Inverted Papilloma

Aka Schneiderian papillomas / Ringertz tumour

DEFINITION

A Benign epithelial neoplasm arising from Schneiderian membrane of nose and paranasal sinuses.

The mucosal lining of nose and paranasal sinuses is known as Schneiderian membrane.

Papillomas arising from this membrane is very unique in that they are found to be growing inwardly and hence the term inverted papilloma.

Papillomas involving the vestibule is not included under this group because histologically, biologically and behaviour wise it is different.

The lining mucosa of nose and paranasal sinuses is unique embryologically in the sense that it is derived from the ectoderm, in contrast to the lining epithelium of laryngobronchial tree which is derived from endoderm.

Inverted papillomas behave like neoplasms, arising from reserve / replacement cells located at the basement membrane of the mucosa due to UNKNOWN stimulus.

The resulting thickening of the epithelium assumes an inverting, fungiform or combination growth pattern.

Depending on the degree of metaplasia varying amounts of respiratory / cylindrical cells may be seen in Schneiderian papillomas.

Rarely the papilloma may be composed entirely of cylindrical cells, and hence the term cylindrical cell papillomas is used to describe this subtype.

ANATOMIC CLASSIFICATION OF SCHNEIDERIAN PAPILLOMA:

Inverted papilloma can be classified according to its site of occurrence i.e. Lateral wall and septal papillomas.

Septal papillomas remain confined to the nasal septum and may very rarely involve the roof and floor of the nasal cavity. Carcinomatous transformation is rare in septal papillomas & Vice versa in lateral wall papillomas.

INCIDENCE

M > F, 20 to 70 yrs. Mean age is 50 yrs

Inverted papillomas are fairly common occurring in 1 - 50 of patients with nasal polypi.

ETIOLOGY

HPV (with mutation of genes), HPV+HSV

GROSS APPEARANCE:

1. Papillary and exophytic

2. Inverted with inwardly invaginating epithelial growth into underlying stroma.

A combination of both patterns also can occur
The papillary form/fungiform papilloma tends to commonly occur in the nasal septum, while the inverted form often occurs in the lateral wall of the nose and sinuses.

**MICROSCOPY**

- Papillary form: epithelial proliferation over a thin core of connective tissue. Inversion of epithelial masses is usually not present.
- Inverted papilloma of lateral wall – When they undergo malignant transformation the stroma is found to be breached.
- The predominant cell type in these papillomas is epidermoid in nature.
- Intercellular bridges can be clearly demonstrated. Microscopic mucous cysts can also be identified in both these types. Keratinisation is very minimal. Excessive keratinisation is very rare, and should prompt the pathologist to other diagnosis like malignant transformation.

**Clinical features:**

- Unilateral nasal mass, commonly fleshy in nature.
- Sometimes it may occur behind a sentinel nasal polyp.
- It commonly involves the nasal cavity, erodes the medial wall of maxilla and may present inside the maxillary sinus.

**Symptoms:**

1. Unilateral nasal obstruction
2. Nasal bleeding
3. Nasal discharge
4. Proptosis if lamina papyracea is breached.

**KROUSE STAGING SYSTEM**

1. Tumour confined to nasal cavity with no evidence of malignancy.
2. Tumour involving the ostiomeatal complex, ethmoid sinuses, and/or medial portion of maxillary sinus involvement of nasal cavity with no evidence of malignancy.
3. Tumour involving the lateral, inferior, superior, anterior, or posterior walls of maxillary sinus, the sphenoid sinus, and/or the frontal sinus with or without involvement of the nasal cavity, the medial portion of the maxillary sinus and the ethmoid sinuses without evidence of malignancy.
4. All malignant tumours and those tumours with extra nasal and extra sinus extension.

**MANAGEMENT**

To summarise:

- Endonasal – 12 to 15 percent recurrence rates
- Midfacial degloving
- Sub cranial approach
- Lateral rhinotomy is generally reserved if exenteration of the orbit is needed simultaneously.
- BEST ➔ Endoscopic Resection.
- Caldwell-Luc or the “limited open approach” was initially used but has fallen out of favour given the poor visualization and higher rates of recurrence associated with this technique.
COMPLICATIONS:

1. Recurrence
2. Haemorrhage
3. Malignant transformation