430 Teams

Diseases of the Ear, Nose and Throat



22st Lecture:

Communication and Swallowing Disorders (part 2)

Done by: ayshah al-mahboob

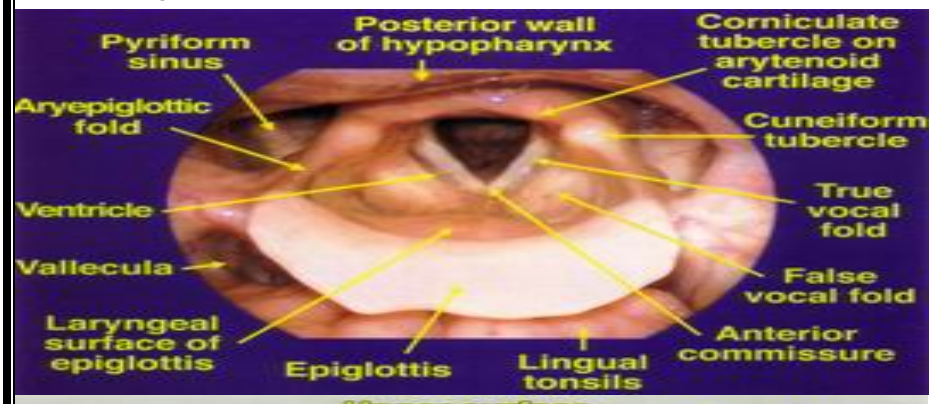
The slides were provided by doctor (**Tamer Mesallam**)
my source (the lecture slides and records only - NOTE: for better understanding , study larynx lectures first)
Important Notes in red
Copied slides in black
Your notes in blue
Doctor notes in green
Highlight possible MCQs mentioned or pointed by the doctor

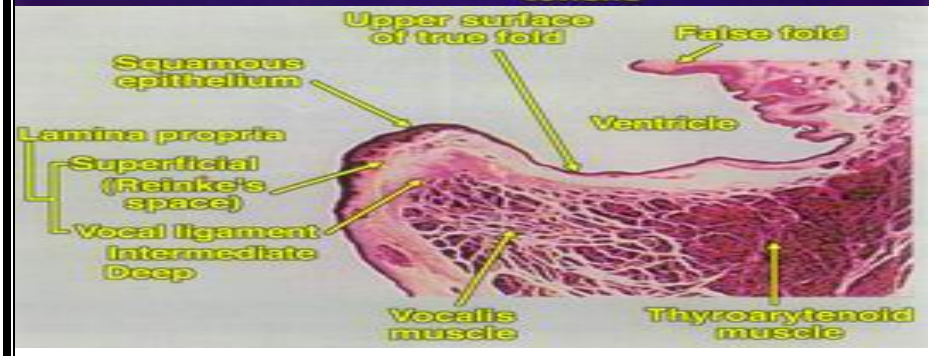
2 Communication and Swallowing Disorders

The doctor read every single word in this picture
–note:
to decide the side of any part of the larynx lesion (eg: vocal cord lesions) whether it's right or left side lesion
(**consider the land mark anteriorly is** : anterior commissure and epiglottis and **your posterior land mark is** : arytenoid cartilage and hypopharynx)
because in the EXAM some picture will be inverted , so it's very important to know the correct site of the lesion.

In part 2 we will study :

-voice disorders
-swallowing disorders





Cross section of the vocal cords which contains :
Mucosa :
1-Squamous epithelium
2-lamina propria which contains:
- the superficial layer
- the intermediate and deep layers which form the vocal ligament

Prerequisites of "normal" voice production:

The doctor did not read the prerequisites

1. Normal range of movement of vocal folds.
2. Normal mobility of mucosa on deep layers.
3. Optimal coaptation of vocal folds' edges.
4. Optimal motor force.
5. Optimal pulmonary support.
6. Optimal timing between vocal fold closure and pulmonary exhalation.
7. Optimal tuning of vocal fold musculature (int. & ext.).

