Secondary Self Traumatic Airway Disease

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Abstract
There is yet no consensus about the ethiology and treatment of one of the most common diagnosis for the ear, nose and throat specialist in open care. The base for this theory is an injury affecting the tissues anywhere from the nostrils to the trachea leading to an afferent information to the central nervous system. It is often followed by an efferent reflex in order to clear the inflammatory swollen airways. The sniffing, snuffling, clearing of the throat, swallowing and cough alleviate the sensation for a moment, but the actions will simultaneously damage the tissue even more. After a while the patient feels a need to repeat the behavior that gives a temporary relief. When the patient becomes aware of the traumatizing reflex and is given an explanation of the pathogenesis the disease often can be cured by relaxing, calm breathing through the nose. Secondary self traumatic airway disease (SSTAD) is a more accurate description for these conditions than the ICD-10 term Chronic Pharyngitis J31.2 only valid for the throat. Suggestion for criteria for the diagnosis and treatment of SSTAD is given.

Introduction
The objective of this article is to describe a hypothesis about the cause of both clearing the throat and excessive swallowing as well as in some patients with congestion of the nose and coughing. The spontaneous improvement of the symptoms is after five to eight years said to be 55% to 56% [1, 2], but should be higher if both the physician and patient are aware of the origin of this problem. The article aims to spread the understanding and knowledge of an unpleasant and common annoyance.

Material and Methods
The main diagnosis of 17607 outpatients, both first-visit and repeats, in our ear, nose and throat clinic during five years 2009 to 2014 was retrospectively reviewed. One physician made all consultations.

Seventy patients diagnosed for SSTAD III were prospectively asked to answer five key questions regarding their symptoms and to grade the symptoms none, light, moderately or severe (0-3).
- Do you feel a lump, slime or something in your throat?
- Do you often clear your throat?
- Are you trying to swallow the lump or the slime?
- Do you experience a tightness in your throat?
- Are you coughing more often than normal?

Results
Of the 17607 outpatients 877 (5,0%) were diagnosed with chronic pharyngitis after the consultation, which is comparable with others [2, 3]. Consequently chronic pharyngitis was the third most frequent diagnosis. Sub diagnoses could not be registered due to a deficiency in the system, but the total frequency of SSTAD III in our clinic is estimated to be around 8%.
The mean total score was 10,7 (5-15). Of all 73 patients 61 (79,4%) had a total score of 9 points or more. Only six (8,2%) had any dysphagia. Fifty-five (75,3%) had had their symptoms for more than one year and none for less than one month.
The most common symptom among the patients was problem with clearing the throat and feeling of a lump with a mean score of severity of 2,7 and 2,6 points respectively closely followed by excessive swallowing with the mean score of 2,4 points. The mean score for excessive coughing was 1,6 and only 1,5 for the symptom of a tight throat.

Classification
The four areas that can be affected by SSTAD are as follows:

I The nasal cavity
II The nasopharynx
III The hypopharyngeal and laryngeal tissues
IV The trachea and laryngeal tissues

Regarding to the patients reaction and behavior subgroup 3 is further divided in:

IIIa Upward clearing of the throat
IIIb Frequently swallowing
IIIc Tension of the pharyngeal and laryngeal muscles

Symptoms
In SSTAD I the main symptoms are nasal congestion and rhinorrhea, sometimes also itching and a dry, sore feeling in the nose. Sniffing temporarily relieves the symptoms and therefore will be repeated by the stricken person. This location for SSTAD is the second most common and is estimated to be one third as common as SSTAD III.

Patients with SSTAD in the second area will feel that they have to get rid of the lump behind the nose and clear the nasopharyngeal field from excessive amounts of mucus by inhaling through the partially closed nasopharyngeal orifice. This creates a loud snoring like sound when the posterior surface of the soft palate vibrates. They subsequently feel a partially but temporary relief of the symptoms. It is socially disturbing for people in the surroundings to hear the snoring sound, but it is the least common of the SSTAD versions.

