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# Nose and paranasal sinuses

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**PNS** identified as paired cavities in the frontal ,maxillary ,ethmoidal and sphenoid bones .  
They communicate with nasal cavity and are lined by mucous membrane .

# **RADIOGRAPHIC ANATOMY OF PNS IS PARTICULARLY COMPLEX BECAUSE OF TWO FACTORS**

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- 1-The sinuses are projected over one another to great extent and anatomical detail is thus obscured .
- 2-There is a great range of normal variants of the sinuses among different individuals in various age group, as well as in the same age groups.



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***CT SCAN coronal section is the imaging  
modality of choice for PNS***

# ***ROUTINE PROJECTION FOR PNS***

## **1-Posteroanterior (Caldwell s)**

This view shows the frontal and ethmoidal sinuses ,but the maxillary sinuses obscured by petrus ridges .

## **2- Posteroanterior view (water s view )**

This view allow maxillary sinuses to be clearly seen .

## **3- Lateral view**

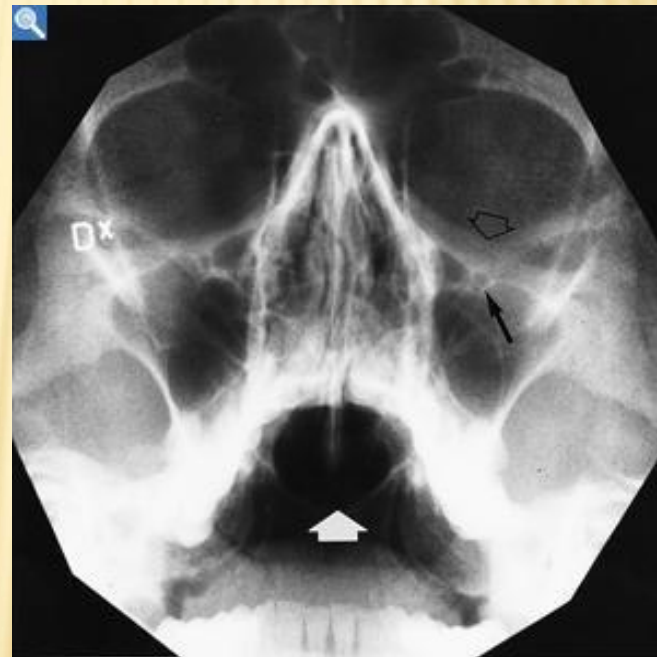
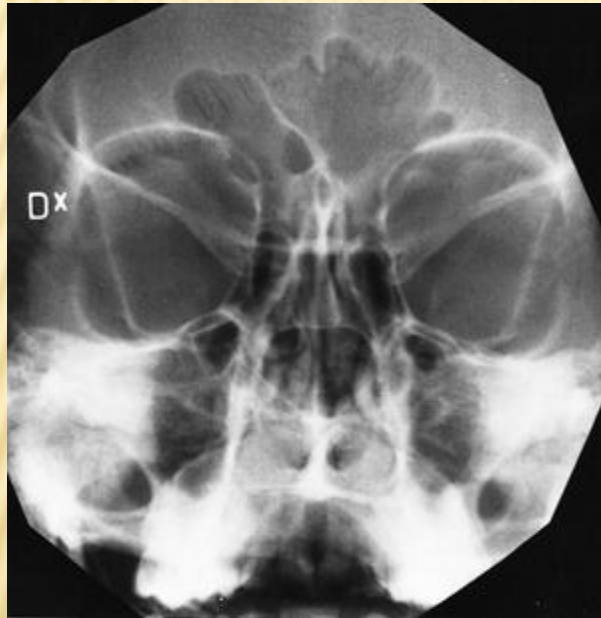
Sphenoidal sinuses seen by this view.