Usually the presenting symptoms in voice disorders are:

- **Dysphonia:** Any change of the patient's voice from his habitual one.
- **Aphonia:** Loss of the patient's voice (functional or organic).
- **Phonasthenia**: a subjective complaint of dryness, tightness, globus feeling ,foreign body sensation and voice fatigue, while the patient's voice and larynx is normal.
- **Dysodia:** Change of the singing voice while the speaking voice is normal. This complain we see it usually in professional voice users like : the singers , quran readers, teachers .
  (يعني يشتكي من تغير صوته بالغناء فقط لكن صوته المعتاد لم يتغير)

Definition of dysphonia and Hoarseness:

We like to say dysphonia in any voice changes rather than hoarseness because **dysphonia means :** Difficulty in phonation and the Changing of voice from his /her habitual and it includes any kind of voice character changes however **Hoarseness means only** roughness & harshness of voice

Etiological classification of dysphonia:

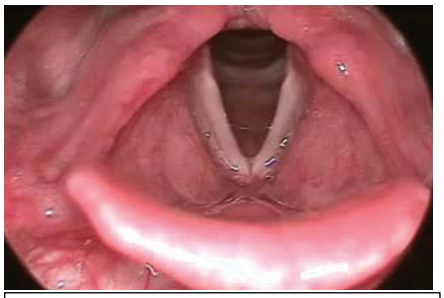
I. Organic Causes
II. Non-Organic Causes: Habitual , Psychogenic
III. Benign vocal fold lesions =Minimal Associated Pathological Lesions (MAPLs) includes cyst , nodules and follicles …etc which we will mention later
IV. Accompaniment of Neuro-psychiatric Ailments

III.Voice disorders:

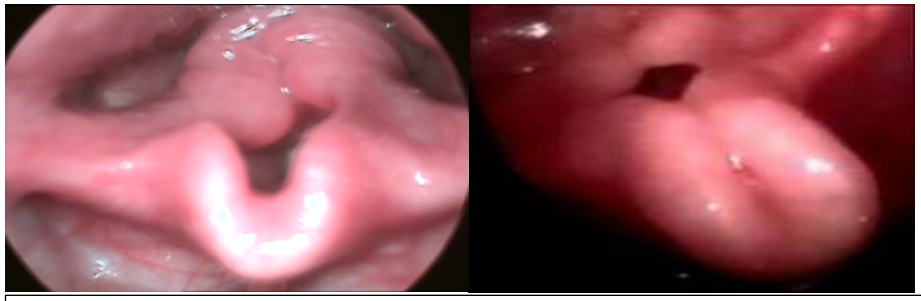
A) Organic voice disorders:

. Congenital.
. Inflammatory.
. Traumatic.
. Neurological.
. Neoplastic.
. Hormonal.
. Status post-laryngectomy.

All of the following pictures regarding organic voice disorders are possible exam questions IMP :



Normal larynx



Description: Omega shape epiglottis whenever you see **it's most likely** Laryngomalacia
It's common in children 1-2 years old
The common presentation: it is not a dysphonia , it's breathing problem , especially when he is laughing or playing , he can get a noisy breathing (stridor) due to collapse epiglottis over the arytenoid cartilage
Treatment:
Depends on the degree
Mild case: observation and tell the family that this condition it's self-limiting
But in severe cases :where it's interfere with respiration we do surgery

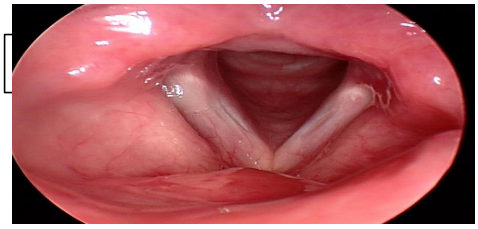
Description: Congenital vocal folds web
The history is about 18 years old patient , he diagnosed late because he did not complain from breathing problem
Common presentation : The symptoms depends on the stages of the web , eg :when the web extend posteriorly , it will obstruct the air way and the patient will suffer from breathing related problems and he will be presented early .
Treatment:
Surgical excision but I have to be aware from post surgical atresia (eg: After the incision in approximately two weeks , there will be adhesion or synchea between the vocal cords when they are closed to each other , so I have to put some thing between them to prevent the adhesion. (I could not hear what is the name of the thing that they put it between the vocal cords ?)