When the problem is focused to hypo pharynx the patient experience one, two or all three of the symptoms of the subgroups. In SSTAD IIIa there is frequently clearing of the throat because of a feeling of a lump in the throat. They express that ”there is something in my throat”. There may also be a sense of dryness or itching and often hoarseness caused by the traumatic vibration of the mucosa and vocal cords. In SSTAD IIIb the main action is swallowing. The patient tries to swallow the lump or the sense of thick mucus, but does not feel that all of the mucus can be swallowed down to the esophagus. The desired result of this ”empty swallowing” is therefor not achieved, but despite this, the attempt to swallow is repeated. By swallowing liquid they may, however, be temporarily relieved. SSTAD IIIc is the less common of the subgroups. The reaction leads to a reflexive contraction of the surrounding muscles and the muscles in the neck and pharynx may also become tender by the repeated clearing and swallowing. This gives the patient a pressing or squeezing feeling. The throat feels tight and in this group we find some people complaining of dysphagia. Here we have the challenge to decide if we have to perform an esophagoscopy or a radiologic examination to exclude a cancer in esophagus.
All three subgroups have in common a high frequency of discomfort or even panic. It is very annoying to sense a foreign body that you can not get rid of. It is important for the doctor not to misinterpret it to be a primary psychiatric problem. This panic is a pure secondary normal reaction on a damaged tissue in an area of uttermost importance for survival. Some people have more discomfort in lying position, possible due to a change of tension or hypostatic. Finally it may be very offensive to the patients family and working colleagues.

The final area SSTAD IV, with mucosal inflammation in the trachea, has mainly one symptom and that is cough. It is most often a nonproductive cough, with a short air shock, that is repeated during the wakening time. Since the cough involves glottic closure there is sometimes also hoarseness. It is said to be related to increased sensitivity of overactive nerve endings [4]. The condition is often called hyper reactive cough and is induced by cold air contact [5].
Finally, it must be said that it is very common with simultaneous symptoms from two or more areas. This is not surprising, since the mucosa in the whole respiratory system have a lot in common. Consequently, Eccles [6 has shown that vibrations of the airways at the level of the throat in patients with acute upper respiratory tract infection induce cough.

Criteria
For diagnosing SSTAD in area three the following criteria are suggested:
1. Observing loud clearing of the throat.
2. The symptoms have lasted for more than one month.
3. Nine points or more in answering the five key questions.
4. Normal clinical examination

The diagnosis of Globus Pharyngeus or SSTAD is, as Kortequee et al [3] concludes, a clinical diagnosis and not a diagnosis of exclusion.

Pathogenesis
The traumatic tissues sends afferent signals through the nerves to the brain, giving the central nervous system information that ”there is something in the throat” or nose. It is potentially dangerous to have the airway and, for the hypopharynx, the upper digestive channel blocked. Therefore the efferent nerves take part in a reflex to get rid of whatever is obstructing the lumen. Unfortunately the obstruction is mainly in the mucosa. The reflex is therefor inadequate - we can not cough up our vocal cords or hypo pharyngeal mucosa. But we are trying to do so because of the reflex. The action of the afferent nerves are for the moment out of action after a clearing, but repairs quickly and a new clearing is taking place. The effect on the tissue is comparable with the neurodermitis in the skin when itching on an eczema. In the narrow airway in the nose, the vacuum created by the sniffling is one of the causes for the edema. Many of these patients have got the diagnosis vasomotoric rhinits or hypertrofic chonchas, but the cause is often self traumatic secondary to one of the below listed causes.

Primary cause
There are a large number of possible primary causes affecting the mucosa, the connective tissue and the muscles in the four areas. The anamnesis could reveal the reason for the damage of the tissue.

Infections	Spirits	Fibromyalgia
Allergies	Gastro esophageal reflux	Mouth breathing
Particles	Snoring	Menstruation cycle
Cold or dry air	Inhalation steroids	Hypothyroidism
Chemical agents	External or internal trauma	Cardiac failure
Tobacco smoking	Autoimmune diseases	Oral medications

Clinical investigation
Systematic and meticulous examination of the airway from the both nostrils, through the nasal cavities, epipharynx, the oral cavity, hypopharynx, larynx and the subglottic space is essential for the diagnosis of SSTAD to separate it from possible differential diagnosis. If any of these areas are difficult to investigate direct or with mirror fiberoptic endoscopy should be performed.
If the clinical examination shows normal conditions or a slightly swollen mucosa with light erythema and the symptom score is consistent with SSTAD radiological examination or laboratory tests are not indicated [2, 7]. ”Red-flag” symptoms like weight loss and difficulties to swallow food must of course lead to further investigation like a radiologic or endoscopic examination of the hypopharynx and esophagus to rule out malignancies or stenosis.

