Evaluation of swallowing disorders

- Screening
- Questionnaires and scales
- Bed Side Evaluation
- Radiographic study (instrumental study)

Evaluation

- The main goal is to decide if the patient can continue to eat orally safely, or that s/he needs an alternative way of feeding.
- Anamnesis.
- Patient's observation. seat, tube, conscious, patient interaction
- Voice and speech. check for hoarsens, wet voice.
- Oral motor examination.
- Gag reflex stimulation.
- Different textures. paste, solid, liquid
  IDDSI: thickener

Suspicious signs of aspiration:

- Cough.
- Gurgling voice.
- Delay or absence of the swallowing reflex.
- Lingual movement.
- Significant difficulty in tongue movements before swallowing – food may split backwards.
- Tiredness' of the patient.
- Fever.

Suspicious signs of aspiration:

- Difficult cognitive problems
- Coughing after aspiration
- Fast eating and in large quantities
- Food residue in mouth as a result of dementia for example
- Tracheostomy

Major concerns:

1. Mental Status dementia, concusses.
2. Neutritional status verbal, tube
3. Resperatory status

Screening Procedures

- Provide the clinician with some indirect evidence that the patient has a swallowing disorders

  may nurse perform it. - any trained person not specifically SLP.
  questioners.
  schools, clinic.....

- Do not provide information on the physiology of that disorder.

Screening procedure

- May be limited to chart review and observation of each “orally fed, saliva management “.
- Should be quick, low risk and low cost.
- Its purpose is to identify high risk patients.
- Use check list (in table 5-1 page 137).

- **Water Swallow Test**
- 3 oz Water Swallow Test
- Give patient 150ml water to drink uninterrupted from a cup
- Observe for 1 minute after the swallow • Coughing
- Wet/Hoarse Vocal Quality

screening:

- **Eat – 10**
- **The Dysphagia Outcome and Severity Scale - DOSS**
- **Dysphagia Handiccapped Index**

Screening procedure

- **Two characteristics are examined:**
  - Identify those individuals who are aspirating or have residue (true positives) and who true negative (no aspiration, no residue).
  - The procedures should not generate many **false positives** (those who are identified as aspirating but not actually aspirating) or **false negative** (those who are aspirating but are not identified as such).

Screening procedure

- Infants, children and developmentally delayed adults have certain abnormal behaviors observed during eating which entail an in-depth physiologic study:
  - Rejection of food
  - Food selectivity tactile agnosia: don't recognize the food and vomit it
  - Gagging 6-12 months
  - Open mouth posture

Rejection of food: A barium swallow test (cine esophagram, swallowing study, esophagography, modified barium swallow study, video fluoroscopy
is an imaging test that checks for problems in the throat, esophagus, stomach, and part of the small intestine

The bedside or clinical examination.

- Designed to provide the clinician with the following data
    - Medical history and medical diagnosis
    - Pt’s medical status
    - Pt’s oral anatomy
    - Pt’s respiratory function and relation to swallow
    - Pt’s labial control
    - Pt’s lingual control

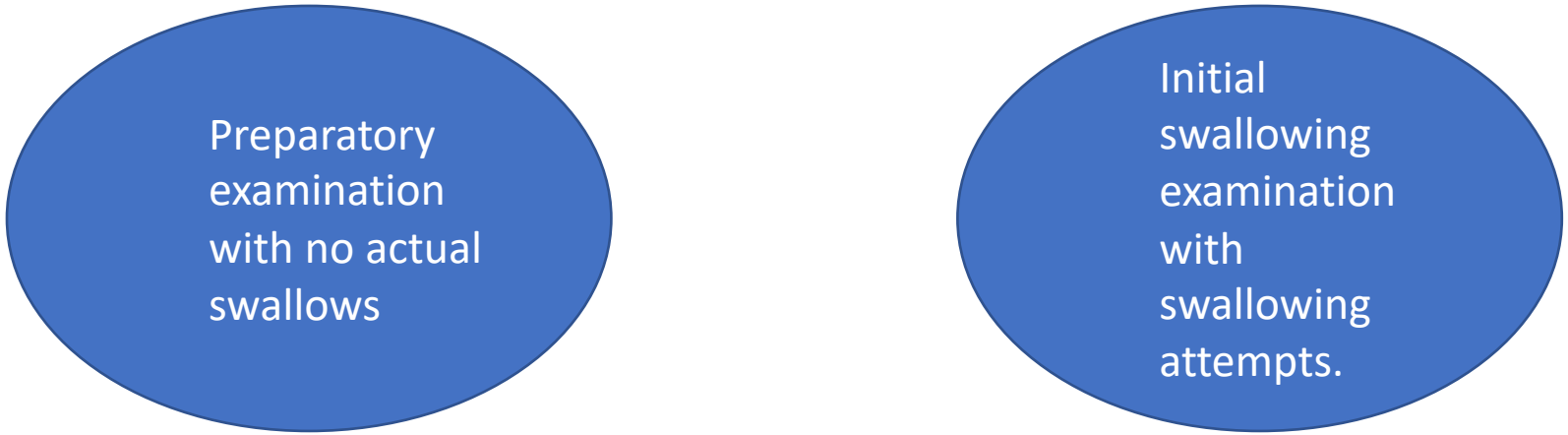
- Palatal function
- Pharyngeal wall contraction
- Laryngeal control
- Pt’s general ability to follow directions, monitor and control his behavior
- Pt’s reaction to oral sensory stimulation and symptoms during attempts to swallow