This is Severe type when the cleft extend deep to the trachea

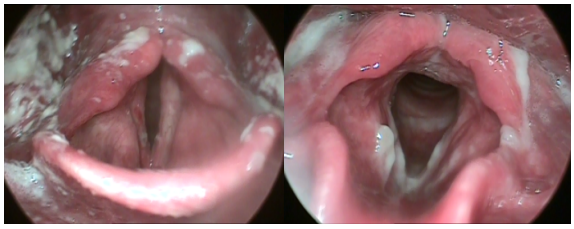
Type 1 in the arytenoid clefting

Description :laryngeal cleft or laryngotracheoesophageal cleft is a rare congenital abnormality in the posterior laryngo-tracheal wall . It means there is a gap between the oesophagus and trachea, which allows food or fluid to pass into the airway.
Types: Type I extends no further down than the vocal cords, **type II** extends below the vocal cords and into the cricoid cartilage, **type III** extends into the cervical section of the trachea and **type IV** extends the furthest—into the thoracic section of the trachea
Management :Surgery

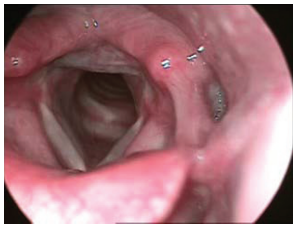
4 Communication and Swallowing Disorders



Description: Sulcus Vocalis (Congenital) , Very difficult condition to diagnose , it's rare but common here in KSA ,
Presentation: severe dysphonia
Treatment: Surgery (vocal cord augmentation to decrease the gabs)



Description: Fungal infection (Inflammatory)
Presentation: Imp finding is a history of immune compromised patient(diabetic patient or patient in immune suppressive drugs)
Treatment: Antifungal drugs

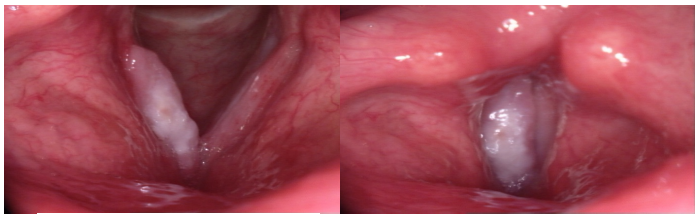


Laryngopharyngeal Reflux (Inflammatory) : Notice that You will see congestion

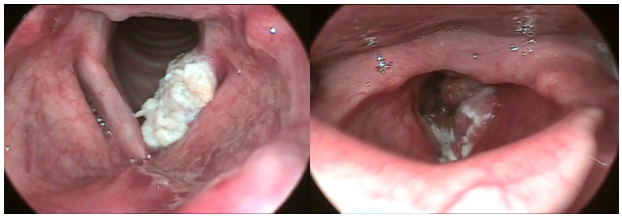
This early stage of this condition (crustation)

This is late stage when we see granulation tissue and subglottic stenosis

Description: The name of this chronic specific infection is Laryngoscleroma (Inflammatory)
Rare here but common in Egypt
Treatment :
In early stage: Selective antibiotic :ciprofloxacin , the response is good
If left untreated : the patient can develop granulation tissue and end in subglottic stenosis

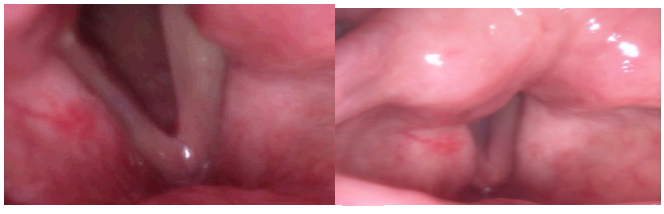


Respiration Phonation

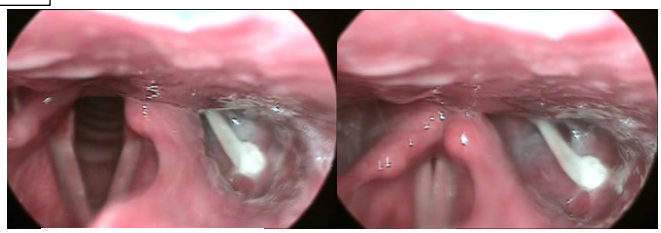


Description: Laryngeal carcinoma (Neoplastic)
-right vocal cords shows squamous cell carcinoma
Common Presentation : dysphonia
Management: surgical
Notice The land mark to decide the direction of the lesion

