

Globus pharyngeus and an approach to dysphagia

Globus pharyngeus and dysphagia present significant diagnostic and management dilemmas and can be the cause of much anxiety for both patients and physicians. A thorough assessment and careful management plan are vital for successful treatment of patients with these conditions. Exclusion of underlying malignancy and reassurance are important aims in these patients.

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What is dysphagia?

Swallowing is a complex and closely co-ordinated neuromuscular event. It depends on rapid co-ordination of functionally important structures within the oral cavity, pharynx, larynx and oesophagus, and can be subdivided into four distinct phases: the oral preparatory stage, the oral stage, the pharyngeal stage and the oesophageal stage. Loss of neuromuscular control or changes to the delicate anatomy of the upper aerodigestive tract involved in any or part of the four stages of swallowing will result in dysphagia.

Dysphagia is thus an impairment of swallowing and indicates a delay in the passage of solids or liquids from the mouth to the stomach. It is an increasingly common and frustrating clinical problem that can lead to secondary manifestations equalling or exceeding the importance of

the original swallowing disorder.

The ability to swallow normally is vital to satisfy daily nutritional requirements. An inadequate oral intake leads to malnutrition and weight loss, and disordered swallowing may cause aspiration (the passage of saliva, gastric reflux or food below the vocal folds into the trachea). In addition, dysphagia can affect other aspects of life, including self-esteem, work capacity, exercise and leisure time.¹

Dysphagia occurs in both children and adults, with an increasing prevalence in the geriatric population. Epidemiological studies estimate the prevalence in individuals over 50 years of age to be about 16 to 22%.²

There is a wide range of possible aetiologies for dysphagia (Tables 1 and 2), and although most are benign (Figure 1), underlying neurological

IN SUMMARY

- Dysphagia is a common and frustrating clinical problem that can lead to secondary manifestations equalling or exceeding the importance of the original swallowing disorder.
- In addition to screening for possible malignancy, the history should help to distinguish oropharyngeal from oesophageal dysphagia and to differentiate structural from functional causes.
- If implemented in a timely and effective manner, the management of dysphagia can improve patients' overall health and quality of life and reduce nursing and other caring costs.
- Although benign, globus pharyngeus can mimic a variety of organic disorders such as upper aerodigestive tract or oesophageal malignancy.
- Investigations form a large part of the management of globus pharyngeus; exclusion of other pathologies and patient (and doctor) reassurance is central in its treatment.

Table 1. Common causes of oropharyngeal dysphagia

Neuromuscular (functional, or motor)

Central nervous system

- Stroke, head injury, tumours
- Parkinson's disease, multiple sclerosis

Peripheral nervous system

- Myopathy – e.g. motor neurone disease
- Neuropathy – e.g. diabetic neuropathy, poliomyelitis
- Sensory – e.g. glossitis, pharyngitis, thrush

Neuromuscular transmission

- Myasthenia gravis
- Dermatomyositis/polymyositis
- Thyroid dysfunction
- Alcoholic myopathy
- Amyloidosis
- Cushing's syndrome

Structural (mechanical)

Intrinsic

- Upper aerodigestive tract malignancy, including oral, oropharyngeal, laryngeal, hypopharynx, cervical oesophagus and nasopharynx – e.g. squamous cell carcinoma, minor salivary gland malignancy, adenocarcinoma, lymphoma
- Laryngeal, hypopharyngeal carcinoma
- Pharyngeal pouch (Zenker's diverticulum)
- Cricopharyngeal bar
- Proximal oesophageal web (Plummer-Vinson syndrome)
- Stricture – previous surgery or radiotherapy, GORD
- Xerostomia – post radiotherapy, medications, Sjörger's syndrome

