COUNT**

## Management: Acute Sinusitis

### Medical management:

1. Antibiotics: Broad spectrum antibiotics
2. Decongestants: for drainage of the sinus
3. Analgesics: Paracetamol—relief
4. Steam inhalation: Steam + Menthol+ Tincture
5. Hot fomentation : Soothing to inflamed sinus



### Surgical management:

1. **Antral lavage:** -Inserting a canula into sinus through inferior meatus.  
-Luke warm water is irrigated through sinus and this drains out through ostium along with sinus exudate.



## Management: Chronic Sinusitis

### Medical management:

1. Antibiotics: Broad spectrum antibiotics
2. Decongestants: for drainage of the sinus
3. Analgesics: Paracetamol –relief
4. Steam inhalation: Steam + Menthol+ Tincture
5. Hot fomentation : Soothing to inflamed sinus

### Surgical management:

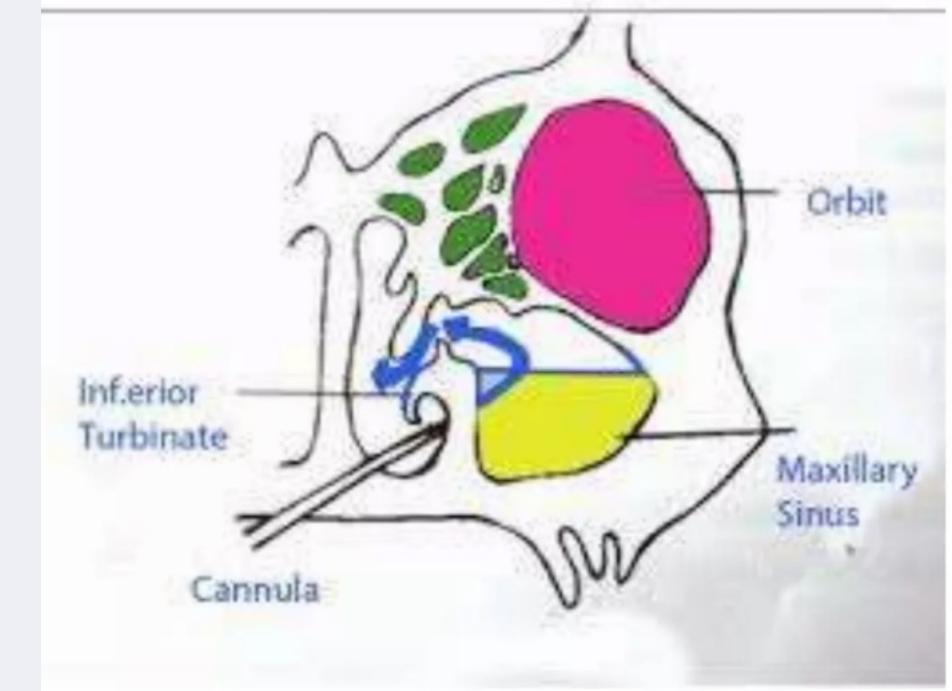
1.Treat any dental infection if present

2.Antral lavage:

