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ORIGINAL RESEARCH

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Efficient management of benign laryngeal symptoms in an endoscopy outpatient clinic

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Abstract

Objectives: A globus and thick mucus in the throat are common reasons for referral to an ear, nose, and throat (ENT) specialist. ENT outpatient appointments focus on nasolaryngoscopy examinations, patient education, and reassurance. An endoscopic outpatient clinic (EOC) was established to efficiently manage patients with benign laryngeal symptoms.

Methods: Patients referred between February 2022 and June 2023 due to a globus and/or thick mucus in the throat were immediately contacted via post. The contact letter included patient education about the potential underlying reasons for their symptoms and self-care instructions. A 15-min outpatient visit was scheduled for an ENT examination and nasolaryngoscopy. Patients completed a questionnaire about their current symptoms and whether they had followed the self-care instructions just before visiting the EOC and 1-month following their appointment.

Results: In total, 203 patients examined in the EOC were included in the study. Before the EOC visit, most patients (89.2%) considered the information letter useful, it relieved concerns in 44.2% of patients, and 73.2% patients had already followed the self-care instructions. After the 1-month follow-up period, symptoms diminished significantly ($p < .001$).

Conclusions: Instructions for self-care and encouragement relieved concerns among patients with benign laryngeal symptoms. Moreover, symptoms improved significantly after a 1-month follow-up period.

Level of evidence: 4.

KEYWORDS
benign laryngeal symptoms, globus pharyngeus, globus sensation, mucus in the throat, self-care

1 | INTRODUCTION

The globus sensation is a common complaint. A lump or tightness in the throat usually subsides during eating or drinking, and the patient experiences no dysphagia or pain. This symptom occurs in 4% of ear, nose, and throat (ENT) referrals.[1] Moreover, up to 78% of adults may have felt a globus, but never sought health care for it.[2] A globus more often affects women up to the age of 50, but seems as prevalent in men and women.[3,4]

The sensation of a thick mucus in the throat is also a common symptom. This may induce continuous throat clearing leading to a sore throat, voice problems, and a globus sensation.[5] As a symptom, it is normally associated with dry mucous membranes due to inadequate hydration, medications causing dryness, and resulting from age-related biochemical and body composition changes such as the atrophy of the mucous membrane as well as an age-related decline in hormone production. At times, mucus in the throat may occur concomitantly with gastroesophageal reflux disease (GERD), due to rhinitis, sinusitis, or an allergy.[6] However, in these cases, a visible mucus accumulation is observed in the ENT status.[6]

The sensations of a globus and thick mucus in the throat are symptoms often resulting in a consultation to an ENT specialist. An outpatient appointment focuses primarily on anamnesis, an ENT examination with nasolaryngoscopy.[7] Patient education and reassurance are also important.[7] In Finland, specialized medical care is paid for through a tax fund, whereby we continuously attempt to identify fast and cost-effective ways of treating patients referred from primary care. Our hospital, a tertiary care unit covering 1.7 million inhabitants, houses our laryngological outpatient clinic, which receives 2000 referrals annually. Therefore, in our department, we established an endoscopic outpatient clinic (EOC) to efficiently manage patients experiencing the sensation of a globus and/or a thick mucus in the throat. All patients referred to our department due to these symptoms immediately received a letter including patient education about potential underlying reasons for their symptoms and self-care instructions. A short 15-min outpatient visit was scheduled for all patients for an ENT examination and nasolaryngoscopy. The aim of this study was to examine patients' satisfaction with the EOC, and patients' symptom severity just before the appointment and after a 1-month follow-up period. We also examined the potential causes for patients' symptoms.