Advanced malignancy , Cancer (Neoplastic)



Respiration Phonation



Respiration Phonation

Description: Unilateral Left vocal fold paralysis (Neurological)
Notice during the abduction the left vocal cords is slightly abducted than the other one
Common Presentation : Aspiration , dysphonia
Treatment is : Augmentation of the vocal cord by medialization laryngoplasty to reduce the gab
The dr said that I guess you will not know it because Moving video is the best way to judge the paralysis

- The History will help you to know the finding .
- In this case there is history of Swelling of the left side of the nick after 3 days from aspiration and chocking during eating.
- **Finding:** There is Bone of chicken in pyriform sinus (notice that this is the first area that you have to look for in case of suspicion of foreign body) !!

B) Non-organic voice disorders:

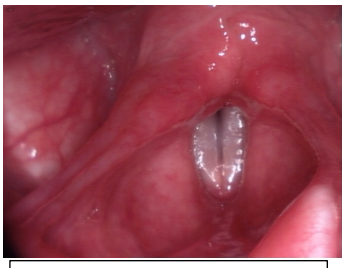
i. Habitual:

1. Hyperfunctional childhood dysphonia (a child who always talk and cry).
2. Incomplete mutation (also called tebophonea? (I could not hear it)? . normally in male puberty there will be changes from high pitch voice to low pitch , in patient who has incomplete mutation this changes will not occur).
3. Phonasthenia (Voice fatigue).
4. Hyperfunctional dysphonia (mis-using of the voice).
5. Hypofunctional dysphonia (severe stage of Hyperfunctional dysphonia may lead to this) .
6. Ventricular dysphonia (this is when vocal cords and false ventricular bands shared in phonation)

Respiration

Phonation

Hyperfunctional dysphonia
Larynx shows No organic lesion but there is **incomplete adduction in phonation** called (phonatory gap) , this is a sign of exhausted muscle



Phonation

Respiration

Phonasthenia
Also there is No organic lesion , just there is there is (phonatory gab)

B) Non-organic voice disorders (cont.):

ii. Psychogenic: it's more common among female , it is also called physco-somatic conversion (the patient converts his psychogenic problem to somatic (voice) problem), so there is no real voice disorder , the patient is just acting .

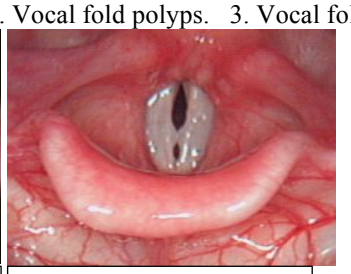
1- Psychogenic dysphonia. 2- Psychogenic aphonia

C) Benign vocal folds lesions:

They included in one category because they shares same etiology which is mis-use of voice imp OSCE :

1. Vocal fold nodules. 2. Vocal fold polyps. 3. Vocal fold cysts. 4. Reinke's edema. 5. Contact granuloma.

Respiration



Phonation

Description: Vocal Fold Nodules: Adult Type
Presentation : Dysphonia
Management: Voice rest and voice thereby , do not say surgery
Note: vocal cord nodule always Bilateral symmetrical nodules In (adult and juvenile type) but the nodules look more softer in juvenile type.