Extrinsic

- Cervical osteophyte, other spinal disorder
- Thyromegaly

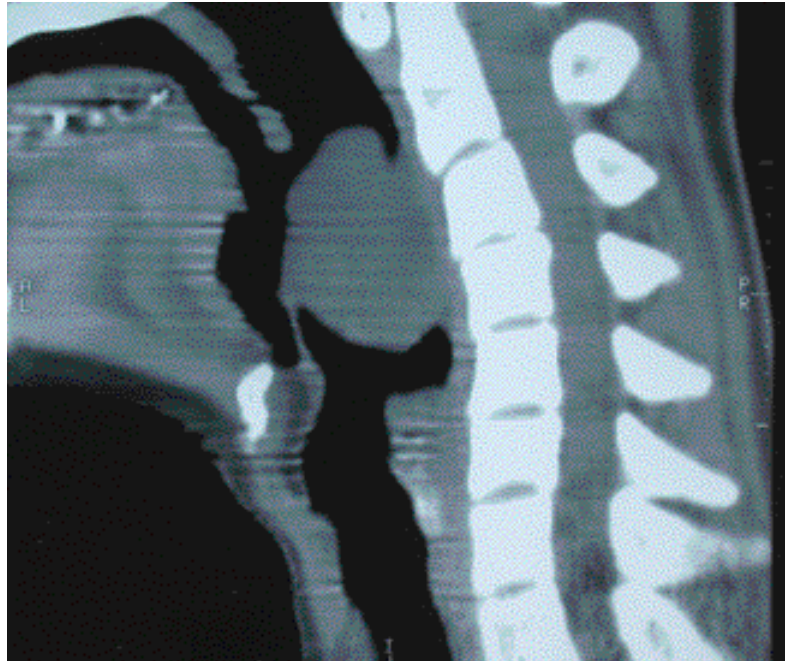


Figure 1. Neurofibroma of the tonsils. A benign cause of dysphagia.

being ignored and resulting in an underestimation of overall swallow dysfunction in clinical practice.¹

The understanding of dysphagia as a clinically manageable condition is now widely recognised. It has been shown that if implemented in a timely and effective manner, management can improve overall health and the quality of life of patients and reduce nursing and other caring costs.³

What is globus pharyngeus?

Globus pharyngeus (also referred to as 'globus sensation' and 'globus hystericus') is defined as a persistent or intermittent nonpainful sensation of a lump or foreign body in the throat. It occurs between meals with the absence of dysphagia, odynophagia or a clinically defined oesophageal motility disorder. It is common in the general population, representing about 4% of ear, nose and throat referrals.⁴

The sensation of a lump in the back of the throat is experienced by a spectrum of patients during a variety of activities of daily living. Particularly stressful and anxiety provoking situations can precipitate globus pharyngeus in up to 45% of the general population. The sensation is more common in women under the age of 50 years, but its prevalence in men and women over the age of 50 is equal.

disorders and upper aerodigestive tract malignancy (including oesophageal) are of foremost concern.

Dysphagia is best divided into oropharyngeal and oesophageal dysphagia. Each group is further subdivided into structural (or mechanical) and functional (or motor) causes. Historically, clinicians have focused on structural lesions, with neurological disorders leading to dysphagia often

continued

Table 2. Common causes of oesophageal dysphagia

Functional

Primary

- Achalasia
- Diffuse oesophageal spasm, nutcracker oesophagus
- Hypertensive lower oesophageal sphincter
- Other oesophageal dysmotility disorders

Secondary

- Scleroderma and other rheumatologic associations
- Reflux-related dysmotility
- Diabetic neuropathy
- Alcoholic neuropathy

Structural

Intrinsic

- Neoplasia
 - Malignant – e.g. squamous cell carcinoma, adenocarcinoma, lymphoma
 - Benign – e.g. leiomyoma
- Mucosal stricture
 - GORD
 - Infectious – e.g. candidiasis
 - Radiotherapy
 - Chemical – e.g. caustic burns
- Mid- and distal rings and webs (e.g. Schatzki's ring)
- Hiatus hernia

