A fatal complication of acute pharyngitis

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Abstract. We present the case of a 26-year-old man with sepsis and multi-organ failure after acute pharyngitis with a peritonsillar abscess which was conducted by descending abscesses into skin, mediastinum and abdomen. Despite proper antibiotic therapy and surgical intervention he died in septic shock.

Introduction
Acute pharyngitis is a common and normally benign and self-limiting disease. A peritonsillar abscess is among its most common complications occurring at an estimated frequency of 5:10.000 [1]. We report a catastrophic complication of acute pharyngitis.

Case report
A previously healthy 26-year-old man was referred with a 7-day history of sore throat, fatigue, coughing, fever, and neck and abdominal pain. He had no history of recent dental infections, infectious mononucleosis, or splenic dysfunction. He had been treated for three days with feneticillin 3 x 500 mg/day prescribed by his general practitioner. On examination he appeared ill and had foetor ex ore. His blood pressure was 105/55, the pulse rate 140 beats per min, tachypnoea 30 breaths per min and a temperature of 39 °C. He was admitted to the ICU for intubation, artificial ventilation and fluid resuscitation. Within 19 hours the abscesses were surgically cleared and drained. Thoracotomy and laparotomy were performed. Multiple abscesses and necrosis of the subcutaneous tissue of the neck, chest and abdomen were found. Also, a widespread necrotizing process in the mediastinum, para-aortal pus and fluid in the abdomen were observed. All abscesses were cleared, necrotic tissue was removed and drains were placed in the mediastinum and abdomen. Blood cultures revealed a mixed infection of Streptococcus constellatus and anaerobes (Bacteroides species). Amoxicillin therapy was converted to amoxicillin/clavulanate 4 x 1200 mg/day and metronidazole 3 x 500 mg/day was added to the antibiotic spectrum for extra anaerobic cover. Vasopressors and inotropics were started, however, despite this treatment he did not improve. A second CT scan of neck and thorax showed some small abscesses in the neck and pleural effusion on both sides of the thorax. A second surgical exploration was performed and the abscesses in the neck were cleared. The pleural effusions were drained. The patient’s clinical condition further deteriorated. In the meantime he had to be resuscitated and after 9 days of intensive treatment he died in refractory septic shock.

Discussion
Infections with rhinovirus, coronavirus, adenovirus, influenza virus and para-influenza virus are among the most common causes of acute pharyngitis (> 34% of cases in persons of all ages) [2,3]. Characteristic symptoms and signs of viral pharyngitis are sore throat, pain on swallowing, rhinorrhea and cough. The ulcerous mass near the tonsil was a peritonsillar abscess. Most abscesses are anaerobic gram-negative rods. They belong to the Bacteroides species). Streptococcus constellatus and anaerobes (Bacteroides species) was found. Streptococcus constellatus, a gram positive coccus, belongs to the streptococcus milleri group and is part of the commensal flora of mouth, gastrointestinal tract and vagina. They have a tendency to form invasive pyogenic infections and a tendency for bacteraemia and metastatic growth. Frequently they grow in synergy with anaerobes. They are often found in dental abscesses and less often in head and neck infections [4,5]. Bacteroides species are anaerobic gram-negative rods. They belong to the normal flora of the mouth, gastrointestinal tract and vagina and also have a tendency to form abscesses in the oral cavity and gastrointestinal tract [6]. Abscesses can rupture spontaneously in the pharynx, extend laterally into the side of the neck or descend into
the mediastinum, as in this case [7]. In a review of the literature, 43 cases of descending abscesses of polymicrobial origin were reported from 1960 to 1990 with a mortality of 36% [8]. Initially Lemierre’s disease was considered, as it starts as acute pharyngitis in previously healthy young persons and presents as sepsis with thrombophlebitis of the jugular vein [8,9]. On CT-scan, we did not find signs of jugular vein thrombosis, however, the absence of thrombophlebitis does not exclude Lemierre’s disease totally as Moreno et al. [10] found septic thrombophlebitis in only 36% of patients with Lemierre’s disease. The main pathogen in Lemierre’s disease is *Fusobacterium necrophorum*, an obligate anaerobic gram negative rod. Our cultures did not reveal *Fusobacterium necrophorum*. But polymicrobial bacteraemia has been reported in one-third of patients with Lemierre’s disease [11,12]. The concomitant bacteria are mostly oropharyngeal microbiota. These bacteria grow more rapidly than *F. necrophorum* does and so *F. necrophorum* may have gone unnoticed in the early anaerobic cultures. So Lemierre’s disease might still have been a possible diagnosis. In our case the patient was initially treated with feninetillin and subsequently with amoxicillin and tobramycin. Considering the mixed nature of the infection with bacteroides species amoxicillin therapy was converted to amoxicillin/clavulanate and metronidazole was added for extra anaerobic coverage. Further treatment consisted of surgical debridement and drainage of the abscesses. Causes of treatment failure were possibly unidentified microorganisms within the mixed infections that were not covered for. As a result of prior use of broad-spectrum antibiotics, further bacteriological samples revealed no growth. Periodic bacteraemia may have also been a possibility. Another explanation is the formation of new metastatic abscesses during therapy that could not be cleared. Unfortunately no post mortem examination was carried out to check this hypothesis.

![Figure 1. CT scan of the neck with multiple gas configurations in the neck (arrows).](image1)

![Figure 2. CT scan of the thorax with subcutaneous and mediastinal gas configurations (arrows).](image2)

**References**