SEVERE THROAT PAIN IN PATIENTS WITH NEGATIVE OROPHARYNGEAL EXAMINATION: FOUR CASE REPORTS AND OVERVIEW OF THE LITERATURE

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ABSTRACT
Throat pain is one of the most frequent complaints prompting patient visits to healthcare professionals. Primary care physicians being the first contact point are frequently encountered with symptoms such as sore throat and odynophagia. However, high level of diagnostic uncertainty exists when the oropharyngeal examination is normal despite patients’ complaints of severe pain. We present four Caucasian Greek patients, two males aged 47 and 57 years and two females aged 32 and 47 years respectively admitted to an Ear Nose and Throat department of a general hospital, with severe throat pain and initially normal oropharyngeal examination. This case series highlights the necessity for a high level of suspicion on the part of the primary care physicians when facing patients complaining of severe throat pain since their symptoms may indicate conditions such as supraglottitis, lingual tonsillitis or pemphigus vulgaris. A careful clinical examination, including an indirect laryngoscopy, is required especially when the initial oropharyngeal examination is normal.

Key words: throat pain, primary care, supraglottitis, lingual tonsillitis, pemphigus vulgaris

INTRODUCTION
Throat pain is one of the most common symptom for which patients seek medical help. Primary care physicians are usually the first point of contact for patients with sore throat and odynophagia. The first step in clinical examination is the inspection of the oral cavity and oropharynx, which usually reveals redness of the pharynx and/or of the tonsils. Since a diagnosis of pharyngitis or tonsillitis is established, the patient receives appropriate advice and/or medication without any further examination of the tongue base, the hypopharynx and the larynx.

The situation becomes more complex when the oropharyngeal examination is completely normal although the patient complains of severe pain. A wrong diagnosis of pharyngitis or tonsillitis is established, the patient receives appropriate advice and/or medication without any further examination of the tongue base, the hypopharynx and the larynx.

Sometimes, deterioration of his clinical condition may result in the next hours or days. More specifically in cases of supraglottitis, lingual tonsillitis or other conditions, the patient may return with fever, aggravation of the sore throat, hoarseness, inability to swallow or even dyspnea, stridor and, not so rarely, with upper airway obstruction. Sometimes medical care requires hospital or intensive care unit admission and in few cases urgent intubation.

This article presents four cases of patients referred to the Ear Nose and Throat (ENT) department of Veroia General Hospital, with severe throat pain and an initial oropharyngeal examination that revealed no abnormal findings. The aim of this case series is to discuss the related differential diagnoses and to overview ways in which the management of such cases by primary care physicians can be better achieved.

CASE HISTORY
CASE HISTORY 1
A 47-year-old man presented with dysphagia, worsening over the next few hours and fever (up to 38°C). The oropharyngeal examination was negative for tonsillitis while it showed signs of sialorrhea. Endoscopic examination revealed severe swelling and redness of the epiglottis. Tender small (less than 1.5 cm in diameter) lymph nodes were palpated at the zones II A (superior jugular) and III (middle jugular) bilaterally. From the laboratory work up,
white blood counts (WBC) were 12.3 x 10⁹/L with 81% neutrophils, C reactive protein (CRP) = 80 mg/L. The rest of the laboratory tests were within normal limits.

The diagnosis of supraglottitis was made and the patient was transferred in the Intensive Care Unit where he stayed for 3 days. He had a history of penicillin and cephalosporins allergy, so he was treated with clindamycin (900 mg x 3 intravenous, iv), ciprofloxacin (400 mg x 2, iv), dexamethasone (8 mg x 3, iv), and ranitidine (30 mg x 2, iv). Three days later he showed sufficient improvement of the symptoms and clinical signs and was then transferred to the ENT unit where he stayed for another 3 days. He was finally discharged on clindamycin (300 g x 3 per os), and ciprofloxacin (500 mg x 2 per os) for another 8 days. A follow-up examination after one month showed complete resolution of the swelling.