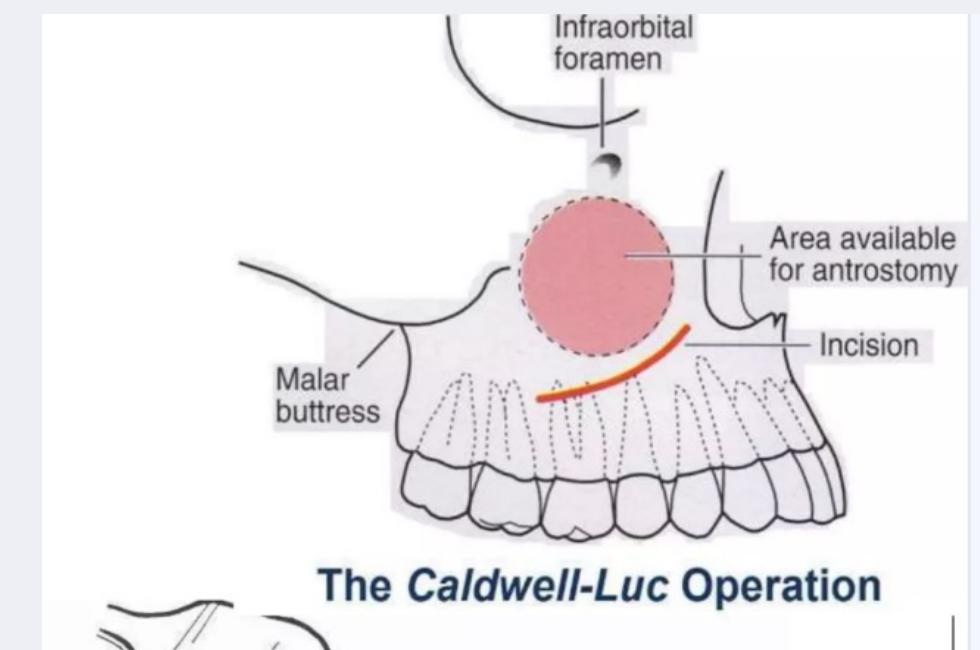


## Surgical management:

**3. Intra nasal antrostomy:** a window or opening is created in inferior meatus to facilitate drainage of sinus



**-4. Cald well luc operation:** gaining entry into maxillary sinus via canine fossa with nasal antrostomy



## Complications of Maxillary Sinusitis

- ✓ ORBITAL CELLULITIS
- ✓ OSTEOMYELITIS OF THE MAXILLA
- ✓ MIDDLE EAR INFECTIONS

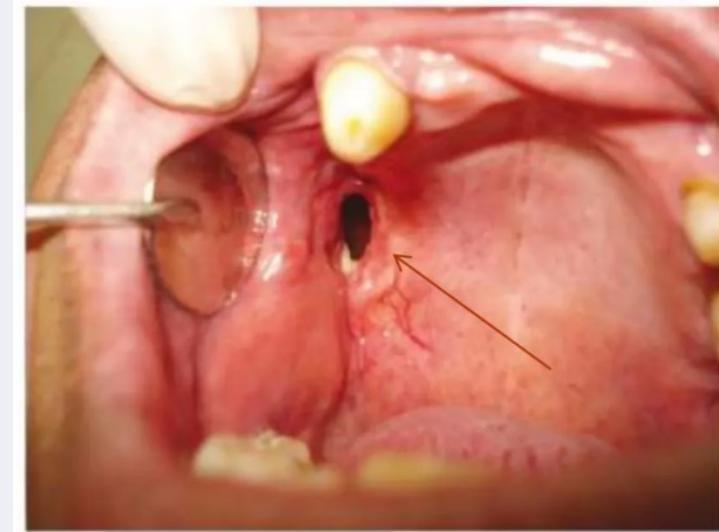
# Traumatic Injuries to Maxillary Sinus

## Oroantral Fistula

- Unnatural communication between oral cavity and maxillary sinus

### Etiology:

- Extraction of the upper tooth-
- Caused due to blind instrumentation,- which may result in root being forced through the sinus floor.
- Trauma to the face
- Osteomyelitis of the maxilla
- Malignancy
- Deep fungal infection

