

Epiglottitis Associated With Pharyngeal Mucosal Space Abscess: A Case Report

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Citation

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Abstract

The pharyngeal mucosal space (PMS) is a potential neck space confined between the pharyngeal mucosa and the middle layer of the deep cervical fascia, descending from the skull base to the cricoid cartilage. Abscesses of the PMS are rare and no case presenting as epiglottitis has been previously reported. A unique case of acute epiglottitis secondary to an abscess of the PMS in a 40-year-old man is presented. The patient complained of a 3-day history of febrile illness, odynophagia, muffled voice and mild respiratory distress. Flexible laryngoscopy revealed an edematous and erythematous epiglottis with a protrusion of the left lateral pharyngeal wall medially, while a computed tomography confirmed a PMS abscess. Spontaneous drainage occurred and the patient gradually improved with intensive conservative management (intravenous antibiotics, steroids). Diagnosis of PMS abscess should be considered in adult patients initially seen with odynophagia and dysphonia. Its clinical characteristics, radiological findings and treatment options are reviewed.

INTRODUCTION

The pharyngeal mucosal space (PMS) is a potential space of the neck confined between the pharyngeal mucosa and the middle layer of the deep cervical fascia (buccopharyngeal fascia).¹ It descends from the skull base to the cricoid cartilage, passing medial to the hyoid bone and lateral to the pharyngeal wall, containing several muscles (pharyngeal constrictors and elevators), the eustachian tube, minor salivary glands and lymphoid tissue.²

Abscesses of the PMS are a rare entity and no case presenting as epiglottitis has been previously documented. A unique case of acute epiglottitis secondary to an abscess of the PMS is presented and the medical and surgical options in the management of this unusual observation are discussed.

CASE REPORT

A 40-year-old, previously healthy man complained of a 3-day history of sore throat, increasing odynophagia, dysphagia, fever, muffled voice and mild respiratory distress (respiratory rate: 21/min, SpO₂: 94%). Flexible fiberoptic laryngoscopy revealed erythema and edema of the oral / pharyngeal mucosa with the left lateral pharyngeal wall protruding medially and a patent airway with an edematous and erythematous epiglottis (Fig. 1). The patient was diagnosed with acute supraglottitis/epiglottitis and was admitted for observation and treatment. Laboratory tests

showed leukocytosis (9,470/mm³) with neutrophilia (67%) and an elevated CRP (11.3 mg/dl) and ESR (69mm/1 hour). The remaining laboratory tests were normal. A soft-tissue lateral neck radiograph showed the classic “thumb” sign of the edematous epiglottis (Fig. 2), while a CT scan confirmed the presence of a large abscess, measuring 7x 2,5x 2 cm, originating in the PMS (from the Waldeyer's ring to the level of hyoid bone) and displacing medially the left lateral pharyngeal wall (Fig. 3). Intensive conservative treatment with intravenous antibiotics (Moxifloxacin: 400mg x1 and Metronidazole: 500mg x3), steroids (Prednisolone: 25mg x3) and intravenous fluids was initiated, while a cricothyrotomy set was always available at the bedside. On the second hospital day a spontaneous drainage occurred on the left lateral pharyngeal wall, 3 cm below the left faucal tonsil. A culture was obtained but no organisms were isolated from the pus. The patient improved gradually and was discharged 6 days after the admission.

Figure 1

Figure 1: Fiberoptic laryngoscopy shows inflammation of epiglottis (epiglottitis).

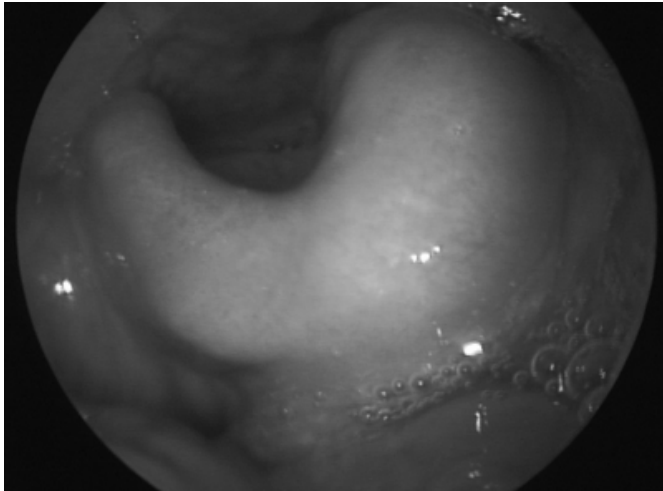


Figure 2

Figure 2: The classic “thumb” sign of the edematous epiglottis as shown on lateral soft-tissue radiograph