CASE HISTORY 2
A 59-year-old man presented with severe throat pain, dysphagia, neck swelling mostly on the left side, worsening over the next few hours and dyspnea. He was previously examined in a primary health care unit and was reassured that nothing abnormal was found. The oropharyngeal examination showed only sialorrhea and a hot potato voice was noticed. The blood tests showed abnormal increase of the WBC and CRP level (WBC = 14.7 x 10⁹/L with 87% neutrophils, CRP = 95 mg/L (normal value less than 10 mg/L). All other blood tests were normal. The endoscopic examination revealed severe edema and redness in the glottic surface of the epiglottis (with a probable abscess on the left side) and in the tongue base. The visual inspection of the larynx’ entrance and the vocal cords were impossible. Neck palpation revealed tender lymph nodes less than 1.5 cm in diameter at the zones II A (superior jugular) and III (middle jugular) bilaterally. A working diagnosis of supraglottitis with epiglottis abscess was established. He was given 1 g of methylprednisone iv and ranitidine 50 mg iv and was then hospitalized in the ENT unit and treated with clindamycin (900 mg x 3, iv), ceftriaxone (2 g x 3, iv), dexamethasone (8 mg x 3, iv), and ranitidine (50 mg x 2, iv). Twenty-four hours later he showed improvement of the dysphagia but no improvement regarding the edema which started to subside after 48 hours. Over the following days, the slow improvement continued, the abscess was automatically drained and the patient was finally discharged after 6 days, on treatment with clindamycin (300 mg x 3 per os), cefditoren pivoxil (400 mg x 2 per os) and methylprednisone (8 mg x2 per os), for another 6 days. A follow-up examination after 10 days showed normal findings.

CASE HISTORY 3
A 32-year-old woman presented with severe throat hoarseness which had started 12 hours previously, fever and chill. A general practitioner examined her previously and the diagnosis was acute viral pharyngitis. The patient had a history of tonsillectomy 12 years ago. The oropharyngeal examination was normal. The visualization of the tongue base and the larynx with indirect laryngoscopy revealed edema, redness, and pus on the lingual tonsil. The rest of the ENT examination including anterior rhinoscopy, otoscopy and neck palpation was unremarkable. The diagnosis of lingual tonsillitis was established. The WBC count was abnormal and the CRP level was elevated (WBC = 11.9 x 10⁹/L with 79% neutrophils and CRP = 55 mg/L). The rest of the blood tests were normal. She was hospitalized and treated with ampicillin and sulbactam (3 g x 3, iv). A day later she started to show signs of improvement and finally after 4 days she was discharged with complete resolution of the symptoms. She was given amoxicillin and clavulanic acid (625 mg x 3 per os) for another 8 days.

CASE HISTORY 4
A 47-year-old woman presented with severe dysphagia. She had visited several physicians during the previous three months and she was treated for pharyngitis, laryngitis, and hypopharyngeal candidiasis, with antibiotics, antifungal and anti inflammatory drugs without improvement. Fifteen days ago she was hospitalized and treated with penicillin G intravenously for 10 days with the diagnosis of atypical laryngitis. She mentioned that she lost about 9 kg over the last month due to dysphagia. The endoscopic examination showed ulcerative lesions on the epiglottis, the aryepiglottic folds and on the ventricular bands. The rest of the ENT examination including anterior rhinoscopy, otoscopy and neck palpation was unremarkable. Laboratory tests showed elevation of WBC = 8.5 x 10⁹/L with normal differentiation and of inflammation markers (CRP = 25 mg/L, erythrocyte sedimentation rate = 72 mm first hour and haemoglobin = 112 g/L). No other abnormalities were evident from the rest of the blood tests. Under local anesthesia, a biopsy was made from the aryepiglottic folds and from the glottis surface of the epiglottis. Immunohistochemical examination and histology set the diagnosis of pemphigus vulgaris. The patient was treated by
dermatologists with methylprednisone and cyclophosphamide iv, with complete reduction of the lesions after 3 weeks.

