

Tumors of Nose & paranasal sinuses

Presented by_

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Tumors of nose & PNS



- ✓ About 3-10% of head-neck cancer is sinunasal origin.
- ✓ It is more common in female with male female ratio of 1:2 to 1:5.





Classifications :

Tumours of nasal cavity: classified as

- **Benign tumours-** squamous papilloma, inverted papilloma, osteoma, chondroma, haemangioma, fibroma,.
- **Malignant tumours-** squamous cell carcinoma, adenocarcinoma, adenoid cystic carcinoma, anaplastic carcinoma, malignant lymphoma, olfactory neuroblastoma.





Inverted papilloma

- Commonly found in males, mostly seen between 40-70 years.
- Arises from the lateral wall of the nose & is always unilateral.
- Presents as a firm red or gray mass.
- The tumour shows inversion of the epithelium into the underlying stroma instead of growing outwards.





Inverted papilloma

- Also called transitional cell papilloma /Ringertz's papilloma.
- Has a marked tendency to recurrent after surgical removal and may be associated with squamous cell carcinoma in 10- 15% cases.
- Malignant transformation is about 2-10% cases.





Inverted papilloma

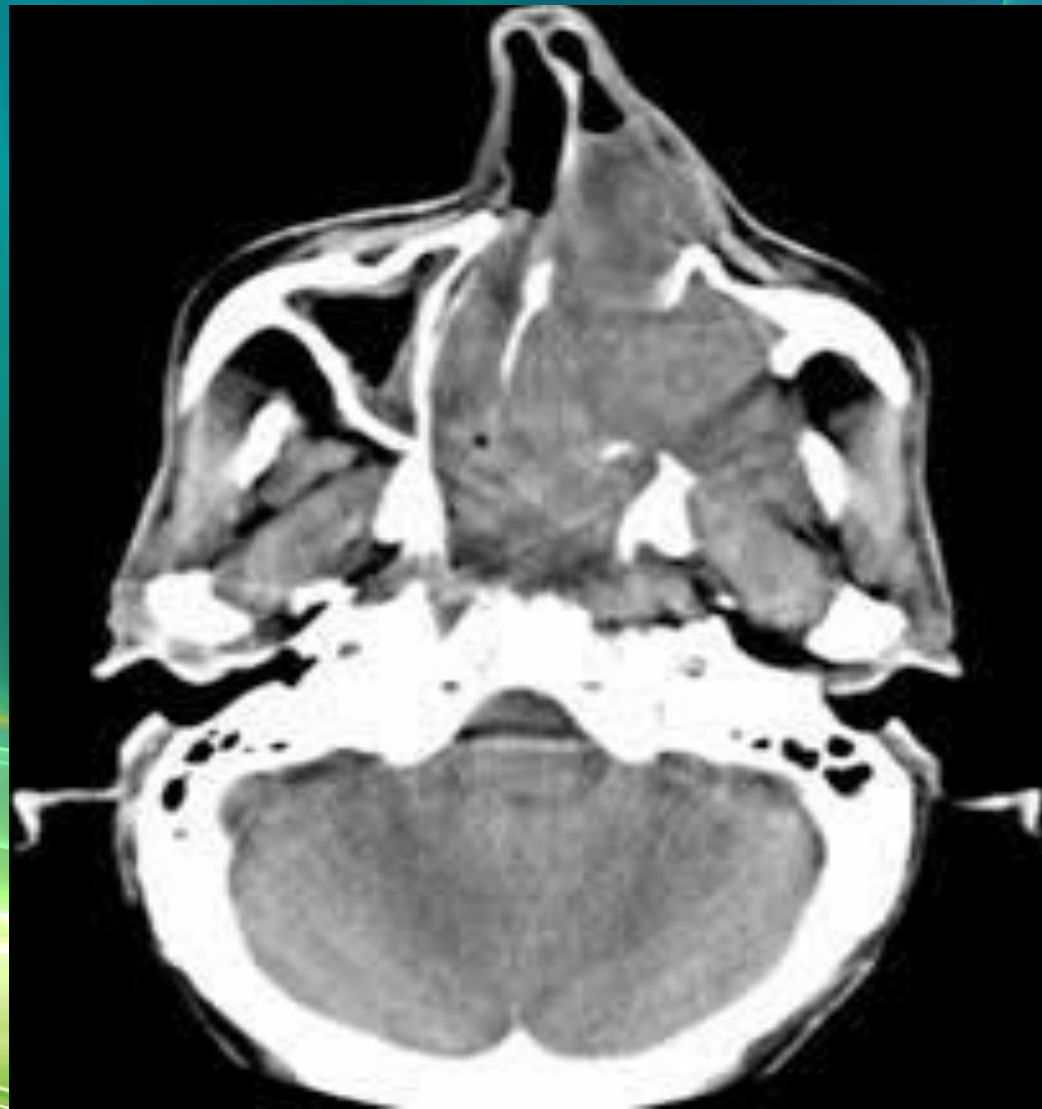




Inverted papilloma.

Investigations:

- Coronal CT scan of PNS- to see the extension of the mass and to exclude malignancy.
- Biopsy .





Inverted papilloma (cont.)

Treatment :

- ❖ Wide excision- through lateral rhinotomy or medial maxillectomy.
- ❖ FESS.
- ❖ Radiotherapy- in case of recurrence or incomplete removal of tumour.





Olfactory neuroblastoma





Olfactory neuroblastoma:

- ☐ Arises from the neural crest cells of olfactory neuro epithelium.
- ☐ Macroscopically it looks like high grade T cells lymphoma and anaplastic carcinoma.
- ☐ Presented with cherry red unilateral polypoidal mass in the upper third of the nasal cavity.