Respiration

Phonation

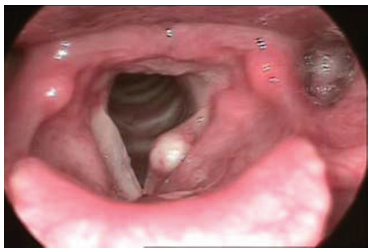
Description : Vocal Fold Nodules: Juvenile Type
Notice that the juvenile type nodules are softer than the adult type
Common presentation : It comes with children who has hyper functional disorder


Phonation | Respiration

Description: Left Vocal Fold Polyp with a Reaction(notice the reaction in the other side)
Treatment : Excision just for the polyp not the reaction

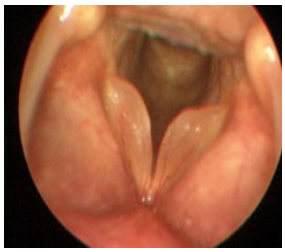
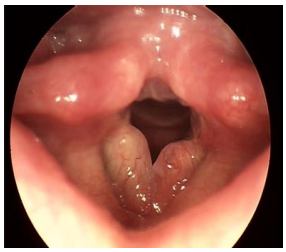

Respiration | Phonation

Discreption: Left Vocal Fold Polyp
-The same finding as previous one just that there is sessile hemorrhagic polyp without reaction

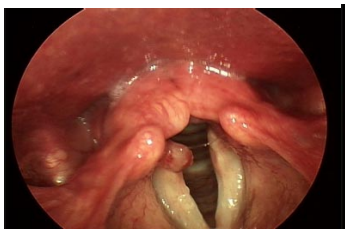
Description: Right Vocal Fold Polyp
-it's Pedunculated polyp , this is easier in excision than the previous one
-always the polyp has well defined edge
- so it's Not a cyst , the cyst has ill defined edge

Description: Left Vocal Fold cyst
Treatment:Surgical excision

Description: Bilateral Reinke's edema
Common presentation :common with female smoker Because this condition cause deepening of the voice so the male will not complain because they do not notice this change .


Description: Right-sided Intubation Granuloma
Common presentation : History of prolonged intubation after for example : cardiac surgery and the Lesion must be in posterior part of the vocal cord
Treatment : conservative treatment and you can discharge the patient




Description: Right-sided Contact Granuloma
Etology : reflux
Treatment : anti reflex thereby by conservative thereby for long time
Note that the granuloma is posterior lesion in opposite to the polyp which is Anterior lesion

Assessment of dysphonia:

I. History taking.
II. Physical examination: APA , … , neck , …
III. Investigations:

- Audio recording.
- Digital High speed imagin
- GERD (LPR) work-up.
- Digital laryngostroboscopy
- Acoustic analysis (MDVP)
- CT neck.
- Digital laryngokymography.
- Aerodynamic analysis (Aerophone II).

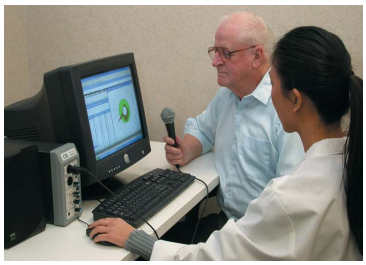
Dr did not read the investigations just said that they have many of them to assess the voice



Video sterboscopy with Rigid or fixable Laryngoscopy

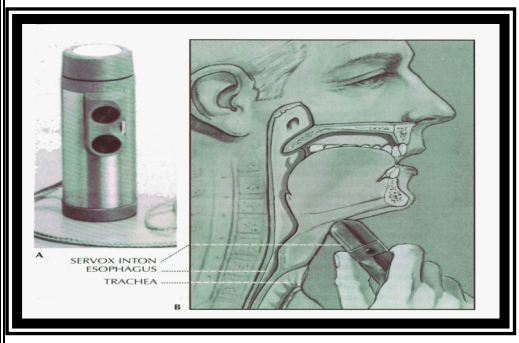
High speed laryngeal imaging

Pharyngeal pH Monitoring For GERD , A Device fixed in the oropharynx and sense the PH of reflex