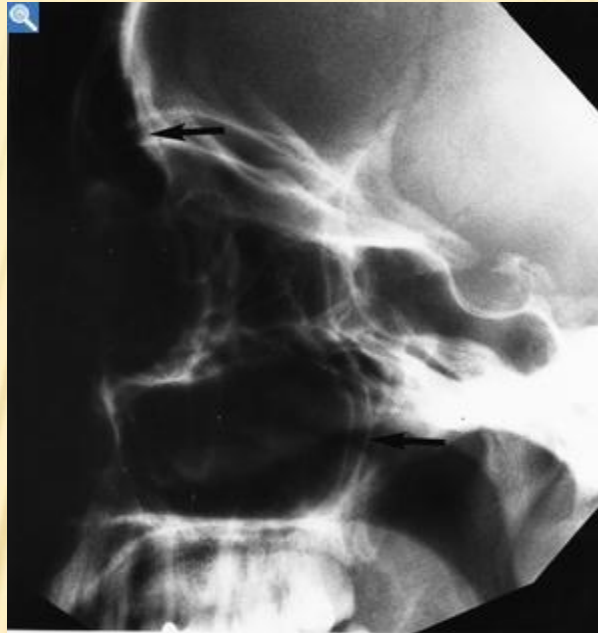
# CALDWELL VIEW

# WATERS VIEW



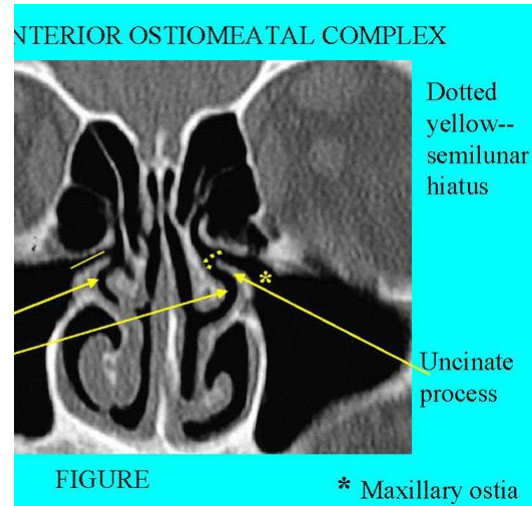
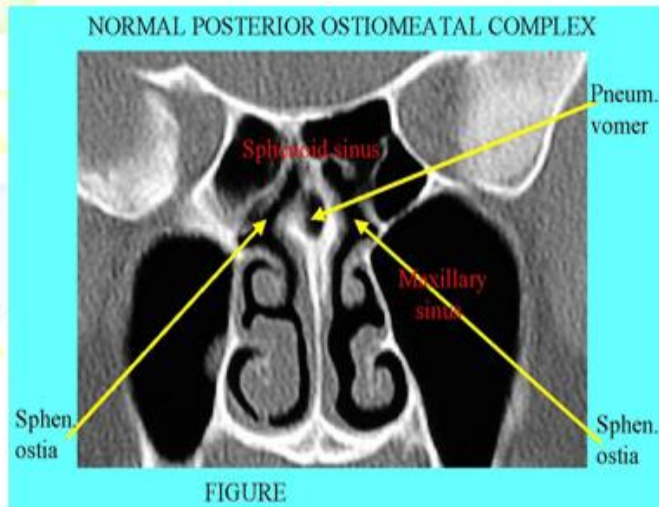
# LATERAL VIEW

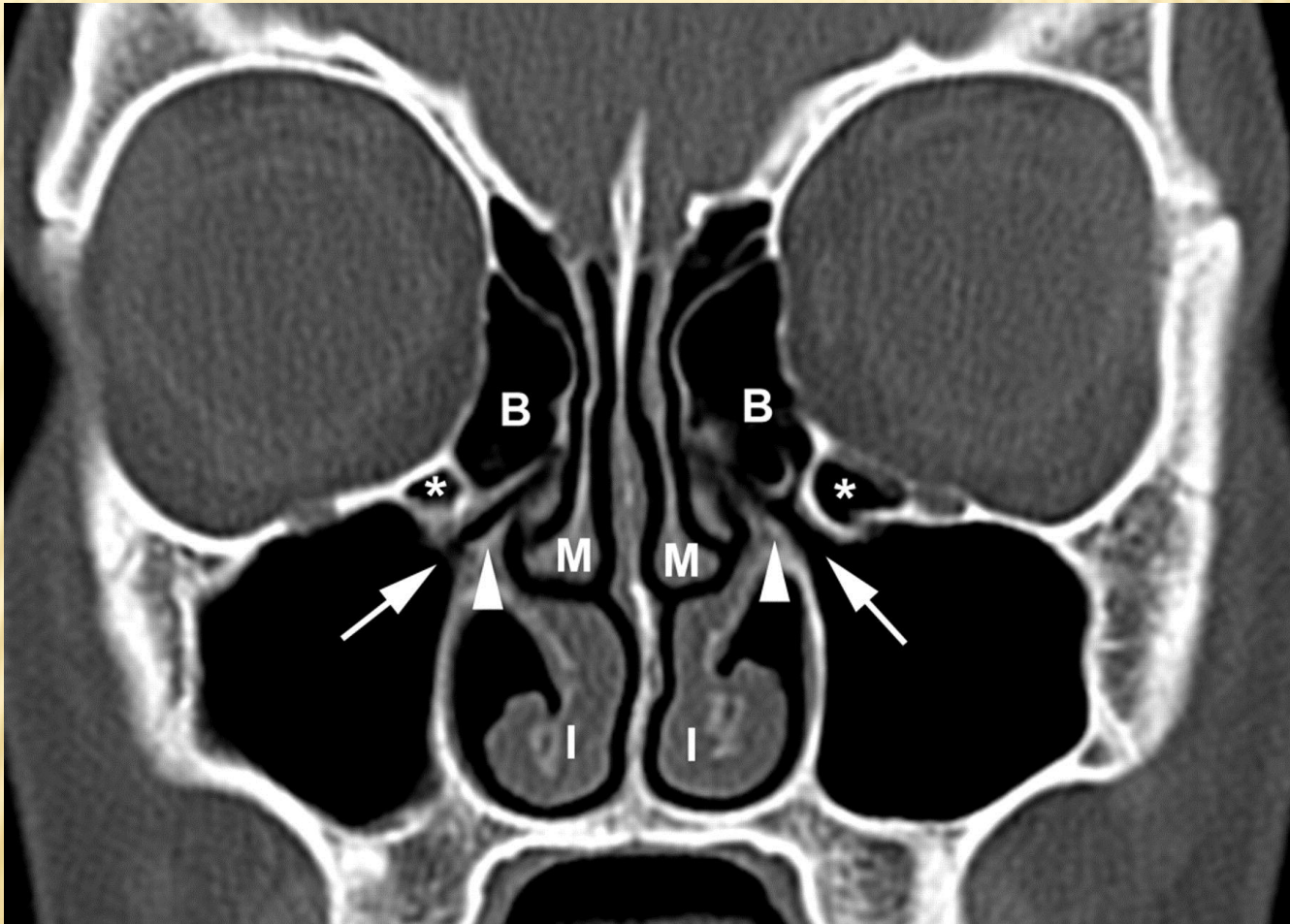
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# CT SCAN ,CORONAL SECTION







