The role of transnasal oesophagoscopy in the management of globus pharyngeus and non-progressive dysphagia

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ABSTRACT

INTRODUCTION Transnasal oesophagoscopy is a relatively new method of examining the upper aerodigestive tract via the nasal passage as an outpatient procedure without the need for sedation. It has been shown to be a well tolerated, safe and accurate technique, that can therefore be used in the investigation of patients thought to have globus pharyngeus and other non sinister causes of dysphagia.

METHODS A total of 150 consecutive patients undergoing transnasal oesophagoscopy were analysed retrospectively.

RESULTS The main indications for this procedure were non-progressive dysphagia ($n=68$, 45%) and globus pharyngeus ($n=60$, 40%). Transnasal oesophagoscopy was normal in 65% of patients and 42% of patients were discharged from clinic at the same appointment with no further investigation. The most common positive findings were laryngeal erythema (13%) and oesophagitis (10%).

CONCLUSIONS Transnasal oesophagoscopy is a useful adjunct to the management of patients with the symptoms of globus pharyngeus and non-progressive dysphagia.

KEYWORDS

Deglutition disorders – Retrospective studies – Oesophagoscopy – Endoscopy – Follow-up studies

Accepted 19 July 2015

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Globus Pharyngeus is a difficult condition to define but can be characterised as the feeling of a lump within the throat or that something is stuck within it.¹ It has been described since the times of Hippocrates but is still a topic of debate. As a common clinical symptom, it represents approximately 4% of all new referrals to the otolaryngology outpatient clinic.² In addition, roughly 45% of people in the general population suffer with symptoms resembling globus pharyngeus at some point in their life.¹ Despite being such a common complaint, the exact aetiology remains unknown although it is hypothesised to be multifactorial.^{3–5} Globus pharyngeus has no objective clinical findings and as such, there is no standardised protocol for the investigation of patients with these symptoms. Regimes of investigation therefore remain widely varied.^{3,6}

One option is the use of transnasal oesophagoscopy (TNO). This allows outpatient visualisation of the upper aerodigestive tract with the use of a flexible oesophagoscope via the nasal airway. It requires local anaesthesia only and has been shown to be a well tolerated procedure with minimal complications.^{7,8} This paper presents the results from the use of TNO in a district general hospital.

Methods

In our department, TNO is used principally to investigate patients with typical symptoms of globus pharyngeus or non-progressive dysphagia. It is a cost effective method that avoids other investigations such as a radiological contrast swallow or endoscopy under general anaesthesia with their inherent risks. It is also used to a lesser extent for patients with odynophagia, chronic cough and reflux symptoms. Patients with symptoms suggestive of a more sinister pathology (eg malignancy) are not investigated with TNO but instead undergo rigid oesophagoscopy and panendoscopy under general anaesthesia.

TNO is currently performed in our department by one consultant, with one session every two weeks. One nurse is required to assist during the procedure.

A TNE-2000Bx transnasal oesophagoscope (Vision-Sciences, Orangeburg, NY, US) with a RLS 9100 B rhinolaryngeal stroboscope light source (Kay Elemetrics, Lincoln Park, NJ, US) is used. A compatible EndoSheath® (Vision-Sciences) is fitted, allowing suction and air insufflation during the procedure. The sheath provides an extra level of sterility although

the scopes are already cleaned before each use with an automated endoscope reprocessor (Tristel, Newmarket, UK).

Patients are consented and anaesthetised ten minutes prior to the endoscopy. The nasal cavity is anaesthetised with two applications of lidocaine 5% and phenylephrine 0.5% topical spray into each nostril, which is also applied to cotton wool and placed into the anterior nasal cavity bilaterally. The oropharynx is anaesthetised with approximately ten applications of lidocaine (10mg per spray). Then the endoscope is passed transnasally, using the larger nasal airway to examine the nasopharynx, oropharynx and larynx. The patient then swallows and the endoscope is passed into the oesophagus, where the mucosa is examined down to and including the gastro-oesophageal junction. Following the procedure, the patient is instructed not to eat or drink for one hour to reduce the small risk of aspiration.

Data collection

Every patient who has undergone this procedure in our department has been recorded in a paper-based database since the procedure was first undertaken in 2009. Hospital electronic records for patients undergoing TNO were analysed to identify the indications and their subsequent outcome.

Results

One hundred and fifty patients underwent TNO at our department between September 2009 and January 2013 (31 in 2009, 45 in 2010, 43 in 2011, 27 in 2012 and 4 in January 2013). Fifty-nine per cent of the patients were female, and the majority (78%) were aged between 40 and 80 years.

