



Penetrating Injury to the Pharynx by Scissors Leading to Retropharyngeal Abscess in a Depressed Man

Ching-Hsiang Lin¹, Yueng-Shiang Chu², Chien-Feng Liao¹, Yu-Long Chen¹, and Ko-Chiang Hsu^{3*}

¹Department of Emergency Medicine; ²Department of Otolaryngology-Head and Neck Surgery,
Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan;

³Division of Emergency Medicine, Tri-Service General Hospital Penghu Branch, Magong, Penghu,
Republic of China

Retropharyngeal abscess caused by pharyngeal penetrating injury is a rare but life threatening condition with extensive fasciitis and possible gas accumulating in the prevertebral fascia. Pharyngeal penetrating injuries are uncommon, except for those with a definite history of foreign body swallowing or external traumatic injury. We described a 24-year-old man, who sustained retropharyngeal abscess with gas formation in the retropharyngeal soft tissue after swallowing and vomiting a pair of scissors. In the emergency department (ED), an early computed tomography scan helped with the diagnosis and showed the extent of the ailment, which was promptly treated with surgical debridement and drainage. Broad-spectrum antibiotics were started as soon as possible, while the clinical suspicion was initially made. The patient was treated promptly and discharged without serious complications.

Key words: retropharyngeal abscess, penetrating injury, prevertebral soft tissue, depression

INTRODUCTION

Retropharyngeal abscess develops mostly secondary to lymphatic drainage or contiguous spread of upper respiratory or oral infections. However, pharyngeal trauma from endotracheal intubation, endoscopy,¹ foreign body ingestion, and removal may cause a subsequent retropharyngeal abscess. In adults, foreign body ingestion is associated with psychiatric illness, mental retardation, alcohol abuse and individuals in custody.² Retained foreign bodies may cause mucosal ulceration, inflammation or infection, especially large or sharp ones. Complications due to these injuries can be fatal. We reported a case of a severe retropharyngeal abscess resulting from a penetrating injury to the pharynx by scissors. We emphasized the importance of thorough initial assessment and prompt management to avoid further devastating complications.

CASE REPORT

A 24-year-old man, with history of major depression, visited our ED because of intermittent fever, chills, sore throat, general weakness, difficulty swallowing and neck swelling for a week.

On arrival, his vital signs were a body temperature of 37.6 °C, blood pressure of 124/66mmHg, heart rate of 81 beats per minute, and a respiratory rate of 18 breaths per minute without dyspnea on exertion. The physical examinations revealed moderate nuchal rigidity, erythematous swelling, heat and tenderness along the anterior and left aspect of the neck. The laboratory tests showed a white blood cell count of 31,200/uL with predominant neutrophils of 91% and an elevated C-reaction protein of 22.25mg/dL. A soft-tissue radiograph of the neck showed obvious thickening of the prevertebral soft tissue with obvious gas accumulation (Fig. 1).

He attempted to commit suicide by swallowing a pair of scissors about 10 days earlier and he vomited the scissors out immediately due to intractable pain and bleeding from the throat. Meanwhile, he had visited a local medical facility without telling the truth and received conservative treatment. He reported this after a detailed history taking was completed.

A 64-multidetector-row computed tomography (MDCT) of the neck was performed, which demonstrated soft-tissue swelling chiefly involving the left neck

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*Corresponding author: Ko-Chiang Hsu, Department of Emergency Medicine, Tri-Service General Hospital, No. 325, Section 2, Cheng-gong Road, Nei-hu District, Taipei City 11490, Taiwan, Republic of China. Tel: +886-2-87923311 ext 16877; Fax: +886-2-87927034; E-mail: kc0611@gmail.com (K.-C., Hsu)

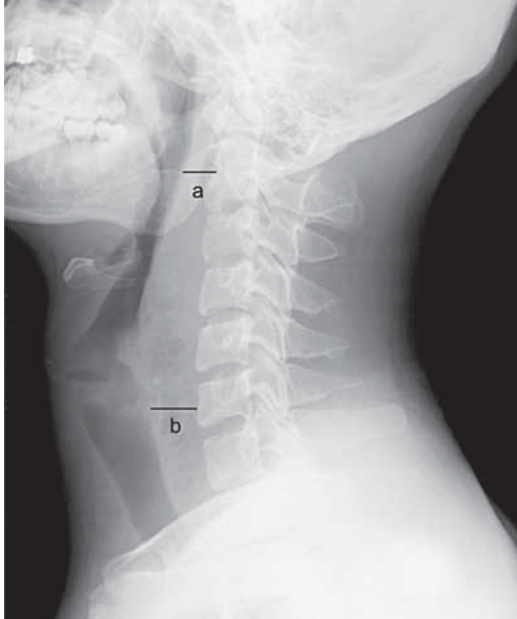


Fig. 1 lateral neck radiograph reveals the thickness of the prevertebral soft tissue of the C-spine increases with obvious gas accumulation. (a=1.41cm, b=2.39cm)

