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REVIEW

The assessment and management of globus pharyngeus

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Abstract

Globus is the sensation of a foreign body in the throat. Investigation and management of patients with globus is widely variable. Most investigations yield negative results yet incur varying patient morbidity and healthcare costs, while malignancy is vanishingly rare in the absence of red flag symptoms and ear, nose and throat examination findings. History taking is key and can help to identify possible causative pathology, directing further investigations and management if necessary. Treatment of globus mainly centres on patient reassurance and counselling, and may include reflux management, neuromodulation, or speech therapy in selected cases, and treatment of any identified cause.

Key words: Globus; Globus pharyngeus; Laryngopharyngeal reflux; Reflux

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Introduction

Globus pharyngeus, or simply globus, is defined as a sensation in the pharynx or throat of a foreign body or lump, in the absence of physical examination findings or dysphagia. Originally coined globus hystericus, it was thought to be a purely hysterical symptom affecting women. This has since been refuted, with Tang et al (2016) demonstrating that the prevalence of globus sensation is 21.5%, with no difference between genders; however, women were more likely to seek medical attention. Formal diagnosis of globus pharyngeus according to the Rome IV criteria (Figure 1) requires exclusion of structural lesions and motor disorders of the oesophageal tract (Aziz et al, 2016). Thus, the true prevalence of idiopathic globus pharyngeus is unknown.

The aetiology of globus sensation is wide-ranging and thus patients suffering with this symptom are often referred to various specialties, particularly gastroenterology and otolaryngology. As a result, investigation and treatment is often non-uniform. This article outlines and examines the evidence base for the options for investigation and management of the patient presenting with globus to aid the clinician presented with this nebulous symptom.

Figure 1. Rome IV diagnostic criteria for globus pharyngeus

All criteria should be present for the preceding 3 months and the symptom should have started at least 6 months before diagnosis. Symptoms should be present at least once per week.

1. Persistent or intermittent, painless sensation of a lump or foreign body in the throat with no structural lesion identified on physical examination, laryngoscopy or endoscopy.
   a. Occurrence of the sensation between meals
   b. Absence of dysphagia or odynophagia
   c. Absence of a gastric inlet patch in the proximal oesophagus
2. Absence of evidence that gastro-oesophageal reflux or eosinophilic oesophagitis is causing symptoms
3. Absence of major oesophageal motor disorders (achalasia gastro-oesophageal junction obstruction, diffuse oesophageal spasm, jackhammer oesophagus, absent peristalsis)

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Clinical assessment of globus

History and examination

The principal aim of the clinical assessment of a patient presenting with globus is to exclude a malignancy, with the secondary aim of identification of other potential causes (Table 1), which will guide management decisions. First, the sensation of a foreign body must be differentiated from true dysphagia, reported as a problem swallowing rather than a sensation of obstruction, with resultant change in dietary intake. This may be associated with regurgitation of food and vomiting. Other red flag symptoms include persistent sore throat, odynophagia, deep unilateral otalgia (which may be associated with swallowing), persistent dysphonia, haemoptysis, cervical lymphadenopathy and weight loss. The presence of any of these symptoms should alert the clinician that there is likely to be a malignant cause and to organise urgent appropriate onward referral or investigation.

Other associated symptoms that may help to identify a causative aetiology include neck pain and stiffness, suggesting possible cervical spondylosis and osteophytosis or, alternatively, muscle tension. A history of gastro-oesophageal reflux disease, or dyspepsia suggestive of this, is prominent. Eliciting smoking and alcohol history is important, as these are risk factors for both pharyngo-oesophageal malignancy and laryngopharyngeal reflux.

Thorough clinical examination should include complete head and neck examination, including examination for cervical lymph nodes, oropharyngeal examination and fibreoptic nasolaryngopharyngoscopy. The latter is usually performed by an otolaryngologist; therefore, ear, nose and throat referral is generally warranted.