**DISCUSSION**

Acute epiglottitis (infection of the epiglottis and/or supraglottic structures) may progress rapidly to complete airway obstruction leading to lethal outcome. Inflammation is generally not limited to the epiglottis (as it occurs in children), but can also affect the pharynx, the uvula, the base of the tongue, the aryepiglottic folds, and the false vocal cords. Haemophilus influenza type b bacterial infection of the epiglottis occurs commonly in childhood. Among adults, only 20% of the cases is related to Haemophilus influenza. While most of the cases are related to bacterial (Streptococcus species, Staphylococcus aureus, Moraxella catarrhalis, Pseudomonas species, Klebsiella pneumonia and Neisseria species), viral or combined viral – bacterial infections. Other non-infectious causes include trauma, actinic and thermal injuries. Incidence of epiglottitis in children has been drastically reduced with the Haemophilus influenza b conjugate vaccine use. In contrast an increase in adult cases has been noted, especially among male subjects. Other risk factors in adults include smoking, diabetes mellitus, hypertension, hematologic disorders, malignancies, HIV infection and alcohol abuse.

Diagnosis in adults may be delayed. Patients may only complain of a sore throat and odynophagia. Such patients may never seek medical help, or may be diagnosed as having pharyngitis and either recover without further intervention, or having progressive symptoms it is expected to seek again medical help. Clinical suspicion include the tripod sign, fever, stridor, sore throat, odynophagia, shortness of breath, and drooling. Acute epiglottitis should be suspected, especially if the patient with sore throat and odynophagia is immunosupressed and the oropharyngeal examination is negative. All such patients should undergo an indirect laryngoscopic examination, along with fiberoptic laryngoscopy to rule out supraglottitis. Cervical lymph nodes and diffuse swelling of the throat are not specific for acute epiglottitis, but when tachypnea and inspiratory stridor are present the diagnosis of acute epiglottitis should be considered.

Infectious processes, such as infectious mononucleosis, diphtheria, pertussis, tonsillitis, Ludwig’s angina, retropharyngeal, parapharyngeal and peritonsillar abscesses, tracheobronchitis, subglottic laryngitis, as well as non-infectious conditions, such as allergic reactions, angioneurotic oedema, foreign body aspiration, reflex laryngospasm, laryngeal trauma, tumours, hydrocarbon aspiration, systemic lupus erythematosus and inhalation of toxic fumes or superheated steam are included in a long differential diagnosis list.

As one out of three patients with confirmed epiglottitis have a negative oropharyngeal examination, direct fiberoptic laryngoscopy is the most accurate diagnostic technique. Laryngoscopic examination can be performed safely in adults, in contrast with children where there is the risk of laryngospasm with subsequent airway compromise and death. Lateral neck soft tissue x-ray films may demonstrate swelling in the supraglottic region (“thumb sign”). Imaging techniques such as CT are useful to exclude conditions such as peritonsilar abscess, abscesses of the deep neck spaces, lingual tonsillitis, laryngitis, or an ingested foreign body.

Effective management requires teamwork between the primary care physician and personnel skilled in intubation as well as timely consultation with an otolaryngologist. The role of airway intervention in adults is controversial. There are those who prefer a conservative approach (antibiotics, corticosteroids and humidified oxygen) and others who suggest early intubation. Mortality among children has been decreased due to prophylactic airway intervention.

Intravenous antibiotics (second or third generation cephalosporin or amoxicillin / clavulanic acid) should be started immediately. In case of allergy to beta-lactam antibiotics, the combination of ciprofloxacin and clindamycin can be used. Corticosteroids, usually given, have not been proven to reduce the need for intubation, the duration of intubation, the duration of intensive care unit stay, or the duration of hospitalization. Racemic epiinephrine may cause rebound effects and should not be recommended. Respiratory distress, stridor, sitting erect, inability to swallow secretions and deterioration within 8–12 hours are the major signs and symptoms showing the need for intubation. When there is a doubt about the patient’s airway, early intubation is the safest approach to avoid time loss and fatal outcomes.