2 | MATERIALS AND METHODS

2.1 | Endoscopic outpatient clinic

All patients referred to our department because of the sensation of a globus and/or a thick mucus in the throat, received a letter via post or via the electronic healthcare service, which included patient education about the potential underlying reasons for their symptoms, and instructions for self-care. Patients' referrals for dysphagia, throat pain, dysphonia, or sinonasal problems were excluded from the study. A 15-min outpatient visit was scheduled for all patients at least 1 month after the letter was sent in order to provide patients sufficient time to follow the instructions. At the appointment, the ENT specialist took a patient history and performed an ENT examination, including neck palpation and video nasolaryngoscopy with a 3-mm-thin flexible endoscope (Olympus Evis Exera III CV-190). An ENT specialist briefly discussed with the patient the possible causes for the symptoms and the instructions for self-care according to the information letter. The ENT specialist's opinion regarding the possible underlying reason for a patient's symptoms were assessed from patient records.

2.2 | Information letters for patients

The letter regarding a globus sensation contained information related to symptom's benign nature and the potential underlying reasons. These included acid reflux from the stomach to the esophagus, throat, or larynx and muscle tension in the neck and shoulders for multiple reasons: for example, one-sided stress to muscles, clearing the throat, repeatedly swallowing with an empty mouth, factors related to the bite or the temporomandibular joint, and a loud and strained use of one's voice. In addition, other factors involved in irritating the larynx and pharynx (e.g., smoking, and snoring) which may cause swelling in the mucous membrane and induce a globus were described. Instructions for self-care included dietary recommendations for reflux, instructions for the treatment of muscle tension, and mucous membrane hydration (e.g., saline sprays for the nose, or using a vapor inhaler).

The letter regarding a thick mucus in the throat explained the importance of saliva for mucous membrane health and clarified that the primary reason for the symptom is often a diminished mucus secretion or a change in its consistency. The causes for a reduction in saliva production (e.g., aging, and some medications) causing resilient laryngeal or pharyngeal mucus were described. If the symptom specifically occurred after a meal and laying down, the possibility of GERD as the reason for the thick mucus was mentioned. Instructions included the abovementioned self-care recommendations for reflux and treatment of the mucous membranes through hydration. TI and TK drafted both letters for the EOC in 2019, and the instructions are based on clinical and research data.[5]

2.3 | Patients

Patients examined in the EOC between February 2022 and June 2023 were recruited to the study. We excluded patients under 18 and over 85 years of age, as well as those who did not properly understand Finnish or Swedish, the official languages in Finland. The patient needed to be able to independently complete a questionnaire. Patients voluntarily signed an informed consent form.

2.4 | Questionnaires

Just before the ENT appointment, patients completed an initial questionnaire. Possible visits at an ENT specialist's appointment and examinations before a referral to our clinic were required. Patients were asked if they had already followed the instructions in the letter and if those were helpful. The self-care instructions followed were assessed (a vapor inhaler, products for nasal moisturizing, treatment of muscle tension, diet and medications for reflux, and instructions to raise the head of the bed). We asked patients' opinions regarding the usefulness to receive a letter beforehand and whether the information diminished their concerns related to their symptoms. Patients

reported the severity of their current symptoms on a scale from 0 to 4 (0 = no symptoms, 4 = very disturbing symptoms).

Patients completed another questionnaire after a 1-month follow-up period and returned it via post or completed an electronic questionnaire created in REDCap. Patients received a text message as a reminder to complete the second questionnaire. In the second questionnaire, patients were asked if they had followed the self-care instructions and were asked to rate the severity of their current symptoms on a scale from 0 to 4 (0 = no symptoms, 4 = very disturbing symptoms). The Ethics Committee of the Helsinki and Uusimaa Hospital District approved the study protocol. A research permission was granted by the Helsinki and Uusimaa Hospital District. This study was conducted in accordance with the Declaration of Helsinki (The World Medical Association 2013).