# **OPAQUE SINUS**

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The sinus become opaque when all air is replaced and appears as dense or denser than the adjacent orbit on plain film

**1-Infection** (thickened mucosa or fluid inside ,or both .)

**2-Mucocele ,obstructed sinus**

**The sinus expanded ,secretion accumulate..frontal sinus mucocele may erode the orbital roof causing exophthalmos**

**Mass in side sinus as polyp ,carcinoma of sinus**



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- × 3-antrochoanal polyp,
  - × Typically arising from maxillary mucosa and prolapsed through ostium to nasal cavity and some time to nasopharynx
  - × 4-Trauma ..hemorrhage ,opacification
  - × 5-carcinoma

✘ Plain film and CT scan with opaque sinus



# FLUID LEVEL IN BOTH MAXILLARY SINUS







A



B



C



D

# FLUID LEVEL IN BOTH MAXILLARY SINUS





A



B



C



D



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## Tumours

In all opaque sinus particularly the antra  
,attention should be made on both plain films  
and CT scan to bony margin because if these  
destroyed the diagnosis of carcinoma almost  
certain

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**osteoma**

**fibro-osseous lesions**

**inverting papilloma**

**juvenile angiofibroma**

**granulomatous conditions**

**malignant tumours.**

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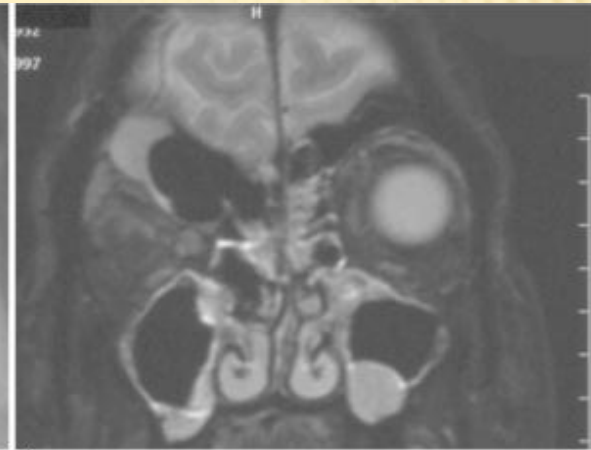
## Osteoma

Benign ,slowly growing tumour .By plain and CT scan appears as well defined ,very dense lesion .





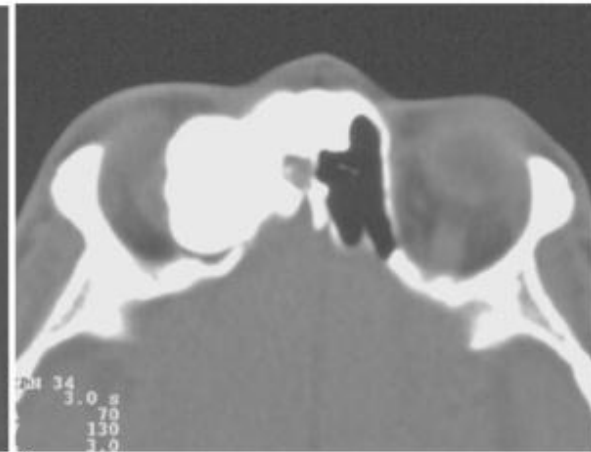
A



B



C



D

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Fractures of the nasal bones are common sequelae of fights.

Plain radiographs are sufficient to document the injury, although they are frequently not required in simple fractures

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## Blow-out' fractures

Trauma to the orbit raise the intra-orbital pressure and lead to fracture of the orbital floor. The orbital fat, inferior oblique and inferior rectus muscles will prolapse into the maxillary sinus and become trapped