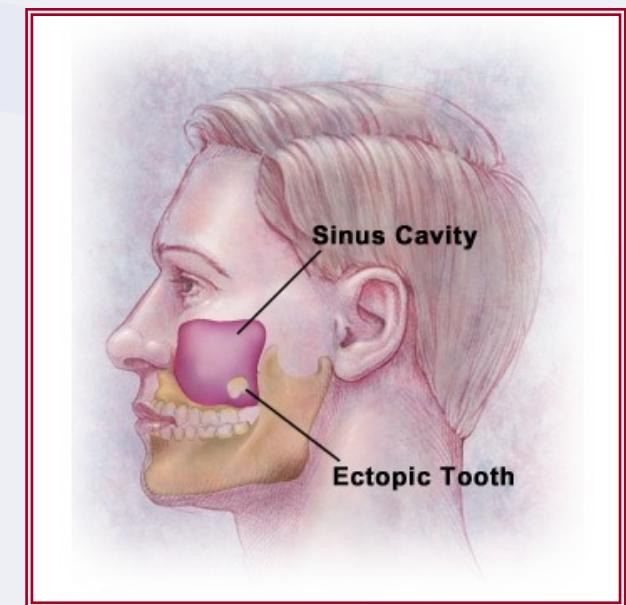
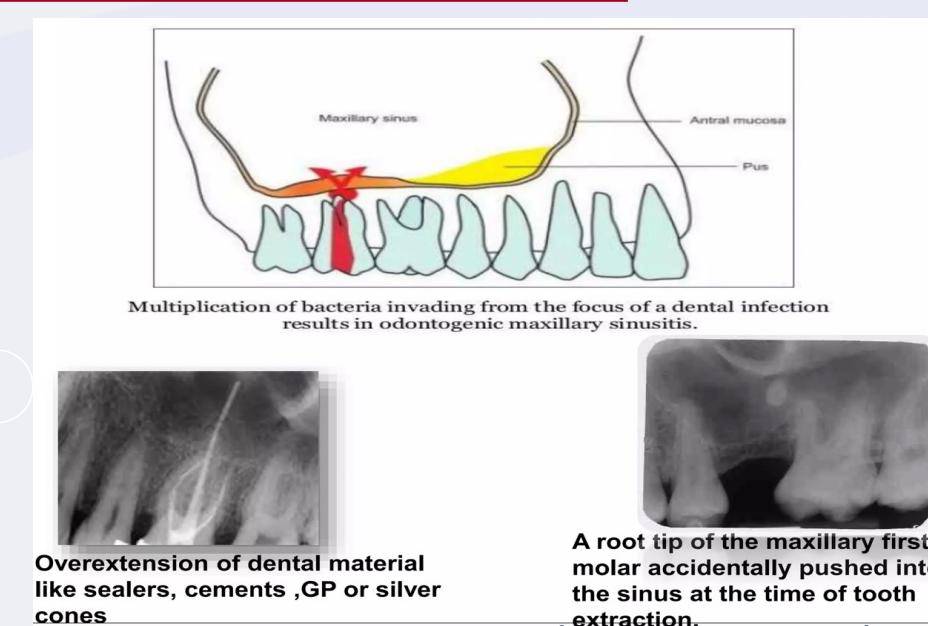


## Signs and Symptoms:

- Regurgitation of liquids
- Edema of the infraorbital soft tissues
- Inadvertent entry of food particles, fluids, dressings, packs into the antrum.
- Unilateral epistaxis (bleeding from nose) due to blood in the maxillary sinus