with inferior extension to the left superior mediastinum, and soft-tissue emphysema in the left parapharyngeal space from C1 to C6 (Fig 2). We started on empirical antibiotics with ampicillin 1.0 gram plus sulbactam 500 miligram given intravenously and consulted an otolaryngologist immediately in the ED. Fiberoptic laryngoscopy was performed, which revealed a bulging posteriolateral pharyngeal wall with minimal ulcerative healing wound over the lateral aspect. Surgical intervention was done and the operative finding showed about 20mL abscess formation and necrotic tissue between sternocleidomastoid muscles and carotid artery. The patient underwent surgical debridement from the 2nd to 8th hospital day and delayed primary suture was performed on the 9th day after admission. The abscess culture yielded mixed flora including *Viridans streptococcus*, *Klebsiella pneumoniae* and *Fusobacterium*. After the operation, nasogastric feeds temporarily took the place of enteral feeds. He received intravenous antibiotic treatment for an additional week and was discharged on the 16th hospital day with uneventful results.

DISCUSSION

Retropharyngeal abscess resulting from penetrating pharyngeal injury is a rare clinical entity. Although rare,



Fig. 2 MDCT of the neck reveals soft tissue swelling involving the left neck with inferior extension of the left superior mediastinum, and soft tissue emphysema in the left parapharyngeal space.

the result could be life-threatening. Patients with penetrating wounds have a higher incidence of infection, since penetrating injuries are deep, and the bacteria are introduced into tissues from the surface of the foreign object.³ In our case, the depressed patient attempted to cover up his suicidal event leading to a significant complication, and the clinician missed the diagnosis the first time. Thus, while encountering patients with symptoms and signs such as a sore throat, fever, difficulty in swallowing, stridor, torticollis, or neck swelling, we must suspect deep neck infection and quickly initiate thorough assessment and treatment in spite of lacking any precipitating clues.

A soft-tissue lateral film of the neck is a key investigating material in the initial assessment of these patients. The measurement of the retropharyngeal wall thickness at C2 of 1.0 to 7.0 mm and at C6 of 9 to 22 mm, could be considered normal in most adult patients.⁴ An increase in width or the presence of air in the retropharyngeal space indicates perforating injury to the pharynx and warrants further investigation.⁵ However, neck radiographs do not differentiate between cellulitis and abscess formation unless retropharyngeal gas is present. In our case, a CT scan of the neck is helpful in this respect. The differentiation is extremely important because a retropharyngeal abscess

requires early additional surgical drainage and a cellulitis requires antibiotics for conservative treatment only. Fiberoptic laryngoscope is also a useful tool for recognition of the site and size of the mucosal violation and decision to drain the neck. Hypopharynx may carry a higher risk of salivary contamination of the deep fascial planes. Bruce L et al.⁶ reviewed 48 patients with hypopharyngeal trauma recognized by fiberoptic laryngoscope, and suggested early neck exploration with drainage in hypopharyngeal injuries to prevent infectious complications. An ultrasonography has been reported as a useful diagnostic modality, but it is almost operator dependent and not able to assess the extent of the disease.⁷

The management of retropharyngeal abscess is a combination of surgical debridement and appropriate antibiotics. Broad-spectrum antibiotics are necessary because the bacteriological pattern of deep neck infections is usually polymicrobial. Huang et al.⁸ reviewed 128 patients diagnosed with deep neck infection, and noted that *Viridans Streptococcus* was the most commonly isolated organism, followed by *Klebsiella pneumoniae* and *Peptostreptococcus*. Antibiotic coverage with penicillinase-resistant penicillin or 3rd generation cephalosporin, which covers gram-negative organisms, combined with metronidazole or clindamycin, which cover anaerobic organisms, had been suggested.^{4,8} Delayed diagnosis and management could result in life-threatening consequences, such as upper airway obstruction, spontaneous perforation, mediastinitis, aspiration pneumonia, sepsis, and more rarely, empyema, thrombosis of the internal jugular vein, and erosion of the internal carotid artery.⁹⁻¹⁰

In conclusion, a retropharyngeal abscess may occur following any oropharyngeal trauma, especially a penetrating injury. A clear, detailed history taking and high index of suspicion are necessary for the clinical entity. However, it is difficult to evaluate a depressed patient, who may present with incoherent description and bizarre behavior. Physical examination, a lateral neck X-ray and CT scan are objective tools which could clarify the existence of neck infection. Treatment of a retropharyngeal abscess consists of systemic antibiotic therapy and delicate surgical drainage. Early recognition and management can achieve a better prognosis and prevent fatal complications. In addition, always remember that a patient with psychiatric disorder presenting with a medical complaint may hide a lethal pitfall at ED.

CONFLICT OF INTEREST STATEMENT

The authors have no commercial associations or sourced of support that might pose a conflict of interest.

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