Extrinsic

- Vascular compression
- Mediastinal malignancies, masses, lymph nodes
- Surgical (e.g. fundoplication)

Although globus pharyngeus is a benign condition, it can mimic a variety of organic disorders such as upper aerodigestive tract or oesophageal malignancy and therefore creates much anxiety for both physicians and patients. Its exact aetiology is unknown, although a wide variety of possible aetiological factors have

Table 3. Disorders associated with globus sensation

Nasal

- Postnasal drip due to sinusitis or allergic and nonallergic rhinitis

Oropharyngeal

- Laryngopharyngeal reflux
- Cervical osteophytes
- After uvulopalatoplasty
- Malignancy, including oropharynx (base of the tongue), larynx, hypopharynx
- Hyperplastic tonsils

Neck

- Thyroid
 - Goitre
 - Prominent nodules
 - Malignancy
- Cervical lymph adenopathy

Oesophageal

- Malignancy
- Cricopharyngeal spasm or bar

- Abnormal oesophageal body or lower oesophageal sphincter motility
- Achalasia
- Postcricoid webs
- Para-oesophageal masses
- Hiatal hernia
- GORD

Central nervous system

- Cerebrovascular accident
- Bell's palsy
- Musculoskeletal disorders (e.g. myasthenia gravis, myotonic dystrophy, polymyositis)
- Cerebellopontine angle lesions
- Botulism
- Guillain-Barré syndrome
- Herpes simplex encephalitis
- Status epilepticus

Psychiatric

been proposed over the years, including, more recently, cervical osteophytes, gastro-oesophageal reflux disease (GORD), psychological and psychiatric disorders, emotional stress, and thyroid nodules. The aetiology is almost certainly multifactorial in origin.⁵

The possible pathogenic mechanism may include acute or chronic irritation of upper aerodigestive tract structures. This may be characterised by frequent throat clearing, which itself can perpetuate a feeling of irritation long after the original cause has resolved. Many disorders are associated with the globus sensation (Table 3), and distinction between dysphagia and globus pharyngeus needs to be established in a timely manner.

Clinical evaluation and investigations

History

Every patient with dysphagia or globus pharyngeus needs to be considered in context. An elderly patient with a history

of smoking and heavy alcohol intake will present a different series of concerns from that of a young healthy nonsmoker.

The focus of the history should be to identify patients at high risk of malignancy who warrant referral. Symptoms suggestive of underlying malignancy include:

- odynophagia
- referred otalgia
- voice changes (hoarse, breathy, 'hot potato')
- haemoptysis
- airway compromise
- progressive symptoms; importantly, this includes a history of having to modify dietary intake from normal to soft foods and then only being able to swallow fluids.

Distinguishing globus pharyngeus from dysphagia

A careful history will distinguish globus pharyngeus from dysphagia. Dysphagia sensation occurs during or immediately after the act of swallowing and is distinct

from the globus sensation, which is persistent and often unrelated to swallowing.⁶

Distinguishing oropharyngeal from oesophageal dysphagia

Besides screening for possible malignancy, the history should characterise the nature of the dysphagia, which will assist in distinguishing oropharyngeal from oesophageal dysphagia and help differentiate a structural cause from a functional disorder.

Patients presenting with oropharyngeal dysphagia may describe an inability to chew and difficulty initiating the act of swallowing. There may be associated drooling of saliva or spillage of food, or the patient may complain of nasal regurgitation of food or fluid. It is important to establish if there are any coughing or choking episodes after swallowing or a recent history of recurrent pneumonias indicating aspiration. Other associated complaints include the need to swallow repeatedly to clear food from the pharynx, dysphonia or dysarthria (especially within seconds of swallowing), swallowing with a gurgling noise, and, possibly, a swelling in the neck, which is strongly suggestive of Zenker's diverticulum (pharyngeal pouch; Figure 2).