Patient-reported outcome measures

By definition, globus pharyngeus has no physical examination finding by which disease severity or treatment response can be objectively measured. Moreover, the objective of treatment, once sinister causes have been excluded, is to improve the patient's perception of their symptom and reduce its impact on quality of life. Therefore, the clinician must depend on the patient's subjective description of their symptom severity to make a judgement on whether an intervention has been effective, rendering patient-reported outcome measures valuable. Only two patient-reported outcome measures currently exist for assessing globus: the Glasgow-Edinburgh Throat Scale (GETS) and the Laryngopharyngeal Measure of Perceived Sensation (LUMP) Questionnaire (Deary et al, 1995; Melancon et al, 2020). Neither tool is widely used currently, with criticism of the GETS including its focus on dysphagia, which is considered a symptom discrete from globus pharyngeus. The novel LUMP questionnaire has recently been validated and its use may grow in clinical practice.

Table 1. Potential causes of globus sensation

Upper aerodigestive malignancy	
Pharyngeal inflammatory causes	Pharyngitis
	Tonsillitis
	Chronic sinusitis
Pharyngeal pouch	
Oesophageal motor disorders	
Gastro-oesophageal reflux disease	
Cervical heterotopic gastric mucosa	
Psychological factors and stress	
Laryngeal hypersensitivity	
Systemic immunomediated diseases, eg vasculitis	

Investigations

Webb et al (2000) conducted a questionnaire survey of 307 UK ear, nose and throat consultants and found that there was no consensus between otolaryngologists regarding the investigation and management of patients with isolated globus sensation: 10% of respondents favoured reassurance and discharge after normal clinical examination, and 4% treating with anti-reflux medications and reassurance and no further investigation. Of respondents, 61% would perform rigid endoscopy under general anaesthesia, and 56% would request barium swallow. Since this survey, many studies have examined the utility of investigation of globus in the absence of red flag symptoms or signs.

Barium swallow and videofluoroscopic swallow study

Barium swallows performed for investigation of globus rarely yield findings that alter patients' clinical management (Caylakli et al, 2006; Alhilali et al, 2014; Järvenpää et al, 2017; Daele, 2020). Moreover, barium swallow studies have poor sensitivity for identification of small malignancies, so a normal study can be falsely reassuring. Therefore, barium swallow should not be the primary investigation tool when malignancy is suspected. However, benign pathologies are frequently found; Caylakli et al (2006) found a benign cause of globus in 63.9% in a series of 194 barium swallow studies, with cervical osteophytes contributing to half of abnormal findings. Other benign causative findings include retroverted epiglottis and lingual tonsil enlargement, although, if present, these should be detected on clinical nasopharyngolaryngoscopy. Although positive findings usually do not directly alter patients' clinical management, the investigation itself can be useful for patient reassurance and understanding of this symptom.

Videofluoroscopy is more sensitive than barium swallow in identifying abnormalities associated with globus pharyngeus (Daele, 2020). This investigation involves video-recorded contrast-swallow using barium mixed with foods and drinks of varying consistencies and thicknesses, assessed by a specialist speech and language therapist. Common abnormalities identified include hiatal hernia, gastro-oesophageal reflux, oesophageal body motility disorder and upper oesophageal sphincter dysfunction.

Neck computed tomography

In one series, one out of 148 neck computed tomography scans ordered to investigate isolated globus sensation yielded a positive finding, a thyroglossal duct cyst, which altered clinical management (Alhilali et al, 2014). Computed tomography neck is not routinely recommended for investigation of globus.

Neck ultrasound

Neck ultrasound is occasionally requested to investigate the complaint of a 'lump in the throat'. It is generally not useful, unless there is an palpable thyroid goitre (Järvenpää et al, 2017).

