بسم الله الرحمن الرحيم

MAO

ENT

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HOARSENESS OF VOICE

It is a weak low pitched voice due to incomplete coaptation (closure) of the vocal cords.

***Etiology:** lesions preventing adduction, tension & vibration of the vocal cords.

1. Laryngeal causes:

a- Congenital; web, laryngomalacia, laryngeal cyst.

b- Traumatic; 1) foreign body.
2) accidental, cut throat, chemical & physical, burn, smoke.
3) surgical; clumsy instrumentation, high tracheostomy.

c- Inflammatory; 1) acute; acute laryngitis, diphtheria.
2) chronic; specific laryngitis, scleroderma, syphilis, T.B.

d- Edema; prevent adduction of the vocal cords. 1) allergy. 2) drug.

e- Neoplastic; 1) benign; multiple papillomatosis, singer's nodule, polyp…etc.
2) malignant; laryngeal cancer.

f- Neurogenic; unilateral vocal cord paralysis.

2. Abuse of voice; habitual as with teachers or due to shouting.

3. Excess alcohol & tobacco.

4. General weakness; as in myasthenia, excess alcohol.

5. Lack of mucous secretion; e.g. atropine.

6. Cricoarytenoid joint lesions; e.g. arthritis.

7. Ulcers of the larynx:

a- Traumatic ulcers; 1) clumsy instrumentation.
2) F.B.
3) contact ulcer due to vocal cord trauma.

b- Inflammatory ulcers; 1) acute, diphtheria.
2) chronic, T.B., syphilis.

c- Malignant ulcers;

d- Ulcers due to blood diseases; agranulocytosis.

e- Ulcers due to skin diseases; pemphigus.

NOTES:

- Why the nodule form in professional persons?

Because of tension→trauma→bleeding (hematoma)→fibrosis→nodule.
This condition may be acute or chronic & treatment by rest & surgery.

- The ulcer of T.B. usually occur in posterior commissure, while of syphilis in the anterior commissure.
- Papillomatosis; it is type of warts which may be; Juvenile {high rate of recurrence, occur in young age, at any site, Rx by surgery-CO2 laser-, complicated by airway obstruction} & Adult type {low rate of recurrence, occur after 80 years}.
- Recurrent laryngeal nerve injury if-unilateral→hoarseness. Or if-bilateral→stridor.

Paralysis of Larynx (Vocal Cords)

***Muscles of Larynx:**

1. Abductors; {*posterior cricoarytenoid*}_it opens the glottis in inspiration.
2. Adductors; {*lateral cricoarytenoid*}, {*interarytenoid*}, {*cricothyroid* }_they closes the glottis in phonation.
3. Tensor; {*thyroarytenoid* }_it increase the pitch of the voice.

***Nerve Supply:**

1. Superior Laryngeal Nerve; branch of vagus, it supply motor fiber of cricothyroid muscles & sensory fibers of the mucosa of larynx above the vocal cords.
2. Recurrent Laryngeal Nerve; branch of vagus, it supply motor fibers to all the muscles of larynx except cricothyroid muscle & sensory fibers to all mucosa of larynx below the vocal cords.

The left recurrent laryngeal nerve descend in the thoracic to turn around aortic arch, but right one turn around the subclavian artery.

***Causes of Laryngeal Paralysis:**

1. Cortical lesions.
2. Bulbar lesions; *a- vascular.* *b- tumours.*
3. Lesions in the motor fibers of the vagus trunk or recurrent laryngeal nerve;
   a- At the base of skull; 1) fracture base. 2) Nasopharyngeal tumours.
   b- In the neck; main causes of bilateral abductor paralysis:
   1)Total thyroidectomy.
   2)Malignant gland.

c- *In the thorax;* the left vocal cord is affected by tumours, glands, aortic aneurysm & cancers.

4. Peripheral neuritis; *Diphtheria & Influenza.*

***Clinical Picture of Laryngeal Paralysis:**

1. Unilateral paralysis;

Causes hoarseness of voice which disappear after 6 months to one year due to compensation of healthy cord crossing the midline to meet the paralyzed cord.

2. Bilateral paralysis;

Causes stridor but not hoarseness because there is full adduction of the cords.

***Clinical Types & Treatment:**

i. *Unilateral Adductor paralysis:*

The paralyzed cord lie in cadaveric (lateral) position, the hoarseness of voice usually improved over 6 months due to compensation of other healthy vocal cord, crossing the midline to meet the paralyzed cord (by speech therapy). If no response then our treatment planned at replacing the paralyzed cord to midline by Teflon injection or implant procedure or crico-arytenoid arthrodesis.

ii. *Unilateral Abductor paralysis:*

The paralyzed vocal cord lie in the paramedian position (if left side is affected then this may refer to left bronchial carcinoma), treatment by speech therapy for 6 months where the other vocal cord compensated.

iii. *Bilateral Adductor paralysis:*

Both vocal cords lie in cadaveric position, where is a risk of inhalation, aphonea. Treatment; either by cuffed tracheostomy tube & nasogastric tube. For feeding. Further management is total laryngectomy or epiglottopexy.

iv. *Bilateral Abductor Paralysis:*

Both vocal cords lie in paramedian position which leads to stridor, so treatment either by speaking valve tracheostomy tube, to replace the vocal cords laterally by cordopexy or arytenoidectomy (+/- CO2 laser) or cordectomy (removal of posterior half of the vocal cords).

The End

Edited by: AMMAR AYAD

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