

Dysphagia: A Symptom Not a Disease

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Abstract

Dysphagia is difficulty in swallowing food semi-solid or solid, liquid, or both. There are many disorder conditions predisposing to dysphagia such as mechanical strokes or esophageal diseases even if neurological diseases represent the principal one. Cerebrovascular pathology is today the leading cause of death in developing countries, and it occurs most frequently in individuals who are at least 60 years old. Patients with dysphagia may walk into dental clinic and because dysphagia is a symptom not a disease, it is a practicing dentist's duty to recognize the underlying cause and then take treatment decisions. Among the most frequent complications of dysphagia are increased mortality and aspiration pneumonia, dehydration, malnutrition, and long-term hospitalization. This review article discusses the pathophysiology, classification, evaluation, investigations and treatment modalities of dysphagia.

Keywords: Oropharyngeal dysphagia; Oesophageal dysphagia; Barium swallow

Introduction

Phagia meaning swallowing and dysphagia means difficulty in swallowing. It is the most likely complaint to be encountered by the dentist. Dysphagia is nearly always a symptom of organic disease rather than a functional complaint.

Dysphagia is defined as a sensation of "sticking" or obstruction of the passage of food through the mouth, pharynx or oesophagus. It should be distinguished from other symptoms related to swallowing.

Aphagia (Aphagia is the inability or refusal to swallow. The word is derived from the Ancient Greek prefix α, meaning "not" or "without," and the suffix φαγία, derived from the verb φαγεῖν, meaning "to eat.") Signifies complete esophageal obstruction, which is usually due to bolus impaction and represents a medical emergency.

Difficulty in initiating a swallow occurs in disorders of the voluntary phase of swallowing. However, once initiated, swallowing is completed normally.

Odynophagia means painful swallowing. Frequently, odynophagia, and dysphagia occurs together. Globus pharyngeus is the sensation of a lump in throat. However, no difficulty is encountered when swallowing is performed. Misdirection of food, resulting in nasal regurgitation (During swallowing, the soft palate and the uvula move superiorly to close off the nasopharynx, preventing food from entering the nasal cavity) and laryngeal and pulmonary aspiration of food during swallowing is characteristic of oropharyngeal dysphagia.

Phagophobia meaning fear of swallowing, and refusal to swallow may occur in hysteria, rabies, tetanus, and pharyngeal paralysis due to fear of aspiration [1].

Pathophysiology of Dysphagia

The normal transport of an ingested bolus through the swallowing passage depends on the size of the ingested bolus; the luminal diameter of the swallowing passage; the force of peristaltic contraction; and deglutitive inhibition including normal relaxation of upper and lower esophageal sphincters during swallowing. Dysphagia caused by a large bolus or luminal narrowing is called mechanical dysphagia, whereas dysphagia due to weakness of peristaltic contractions or to impaired deglutitive inhibition causing nonperistaltic contractions and impaired sphincter relaxation is called motor dysphagia [1].

Classification of Dysphagia

- Oropharyngeal dysphagia is usually described as the inability to initiate the act of swallowing. It is a "transfer" problem of impaired ability to move food from the mouth into the upper esophagus. It is caused by weakness of tongue muscles.

- Esophageal dysphagia results from difficulty in "transporting" food down the esophagus and may be caused by motility disorders or mechanical obstructing lesions.

- In esophageal cancer we can observe an epigastric mass and palpable supraclavicular lymph node [2].

Causes of Dysphagia

Mechanical dysphagia

Mechanical dysphagia can be caused by a very large food bolus, intrinsic narrowing, or extrinsic compression of the lumen. When the esophagus cannot dilate beyond 2.5 cm in diameter, dysphagia to normal solid food can occur. Dysphagia is always present when esophagus cannot distend beyond 1.3 cm. Circumferential lesions produce dysphagia more consistently than due lesions that involve only a portion of circumferences of the esophageal wall, as uninvolved segments retain their distensibility.