Oesophageal endoscopy

Rigid oesophagoscopy was previously commonly performed by otolaryngologists to investigate globus symptoms. A study of 250 rigid oesophagoscopies revealed no abnormalities in 86.8%, with abnormalities found including cricopharyngeal spasm, reflux, pharyngitis and oesophageal web and retention cyst (Takwoingi et al, 2006). Importantly, there were no malignancies found in the cohort. Furthermore, this investigation requires general anaesthetic and carries a greater rate of oesophageal perforation than flexible oesophagoscopy. Therefore, rigid endoscopy is not a suggested investigation for globus pharyngeus in the absence of worrying upper aerodigestive tract symptoms.

Cervical heterotopic gastric mucosa has been increasingly recognised as a cause of globus sensation but requires endoscopic examination of the upper oesophagus to diagnose (Aziz et al, 2016). Flexible oesophagogastroduodenoscopy can be performed without the need for general anaesthesia. Alternatively, transnasal oesophagoscopy, usually performed by an otolaryngologist with a specialist interest, offers examination of the pharynx, larynx and oesophagus as a clinic-based procedure without need for sedation and with miniscule risk of perforation, as well as providing a significant cost and time saving (Wellenstein et al, 2019). However, limited expertise and availability of the procedure currently restricts its use.

24-hour pH testing and oesophageal manometry

Oesophageal manometry and 24-hour pH studies are usually done in conjunction, with dual-probe pH testing representing the gold standard investigation for reflux and high-resolution oesophageal manometry considered the gold standard for motility disorders. One study showed these investigations to yield a higher proportion of abnormalities in patients with globus than endoscopy or fluoroscopy: 62.8% of manometry investigation were abnormal, with reasons including ineffective oesophageal motility, nutcracker or jackhammer oesophagus, and achalasia or outlet obstruction (Daele, 2020). In the same study, dual-probe pH findings found abnormally high proximal oesophageal acidification in 19.8% of tests.

The Restech Dx-pH (Respiratory Technology Corp, San Diego, CA, USA), a nasopharyngeal catheter designed to measure posterior pharyngeal acidity, and Peptech, a rapid salivary pepsin test, have also been touted as potential objective measures of reflux severity. However, neither of these tests correlate well with symptoms associated with laryngeal irritation (Yadlapati et al, 2016).

Management

Management of the patient presenting with globus primarily aims to address any identified or suspected cause. Patients with structural causes of globus sensation, such as malignancy and pharyngeal pouch, invariably have additional divulging symptoms or positive examination findings; management of these conditions is beyond the scope of this article.

A full battery of investigations, including radiological imaging, upper gastrointestinal endoscopy and functional oesophageal studies, is usually not performed, given the cost and availability limitations and patient morbidity, and the benign nature of the condition. Reassurance alone plays a substantial role in managing globus. One prospective study of 30 patients with globus found significant improvement in patient symptoms with no treatment, following an ear, nose and throat consultation and investigation (Järvenpää et al, 2017). However, approximately half of patients continue to suffer from globus pharyngeus after many years.

Reflux management

Globus pharyngeus has been linked to gastro-oesophageal reflux disease. One cross-sectional study found that a previous diagnosis of gastro-oesophageal reflux disease was significantly associated with globus, with an odds ratio of 3.75 (Haft et al, 2016). Retrograde flow of gastric contents is thought to cause globus sensation via two main mechanisms. First, by laryngopharyngeal reflux: direct irritation of the laryngopharyngeal mucosa, which is more sensitive than oesophageal mucosa to gastric enzymes and acid. Second, a vasovagal reflex increase in upper oesophageal sphincter pressure from gastric contents stimulating the lower oesophagus.

Herbella et al (2016) found that neither ear, nose and throat symptoms nor laryngoscopic findings were reliable for diagnosis of pathological reflux and suggest that oesophageal manometry and pH studies be performed before commencing pharmacological anti-reflux treatment. However, the resource-demanding nature of such an approach, coupled with the non-invasive and well-tolerated trial of a proton-pump inhibitor, supports the approach commonly taken by clinicians: many practitioners empirically prescribe a trial of anti-reflux medications with the assumption that globus is a manifestation of gastro-oesophageal reflux disease, although good-quality evidence for the efficacy of proton-pump inhibitors in improving globus specifically is lacking (Aziz et al, 2016). One study found incorrect proton-pump inhibitor use in 62.7% of patients (Pisegna et al, 2017), which may be contributing to the reported lack of response to proton-pump inhibitors.