- ☐ Other symptoms are nasal obstruction, anosmia or hyposmia, facial pain, epistaxis.
- ☐ It is a vascular tumour and bleeds profusely on biopsy.
- ☐ Treatment is surgery.
- ☐ Prognosis is poor.





Olfactory neuroblastoma





Carcinoma of nose & PNS

- Cancer of nose and PNS constitutes 0.44% of all body cancer.
- Common in males than females.
- Most frequently involved are the maxillary sinuses followed by ethmoid, frontal and sphenoid.





Carcinoma of PNS (cont.)

Aetiology:

- ✓ Causes of sinus malignancy is unknown.
- ✓ People working in hardwood furniture industry, nickel refining, leather work and manufacture of mustard gas have shown higher incidence of sinunasal cancer.
- ✓ Workers of furniture industry develop adenocarcinoma of the ethmoids and nasal cavity.
- ✓ Those engaged in nickel refining get squamous cell and anaplastic carcinoma.





Carcinoma of PNS (cont.)

- ✓ More than 80% of the malignant tumours are of squamous cell variety.
- ✓ Rest are adenocarcinoma, adenoid cystic carcinoma, melanoma and various types of sarcoma.
- ✓ Carcinoma of maxillary sinus arises from the sinus lining and may remain silent for a long time.





Clinical features

- ✓ Disease is common in 40-60 age group with preponderance in males.
- ✓ Early features of maxillary sinus malignancy are- nasal stuffiness, blood stained nasal discharge, facial paraesthesias or pain and epiphora.
- ✓ These symptoms may be missed or simple treated as sinusitis.





Clinical features (cont.)

Late features will depend on the direction of spread and extent of growth.

- **Medial spread**- to nasal cavity gives rise to nasal obstruction, discharge and epistaxis.
- **Anterior spread**- causes swelling of the cheek and later invasion of the facial skin.
- **Inferior spread**- causes expansion of alveolus with dental pain, loosening of teeth, poor fitting of dentures, ulceration of gingiva and swelling in the hard palate.