- Facial awareness: observe it during conversation, related to cognitive ability.

The bedside or clinical examination

Risk & Benefit check to decide the way the patient will continue to eat.

- Divided into two parts:



Preparatory examination

observation of patient and general behaviour

- Collection of information from the patient’s charts

- Complete examination of vocal tract control.

Patient chart review

- Examine the patient's medical chart to determine pt's respiratory status(pneumonia, presence of tracheostomy tube)
- History of mechanical ventilation and intubation
- History of swallowing problem, "duration"
- Motivation (pt's ability to follow directions)
- General behavior
- Nutritional status "oral feeding vs nonoral nutrition and type".

PO vs NO
per oral vs non oral

Patient chart review

- Should also identify:
  - Current and past medical problems may cause dysphagia.
  - Current past immediate past medication causing dry mouth (xerostomia)
  - History of the swallowing disorders “time, nature of onset symptoms”
  - Present, type, duration and method of placement of any ventilation (tracheostomy): type, duration of placement, adequacy
  - Complication of oral and non-oral nutrition.

Observation upon entering the patient's room

- Should be observed:
- Pt's posture
- Present or absence of a tracheostomy tube
- General awareness

Respiratory status

- Observation of respiratory rate
  - The timing of the patient's saliva swallow in relation to the phases of the respiratory cycle. Swallowing normally occurs during expiration.
  - The timing of any coughing in relation to respiratory-swallow coordination.
  - The duration of comfortable breathing.
  - The patient's rest breathing pattern, oral vs. nasal.

    closing the mouth while swallowing without choking

History

- When did the disorder begin ?
- Did it get worse gradually or rapidly?
- How does the problem vary with different consistencies of food?
- What specifically happens when the pt. tries to swallow?

History

- **The swallowing therapist may have information:**
  - The localization of the disorder in terms of the oral of pharyngeal stages of swallowing or both.
  - The easiest and most difficult types of material for the pt. to swallow.
  - The nature of the swallowing disorders.

- **We have to do:**

➢ Anatomical assessment

➢ Functional assessment

❖ Lips
❖ Tongue
❖ Soft palate
❖ PTK pa, ta , ka
❖ CN cranial nerves
❖ Oral reflexes
❖ Oral sensation test: closed eye -> which side, how many time, where, do I put the tounge depressor.
❖ Laryngeal function exam
❖ Volitional cough & swallow

The examination of oral anatomy (anatomical examination)

- Observation of lip configuration, tongue, hard palate, soft palate and uvular
- Any scarring in the oral cavity.
- The dentition status
- Oral secretion (mouth moist or dry)

Functional assessment

- **1-Oral motor examination**
  - include evaluation of the range, rate and accuracy of movement of the lip, tongue, soft palate and pharyngeal wall during speech reflex activity and swallowing.
- **2-Ability to open the mouth voluntarily**
  - The voluntary mouth opening is difficult and slow(3-5min)→ neurological impairment.
  - The pt benefit for bedside assessment with oromotor stimulation rather than immediate radiographic study.
  - The radiographic scheduled when the pt is able to open the mouth more easily.
  - If a bite reflex is present using gauze roll to prevents pt breaking a tooth .

Functional assessment

- **3-Identification of optimal oral-sensory stimuli and bolus types**
  - Some pt's. Produce oral activity in response particular combinations of taste, textual, and temperature
  - To present various textures in the pt's mouth
  - Use 4X4 pieces of cloth, rolled around a straw
  - One end of this rolled materials can be dipped into liquid of various temperature.
  - These stimuli (mixed with barium) can then be introduced as one of the boluses during x-ray.

Functional assessment

- **4-Identification of and compensation for swallowing apraxia**
  - A pt. with swallowing apraxia usually performs best with bedside evaluation with no verbal directions are given.
  - Pt during x-ray exam. Pt. has severe difficulty initiating the oral stage of swallow. **why?**

Functional assessment

- 5- **Identification of and compensation for abnormal oral reflexes.**
  - Some pts exhibit abnormal oral reflexes (hyperactive gag, tongue thrusting or tonic bite).
  - These abnormal reflexes are counterproductive to acceptance of food in mouth and production of normal swallowing (can be identified at bedside).
  - Identification of the location in mouth where reflexes are triggered important to avoided during x-ray.