2.5 | Statistical analysis

To evaluate the sample size, we consulted an experienced statistician. The sample size calculation was completed using the G*Power program, using the question "How disturbing are your symptoms right now?" from the first and second surveys as the primary response variable.[8] The power was set at 80%, and we considered $p < .05$ as statistically significant. Because a change of one unit in the question was considered a clinically significant difference between groups, the necessary sample size was calculated accordingly. Using the Wilcoxon signed-rank test, assuming a difference in means of 1 and a standard deviation for the difference of 4, we required a sample size of 134. We estimated that 30% of patients would not return the second questionnaire and some may leave the study for various reasons. Thus, we considered a targeted sample size of 200 likely to produce sufficient observations for the final dataset to address the research question. The Wilcoxon signed-rank test was used to analyze the change in symptoms. Patients' compliance in following instructions was used as a background variable to explain the change in symptoms (Mann–Whitney *U* test). The age distribution between patient groups was compared using the Mann–Whitney *U* test and we analyzed the gender distribution using the chi-square test. Other data were examined descriptively. Analyses were performed using the Statistical Program for Social Sciences (SPSS for Windows, version 27.0; SPSS Inc, Chicago, IL, USA).

3 | RESULTS

Between February 2022 and June 2023, 269 patients were examined in the EOC. Among these, 19 declined to participate in the study, 10 were excluded because of age, 2 were unable to complete the questionnaire themselves, 20 presented with throat pain and/or dysphagia as the primary complaint, and 15 were unable to participate due to the absence of the study nurse. Moreover, 12 patients canceled their appointments because they no longer had any symptoms. Thus, in total 203 patients participated in the study; 138 had a globus sensation (median age 44, range 20–80 years, 72.5% female), 43 had the sensation of a thick mucus in the throat (median age 68 years, range 20–82, 58.1% female), and 22 presented with both symptoms (median age 44 years, range 20–78 years, 68.2% female). There was no difference in the gender distribution across groups, although those with a mucus sensation were older than the globus patients and those with both symptoms. A total of 26 patients (12.8%) had a previous ENT specialist appointment. Before the referral, 36 globus patients (26.1%) underwent a neck ultrasound, five (3.6%) an esophagogastroscopy, five (3.6%) a chest x-ray, and one (0.7%) underwent neck magnetic resonance imaging (MRI). Among those experiencing the sensation of a thick mucus in the throat, six (14.0%) patients had a chest x-ray, three (7.0%) a paranasal sinus x-ray, and three (7.0%) an esophagogastroscopy. Among patients with both symptoms, two (9.1%) underwent a neck ultrasound, three (13.6%) an esophagogastroscopy, two (9.1%) a chest x-ray, two (9.1%) a paranasal sinus x-ray, one (4.5%) a neck MRI, and one (4.5%) a neck computed tomography (CT).

Based on the questionnaire responses, 157 (77.3%) patients received the information letter beforehand, among whom 140 (89.2%) thought it was useful and 115 (73.2%) who followed the instructions before their appointment in the EOC. Table 1 summarizes the self-care instructions patients followed prior to their visit to the EOC based on patient groups.

Among the globus patients, 30 (21.7%) reported that the instructions were helpful to their symptoms, whereas 15 (34.9%) patients with mucus and 6 (27.3%) who presented with both complaints reported that. The information letter diminished concerns about their symptoms in 61 (44.2%) globus patients, in 18 (41.9%) mucus patients, and in 13 (59.1%) patients with both complains. Figure 1 illustrates

TABLE 1 Self-care instructions followed before the EOC visit.

	Diet for reflux, raising the head of the bed	Medication for reflux	Products for nasal moisturizing	A vapor inhaler	Treatment of muscle tension
Globus, $n = 138$	72 (52.2 %)	52 (37.7 %)	42 (30.4 %)	12 (8.7 %)	57 (41.3 %)
Mucus, $n = 43$	20 (46.5 %)	18 (41.9 %)	16 (37.2 %)	9 (20.9 %)	–
Globus and mucus, $n = 22$	13 (59.1 %)	11 (50.0 %)	8 (36.4 %)	4 (18.2 %)	10 (45.5 %)
All patients, $n = 203$	105 (51.7 %)	81 (39.9 %)	66 (32.5 %)	25 (12.3 %)	67 (41.9 %)[a]

Abbreviation: EOC, endoscopic outpatient clinic.
[a]Mucus patients did not receive instructions for treating muscle tension.