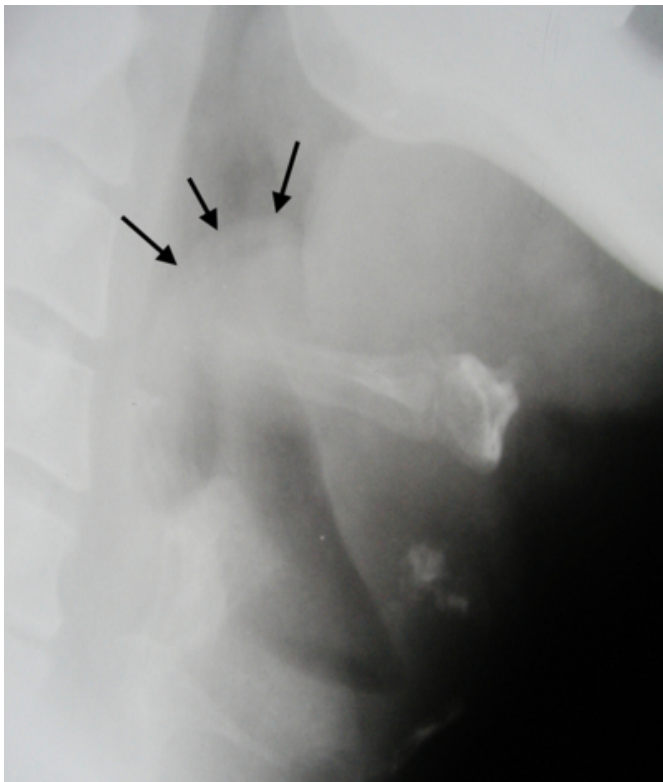
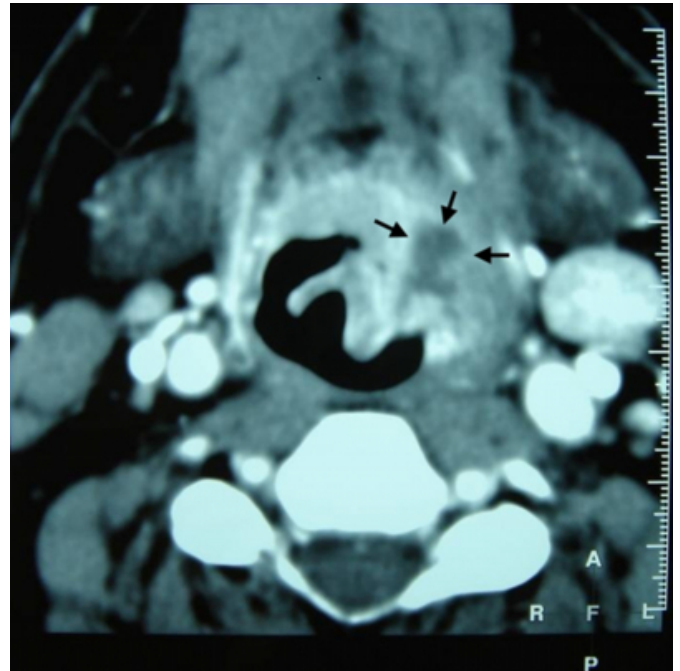


Figure 3

Figure 3: Contrast-enhanced CT scan shows inhomogeneously enhancing abscess formation in the pharyngeal mucosal space (7x 2.5x 2 cm) from the Waldeyer's ring level to the level of hyoid bone and the left aryepiglottic fold that protruded the left lateral pharyngeal wall.



