Retropharyngeal hematoma

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ABSTRACT

حالات التجمع دموي خلف البلعوم، تعتبر حالة نادرة نسبياً. كما تعتبر مهمة سريرياً بسبب قرب المنطقة تشريحياً إلى مجرى التنفس الأعلى والذي يُمكنُ أَنْ يشكل خطورة كبيرة على الحياة ويَتطلّبَ تدخّلَ فوريَ. في هذا التقرير نبلغ عن مريض حضر بحالة تجمع دموي خلف البلعوم بسبب أدوية تخثر الدم والتي أدت إلى اختناق في مجرى التنفس الأعلى مما استوجب تركيب أنبوبة تنفس. نقدم هنا التشريح الطبيعي لمنطقة خلف البلعوم مع النشوء المرضي، وطرق العلاج مع المراجعة الأدبية.

Retropharyngeal hematomas (RPH) are relatively rare. They are clinically important because of the close proximity to the upper airway, which can be life threatening and requires immediate intervention. We report one patient who presented with RPH due to anticoagulation that resulted in airway obstruction and subsequent intubations. We outline the normal anatomy of the retropharyngeal space, the pathogenesis and treatment of RPH, with related literature review.

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Retropharyngeal hematoma (RPH) is a rare entity with potential fatal outcome owing to progressive internal blood loss and airway obstruction. This case report is presented because RPH is a serious medical illness and it is important for physicians to be familiar with the initial symptoms and signs of RPH, and understand the urgency of airway management in this disease. We analyzed reports in the literature regarding patients who developed RPH, focusing especially on the initial symptoms and signs of RPH in these patients, and the airway management that was used to treat the patients. There are less than 100 cases reported in the literature.[1]

Case Report. A 63-year-old man known with atrial fibrillation on anticoagulation therapy was presented to the emergency department with progressive dysphagia and odynophagia. On physical examination, his temperature was 37^0C, oxygen saturation was 93% on 2 liters of oxygen, and other vital signs were normal. Examination of the neck revealed diffuse swelling, bruising, and tenderness all over. Flexible laryngoscopy revealed large lateral and posterior pharyngeal wall swelling. His initial blood investigations showed normal complete blood count (CBC) and international normalized ratio (INR) of 9.8. X-ray revealed a soft tissue of the neck that demonstrated a retropharyngeal swelling compromising the airway (**Figure 1**). The patient was then had fiber optic awake oral intubation and gradual reversal of the coagulopathy was achieved with fresh frozen plasma and vitamin-K after being transferred to the intensive care unit. Subsequently, the patient had a tracheostomy after he failed extubation, 3 weeks later the hematoma completely resolved and the patient sent home in good condition after he was been successfully decanualted.

Discussion. Retropharyngeal hematoma is a rare entity that may rapidly cause airway obstruction.[1] Several etiologies of RPH has been described including anticoagulation therapy, cervical spine trauma, great vessel trauma, iatrogenic injury, metastatic carcinoma, hemophilia, foreign body ingestion, parathyroid tumors, and spontaneously.[2-14] The diagnosis can be difficult, as the patient may initially have only mild sore throat without shortness of breath and may be misdiagnosed with viral pharyngitis. If a retropharyngeal swelling is identified, the patient may be misdiagnosed with retropharyngeal abscess.[5] The classical manifestations of RPH are referred as "Capp's Triad," which consists of clinical symptoms of subcutaneous bruising over the neck and anterior chest, flexible laryngoscopy with evidence of tracheal and esophageal compression, and

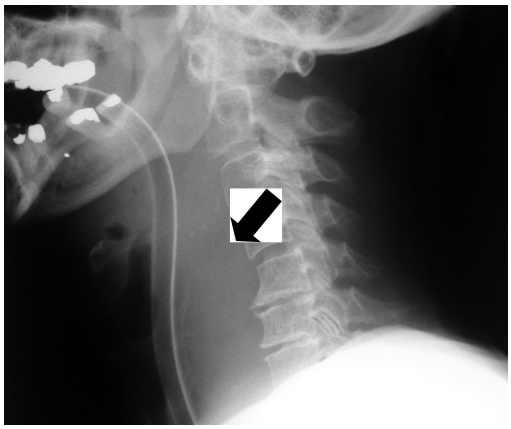

Figure 1 - Lateral soft tissue x-ray of the neck showing retropharyngeal swelling compromising the airway (narrow).