Antral carcinoma





Clinical features

- **Superior spread**- invades the orbit causing proptosis, diplopia, ocular pain and epiphora.
- **Posterior spread**- is into pterygomaxillary fossa, pterygoid plates and the muscles causing trismus.
- **Intracranial spread**- can occur through ethmoids, cribriform plate or foramen lacerum.

Lymphatic spread- **nodal metastases are uncommon.**

Systemic metastases- **are rare and seen in lungs or bone.**





Diagnosis

X-ray of sinuses – shows opacity of the involved sinus with expansion and destruction of the bony walls.

C T scan- (both in axial and coronal planes) helps in the staging of disease.

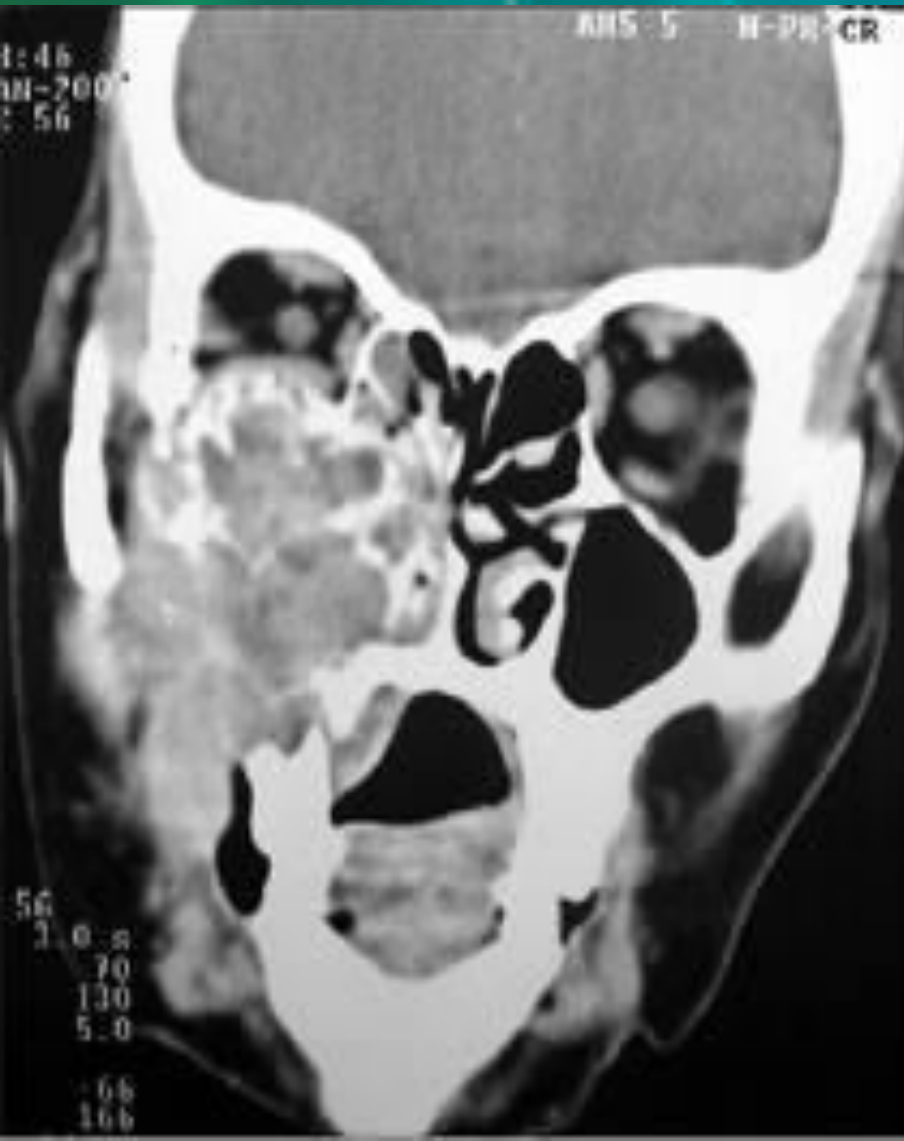
Biopsy –

Endoscopy of the nose and maxillary sinus- will provide detailed examination.





