MALIGNANT TUMOR
OF
LARYNX

• Risk factors
  – Geographic (Brazil, India, France, Italy, Spain, Poland Switzerland)
  – Low social class
  – Urban
  – Smoking
  – Alcohol
  – Radiation

MALIGNANT TUMORS OF THE LARYNX

• Squamous cells carcinoma (85%)
• Carcinoma insitu
• Verrucous carcinoma
• Undifferentiated carcinoma
• Adeno carcinoma
• Miscellaneous carcinoma
  – Adenoid cystic
  – Spindle cell etc.
• Sarcomas

MALIGNANT TUMORS OF THE LARYNX

• Symptoms and signs of laryngeal cancer
  – Progressive hoarseness
- Dyspnoea and stridor
- Pain
- Dysphagia
- Swelling in the neck.

### MALIGNANT TUMORS OF THE LARYNX

#### Workup of the patient

- History
- Examination (including)
  - IDL
  - Laryngoscopy
  - Nasophargoscopy
  - Videostroboscopy
  - Neck examination
  - General examination

#### Investigation

- Imaging studies (CXR, CT or MRI)
- Clinical investigation
- Endoscopy and biopsy

### LARYNGOSCOPY FOR GLOTTIC TUMOURS

- The size, site, extend and gross appearance of the tumour are determined
- Extend into the vallecula or pre-epiglottic space
- Tongue base involvement, tumor extend laterally or medial wall of the piriform sinus
- Vocal cord mobility is checked
• Supraglottic or subglottic spread
• Anterior commissure, ventricle is checked hypopharyngeal examined and biopsy taken
• Neck AND THYROID is palpated

MALIGNANT TUMORS OF THE LARYNX

Classification of supraglottic tumors
T- Primary tumors
  Tis- Carcinoma in situ
  T1- Tumor limited to one subsite of supraglottis
  T2- Tumors involving more than one subsite of supraglottis or glottis or region outside the supraglottis, without fixation of larynx
  T3- Tumors limited to larynx with vocal cord fixation and / or invades any of the following: postcricoid area, pre-epiglottic tissues, deep base of tongue
  T4- Tumors invades through thyroid cartilage, and / or extends into soft tissues of the neck, thyroid and / or oesophagus.

MALIGNANT TUMORS OF THE LARYNX

CLASSIFICATION OF GLOTTIC TUMORS
  Tis- Carcinoma in situ
  T1A- Tumor limited to one vocal cord
  T1B- Tumor involves both vocal cords
  T2- Tumors extends to supraglottis and / or subglottis and / or with impaired vocal cord mobility
  T3- Tumor limited to the larynx with vocal cord fixation
  T4- Tumor invades through thyroid cartilage and / or extends to other tissues beyond the larynx e.g. to oropharynx, soft tissues of the neck

MALIGNANT TUMORS OF THE LARYNX
• **CLASSIFICATION OF SUBGLOTTIC TUMORS**

  Tis- Carcinoma in situ  
  T1- Tumor limited to the subglottis  
  T2- Tumor extends to vocal cord(s) with normal or impaired mobility  
  T3- Tumor limited to the larynx with vocal cord fixation  
  T4- Tumor invades through the cricoid or thyroid cartilage and/or extends to other tissues beyond the larynx, e.g. to oropharynx, soft tissues of the neck.

• **MALIGNANT TUMORS OF THE LARYNX**

  • **Staging for laryngeal cancer**
    
  Treatment planning for Ca-Larynx

  • Curative intent  
    – Radiotherapy  
    – Surgery  
    – Radiotherapy with or without chemotherapy  
    – Rehabilitation  
    – Surgery with postoperative radiotherapy or chemotherapy

• Rehabilitation

• **TREATMENT PLANNING FOR CA-LARYNX**

  • Palliation  
    – General palliative, symptom control and nutritional support  
    – Tracheostomy  
    – Palliative surgery  
    – Chemotherapy  
    – Radiotherapy  
    – Radiotherapy and chemotherapy

• **SURGICAL TREATMENT**
The following operations can be performed on the larynx:

- Microendolaryngeal and laser surgery
- Vertical partial resection (hemilaryngectomy)
  - Cordectomy
  - Frontal partial laryngectomy
  - Anterior frontal laryngectomy
  - Lateral partial laryngectomy
  - Frontolateral partial laryngectomy
  - Extended frontolateral partial laryngectomy
- Horizontal partial laryngectomy
  - Epiglottectomy
  - Supraglottic partial laryngectomy
  - Extended supraglottic laryngectomy

Surgical Treatment:

- Supracricoid laryngectomy with cricohyoidoepiglottoplexy (subtotal laryngectomy)
• Total resection
  – Total laryngectomy
  – Extended total laryngectomy

**POST OPERATIVE PICTURE**

**Complications of Laryngectomy**

• Fistula
• Stenosis of pharynx, tracheostome
• Recurrence within the pharynx or the site of tracheotomy
• **Stomal recurrence (5-15%)**
  — Inadequate incision
  — Implantation into the tract of a preoperative tracheotomy
  — Tumour in the paratracheal nodes
  — Second tumour in the cervical trachea

**STENOSIS**

**CAUSES OF STOMAL STENOSIS**
• Excessive scar tissue
• Excessive fat around the stoma
• Defective or absent tracheal rings
• Recurrent tumour
• Failure to wear a stoma button

SURGICAL VOICE RESTORATION AFTER LARYNGECTOMY

• Oesophageal speech
• Primary tracheo-oesophageal puncture
• Secondary puncture
• Other aids to communication
• Electrolarynx

OESOPHAGEAL VOICE

GOOD OESOPHAGEAL SPEECH DEPENDS ON

• Gender
• Age
• Motivation
• Intelligence
• Local factors in the pharynx
• State of the oesophagus

OESOPHARYNGEAL PUNCTURE
ADVANTAGES OF TRACHEO-OESOPHAGEAL VALVES

- Increased intelligibility
- Increased fluency
- Easier to acquire
- Enhanced intensity
- Improved fundamental frequency

ELECTRO LARYNX

MALIGNANT TUMORS OF THE LARYNX

- PARAMETERS TO BE CHECKED DURING VIDEOSTROBOSCOPY
• Fundamental frequency
• Bilateral symmetry
• Periodicity of successive vibrations
• Glottal closure
• Amplitude of vibration
• Mucosal wave
• Non-vibrating portion

MALIGNANT TUMORS OF THE LARYNX

• ADVANTAGES OF VIDEOSTROBOSCOPY
  – Information on detailed vibratory behavior
  – Exact identification of surface tensions
  – Information provided in out-patient setting
  – Histology and documentation can be obtained on superficial extent and infiltrative depth of early malignant lesions.

TREATMENT FACTORS

• Age
• Performance status
• Treatment preference of the patient
• Any previous treatment
• Patients distance from the treatment facility
• Follow-up reliability
• Physicians preference for treatment
• Availability of high-quality imaging
• Skilled pathology
• Skill of the surgeon

CONTRAINDICATION FOR TRACHEO-OESOPHAGEAL PUNCTURE

• Inability to care for the stoma
• Stenotic stoma
• Oesophageal stenosis
• Poor motivation

THANK YOU