Delayed regurgitation (hours after eating, nocturnal regurgitation) of undigested food is characteristic of oesophageal dysphagia. The clinician needs to determine if the patient suffers from chest pain, heartburn or acid reflux. The localisation of symptoms to the substernal or epigastric regions is important and is suggestive of oesophageal dysphagia. Symptoms localised to the suprasternal region or upper cervical region point to the tonsils. Studies have shown that patients precisely indicate the point of obstruction or anywhere above in roughly 75% of cases.⁶

Distinguishing structural from functional dysphagia

A careful and comprehensive history is important when differentiating structural

Table 4. Oesophageal dysphagia: structural versus functional disorders⁶

History	Structural	Functional
Onset	Gradual or sudden	Usually gradual
Progression	Often	Usually not
Type of bolus	Solid (unless severe)	Solids or liquids
Response to bolus	Often regurgitated	Usually passes with repeat swallowing or liquids
Temperature dependent	No	Worse with cold; may improve with warm liquids

from functional causes of dysphagia. Table 4 lists features to look for in the history to distinguish structural from functional oesophageal dysphagia.

Patients with functional causes often have a long history of dysphagia to both solids and liquids. They describe manoeuvres, such as repeated swallowing, raising the arms over the head, throwing the shoulders back, or using the Valsalva manoeuvre to assist the passage of food or liquids. Relief by carbonated drinks may be associated with specific conditions such as achalasia, while chest pain and sensitivity to hot or cold liquids can often be associated with diffuse oesophageal spasm.

Patients with structural causes often exhibit dysphagia to solids only. Food impaction occurs frequently and must be regurgitated for relief. If the dysphagia is episodic and nonprogressive without significant weight loss, benign causes such as an oesophageal web or distal oesophageal ring (Schatzki's ring) should be suspected. Dysphagia that occurs daily or is clearly worsening is more suggestive of a peptic stricture or malignancy. Significant weight loss, anorexia, or rapidly worsening dysphagia (over a period of less than four months) favours oesophageal malignancy.

Less obvious symptoms that need to be considered, especially in elderly patients, include a change in eating habits – for example, eating slowly, frequent throat clearing, food avoidance and prolonged

meal times. Recurrent chest infections, a change in respiration pattern after swallowing, atypical chest pain and a 'wet' quality to the voice are also important clues to the presence of an underlying swallowing disorder.⁷

Establishing comorbidities and exacerbating factors

A general history is taken to establish comorbidities and possible underlying causes of dysphagia. Obtaining a past medical history of treatment for head and neck cancers (external beam radiotherapy or surgery), neurological or neuromuscular disorders, GORD, known Barrett's oesophagus, and immunosuppression are important in patients with dysphagia. As CNS and neuromuscular disorders constitute most causes of oropharyngeal

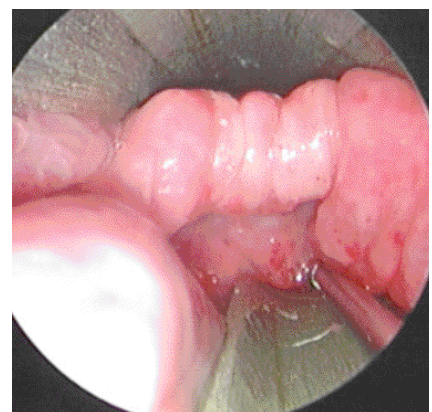


Figure 2. Zenker's diverticulum.

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Table 5. Comparison of standard versus modified barium swallow¹

Modified barium swallow

Assesses oral pharyngeal phase
 Patient is seated, relaxed
 Start with teaspoon amounts
 Modify volume and consistency of barium
 Evaluate different bolus volumes, consistencies
 Evaluate effect of manoeuvres
 Safe test if aspiration present
 Therapeutic intervention possible during procedure

Standard barium swallow

Assesses oesophageal phase
 Patient is standing or lying
 Start with mouthful amounts
 Dangerous test if aspiration present

functional dysphagia, neurological symptoms in particular need to be excluded.⁶

Medication use should also be considered, especially the use of antihistamines, antidepressants and diuretics, which can cause xerostomia, as well as irritant medications such as alendronate or potassium supplements and antipsychotics (anticholinergic), which can impair swallowing function.