CT scan of PNS





Classification (Antral carcinoma)

There is no universally accepted classification for maxillary carcinoma.

- **Ohngren's classification**- 4 anatomical divisions by an oblique plane from the inner canthus downwards and backwards to the mandibular angle and by a vertical line through the pupils to determine prognosis.
 - Posterior-superior medial -most dangerous.
 - Posterior-superior lateral
 - Anterior-inferior medial-**least harmful**
 - Anterior-inferior lateral





classifications

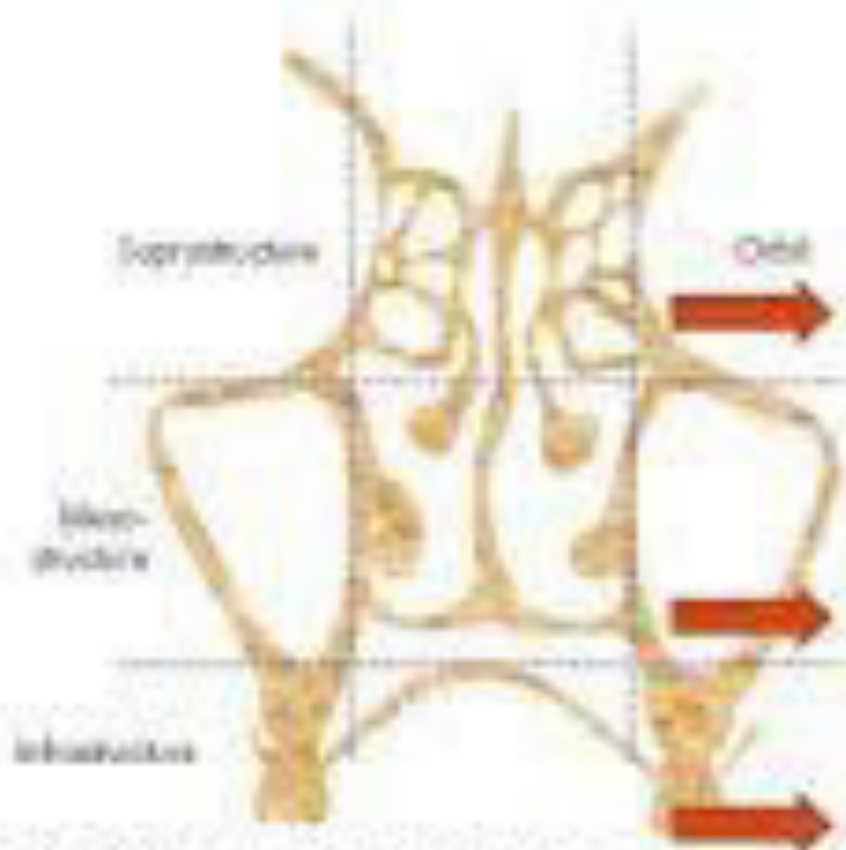
➤ Lederman's classification-

Consists of two horizontal lines passing through infra-orbital floor and floor of the nasal cavity and two vertical lines passing through medial orbital margins dividing nose and sinuses into 9 segments.

This includes all malignancies of nose and paranasal sinuses.



Lederman's Classification.



Ethmoid, sphenoid, frontal
sinuses & olfactory area of
nose.

Maxillary & respiratory
part of nose.

Alveolar process

Fig. 40.5 Lederman's classification



Classification

➤ AJCC (American Joint Committee on Cancer) classification-

only for squamous cell carcinoma.

Histopathologically, squamous cell carcinoma is graded into: a) Well differentiated.

b) Moderately differentiated.

c) Poorly differentiated.