Prokinetic agents such as mosapride are commonly used in Asia for treatment of reflux, together with proton pump inhibitors. After 3 months, this combination has been shown to result in greater improvement in globus and patient-reported throat symptoms, as well as laryngeal endoscopic findings, than proton-pump inhibitors alone (Yoon et al, 2019). Mosapride is not available in the UK or the USA.

For patients with troublesome laryngopharyngeal reflux resistant to medical therapy, further management options include radiofrequency ablation (Stretta procedure) and

minimally invasive fundoplication. Patients must be carefully selected and demonstrate pathological acid reflux confirmed on oesophageal pH and impedance studies and reduced lower oesophageal sphincter pressure on manometry. Both Stretta and laparoscopic fundoplication have been shown to significantly improve extra-oesophageal reflux symptoms, including globus pharyngeus (Yan et al, 2015).

Ablation of cervical heterotopic gastric mucosa

Cervical heterotopic gastric mucosa, otherwise known as gastric inlet patches, are now diagnosed with increasing frequency, with increasing endoscopist awareness and use of narrow band imaging. When identified, small patches of cervical heterotopic gastric mucosa can be treated by argon plasma coagulation. Oesophageal stricture is a risk, particularly when managing larger patches of cervical heterotopic gastric mucosa; thus, radiofrequency ablation may be a more appropriate treatment modality (Kristo et al, 2018).

Reducing cricopharyngeal muscle tone

Cricopharyngeal hypertonicity has long been thought to be an explanation for globus, with higher peak resting cricopharyngeal pressures demonstrated in patients with globus compared to those without (Ding et al, 2017). Moreover, globus patients have been found to have significantly hyperdynamic respiratory upper oesophageal pressure changes, suggesting a general hyperactivity of the cricopharyngeus as a possible aetiological factor. Biofeedback using high-resolution manometry can improve volitional control of upper oesophageal sphincter pressure, although good evidence for patient-reported improvement in symptom severity has not been demonstrated (Nativ-Zeltzer et al, 2019). Furthermore, prolonged manometry is uncomfortable, so this is unlikely to yield a practical therapeutic option for globus.

Tricyclic antidepressants, such as amitriptyline, have long been used to treat functional gastrointestinal disorders at doses below the effective doses for antidepressant effect. Amitriptyline and paroxetine, a selective serotonin-reuptake inhibitor, have both been shown to relieve globus symptoms, possibly via upper oesophageal sphincter relaxation (Zhou et al, 2017). However, one contradictory study by Manolakis et al (2019) showed that citalopram, another selective serotonin-reuptake inhibitor, may induce globus sensation via increased upper oesophageal sphincter pressures.

Muscle tension

Excessive laryngeal tension has been considered a contributing factor to globus pharyngeus. Higher rates of globus are reported in patients with functional dysphonia than in patients with organic dysphonia, with particularly high rates in the subgroup with muscle tension dysphonia (Hamdan et al, 2019). Speech therapy techniques aimed at releasing muscle tension have been shown to be effective at improving globus symptoms (Khalil et al, 2003). Useful strategies include general body relaxation, postural encouraging adequate fluid intake, diaphragmatic exercises, laryngeal manipulation and vocal exercises. Referral to speech therapy may be useful if patients have significant dysphonia or fail to respond to counselling and basic measures.

Thyroid disease

An enlarged thyroid gland may cause compressive symptoms and present as globus. It may seem intuitive that surgery to alleviate compression will improve globus symptoms; however, throat symptoms, including globus, are recognised to increase in prevalence following thyroid surgery, as part of a ‘post-thyroidectomy syndrome’. Preoperative globus sensation in patients with thyroid disease appears to be closely related to psychological factors (Tomoda et al, 2018). Therefore, in the absence of other indications, thyroid surgery is not recommended for the treatment of globus symptoms.