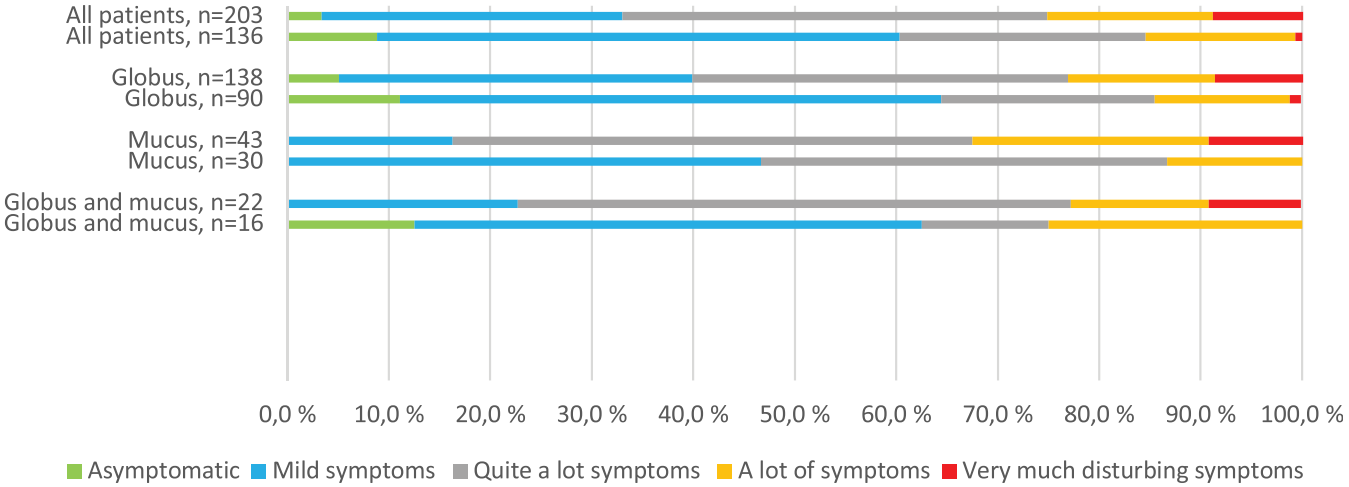

FIGURE 1 Symptom severity just before the visit to the endoscopy outpatient clinic (upper line) and after a 1-month follow-up (lower line) for all patients and different patient groups.

TABLE 2 Self-care instructions followed after the EOC visit.

	Diet for reflux, raising the head of the bed	Medication for reflux	Products for nasal moisturizing	A vapor inhaler	Treatment of muscle tension
Globus, $n = 90$	55 (61.1 %)	38 (42.2 %)	38 (42.2 %)	10 (11.1 %)	55 (61.1 %)
Mucus, $n = 30$	13 (43.3 %)	7 (23.3 %)	19 (63.3 %)	10 (33.3 %)	–
Globus and mucus, $n = 17$	6 (35.3 %)	4 (23.5 %)	11 (64.7 %)	4 (23.5 %)	9 (52.9 %)
All patients, $n = 137$	74 (54.0 %)	49 (35.8 %)	68 (49.6 %)	24 (17.5 %)	64 (59.8 %)[a]

Abbreviation: EOC, endoscopic outpatient clinic.
[a]Mucus patients did not receive instructions for treating muscle tension.

the symptom severity just before the visit to the EOC according to patient groups.

After a 1-month follow-up period, 137 (67.5%) patients completed a second questionnaire, among whom 122 (89.1%) had followed the self-care instructions. The median time to complete the questionnaire was 33 days (range 21–134). Table 2 summarizes the self-care instructions followed according to the patient groups after a 1-month follow-up period.

Figure 1 illustrates the symptom severity according to patient groups after a 1-month follow-up period. One patient with both complaints reported fluctuating symptom, a response which was excluded. Symptom improvement was statistically significant in 136 patients ($p < .001$). Patients who followed the self-care instructions reported fewer symptoms than those who did not ($p = .010$). Moreover, separately in all patient groups the symptom improvement was statistically significant after a 1-month follow-up period. When comparing those who followed the self-care instructions to those who did not, only a significant symptom improvement was observed in globus patients who followed the self-care instructions. However, in the two other groups, there were only a few who did not follow the self-care instructions. Only 15 (10.1%) respondents reported not following the instructions after the EOC. Among these, five patients were asymptomatic, seven had mild symptoms, two reported quite a lot of symptoms, and one reported a lot of symptoms.