Antral carcinoma





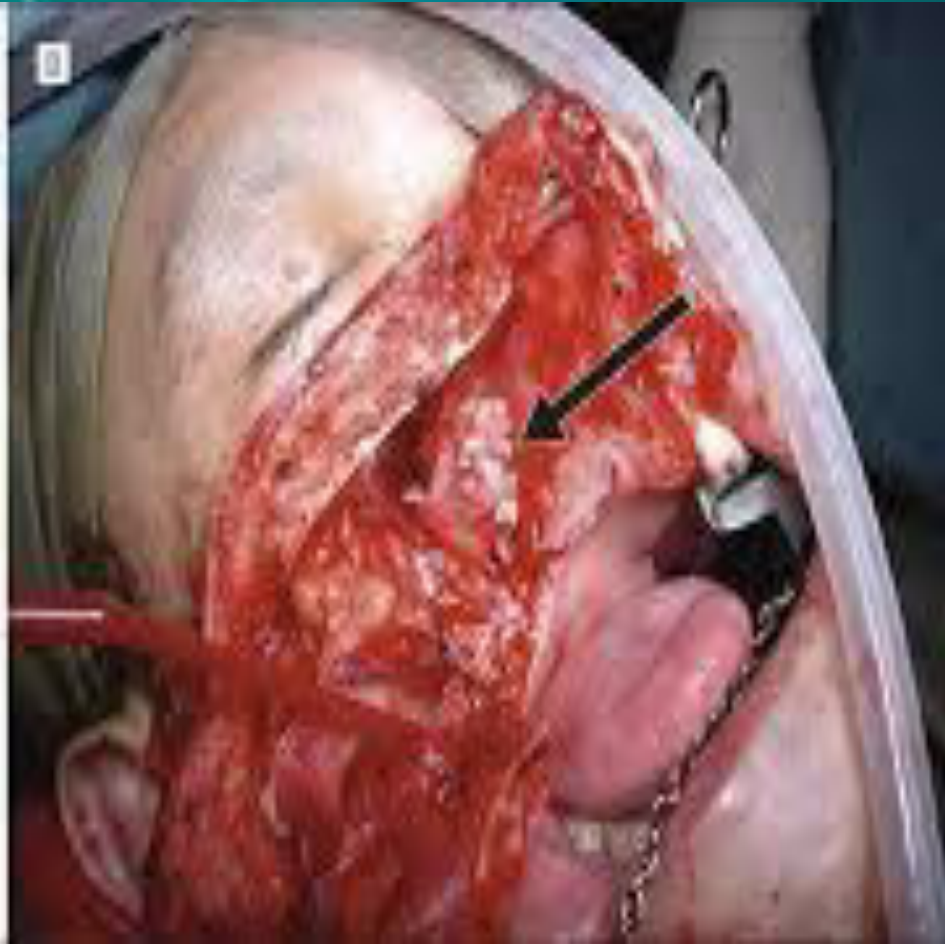
Treatment

- For squamous cell carcinoma- a combination of radiotherapy and surgery gives better results than either alone.
- Radiotherapy can be given before or after surgery.
- Very often, a full course of pre-operative tele cobalt therapy is given followed 4-6 weeks later by surgical excision of the growth by total or extended maxillectomy.





Incision for maxillectomy





Ethmoidal malignancy

Ethmoid malignancy:

Presents with nasal mass, nasal obstruction epistaxis, proptosis, epiphora, diplopia.