Causes of mechanical dysphagia

Luminal

- A. Large bolus
- B. Foreign body

Intrinsic narrowing

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- A. Inflammatory condition causing edema and swelling
 - 1. Stomatitis
 - 2. Pharyngitis, epiglottitis
 - 3. Esophagitis
 - α) Viral (herpes simplex, varicella-zoster, cytomegalovirus)
 - β) Bacterial
 - χ) Fungal (candidal)
 - δ) Mucocutaneous bullous diseases
 - ε) Caustic, chemical thermal injury
- B. Webs and rings
 - α) Pharyngeal (Plummer-Vinson syndrome)
 - β) Esophageal (congenital, inflammatory)
 - χ) Lower esophageal mucosal ring (Schatzki ring)
- C. Benign strictures
 - α) Peptic
 - β) Caustic and pill-induced
 - χ) Inflammatory (Crohn's disease, candidal mucocutaneous lesions)
 - δ) Ischemic
 - ε) Postoperative, post irradiation
 - φ) Congenital
- D. Malignant tumors
 - 1. Primary carcinoma
 - α) Squamous cell carcinoma
 - β) Adenocarcinoma
 - χ) Carcinosarcoma
 - δ) Pseudosarcoma
 - ε) Lymphoma
 - φ) Melanoma
 - γ) Kaposi's sarcoma
 - 2. Metastatic carcinoma
- E. Benign tumors
 - α) Leiomyoma
 - β) Lipoma
 - χ) Angioma
 - δ) Inflammatory fibroid polyp
 - ε) Epithelial papilloma
- Extrinsic compression**
 - A. Cervical spondylitis
 - B. Vertebral osteophytes

- X. Retropharyngeal abscess and masses
 - Δ. Enlarged thyroid gland
 - E. Zenker's diverticulum
 - Φ. Vascular compression
 - α) Aberrant right subclavian artery
 - β) Right-sided aorta
 - χ) Left atrial enlargement
 - δ) Aortic aneurysm
 - G. Posterior mediastinal masses
 - H. Pancreatic tumor, pancreatitis
 - I. Postvagotomy hematoma and fibrosis.
- Motor dysphagia**
- Motor dysphagia may result from difficulty in initiating a swallow or from abnormalities in peristalsis and deglutitive inhibition due to disease of the esophageal striated or smooth muscle.
- Causes of motor (Neuromuscular) dysphagia**
- Difficulty in initiating swallowing reflex**
- α) Paralysis of the tongue
 - β) Oropharyngeal anesthesia
 - χ) Lack of saliva (e.g. Sjogren's syndrome)
 - δ) Lesions of sensory components of vagus and glossopharyngeal nerves
 - ε) Lesions of swallowing center
- Disorders of pharyngeal and esophageal striated muscle**
- A. Muscle weakness
 - 1. Lower motor neuron lesion (bulbar paralysis)
 - α) Cerebrovascular accident
 - β) Motor neuron disease
 - χ) Poliomyelitis, postpolio syndrome
 - δ) Polioneuritis
 - ε) Amyotrophic lateral sclerosis
 - φ) Familial dysautonomia
 - 2. Neuromuscular
 - α) Myasthenia gravis
 - 3. Muscle disorder
 - α) Polymyositis
 - β) Dermatomyositis
 - χ) Myopathies (myotonic dystrophy, oculopharyngeal myopathy)
 - B. Nonperistaltic contractions or impaired deglutitive inhibition
 - 1. Pharynx and upper esophagus
 - α) Rabies

- β) Tetanus
 - χ) Extrapyramidal tract disease
 - δ) Upper motor neuron lesions (pseudobulbar paralysis)
2. Upper esophageal sphincter (UES)
- α) Paralysis of suprahyoid muscles (causes same as paralysis of pharyngeal musculature)

β) Cricopharyngeal achalasia

Disorders of esophageal smooth muscle

A. Paralysis of esophageal body causing weak contractions

1. Scleroderma and related collagen-vascular diseases
2. Hollow visceral myopathy
3. Myotonic dystrophy
4. Metabolic neuromyopathy (amyloid, alcohol?, diabetes?)
5. Achalasia (classical)