Based on the ENT specialist's opinion and patient records, the possible underlying reason for patients' symptoms were assessed. The most common reasons for the globus patients' symptoms were muscle tension and bruxism ($n = 83$, 51.9%), and dry mucous membranes ($n = 24$, 15.0%; see Table 3). Three patients had a finding in the ENT status possibly influencing a patient's globus sensation. One patient had idiopathic vocal cord paralysis without dysphonia, one had an enlarged submandibular gland determined to be benign in ultrasound, and one had a flabby soft palate collapsing when lying on their back. The most common reasons for the sensation of thick mucus were dry mucous membranes ($n = 60$, 92.3%), and sequelae following an upper respiratory tract infection ($n = 4$, 6.2%; see Table 4). There were no specific findings in the ENT examination.

A total of 10 patients (4.9%) received a referral for further examinations after the EOC, all of whom had a globus. Six neck ultrasounds, two neck CTs, one esophagogastroscopy, and one neck MRI were ordered. One goiter was confirmed in a neck ultrasound possibly inducing the globus. Otherwise, the examinations had no specific findings.

TABLE 3 Possible underlying reasons for the globus symptom based on ENT specialist's opinion ($n = 160$).

	Reason one	Reason two
Muscle tension, bruxism	83 (51.9 %)	19
Dry mucous membranes	24 (15.0 %)	33
No reason mentioned	19 (11.9 %)	
GERD	15 (9.4 %)	4
Sequelae to an upper respiratory tract infection	8 (5.0 %)	
Finding in the ORL examination	3 (1.9 %)	
Goiter	3 (1.9 %)	
Stress, anxiety	2 (1.3 %)	3
Voice problems	2 (1.3 %)	
Throat clearing	1 (0.6 %)	3

Abbreviations: ENT, ear, nose, and throat; GERD, gastroesophageal reflux disease.

TABLE 4 Possible underlying reason for the mucus symptom ($n = 65$) based on ENT specialist's opinion.

	Reason one	Reason two
Dry mucous membranes[a]	60 (92.3 %)	8
Sequelae to an upper respiratory tract infection	4 (6.2 %)	
GERD	1 (1.5 %)	7

Abbreviations: ENT, ear, nose, and throat; GERD, gastroesophageal reflux disease.
[a]Because of inadequate drinking, aging, and medications.

4 | DISCUSSION

Our results indicate that patients experiencing the sensation of globus, a thick mucus in the throat, or both symptoms benefited from self-care instructions. In addition, those instructions may have helped to relieve the symptoms and patients' concerns even before a visit with an ENT specialist. After a 1-month follow-up period, patients' symptoms improved and only a few patients continued experiencing multiple symptoms. Moreover, it was rare that further examinations were needed. An information letter delivered before the visit reduced the time a physician required for an outpatient consultation because there was no need to fully explain the background of the symptom and provide treatment instructions. Furthermore, patients have the information letter for future use. These patients cover over 10% of new referrals in our laryngological outpatient clinic annually. Ultimately, the EOC has allowed us to treat these patients more effectively given that they do not need to queue for a long period of time along with other nonurgent laryngological patients.