Functional assessment

- Labial function. /u/, /i/->10 times, labial closure, repeat sentences include labial sounds.
- Lingual function. /pa/, /ta/, /ka/, repeat sentences include /ta/ ->anterior tounge, /ka/-> posterior tounge.
- Chewing function. use gauze and ask the pt to pretend that he is chewing. food not recommended
- Soft palate function and oral reflexes. /a/ for several seconds, palatal & gag reflex test.
- Oral sensitivity examination. ask pt to close his eyes, uses tounge depressor start from the lips-> tounge-> mouth (right, left, up, down), then ask him where is the tounge depressor placed.

Management of information collected from oral examination

- The result of labial assessment should identify any facial paralysis and any problem the pt. may have maintaining lip closure when food is placed in the mouth.
- lingual function examination identifies any limitation in the tongue function that may effect ability to propel food posteriorly or hold food.
- Identification impairments of tongue function will help the clinician to select the material that the pt. can best manage

Laryngeal function examination

- Assess voice quality.
- Hoarseness voice, why?
- Assess cough and throat cleaning.

sign of Decreased laryngeal elevation; Decreased elevation of the hyoid and larynx causes insufficient opening of the UES, resulting in an increased amount of pharyngeal residue and risk of aspiration. OR may cause of Gerd.

Management information to be collected from the laryngeal examination

- Assess laryngeal function in swallowing disorders
- If laryngeal function appeared to be borderline, the clinician should teach the pt. the supraglottic or super supra glottic swallow swallow to increases the pt's. airway protection period to initiate any swallowing.

Pulmonary function testing

- Pts who are observed to aspirate on a radiographic study have been found at high risk for developing pneumonia in the next 6 months than pts. who exhibit no aspiration.

best test at 90 degree or if it difficult at 45 degree.

Should trial swallows at the bedside be attempted ?

- The therapist must look at all aspects of the pt's function and determine the best course of action in regard to trail swallows.

Should trial swallows at the bedside be attempted

- If pt. is being orally fed, the clinician should observe feeding to note

(1) Pt's reaction to food.

(2) Oral movements in food manipulation and chewing.

(3) Any coughing, throat clearing, or struggling behaviors or changes in breathing and their frequency relative to swallowing and their occurrence during the meal(beginning, middle or end).

(4) Changes in secretion levels throughout the meal.

(5) Duration of meal and total intake.

(6) Coordination of breathing and swallowing.

Utensils to be used in the initial swallowing evaluation

The clinician should bring a number of utensils into the pts room for the swallowing evaluation. These include:

1) A size 0 or 00 laryngeal mirror.
2) A tongue blade for wiping material onto the posterior tongue.
3) A cup to give the patient a small measured amount of material.
4) A spoon for presenting liquids and paste material.
5) A straw to be used as a pipette for placing liquid in the back of the mouth.
6) A syringe to squirt small amounts (1 ml) of liquid into the posterior oral cavity.

Observations during bedside trial swallows

- ✓ The index should be lightly positioned immediately behind the mandible anteriorly, the middle finger at the hyoid bone, the third finger at the top of the thyroid cartilage,& the fourth finger at the bottom of the thyroid cartilage.
- ✓ In this way the submandibular, hyoid , laryngeal movement can be assessed during swallowing.

Helpful in assessing aspiration:

- The pt. is asked to phonate “ah” Immediately after the swallow, for several seconds. **Why?**

- The pt. is asked to pant (breath heavily) for several sec., so that material residing in the pharyngeal recesses (valleculae or pyriform sinuses) is shaken loose to fall into the esophagus.

- After panting the pt. should be asked to vocalize again. **Why?**

- The pt. should turn the head to each side & ask him/her to vocalize with the head turned to each side. This head rotation results in forming pressure on each pyriform sinus & may squeeze any residual material from the pyriform sinus into the pharynx causing voice to become gurgly.

- If the voice is clear—then ask him/her to lift the chin up & hold it there for a few seconds, then vocalize again. This posture will cause the tongue base to push on the valleculae & result in clearing material from the valleculae which may then cause a gurgly voice.

- If the pt. coughs during any part of this sequence, or if gurgling vocal quality is heard, aspiration can be suspected.

- Diagnosis
- Neurological examination
- Respiratory status
- Nutritional status
- Dysphagia, symptom, history

Types and Amounts of Materials Used

✓**Why do we begin with liquids???**

❖Ensures that material will not block the airway, if aspirated.

❖Pneumonia is less likely from aspiration of liquids than from aspiration of thicker foods.

❖Lungs are able to clear liquids from tracheobronchial tree by a cough.