Common comorbidities or exacerbating factors for globus pharyngeus should also be carefully screened for. These include nasal symptoms such as allergic rhinitis or postnasal drip, cervical osteoarthritis, rarely thyroid disorders and previous oropharyngeal surgery including palatal, laryngeal or thyroid surgery.

Laryngopharyngeal reflux (LPR), the retrograde flow of gastric content to the laryngopharynx where it comes in contact with tissues of the upper aerodigestive tract, should always be considered in patients with globus pharyngeus. Studies have shown that most patients with LPR exhibit some of the symptoms of globus,

such as throat clearing, hoarseness, excessive mucous production, and chronic dry cough, while few complain of typical GORD symptoms such as heartburn.

Clinical examination

All patients require a routine head and neck examination and a brief neurological evaluation including lower cranial nerve assessment. A general physical assessment including nutritional status is recommended. The upper aerodigestive tract should be thoroughly examined, looking specifically for lip changes (e.g. angular stomatitis, asymmetry), tongue changes (e.g. glossitis, weakness or fasciculation), poor dentition, xerostomia, hypersalivation, oral or oropharyngeal ulceration or swelling, neck masses (including cervical lymphadenopathy) or thyroid masses.

In patients with globus pharyngeus, particular attention should be paid to their nose and sinuses, looking for congested ‘allergic’ mucosa, nasal obstruction and evidence of discharge, particularly a post-nasal discharge (inspissated mucous seen on the posterior pharyngeal wall).

In a more specialised setting, the following features may also be considered:

- the patient’s voice (a ‘wet voice’ suggests aspiration; a ‘breathy voice’, vocal cord palsy; a ‘hot potato voice’, oropharyngeal or supraglottic mass)
- the nature of the patient’s saliva swallow – is it painful, forced or infrequent (less than one swallow every five minutes); does the patient have poor control of secretions or is he or she unaware of salivary spill; is he or she throat clearing or coughing after simple swallows; does he or she have copious chest secretions?
- signs of airway or breathing difficulties or significant fatigue.

Investigations

A thorough clinical examination is often limited in its ability to diagnose functional problems and further investigations are often required.¹

Blood tests may be of value. Electrolytes, urea and creatinine, full blood count, thyroid function tests, albumin and liver function tests are valuable baseline tests and help to assess a patient’s nutritional status.

Patients at risk of malignancy or with progressive and ongoing symptoms need specialist referral for a more thorough evaluation of the aerodigestive tract. Those with globus pharyngeus or oropharyngeal dysphagia should be referred to an otorhinolaryngologist (for indirect mirror laryngoscopy or flexible fiberoptic nasendoscopy), while those with oesophageal dysphagia will benefit also from review by a gastroenterologist. If the underlying cause is neuromuscular, referral of patients to a neurologist is also prudent. Referral to other specialists, including dental, endocrine, geriatric and respiratory specialists, may also be of benefit.

Investigations for oropharyngeal dysphagia

When the clinical examination and nasendoscopy point to oropharyngeal dysphagia, further functional investigations are useful. A modified barium swallow (MBS) (videofluoroscopic or cineradiographic swallowing study) and/or nasendoscopy and swallow assessment (fiberoptic endoscopic evaluation of swallowing; FEES) are the tests of choice.

Further investigation in the form of imaging the head, neck and chest regions may be indicated. These include a computed tomography scan with contrast and/or magnetic resonance imaging. Imaging can diagnose a variety of central nervous system, head and neck, oesophageal and chest conditions resulting in dysphagia.

