BLK Super Speciality Hospital

VOICE DISORDERS

How is speech generated: Voice is produced by vibratory movements of two vocal cords situated in larynx.

Vibratory Mechanisms in Larynx: Pitch of sound depends on period of vibration of cords. Pitch is varied by regulation of tension of cords, variation of length of vibrating cord from broad and thick to thin and narrow, shape of free margin of vocal cord and infraglottic pressure. Suction force by the Bernoulli effect producing vocal cord vibration during phonation is very important aspect to be taken into account while treating voice disorder.

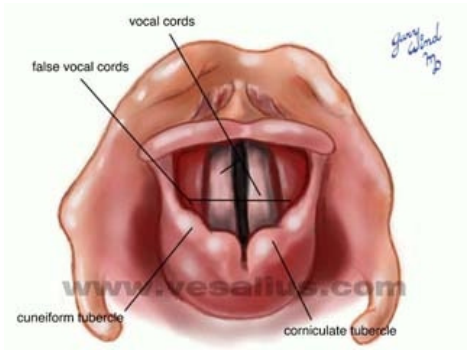

Fig 1: Larynx from inside

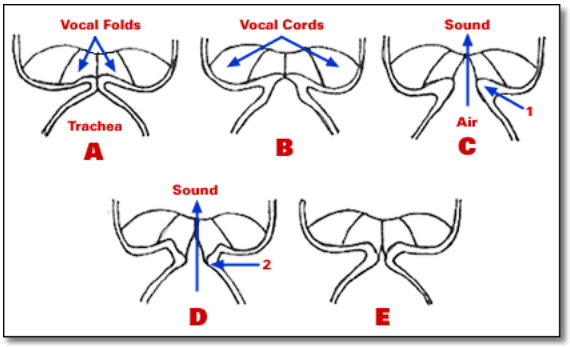

Fig 2: Mechanism of voice production

A. Vocal cords closed immediately prior to phonation (voice production).

B. Air pressure develops below vocal cords because of air from lungs during exhalation.

C. Vocal cords separate briefly with the release of air. (1) Arrow points to the upper edge of the vocal cord.

D. Vocal cords re-approximate. (2) Arrow points to the lower edge of vocal cord.

E. Vocal cords together again.

Articulation of Voice

Final modification of the voice occurs in the vocal tract above the level of larynx which comprises of mouth, nose, and throat, where the tongue, palate, cheek, and lips are involved in articulation (speech production).

- What are the causes of voice disorders:
    - Benign lesions like vocal cord nodules (Singer's nodule), Vocal cord polyp, Vocal cord cyst, Leukoplakia of vocal cords etc;
    - Trauma to larynx
    - Neurological conditions affecting Larynx like unilateral vocal cord palsy, spasmodic dysphonias,
    - Malignant or cancerous lesion of Larynx or voice box
    - Certain other diseases like GERD, Hypothyroidism, simple viral laryngitis,
- When should you consult ENT Specialist: If any change of voice persists for more than 2 weeks in spite of treatment, you should consult ENT Specialist
- What investigations ENT Specialist will advise: He will take a detail history and will carry out general ENT examination. Then the following examinations may be required like:
    - Video laryngoscopy
    - Video Stroboscopy
    - Voice recording and analysis
    - Imaging like CT Scan
    - Blood tests depending on the suspected systemic diseases
    - Microlaryngoscopic examination under general anaesthesia if required
- What treatment modalities available:

  Treatment depends upon the cause for dysphonia or change of voice which can be one of the following:
    - In case of laryngitis which is due to infection is treated by medication and steam inhalation
    - In case of vocal nodules or Singer's nodule only speech therapy
    - In case of benign lesions of larynx either cold knife surgery using microscope or CO2 Laser
    - In case of cancerous lesion the treatment can be Surgery or Radiotherapy depending upon the staging of the disease
    - In case of suspected systemic diseases appropriate medical treatment

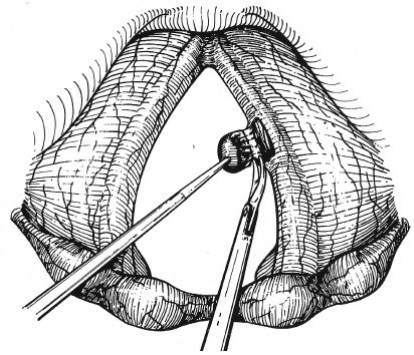

Fig 3: Phonomicro surgery

Fig 4: CO2 Laser Equipment

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