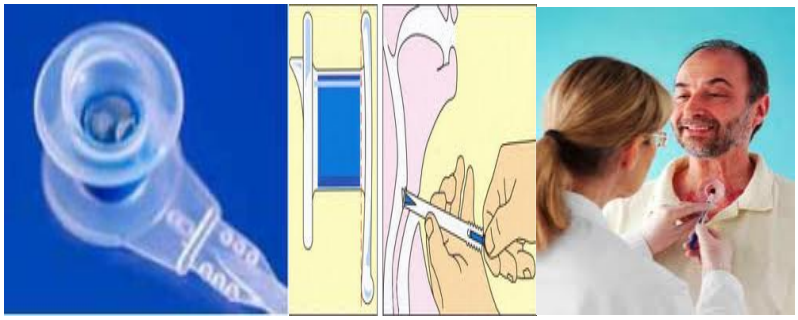


Computerized speech lab. (CSL) For Voice analysis

Phonatory Aerodynamic System (PAS) Assess the phonatory air flow During (phonation and vibration)



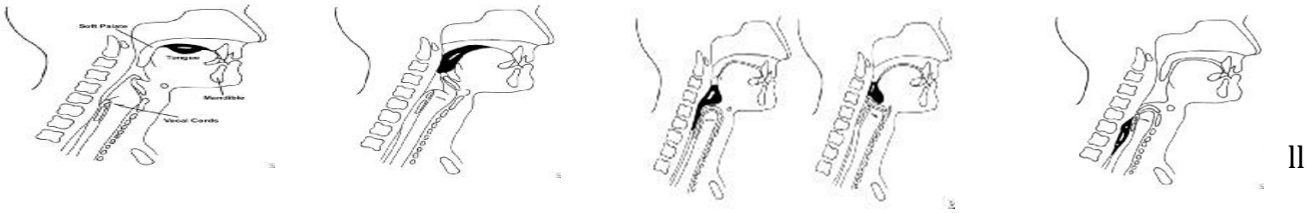
Artificial larynx in patient who got total laryngioctomy , can induce mechanical voice But most of patient do not like it



Tracheo-esophageal puncture , it is The most common procedure done for the patient who undergoes laryngectomy , an instrument is introduced in trachea and through the air entry into trachea , the phonation will occur

Swallowing Disorders

Phases of normal swallowing: We are interested mainly by oral and pharyngeal swallowing not the esophageal one



1. Oral preparatory phase

2. Oral propulsive phase

3. Pharyngeal phase

4. Esophageal phase

ll

- Definition of dysphagia: Difficulty in moving food from the mouth to the stomach.
- Odynophagia : painful swallowing due to a disorder of the esophagus

Consequences of dysphagia:

- Dehydration. - Weight loss.
- Aspiration pneumonia. - Airway obstruction. - Loss of joy of eating

Causes of dysphagia:

Oropharyngeal

- **Structural:**
  Head & Neck Surgery
- **Neuromuscular**:
  CVA

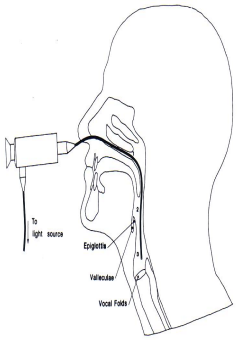
Esophageal:

- **Mechanical [Solids]**
  Tumors
- **Neuromuscular**
  (Esophageal Dismotility) [Solids & Liquids]
  Achalasia

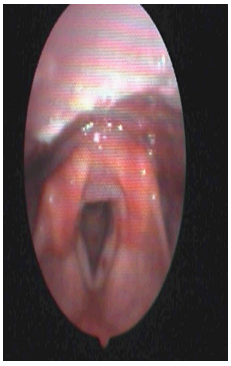
Assessment of dysphagia:

I. History taking
II. II. Physical examination:
III. - General examination.
- Language and Speech assessment.
- Vocal tract examination.
- Neck examination.
- Trail feeding (Bed-side assessment). Most imp , seeing the patient behavior during eating.

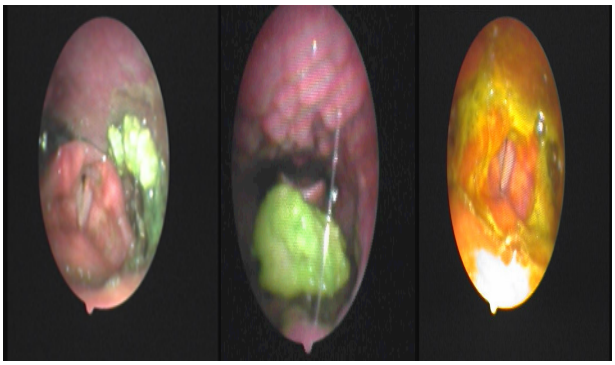
III. Investigations:
- FEES.
- VFES (MBS).
- GERD (LPR) work-up.