Electromyography (EMG) may distinguish neurogenic from myogenic causes and is useful in documenting the timing and function of the cricopharyngeus and strap muscles in swallowing.

Investigations for oesophageal dysphagia

When oesophageal dysphagia is suspected a standard barium swallow is recommended

continued

as first line of investigation. Standard barium swallow is different from a MBS, as outlined in Table 5,¹ and is not indicated in patients with oropharyngeal dysphagia, especially if aspiration is suspected. Barium swallows are readily available and will show cervical oesophageal lesions such as a web or pouch, a cricopharyngeal bar, motility disorders such as achalasia or oesophageal spasm, hiatus hernias and evidence of reflux, and mechanical obstructions such as a stricture or malignancy.

Upper GI endoscopy is currently the best way to determine the cause of oesophageal dysphagia because of its high diagnostic accuracy and the opportunity for therapeutic intervention (i.e. biopsies, dilatation), if appropriate, at the same time.

Transnasal-oesophagoscopy (TNE) is a viable alternative when available. The benefit of this technique is the ability to perform endoscopy with therapeutic intervention, without sedation and often without delay in an office setting, avoiding the costs or inconvenience of a separate facility. TNE is well tolerated by over 95% of patients and has been shown to be of equivalent diagnostic accuracy to standard sedated endoscopy.^{8,9}

Oesophageal manometry is valuable in the evaluation of oesophageal motility disorders. These commonly include non-specific motor disorders associated with GORD, and primary neurogenic disorders related to conditions such as diabetes, ageing, alcohol, multiple sclerosis, Parkinson's disease, motor neurone disease, achalasia, diffuse oesophageal spasm and nutcracker oesophagus.¹

Oesophageal manometry is unnecessary in patients with dysphagia in whom a mechanical lesion is identified on endoscopy or barium swallow. Manometry can be coupled with pH studies. Twenty-four hour ambulatory pH monitoring is currently considered gold standard for diagnosing GORD and documenting LPR.

Investigations for globus pharyngeus

Investigations specifically for globus pharyngeus form a large part of the management of this condition, as exclusion of other pathologies and patient (and doctor) reassurance are central in its treatment. If the symptoms of globus pharyngeus are 'typical' – i.e. foreign body sensation, throat clearing and choking – the investigation of

choice is nasendoscopy.¹⁰ Many patients seek specialist opinion because of their concerns of 'throat' cancer and the above regimen can exclude this possibility relatively quickly, safely and inexpensively.

For patients with 'atypical' and progressive symptoms, including odynophagia, sore throat, halitosis, reflux symptoms, weight loss and associated dysphagia,

more emphasis is made to exclude significant pathology such as malignancy. Nasendoscopy alone cannot be used to assess beyond the cricopharyngeus muscle and may result in missing early malignancies in the postcricoid region of the hypopharynx. Barium swallows are useful but postcricoid and pharyngeal lesions may be missed.

Although exceptionally rare, a malignancy arising in this postcricoid region needs to be excluded. As flexible oesophagoscopy is also unreliable in detecting lesions in this region, direct laryngoscopy and rigid oesophagoscopy should be performed under general anaesthesia if there is a reasonable suspicion. TNE is a suitable alternative to

assess the postcricoid area and exclude malignancy.

Management

In most cases a careful history and clinical examination will result in identification of the underlying pathology, which can often be treated conservatively. The patient's overall prognosis, comorbidities, medications, social circumstances and personal wishes are all taken into account when making management decisions.¹

Patients with dysphagia often have complex medical backgrounds and benefit from a multidisciplinary team approach, which is often best co-ordinated by the local medical practitioner. Specialist referral (including otorhinolaryngology, gastroenterology, neurology, geriatrics, etc) is usually required as part of the initial workup and for ongoing management.