B. Nonperistaltic contractions or impaired deglutitive inhibition

1. Esophageal body

α) Diffuse esophageal spasm

β) Achalasia (vigorous)

χ) Variants of diffuse esophageal spasm

2. Lower esophageal sphincter

α) Achalasia

I. Primary

II. Secondary

ι. Chagas' disease

ιι. Carcinoma

ιιι. Lymphoma

ιιιι. Neuropathic intestinal pseudoobstruction syndrome

ιιιιι. Toxins and drugs

ιιιιιι. Lower esophageal muscular (contractile) ring

Evaluation of a Case of Dysphagia [1,3-5]

History

The oesophagus being inaccessible by palpation the history can provide a presumptive diagnosis in over 80% of patients.

Past history

α) Of swallowing corrosives or of instrumentation suggest benign stricture formation.

β) Of psychoneurotic disorder may suggest globus hystericus.

χ) Of cholecystitis or peptic ulcer may point to reflex cardiospasm.

Present history

Age and sex

α) Children: Cleft palate, foreign body, diphtheritic paralysis, tonsillitis.

β) Young Female: Hysterical spasm

χ) Menopause: Sideropenic dysphagia

δ) Above 50 years: Ca esophagus.

Duration

Onset

α) Acute- in foreign body, encephalitis, thrombus in cerebellar artery or hysterical.

β) Gradual- in stricture, malignancy, achalasia, onset after shock or emotional upset common in achalasia (a condition in which the muscles of the lower part of the oesophagus fail to relax, preventing food from passing into the stomach.)

χ) Intermittent or progressive- a long history, with intermittent symptoms suggests achalasia of cardia, progressive persistency indicates stenotic causes.

Progress is helpful in diagnosing

α) Transient dysphasia may be due to inflammatory.

β) Progressive dysphagia lasting a few weeks to a few months is suggestive of cancer oesophagus.

χ) Episodic dysphagia to solids lasting several years indicates a benign disease characteristic of a lower esophageal ring.

Nature of difficulty in swallowing/Type of distress

α) Type of food difficulty only with solids implies mechanical dysphagia with a lumen that is not severely narrowed.

In advanced obstructive cases dysphagia occurs with liquids and solids. In contrast motor dysphagia due to achalasia and diffuse esophageal spasm is equally affected by solids and liquids from the very onset.

Dysphagia both liquids and solids particularly if there is nasal reflux implies a neurological problem with in coordination of palate. Drooling, difficulty in initiating swallow, nasal regurgitation, difficulty managing secretions, choking, cough episodes, food sticking in the throat all these should alert the dentist into knowing that a neurologists opinion is a must.

α) Difficulty in transferring a bolus from mouth to gullet is usually caused by local disorders of pharynx or larynx.

β) Sensation of food sticking retrosternally in the throat or at the xiphisternum shortly after swallowing is usually caused by esophageal abnormalities.

Relation of distress to posture

Patients with scleroderma have dysphagia to solids that is unrelated to posture and to liquids while recumbent but not upright. When peptic stricture develops in patients with scleroderma dysphagia becomes more persistent. If distress is at night when patient is in reclining position suggest esophageal hiatus hernia.

Position at which food sticks/Site of dysphagia

It gives a fairly accurate guide to the site of obstruction the lesion is either at the level or higher up. (The lesion at or below the perceived location of dysphagia)

Associated symptom

α) Pain on swallowing: Severe pain on attempting to swallow is more frequently seen with inflammatory lesions such as ulcer or esophagitis.

β) Deglutition with strangulation or cough: Means central lesions of bulbar type, myasthenia gravis or diseases irritating IX or Xth cranial nerve.

γ) Regurgitation which is also a feature of pharyngeal pouch may cause cough and recurrent chest infection. Weight loss is a common feature of most dysphagias but a short progressive course with history of considerable loss of weight is always suspicious of an oesophageal cancer which is particularly common in men under 40 who smoke.

δ) When hoarseness precedes dysphagia, the primary lesions is usually in larynx. Hoarseness following dysphagia may suggest involvement of the recurrent laryngeal nerve by extension of esophageal carcinoma.