Differential diagnosis

Tumor	(difficulties to swallow food)
Thyroid disease	(fatigue or anxiety, weight changes, freezing or sweating)
Psychiatric problems	(somatoform autonomic dysfunction[8])
Tourette syndrome	(usually starting at seven years of age [9)

Treatment

This illness is mainly cured with pedagogic effort by the physician. A medical doctor is primarily trained to cure patients with surgery or pills. There is an exception for psychiatrists, and possibly generalists, but certainly not for a typical ENT specialist. It may therefore feel unaccustomed to guide the patient in a verbal, intellectual way, so he or she begins to understand why this condition has come and how to treat it themself.
Awareness of the self-traumatic sniffling, clearing of the throat etc. and the extent of the behavior is the ground for treatment. Insight in the pathophysiology and the natural psychological reaction are therefor basic for trying to cure the patient. Both the therapist and the patient should, however, be aware of the remarkable persistence of the symptoms which, in one study [10] showed that only 27% was free from the feeling of something stuck in the throat 31 months after the initial presentation.
Instruct the patient in calm, controlled breathing technique through the nostrils which makes the often dry and cold inhaled air humidified to 100 percent and heated to 37 Degrees Celsius when it arrives to the traumatized hypopharyngeal mucosa. The quite breathing also helps the person to control the reflex to swallow, cough etc.The nose is a humidifier and a heat exchanger, but set aside, the rapid inhalation of dry, cold air damage the mucosa. The goblets cells is changed and produces excessive amounts of pathologic mucus. It is rather easy to get a person without medical education to understand what has happened to their airway, why they feel like they do and how to heal the mucosa. When meeting the patient in the office, you often hear the clearing of the throat or sniffling through the nose, but just register it for yourself. After the patient has told you his or her complaint and the anamnesis is complete, you will examine the patients nose, mouth, epipharynx, hypopharynx and larynx and palpate the neck. First now you can describe for the patient the symptoms of SSTAD and calm their fear of dangerous disease. Most patients immediately recognize them selves on many of the listed symptoms. The interest is now awaked and you can describe the primary causes, what the lump is, the natural reflex and psychological reaction. People who's main problem is clearing the throat now often start swallowing instead knowing that the doctor is watching. Confirm that the patients sensation of a lump is true and that the lump is the thickened mucosa.
There are some sentences in the conversation that will make the patient understand SSTAD:

- You do have a lump, but this is the swollen mucosa.
- You cant swallow your vocal cords and you can´t cough them out, but you are trying.
- It is like an eczema in the throat.
- If you get a mosquito bite you know that the itching will not stop until you stop scratching.
- You have come in to a vicious circle.
- There are no pills against SSTAD, but you can cure it without.

It is easy to understand why antibiotics are useless and topical steroids are not effective. A few patients want to try peroral steroids. The minority with gastroesophageal reflux as a primary cause should be given proton pump inhibitor, but fewer than one would hope get relief with this therapy. Hydroxyzine has also been tried, but the effect of this antihistamine varies. Swallowing a mouth of water will feel better than empty swallowing. Some of the stricken clear their throat every eight second and are often partially relieved by cough medicine containing morphine. It is, however, important to tell the patient that the main cure is the understanding of SSTAD.

Speech therapists and physiotherapists should have an important role in curing SSTAD. The first category is well educated in disorders in this area and the second category is also used to teach the patient breathing technique and muscle relaxation. Unfortunately these professions have usually achieved not more interest for this large group patients than the medical doctors.

This is not a primary psychogenic disease and should not be treated like one, although many still see it as a somatoform [8] or neurotic [11] condition. Several researchers have focused on pharyngeal origin for the sensation of a lump [7, 12, 13], but others [14] have dismissed this theory. The patronizing designation ”Globus hystericus” with ICD-10 code F45.8 should not be used other than possible as an example of our earlier professional shortcomings. Chronic pharyngitis is a better nomenclature that describes the longstanding inflammation in the throat and has the ICD-10 number J 31.2.

Discussion
Why this collective explanation for the origin and treatment of the similar conditions in the airways not have been described earlier may depend on that the illness is not dangerous and therefore not as interesting as a harmful disease. There are also not obvious pathological findings discovered in the clinical investigation of the airways. If you can´t see the lump, it is easy to think that it doesn´t exist. Further, there is no measurable laboratory analysis that is pathognomonic or even gives a hint to the disease. Also, no radiological examination, CT scan or MRI is useful for diagnostic purposes. If not even these delicate imaging techniques shows the lump, it is definitely hard for the physician to believe that the lump exist. Finally, there are usually no pharmacological treatment for SSTAD i. e. there is no commercial interest in SSTAD.

Conclusions
This article gives a collective explanation and treatment for the third most common discomfort affecting patients at an ear, nose and throat office. The symtoms from the airways in four areas from the nostrils down to the trachea are long-standing sniffling through the nose, nasal congestion, snoring, clearing the throat, excessive swallowing, a narrow feeling of the throat and finally coughing. The knowledge of this condition should also be spread to the general practitioners to whom the patients often seek medical attention to first. Criteria for diagnosing SSTAD is given. The primary cause can sometimes be cured, but is often obsolete, why the treatment of this secondary self-traumatic airway disease should be focused on comprehension and stopping the behavior.

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