anterior displacement of the trachea on lateral cervical radiograph.[1,15-17] Although, there are some guidelines as to the measurements of the retropharyngeal space the literature supported that in general the retropharyngeal soft tissue should measure one third to half of the cervical spine width. An increase in the soft tissue width and ventral displacement of the trachea would suggest pathology of the retropharyngeal space.[1,3,16] Retropharyngeal space anatomically is a distensible space in the neck. The ventral border of the retropharyngeal space is the buccopharyngeal fascia; the lateral borders are the carotid sheaths, and the dorsal border is the prevertebral fascia. The retropharyngeal space extends from the base of the skull to the posterior mediastinum, which ends at the level of the second to sixth thoracic vertebrae. Anatomically the space between the vertebral body and the pharyngeal muscles is divided into 3 potential spaces namely the retropharyngeal space, the danger space and the prevertebral space by 3 layers of fascia namely the visceral, the alar and the prevertebral fascia, respectively.[1,15] Blood accumulation in this space causes RPH. Most documented causes have occurred in the context of coagulopathic states, with few rare cases of spontaneous RPH without any identifiable cause.[1-3,6-8,14] The proposed mechanism associated with the formation of hematoma usually result from tearing of the longus colli muscle on the anterior wall of the cervical vertebral bodies.[12] Alternatively hematoma can develop following arterial avulsion that occur during a violent coughing or sneezing episode or with whiplash injuries where cervical hyperextension may result in laceration of the blood vessels within the anterior spinous ligament.[3,5,9-10,12] Although, radiologically RPH may mimic retropharyngeal abscess; it is usually differentiated based on clinical bases with absences of features suggestive of infection such as fever, odynophagia, dysphagia, decrease range of motion of the neck, and elevated white cell count and the presence of right clinical context of hypercoagulable state.[1,16] Management of RPH is based on that bleeding into the retropharyngeal space is serious due to the anatomic peculiarity of the pharyngeal muscles, whose insertion move towards their origins, offering no resistance to expansion of the hematoma. As the hematoma expands, compression of the airway can be fatal. Another theory of how airway obstruction is developed is not related to mechanical compression of the rigid trachea, but rather by swelling of the pharyngolarynx due to venous and lymphatic congestion. When the vocal cords become edematous inspiratory stridors develop.[1,3,16] Treatment of patients with retropharyngeal hematoma should first be directed towards airway control. If the patients have no airway compromise, close intensive observation must be undertaken. Similar to our case with early or less severe cases of compromise, fiber optic awake intubation will provide a safe airway. However, if a more difficult airway is anticipated a tracheostomy under local anesthesia is likely a safer choice.[1,3,15] The literature suggests airway control followed by observation to treat these patients represent the hallmark of RPH management. Medical therapy is warranted to address the underlying cause if known hypercoagulable state, iatrogenic injury, and so forth. Surgical exploration and evacuation are usually reserved for those cases of expanded hematomas or those that do not resolve within 2-4 weeks period. Two methods of drainage have been described: trans-oro-pharyngeal aspiration and external drainage. Trans-oro-pharyngeal aspiration seems better suited for smaller hematomas and may reduce recovery time but does carry a risk of bacterial contamination of retropharyngeal space. The external drainage appears better to larger hematomas and reduced chance of bacterial contamination of the retropharyngeal space.[1,3-4,9,14-16]

In conclusion, a high degree of clinical suspicion is needed to diagnose such a rare clinical entity. A patient with subcutaneous bruising over the neck, anterior displacement of the trachea on lateral soft tissue x-ray of neck, and especially if in hypercoagulable state should always be suspected for RPH. Immediate control of the airway is the hallmark management of this rare but important diagnosis.

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Ethical Consent

All manuscripts reporting the results of experimental investigations involving human subjects should include a statement confirming that informed consent was obtained from each subject or subject's guardian, after receiving approval of the experimental protocol by a local human ethics committee, or institutional review board. When reporting experiments on animals, authors should indicate whether the institutional and national guide for the care and use of laboratory animals was followed.