### TEETH OR ROOTS IN THE MAXILLARY SINUS

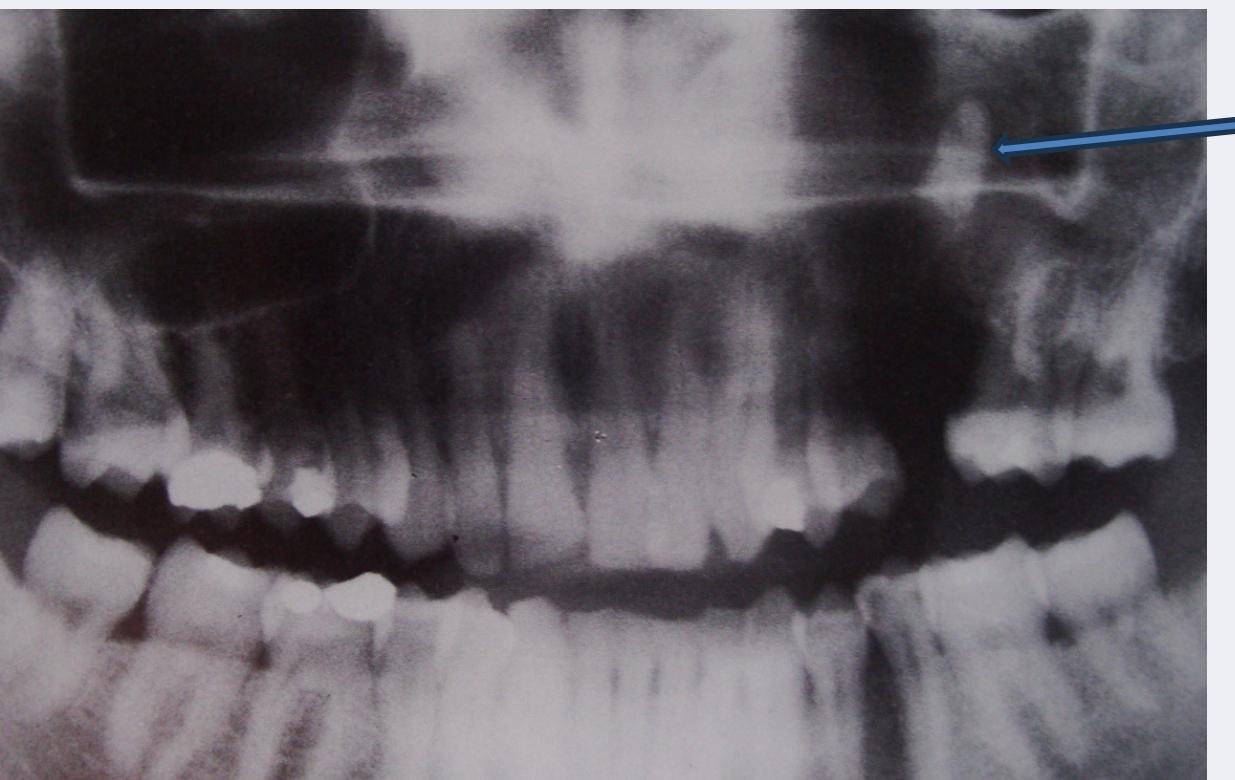
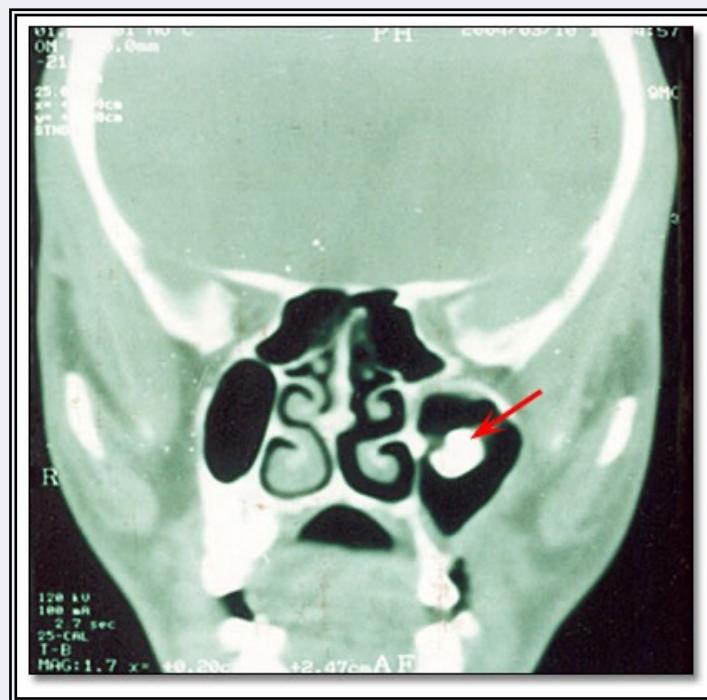
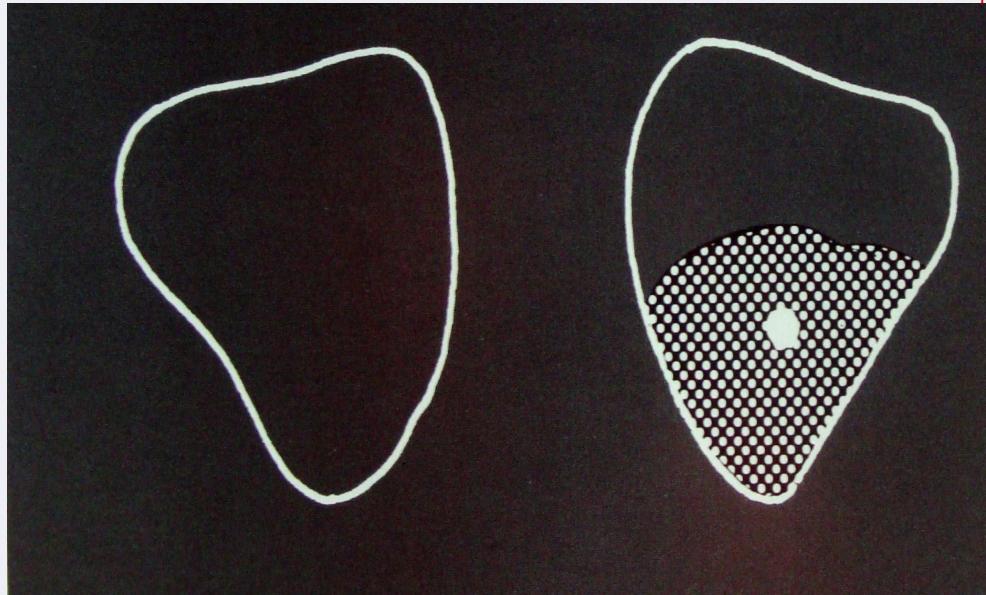
- Accidents during tooth extraction
- Roots in proximity to the maxillary sinus