Medications

Many medications precipitate dysphagia. These include tetracycline, doxycycline, minocycline, KCl, quinine, aspirin. Here acute development of retrosternal pain is observed usually exacerbated by swallowing and dysphagia (odynophagia). Immunosuppressive drugs used in cancer chemotherapy may precipitate the fungal esophagitis which may present as dysphagia. Drug reactions like Erythema multiforme or Stevens Johnson syndrome can also cause desquamation and ulceration up to the level of esophagus causing the dysphagia.

Physical Examination

It is important in motor dysphagia due to skeletal muscle, neurologic and oropharyngeal diseases. Signs of bulbar or pseudobulbar palsy including dysarthria, dysphonia, ptosis, tongue atrophy and hyperactive jaw jerk in addition to evidence of generalized neuromuscular disease should be sought.

- **Mouth and Throat:** For stomatitis, malignancy tongue and abnormalities of pharynx.
- **Neck:** Enlarged lymph glands, goiter, malignancy of thyroid.
- **Chest:** For evidence of aneurysm, mediastinitis or mediastinal tumour, pericarditis, marked cardiac hypertrophy, empyema, and pulmonary abscess.
- **Nervous system:** For evidence of bulbar paralysis or myasthenia gravis.
- **Spine:** Cold abscess to exclude chronic retropharyngeal abscess.
- **Anacmia and koilonychia**—in Plummer–Vinson syndrome.
- Changes in skin and extremities may suggest a diagnosis of scleroderma and other collagen-vascular diseases or mucocutaneous diseases such as pemphigoid are epidermolysis bullosa, which may involve the esophagus.

Investigation

Dysphagia is nearly always a symptom of organic disease rather than a functional complaint. If oropharyngeal dysphagia is suspected videofluoroscopy of oropharyngeal swallowing should be obtained. If mechanical dysphagia is suspected in clinical history barium swallow, esophagogastrosopy and endoscopic biopsies are the diagnostic procedures of choice.

1. Barium swallow or barium meal is the first evaluation indicated. Radiographic evaluation: shows extrinsic structural lesions e.g. thyromegaly, initiative obstructive lesions e.g. esophageal rings and webs.

2. Indirect laryngoscopy.
3. Endoscopic examination and use of special endoscopes for esophageal biopsy.
4. Video fluoroscopic evaluation: This is helpful for evaluation of swallowing function and slow motion replay of the complex events during swallowing.
5. Electromyographic studies coupled with blood screens help in neurogenic dysphagia evaluations.
6. MRI-Magnetic resonance imaging is also definitely one of the tests to consider when the cause remains undetected.
7. Manometry of esophagus-Determining the force or pressure of swallow using a esophageal manometer lends a clue to those perplexing cases.
8. Esophageal scintigraphy: Useful screening test for esophageal motility disorders. It determines functional obstruction and shows any abnormal transit of the radio-nuclide bolus [1, 3-5].

Treatment

Groundwork on the multidisciplinary discussion with physician, neurologist and the psychologist, the oral medicine specialist usually decides one of the following.

1. All the oral causes of dysphagia are undertake before referring the patient to the other specialists.
2. Nutritional regimen of balanced vitamins and minerals together some form on laxatives since the low fiber food is more easily swallowed. Nutritionists ultimately may decide on exact nature of food texture that makes the patient comfortable. Nutritionist is definitely one of the team members here.
3. The need for surgery, regular or Endoscopic must be made consulting with Gastro-enterologist.
4. Exercise programs aimed at improving the neuromuscular control is indicated.
5. Intra-oral prostheses may be designed for patients who have undergone cancer surgery to facilitate swallowing.
6. Use of artificial saliva and other lubricants may make the patients swallow much comfortable [1,3].

Conclusion

Dysphagia is the most likely complaint to be encountered by the dentist and must never be taken very lightly, but must be investigated in a systematic manner if any pathology is detected then the patient should immediately be referred to a gastro-enterologist.

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