Lingual tonsils are often overlooked during oral examination, especially in patients who have undergone tonsillectomy, requiring a laryngeal mirror to make them visible. Sore throat, odynophagia, dysphagia, otalgia, glossal pain, fever, speaking
difficulty, nocturnal or supine cough, halitosis and dyspnea may be present in cases with lingual tonsillitis. Many patients with lingual tonsillitis may undergo extensive work-up, suggested by their primary physician, before being referred to an otolaryngologist.21,22

Modern techniques including radiofrequencies and CO₂ have made lingual tonsillectomy a safer and quite simple procedure with promising results.22-25 A lingual tonsil abscess should be drained under general anesthesia.22-25 Inspection of the tongue base and hypopharynx indirectly using a mirror or fiberoptic exam is important to rule out lingual tonsillitis.21

Pemphigus vulgaris is an autoimmune blistering disorder and is mediated by autoantibodies directed against skin and mucosal membranes.26 When persistent erosive oral and/or pharyngeal lesions occur, pemphigus vulgaris should be considered.26 Only a few isolated cases of pemphigus vulgaris have been reported. Synchronous laryngeal and nasal septal lesions are rare.26-29 Biopsy with immunofluorescence histological examination to quickly start treatment in case of clinical suspicion is required.29 Favorable outcome depends on early and accurate diagnosis and administration of therapy with steroids and immunosuppressive agents.28 An ENT endoscopy offers better results than simple visual inspection, and should be performed when pemphigus vulgaris is suspected.30

**CONCLUSIONS**

Sore throat is a very common symptom in many disorders affecting the oral cavity, pharynx and larynx. A general practitioner should not rely exclusively on a normal oropharyngeal examination, especially when dysphagia, odynophagia, disability to swallow secretions, dyspnea, or stridor are present. A complete ENT examination, including an indirect or fiberoptic laryngoscopy should always be performed because conditions such as supraglottitis, lingual tonsillitis or pemphigus vulgaris require immediate interventions. Ideally, primary care physicians should be well trained and equipped to perform an indirect laryngoscopy in every patient, especially when the oropharyngeal examination does not explain patient’s symptoms.

**CONSENT**

Written informed consent was obtained from the patients for publication of this case series.

**REFERENCES**


СИЛЬНАЯ БОЛЬ В ГОРЛЕ У ПАЦИЕНТОВ С НЕГАТИВНЫМ ОСМОТРОМ ОРОФАРИНКСА. ЧЕТЫРЕ КЛИНИЧЕСКИХ СЛУЧАЯ И ОБЗОР ЛИТЕРАТУРЫ

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РЕЗЮМЕ

Боль в горле, из-за чего пациенты обращаются к врачу, представляет собой самую частую жалобу. Общепрактикующие врачи очень часто встречаются с пациентами, жалующимися на воспаление горла и боль при глотании. Однако существует высокая диагностическая неуверенность в случаях, когда осмотр орфаринкса не показывает ничего аномального, несмотря на жалобы пациента на сильную боль.

В настоящей работе авторы описывают четыре случая греческих пациентов (2 мужчины в возрасте соответственно 47 и 57 лет и 2 женщины в возрасте соответственно 32 года и 47 лет), поступивших в оториноларингологическое отделение с жалобами на сильную боль в горле (при первоначальном осмотре горла – нормальные находки).

Эта серия пациентов подчеркивает необходимость в пристальном внимании со стороны общепрактикующих врачей в случаях, когда налицо сильная боль в горле, так как симптомы могут указывать на заболевания как супраглотит, лингвальный тонзиллит или пемфигус вулгарис. Необходим очень внимательный осмотр, включающий непрямую ларингоскопию, особенно когда осмотр орфаринкса оказывается отрицательным.

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