{Ask pt to hold nose & breath out – bubbles to appear in extraction socket.}

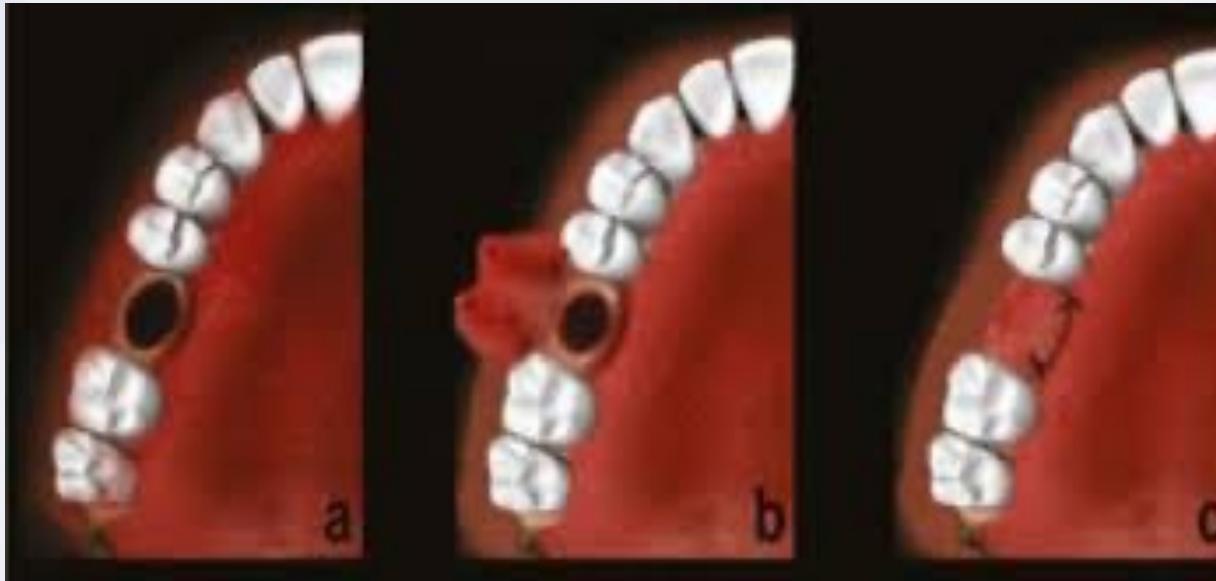
-If root in sinus for long time – sinusitis.}