Most of the patients felt it was useful to receive the information letter before their clinic visit, which already diminished about half of the patients' concerns regarding the severity of their symptoms. Additionally, there were patients who canceled their appointments because it was no longer necessary. If these patients would have been considered, the result of the letter's effect on diminishing patients' concerns would have been even stronger. Over 90% of patients reported in both questionnaires that they had followed the self-care instructions. In addition, about one-third of the patients felt that the instructions diminished their symptoms even before the EOC visit. That said, how carefully patients follow the instructions may fluctuate and accordingly may influence the overall benefit. Over 20% of patients reported that they had not received the letter. However, in many cases, they had received it, but did not notice it in the envelope with the appointment letter or did not have time to read it, indicating how disturbing symptoms might have been. Before the EOC visit, about one-third of patients reported asymptomatic or mild symptoms. However, after a 1-month follow-up period, over 60% of patients were asymptomatic or had only mild symptoms. Symptom improvement in a 1-month follow-up was statistically significant overall and in all patient groups separately. If patients' compliance in following instructions was used to explain the change in symptoms, the difference in symptom change was also statistically significant overall as well as among globus patients, but not in the two other patient groups. In those groups, only a few patients reported not following the instructions, thereby influencing that finding. In a study with a 4-month follow-up period, globus patients' symptoms improved without any treatment after they have had normal results during an ENT examination and in further examinations, such as a transnasal esophagoscopy (TNE).[9] Thus, it is difficult to determine how much symptoms have diminished resulting from following the self-care instructions, the ENT specialist's examination with normal findings, or due to a spontaneous recovery. After a 1-month follow-up period, few patients experienced a lot of symptoms. In studies with a 6- and 7-year follow-up periods, up to 50% of patients still experienced some symptoms occasionally indicating that globus may persist and fluctuate.[10,11]

Patients were successfully selected for the EOC visit. None of the globus patients had any concerning findings and only a few examinations were ordered before the referral to our clinic or after the EOC visit. In addition, these examinations had no specific findings. This agrees with other studies indicating that for globus diagnostics further examinations are usually unnecessary.[7,11,12] A neck ultrasound was the most often prescribed examination but appears unbeneficial when a neck palpation is normal.[11] An esophagogastroscopy was occasionally ordered. When globus patients without reflux symptoms underwent TNE and 24-h multichannel intraluminal impedance with pH monitoring, there were no GERDs.[13] In addition, if a globus patient experiences concomitant reflux symptoms, it is no longer globus pharyngeus (Rome criteria).[14] Moreover, a globus is not an early sign of a malignancy when alarming signs such as throat pain, dysphagia, or weight loss are absent.[12,13,15] Mucus patients with any rhinitis or sinonasal problems are examined in our rhinological outpatient clinic, not in the EOC. Thus, primary x-ray or CT examinations were not needed.

The cause for a globus is currently considered multifaceted.[16] In the present study, the most common possible reason for a globus included muscle tension, and dry mucous membranes. Based on a retrospective study, these were also the most common reasons for a globus.[11] Other studies have also concluded that muscle tension in the

larynx and pharynx may induce a globus.[17] Because our patients did not normally report any reflux symptoms, ENT specialist did not think that was a cause for symptoms.[13] Yet, interestingly patients often reported that they had followed instructions to treat a possible reflux. Psychological factors and stress have been considered causes for a globus.[18–20] In this study, these rarely explained a globus; but, in many cases, they may have influenced patients' muscle tension and bruxism. The information letter from the EOC might allow us to relieve at least these patients' stress about the severity of their symptoms. Among our patients, the primary reason for the thick mucus was thought to result from dry mucous membranes resulting from multiple reasons, such as changes related to aging, explaining why those patients were also older than globus patients.

There are some limitations to this study. Only a few patients did not follow the instructions after their visit to the EOC. Thus, it was not reliable to compare whether following the instructions were helpful in patients who had the sensation of a thick mucus with or without a globus. However, overall and separately in all patient groups, we detected a remarkable symptom improvement and patients reported it was useful to receive instructions. We did not receive one-third of the patients' second questionnaires. Based on the sample size calculation, these repeated responses should be sufficient to achieve reliable findings. However, it is possible that those with symptoms are more likely to return the repeated measure, underestimating the usefulness of our instructions.

5 | CONCLUSIONS

Instructions for self-care and encouragement appeared to relieve concerns among patients with benign laryngeal symptoms as well as improve their symptoms. When patients are selected well, no concerning findings and typically no need for further examinations occur. In the future, these patients should be encouraged to follow self-care instructions, which also save healthcare resources.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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