FEES



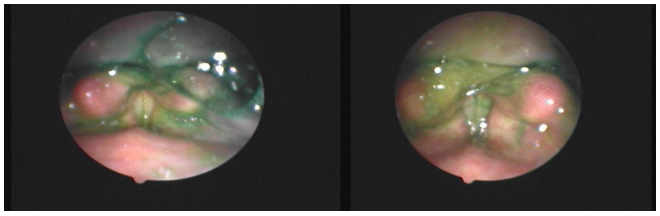
Normal FEES



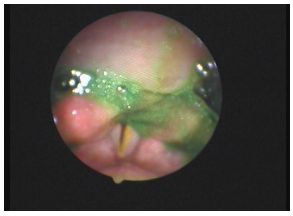
Residue in left pyriform sinus

Residue

Residue



Penetration



Aspiration
When I can not see the subglottic space clearly ,Means this materials enter air way (below the vocal cord) and coughed out

In FEES: We look for residue after swallowing
If the Bolus is found
Above the vocal cords it is penetration
Below the vocal cord it is aspiration

I. FEES protocol of evaluation (Langmore, 2003):

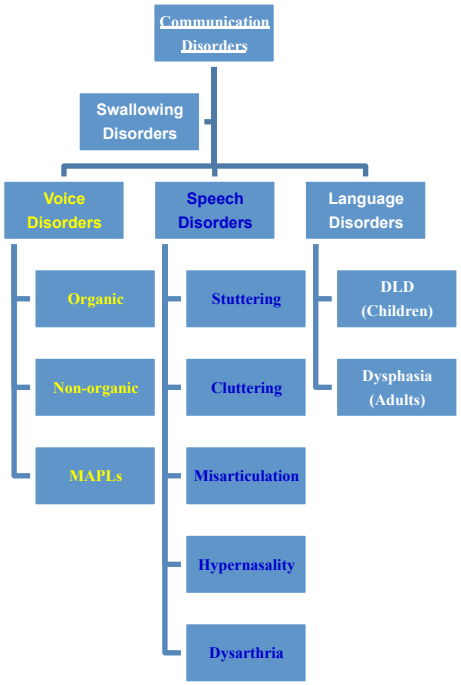
- Anatomic and physiologic assessment.
- Assessment of food and liquid swallowing.
- Assessment of theraputic interventions.

Normal (MBS)modified Barium swallowing

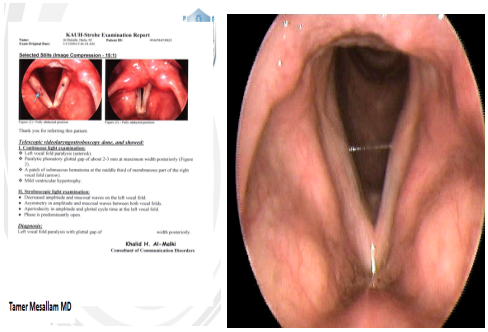
Aspiration (MBS) Bolus is aspirated and enter trachea

Management of dysphagia:

- **Swallowing therapy**:
  - Diet modification. - Postural techniques. - Swallowing maneuvers.
  - Sensory enhancement techniques. - Motor exercises.
- **Surgical treatment, eg** medialization laryngoplasty in vocal cord paralysis.
- **Medical (Drug) treatment,** eg anti-parkinsonism drugs.
- **Intraoral prosthesis.**
- **Alternative routes of feeding**, eg NG tube feeding. If the patient failed to compline the previous treatment ways



Strobe :



High speed laryngeal

The doctor show us a video to compare the difference between this two methods , I can not write all what he said but the conclusion is :
Strobe :Giving flashing of light in slow motion
High speed laryngeal imaging :Shows the vocal cords in very very slow motion , more detailed

Dr did not mention any thing about these two picture