Conservative management for dysphagia importantly requires the involvement of a speech pathologist and dietitian to assist with nutritional support. The speech pathologist will evaluate patients' swallowing function and assist them with appropriate food consistencies (there is less risk for aspiration with various consistencies of food such as thickened liquids), techniques to enhance safe swallowing and appropriate support services. The dietitian plays a key role in dietary evaluation of the patient.

Managing dysphagia

Successful treatment of dysphagia largely depends on the underlying cause. Dysphagia associated with systemic illnesses, such as Parkinson's disease and thyroid dysfunction, often improves with treatment of the underlying disorder. Neoplasms may require resection and, in some cases, chemotherapy and/or radiotherapy. Unfortunately, treatment itself may also result in significant dysphagia because of the removal or loss of function of structures critical to normal swallowing.¹¹ Dysphagia following a cerebrovascular accident may respond to techniques aimed

continued

at rehabilitation of the physical components of swallowing.

Surgery has a role in a minority of patients. A few disorders such as a pharyngeal pouch are best treated surgically. Cricopharyngeal myotomy may play a role in the treatment of patients with poor sphincter relaxation and oropharyngeal dysphagia. Injection of botulinum toxin may provide an alternative approach to cricopharyngeal dysfunction. The use of a large-diameter dilator (18 to 20 mm) may also improve dysphagia, particularly in patients in whom manometric studies show high upper oesophageal sphincter pressure or impaired relaxation.

Surgery can also play a role in the management of patients with chronic aspiration, a detailed discussion of which is beyond the scope of this article.

Managing globus pharyngeus

The management of globus pharyngeus is more controversial. Investigations are primarily aimed at identifying the very few patients who have pharyngeal or upper oesophageal malignancy and reassuring the remainder.¹⁰

Treatment is directed at the possible underlying cause. If nasal pathology is suspected, treatment is primarily aimed at reducing postnasal discharge and managing allergic symptoms. We recommend the regular use of normal saline nasal douches and maintenance of good hydration; topical nasal corticosteroid may also be beneficial. If nonallergic rhinitis is suspected with significant clear nasal discharge, a topical anticholinergic such as ipratropium bromide can be used.

The association of LPR and globus sensation is clear, but whether LPR is a direct cause has not been established. Despite the uncertainty, many physicians treat patients with globus pharyngeus empirically with proton pump inhibitors (PPI). Other lifestyle changes such as exercise, weight loss, avoidance of eating immediately before sleeping, abstinence from caffeine products and spicy foods,

and changing the posture at night (10 to 20 degrees head up position) in conjunction with antacids may also be useful.

As the distinction between LPR and GORD becomes more apparent, so does the need for sustained reduction in the acidity of the refluxate to treat LPR. Unlike GORD, which appears to respond to lower doses of PPI to maintain neutral pH for at least 16 hours a day, LPR requires sustained 24-hour neutral pH and therefore higher and more frequent PPI doses. A trial of a PPI is undertaken for three months to assess efficacy. Failure to improve may suggest a different aetiology, so pH monitoring with multichannel intraluminal impedance monitoring to detect nonacidic refluxate should be performed to confirm the diagnosis.

Summary

The swallowing mechanism is complex and intricate and therefore vulnerable to a host of disorders. All patients presenting with a globus sensation and/or dysphagia require a thorough work-up to determine the aetiology of their dysfunction. A complete head and neck examination, as well as flexible nasendoscopy or indirect mirror laryngoscopy and/or barium swallow are mandatory in most patients. In other cases, an upper GI endoscopy or TNE, physical examination, laboratory tests and other specialised tests should assist in determining whether a generalised illness is present and aid in initiating an appropriate management plan. MT

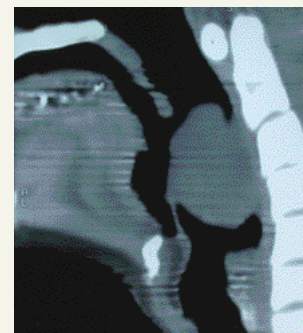
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DECLARATION OF INTEREST: None.

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