Otolaryngology
Laryngology

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Tumors of the larynx

Benign tumors:
1. hemangioma
2. chondroma
3. Leomyoma
4. Rhabdomyoma
5. Paraganglioma
6. Papilloma

Malignant tumors:
1. squamous cell carcinoma 85%
2. undifferentiated carcinoma 5%
3. verrucous Carcinoma 3%
4. carcinoma insitu 3%
5. sarcoma 2%
6. Adenocarcinoma 0.5%
7. others(miscellaneous:adenoid cystic carcinoma , Lymphoma ,..) 1.5%

Epidemiology

Squamous cell carcinoma of the larynx is the commonest head and neck cancer in the Western world and represents approximately 1% of all malignancies in men, it is the disease of urban societies, the cause of cancer of the larynx is not known, but persons who smoke tobacco and drink alcohol are predisposed to the disease. It is very rare in non-smokers. Alcohol on its own is probably not a cause of laryngeal cancer but it is highly synergistic with smoking, chronic laryngitis , radiation, Asbestosis and other occupational pollutions may predispose to this disease.

Surgical Anatomy:

The larynx is divided into three regions which each include a number of sites:

1.**Supraglottis**. This comprises the larynx superior to the apex of the ventricle. It includes the ventricle, vestibular folds, arytenoids, aryepiglottic folds and the epiglottis.

2. **Glottis**. This comprises the vocal cords and the anterior and posterior commissures.
3. **Subglottis**. This extends from the inferior border of the glottis to the lower border of the cricoid cartilage.

Clinical features:

Malignant tumors of the larynx are about five times commoner in males than females. The incidence increases with age, but the peak age of presentation is in the seventh decade.

Hoarseness is the commonest and often the only presenting symptom, **Dyspnoea** and **stridor** are late symptoms and almost invariably indicate an advanced tumour. **Pain** is an uncommon symptom but is most typical in supraglotic tumours. Patients with a cancer in this site may complain of a **unilateral sore throat**. There maybe **referred otalgia**. **Dysphagia** indicates invasion of the pharynx.

Swelling of the neck may be due to direct penetration of the tumour outside the larynx or to lymph node metastases. **Cough and irritation** of the throat are occasional symptoms. The general symptoms of **norexia, cachexia and fetor** are usually associated with advanced disease.

Laryngeal tumours usually metastasize to the upper deep cervical lymph nodes, but supraglottic tumours may cause bilateral nodes, and some subglottic tumours may spread to the upper mediastinal nodes.

Investigations:

1.A chest radiograph, full blood count and serum analysis are baseline investigations prior to a general anaesthetic, The chest radiograph should be carefully examined to exclude metastases or to assess intercurrent lung disease.

2.Hypoproteinaemia, which may indicate malnourishment and a possibility of poor wound healing.

3. MRI or CT scans of the larynx and neck provide further information about the primary tumour. Imaging may also uncover the presence of impalpable or occult nodes.

4.Direct laryngoscopy under general anaesthesia is mandatory. In addition, the patient should have a full panendoscopy including bronchoscopy. The incidence of a synchronous second primary tumour in the head, neck or lung is in the region of 1-5%.Biopsy material should include an adequate amount of representative tissue to obtain a definitive diagnosis of malignancy, identification of the tumour type and tumour differentiation.

Staging:

T (tumor mass)
Supraglottis.
T1 Tumour limited to one subsite of the supraglottis.
T2 Invasion of more than one subsite of the supraglottis or glottis
T3 Confined to larynx with a fixed vocal cord or invades the postcricoid area, preepiglottic tissues, base of tongue.
T4 Extends beyond the larynx.

Glottis.
T1(a) Tumour limited to one vocal cord.
T1(b) Involves both vocal cords.
T2 Tumour extends to supraglottis and/or subglottis, or impaired cord mobility.
T3 Confined to the larynx with a fixed vocal cord.
T4 Extends beyond the larynx.

Subglottis.
T1 Tumour limited to subglottis.
T2 Extends to vocal cords with normal or impaired mobility.
T3 Vocal cord fixed.
T4 Extends beyond the larynx

N (lymph node metastasis)
N0 no lymph node metastasis
N1 Iipsilateral single LN less than 3 cm in size
N2
- A Ipsilateral LN 3-6 cm in size
- B Ipsilateral multiple less than 6 cm in size
- C CotraLATERAL OR bilateral LN less than 6 cm size

N3 LN more than 6 cm size

M (distant metastasis)
M 0 no distant metastasis
M1 distant metastasis

Management:

Each patient will fall into one of the following treatment categories depending their age, general condition, and stage of the tumour: curative treatment or palliative treatment.

1. Curative treatment may involve radiotherapy, surgery or a combination of these two modalities.

A/ small tumors are treated by radical Radiotherapy in the first instance, with surgery reserved for recurrence. Preservation laryngeal surgery (partial Laryngectomy) is also an option with small tumors.

B/Larger tumors tend to be treated with primary surgery, usually with postoperative radiotherapy.

2. Palliative treatment includes pain relief, tracheostomy, insertion of a percutaneous gastrostomy, palliative radiotherapy, chemotherapy and occasionally surgery.