Laryngeal Tumors

Anatomy of the Condition:

The **larynx** or voice box begins at the back of the throat and extends down, carrying air from the nose and mouth to the trachea and then into the lungs. There are several types of **laryngeal tumors** that can occur in the larynx.

Benign Neoplasms

- Papilloma
- Vascular Neoplasms
- Chondromata
- Myogenic tumours.
- Granular cell tumours
- Fibroma
- Lipoma
- Adenoma
- Neurogenic tumours.
- Para- gangliomata.

-Slow to grow.

-Asymptomatic to start with,

-Give symptoms when sufficient in size due to pressure on nerves muscles and other tissues

-Early hoarseness later stridor, dyspnoea cough, pain.

-Excision biopsy followed by histopathology is the treatment of choice in most of the cases.

Recurrent Respiratory Paplliomatosus

- Human papilloma virus- causative agent
- Presents before 4 years of age.
- Hoarseness, abnormal cry, increasing stridor, respiratory distress.
- Disturbance of mucous blanket- causative factor.
- Multiple, recurrent, remission.
- Co2 laser, tracheostomy, Interferon.

Malignant Neoplasms

A variety of malignant tumors can also arise in the larynx.

Risks factors for cancer of the larynx include:

1. Smoking
2. Heavy alcohol consumption (especially when combined with smoking)
3. Age (laryngeal cancer is more common in people over 55)
4. Gender (men are four times more likely than women to contract the disease)
5. Race (African-Americans have a higher incidence of laryngeal cancer)
6. Exposure to materials such as asbestos or other cancer-causing environmental substances.

Pathology

Macroscopy

- Cauliflower like
- Infiltrative
- Ulcerative
- Sheets of keratotic epithelium

Microscopy

A- Epithelial tumours (Squamous cell carcinoma, Adenocarcinoma Adenoid cystic carcinoma)

B- Connective tissue tumours (Fibrosarcoma, Liposarcoma, Osteogenic sarcoma, Chondrosarcoma, Lieomysarcoma).

Site of Origin

- Supraglottis 19%
- Glottis 76%
- Subglottis 5%

Spread

- Local
- Regional: To the cervical lymph nodes 18%
- Distant (Lung, Liver, Brain, Bone)

Clinical features- Symptoms:

- Progressive and unremitting dysphonia
- Dyspnoea
- Strider
- Pain / Referred pain
- Dysphagia
- Cough and irritation
- Neck swelling
- Hemoptysis, Anorexia, Cachexia.

Clinical Features- Signs

- EXAMINATION OF LAYNX: External examination + Mobility+ I.D.L.
- Examination of the neck
- Examination of ear, nose and throat
- Systemic examination.

Investigations

Routine investigations

- CBP & ESR
- GUE
- Blood sugar
- Blood urea
- X-ray chest PA view
- E.C.G.

Specific investigations

- X-ray neck A.P and lateral views
- CT Scan
- MRI
- Laryngography

- Direct Laryngoscopy
- Histopathology

Staging

TNM classification

T: primary tumour

- Tis - Preinvasive carcinoma
- To- No evidence of primary tumour.
- T1- Tumour confined to the region with normal mobility.
- T2- Tumour confined to the larynx with extension to adjacent sites without vocal cord fixation / superficial involvement of adjacent oro/hypopharynx.
- T3- Tumour confined to the larynx with vocal cord fixation or deep spaces involvement.
- T4- Direct extralaryngeal spread.(prevertebral space, mediastinal structures or encases carotid artery).

N- Lymph Nodes

- No- No evidence of lymph node metastasis
- NX- Regional lymph nodes cannot be assessed
- N1- Metastatic ipsilateral lymph nodes 3cm or less than 3cm in greatest dimension.
- N2a- Metastasis in Single ipsilateral lymph nodes between 3cm-6cm in greatest dimensions.
- N2b- Metastasis in Multiple ipsilateral L-nodes, none more than 6cm in greatest dimensions.
- N2c-Metastasis in Bilateral or contralateral L.N. none more than 6 cm in greatest dimension
- N3- Metastasis in a lymph node more than 6 cm in greatest dimensions

M-Metastasis

- Mo - No evidence of metastasis
- M1- Evidence of distant metastasis present.

Treatments for Laryngeal Cancer:

- **Palliative: Attempts to suppress the size and symptoms of the tumour without the intent to cure.**
- **Curative: Treatment of the tumour with the intent to cure.**

MAJOR MODALITIES

- **Radiations**
- **Surgery**
- **Chemotherapy**

MINOR MODALITIES

- **Laser**
- **Cryosurgery**

Radiations - Advantages

- **Functional preservation.**
- **Patient's preference**
- **No post. Operative complication**

- **Deals effectively with the microscopic invasion into the adjacent lymphatic and venous channels**
- **Can be employed for all sorts of curative and palliative purposes**

Radiations - Disadvantages

- **Ineffective at the necrotic centre of tumour so ineffective against large bulky tumours**
- **Relatively ineffective against Radio resistant tumours**
- **Post radiation reactions**
- **Morbidity**

Radiations- indications

- **Curative small superficial lesions and highly radiosensitive tumours.**
- **Palliative.**
- **Adjunctive for Massive tumours.**

Surgery

Advantages:

- **Can be employed for all tumour sizes for palliative and curative purposes.**
- **Can be used for nodal disease.**
- **Tumour can be assessed per-operatively.**

Disadvantages

- **Functional loss.**
- **Complications of anaesthesia and surgery.**
- **Patient's reluctance.**
- **Problems of reconstruction.**

Types

- **Supraglottic partial laryngectomy**
- **Vertical partial laryngectomy.**
- **Total laryngectomy**
- **Extended total laryngectomy**
- **E. Total laryngectomy with radical neck dissection**

Chemotherapy

- Palliative
- Adjunctive Chemoradiation (Surgery followed or preceded by Chemoradiation).

Laser & Cryosurgery

- Palliative role .
- CO2 Laser may be employed for very small lesions as curative e.g. T1a lesions.

SPEECH REHABILATATION

- Esophageal speech
- Artificial prosthesis
- Electrolaynx