The main indications were non-progressive dysphagia or other symptoms compatible with globus pharyngeus (Fig 1). TNO was normal in 65% of patients (Fig 2) while the most common positive findings were laryngeal erythema (13%) and evidence suggestive of oesophagitis (10%). A final diagnosis of gastro-oesophageal reflux was made in 38% and globus pharyngeus in 20%, with one patient diagnosed as having a malignancy after further investigation (Fig 3). Of those patients with normal TNO, 42% were discharged after the procedure with no further investigation required. Patients not discharged after TNO underwent further investigation or were treated with medication and followed up to assess response.

Discussion

Globus pharyngeus is a common presenting complaint seen in the ear, nose and throat department, and it remains a difficult symptom for otolaryngologists to manage. The reason is that it tends to be difficult to treat, long-standing and has a high chance of recurrence. Its exact aetiology is unknown but it is felt by many to be multifactorial.^{1,4-6} The term 'functional globus pharyngeus' is sometimes used when no organic cause for these symptoms is identified.¹ Most recently, it has been postulated that it is an atypical symptom of silent laryngopharyngeal reflux.^{4,6}

Investigation of patients with symptoms of globus pharyngeus aims to identify contributing factors and exclude occult malignancy. The method of investigation varies widely in the UK. A survey of the practice of otolaryngology consultants in the UK demonstrated that the most common investigation performed was rigid endoscopy (61%), followed by a

Figure 1 The presenting complaints of patients undergoing transnasal oesophagoscopy

radiological contrast swallow (56%), with 17.5% performing both and 14% relying on outpatient clinical examination alone.³

Two studies evaluating the results of radiological contrast swallows involving more than 3,000 patients with typical globus symptoms revealed no malignancy.^{9,10} Although rigid endoscopy remains the best way to identify malignancy, it

involves a small but significant risk of perforation and requires the patient to undergo general anaesthesia. A retrospective study of 250 rigid endoscopies performed in patients with globus pharyngeus revealed that no malignancy was detected.¹¹ In view of the fact that there is a low diagnostic value for identifying malignancy in patients with typical globus using these investigations and with the potential risks

associated, there are doubts regarding routine use in such patients. This raises the question of how these patients should be best investigated and we propose the use of TNO in selected patients with no atypical or sinister features.

The use of TNO in the investigation of globus and non-progressive dysphagia is widely accepted internationally, with limited use in the UK.¹² Its use was first described in 1994 by Shaker and since then its use has increased, particularly in the US and Japan.¹⁵ It requires local anaesthesia only, without sedation, and allows visual examination from the nasal cavity to the oesophagogastric junction. Further technological advances allow insufflation to be performed and biopsies to be obtained via TNO, which have been shown by Postma *et al* to be as good as biopsies taken at panendoscopy.¹⁴ With regard to diagnostic accuracy, TNO has been shown to be comparable with conventional flexible oesophagogastrroduodenoscopy.^{15–17}

The major advantage of TNO is that it can be performed without the need for intravenous sedation or general anaesthesia, which is required for oesophagogastrroduodenoscopy or rigid endoscopy respectively. This has profound implications as both sedation and anaesthesia carry significant risks; it is estimated that 0.6% of patients receiving sedation develop a cardiopulmonary event.¹⁸ TNO has been shown to be a well tolerated procedure with minimal complications, the most common being anterior epistaxis.^{7,8,19} It also has clinical time benefits since TNO does not require recovery time following the procedure or theatre usage compared with the other modalities. The significant cost savings, which are not the focus of our report, have been published previously.²⁰ The potential future uses of this technique could also include biopsies of known cancerous lesions, staging etc.

The results of our retrospective analysis of patients undergoing TNO are comparable with those seen in the literature. A prospective study by Abou-Nader *et al* in 2014 demonstrated similar results, using similar indications for the procedure such as dysphagia and unexplained throat symptoms.²¹ They found that 56% of TNOs performed were normal and that a significant proportion of their patients could be discharged back to the referring clinician without requiring further invasive investigation.

Patients with symptoms of globus pharyngeus and non-sinister symptoms with a normal, complete TNO may be reassured and discharged. There are obvious benefits to this in terms of time and cost savings. Furthermore, patients are not subjected to unnecessary investigations and their risks. TNO in the UK is relatively new and its use in carefully selected patients makes it an extremely useful alternative to radiological contrast swallow or endoscopy. However, it should not replace these investigations completely as they both remain useful techniques in certain situations. For example, endoscopy should be used for patients strongly suspected of having an underlying malignancy.

Conclusions

This report suggests that TNO is a very useful investigation in selected patients. By using this technology, patients with

non-sinister features who may otherwise go on to have a radiological contrast swallow or endoscopy (or both) can be investigated in an outpatient setting without sedation. If TNO is normal, such patients may be reassured without the need for further investigation or follow-up, providing a significant benefit to both the patient and the otolaryngology department.

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