Cervical osteophytosis

Anterior cervical osteophytes are often found during fluorography or endoscopy. However, these are frequently asymptomatic and other causes of globus should be excluded before ruling the osteophyte as the primary cause of symptoms. Anterior cervical osteophytes are

best demonstrated by video-fluoroscopic swallow study, which may also reveal or exclude oesophageal motility disorders. Management consists of conservative management, anti-inflammatory medications and surgical excision, which is reserved for severe refractory cases with dysphagia and osteophytes exceeding 10 mm in size. Surgery for osteophytes between C4 and C7 by lateral cervicotomy and osteophytectomy results in high rates of long-term symptom control (Vodičar et al, 2016), with endoscopic transoral surgery as an option for high osteophytes between C1 and C2 (Jabarkheel et al, 2018).

Oesophageal outflow obstruction

Oesophageal outflow obstruction or achalasia may cause perception of upper oesophageal contraction and hypersensitivity, resulting in perception of globus (Blais et al, 2017). Achalasia may be identified on endoscopy, fluorographic studies or oesophageal manometry and is usually associated with dysphagia. Muscle relaxants, such as nifedipine and nitrates, endoscopic balloon dilatation of the lower oesophageal sphincter, botulinum toxin injections and surgical myotomy are options for management of achalasia.

Medication-induced globus

Anticholinergic medications have been identified as a possible cause of globus sensation, possibly by salivary hypofunction (Haft et al, 2016). Furthermore, citalopram has been reported to cause globus sensation in one study, with increased upper oesophageal sphincter pressures when given intravenously (Manolakis et al, 2019). Thus, medication reviews play a role in identifying the cause, and therefore treatment, of globus.

Psychological factors

Globus has long been thought to be associated with psychological disorders, having originally been termed globus hystericus. Okland et al (2017) showed that patients with medically unexplained ear, nose and throat symptoms associated with somatisation, including globus sensation, scored higher on a Review of Systems Score than patients with symptoms associated with positive objective findings. This suggests that globus may be a somatisation disorder, or that it is more frequently coexistent with psychiatric illness. When associated with depression or other psychiatric disorder, treatment of the psychiatric affliction with cognitive behavioural therapy, antidepressants or electroconvulsive therapy may improve globus symptoms (Harvey et al, 2018). As discussed previously, adequate reassurance alone may play a large role in alleviating psychological factors contributing to globus sensation.

Conclusions

Globus pharyngeus remains a diagnosis of exclusion. However, in the absence of true dysphagia and other red flag symptoms, investigation is not always warranted and may increase patient anxiety. Simple reassurance following complete head and neck examination by an otolaryngologist plays a large role in patient management, and treatment of coexisting psychological factors is key. A short trial of antireflux medications is a low-cost therapeutic and diagnostic tool that can be commenced in primary care. Speech therapy can also be of benefit in the management of globus pharyngeus. Oesophageal disorders are frequently diagnosed in these patients; transnasal oesophagoscopy is useful as a ‘one-stop’ examination of patients suffering with globus. Otherwise, onward referral to gastroenterology for further investigation and treatment is suggested for management of the refractory patient.

With increasing awareness of mental illness, more patients are taking regular selective serotonin-reuptake inhibitors. Further research into the role of antidepressants and selective serotonin-reuptake inhibitors is required to elucidate their role in management of globus in the absence of clinical psychiatric illness.

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Key points

- Globus sensation is very common, with one in five adults reporting the symptom.
- The presence of red flag symptoms, particularly dysphagia or odynophagia, suggests sinister pathology and urgent referral and investigation is warranted.
- In low-risk patients with no red flag symptoms, simple reassurance is key. Investigations are generally not necessary in isolated globus.
- A trial of a proton-pump inhibitor is a low-cost and easy to access treatment option for these patients that can be started in primary care, although evidence of efficacy for treatment of globus is lacking.

Conflicts of interest
The authors declare that there are no conflicts of interest.

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