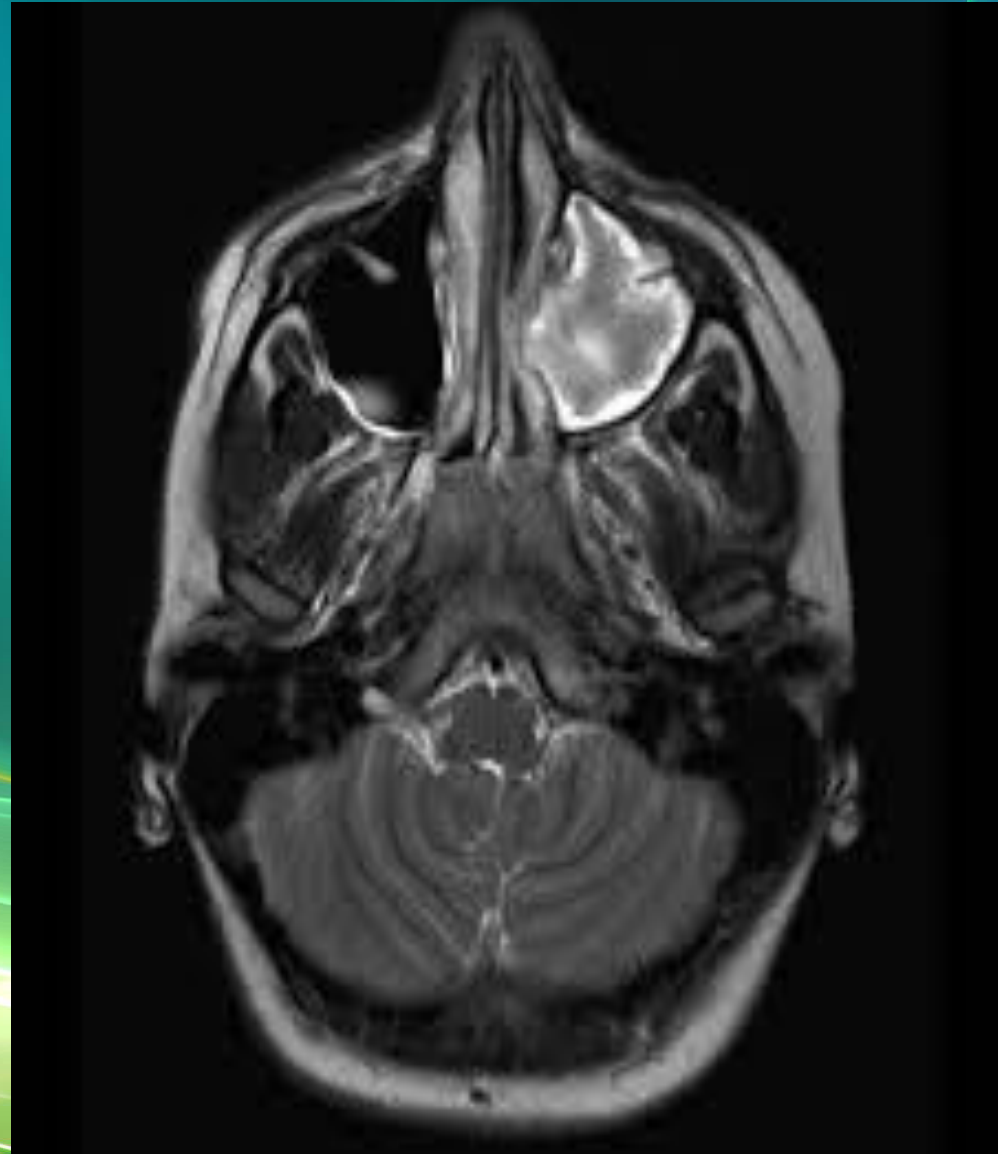




Cancer of nose & PNS

Investigations:

- ✓ Coronal CT scan of PNS-
to see the bony erosion
and extension of the
mass
- MRI
- Biopsy





Treatment of nasal carcinoma

- **Lateral rhinotomy**- for tumour limited to the lateral nasal wall, nasal cavity and ethmoid.
- **Total maxillectomy**- for carcinoma of maxillary atrum followed by post operative radiotherapy.
- **Craniofacial resection**- for olfactory neuroblastoma.
- **Neck dissection**- for neck nodes metastasis.





Carcinoma of maxilla





THANK
YOU ALL