DISCUSSION

Abscesses of the PMS, although rare, are an important entity to the otolaryngologist. They usually follow surgical manipulation of the tonsils or dental extraction, suppuration of the lymph nodes of this space, injuries to the posterior pharyngeal wall or can result from a peritonsillar abscess, particularly that of the inferior pole of the tonsil, which is virtually a part of the PMS. ¹

The abscess is usually extended downwards owing to gravity and the peristaltic movement of the pharyngeal muscles during swallowing. When the abscess reaches the inferior part of the space, edema of arytenoids, aryepiglottic folds, vallecula and lingual aspect of epiglottis is present. ³ Therefore, differential diagnosis includes other deep neck abscesses, epiglottic abscesses (an uncommon sequel of acute supraglottitis) ⁷ and epiglottitis, especially in the case that the abscess is located at the inferior compartment of the PMS.

The radiological evaluation of the PMS abscess is mandatory to differentiate it from other lesions displacing the lateral pharyngeal walls. Computed tomography easily confirms its existence and reveals its extension. ⁴ Magnetic resonance

imaging, although similarly informative, is more expensive, whereas ultrasonography cannot identify the neck spaces. ⁴

In acute epiglottitis the most common causative organism is *Haemophilus influenzae* type b, although some other agents have also been implicated in older patients. ⁵ On the contrary abscesses of the PMS are often polymicrobial and apparently related to the pharyngeal microflora. ^{4,6,7} Therefore, empiric antibiotic management must treat streptococci and anaerobic and possibly β -lactamase-producing bacterium. Amoxicillin-clavulanate, ampicillin-sulbactam, clindamycin, chloramphenicol and third generation cephalosporins such as ceftriaxone or cefotaxime are the most appropriate antibiotics. In cases in which no improvement is seen, signs or symptoms of progressive infection are identified, or pathogenic cofactors coexist, such as diabetes mellitus and immunosuppression (complement deficiency, HIV infection), surgical intervention and drainage should be considered. However, spontaneous drainage of the abscess toward the vulnerable pharyngeal mucosa is quite possible due to the pressure that the pharyngeal constrictor muscle exerts on the abscess during the pharyngeal peristaltic wave, as in our case. Furthermore, the spread of the abscess in adjacent, more dangerous spaces is infrequent.

Certainly paracentesis or surgical intervention will shorten hospitalization. However, there are several drawbacks for general anaesthesia. Laryngeal intubation should be avoided to prevent traumatic drainage of the abscess and aspiration of the pus into the tracheobronchial tree. Tracheotomy,

under local anaesthesia, may be required for the patient to be intubated through the tracheotomy tube. The abscess is then drained and aspirated through the mouth, without an external incision. Before undertaking a surgical intervention, we should take the following into consideration: (1) clinical inspection of the lesion, (2) the existence of comorbidities and (3) signs and symptoms of the infection in consideration with the laboratory results.

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References

1. Skoulakis CE, Papadakis CE, Bizakis JG, Nikolidakis AA, Manios AG, Helidonis ES. Abscess of the pharyngeal mucosal space-an unusual location. *J Otolaryngol* 2003;32(2):121-124.
2. Parker GD, Harnsberger HR, Jacobs JM. The pharyngeal mucosal space. *Semin Ultrasound CT MR* 1990;11:460-475.
3. Frantz TD, Rasgon BM, Quesenberry CP Jr. Acute epiglottitis in adults. Analysis of 129 cases. *JAMA* 1994;272:1358-1360.
4. McClay JE, Murray AD, Booth T. Intravenous antibiotic therapy for Deep Neck Abscesses defined by computed tomography. *Arch Otolaryngol Head Neck Surg* 2003;129:1207-1212.
5. Ragosta KG, Orr R, Detweiler MJ. Revisiting epiglottitis: a protocol of the value of lateral neck radiographs. *J Am Osteopath Assoc* 1997;97(4):227-229.
6. Ungkanont K, Yellon RF, Weissman JL, Casselbrant ML, Gonzales-Valpena H, Bluestone CD. Head and neck space infections in infants and children. *Otolaryngol Head Neck Surg* 1995;112:375-382.
7. Brook I. Microbiology of abscesses of the head and neck in children. *Ann Otol Rhinol Laryngol* 1987;96:429-433.

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