- Occlusal, waters projection- at different angles.
- R/F: Radiopaque mass with layer of enamel , dentin & pulp
- Located near floor of sinus
- Break in floor of sinus

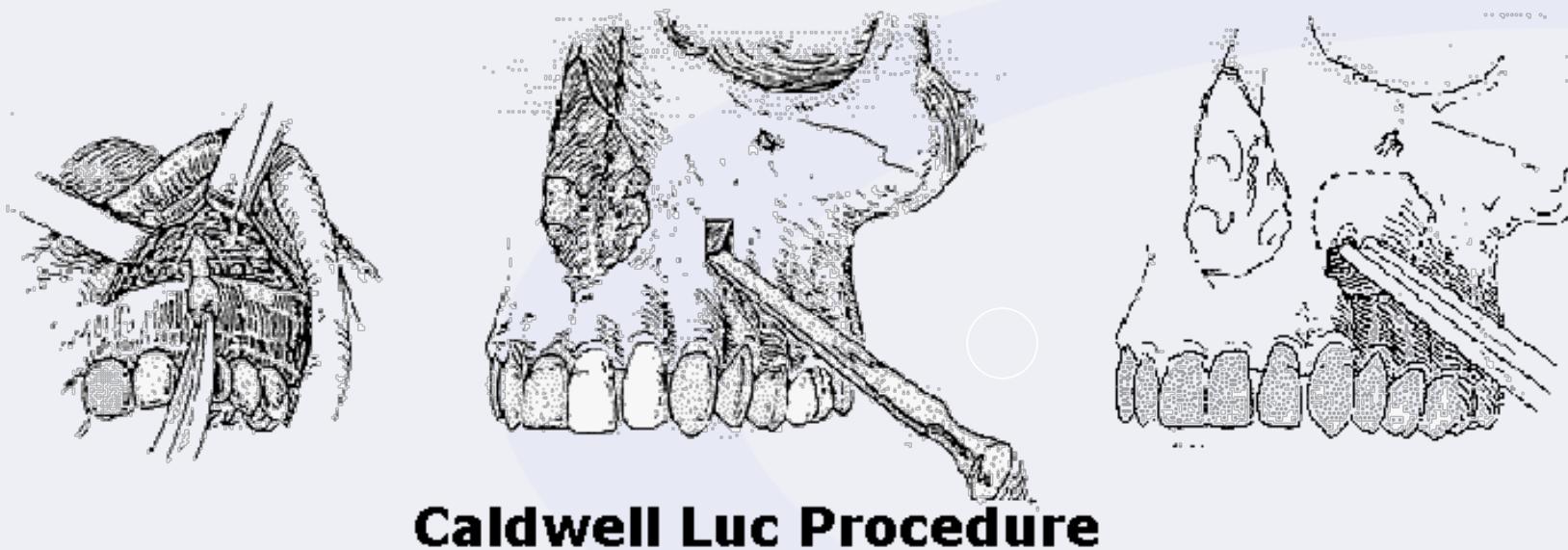


Surgical management:

**-Buccal Flap surgery**



**- Caldwell luc surgery**



## Conclusion

- Due to close proximity of maxillary sinus to orbit , alveolar ridge , maxillary teeth , diseases involving these structures may produce confusing symptoms.
- Knowledge of anatomical relationship between maxillary sinus floor and maxillary posterior teeth is important for preoperative treatment planning of maxillary posterior teeth.



Hence precise information and clinicians must be particularly cautious when performing dental procedures involving maxillary posterior teeth.

## *References*

1. Textbook of dental and maxillofacial radiology, Freny Karjodkar, 2<sup>nd</sup> edition.
2. Oral Radiology- Principles and Interpretation, White and Pharoah, 7<sup>th</sup> edit, chap 26, Pg 472-481.
3. Burket's oral medicine, 12 & 13<sup>th</sup> edition pg 340-341

