Case Report

Delayed post trauma retropharyngeal hematoma with acute airway obstruction In a non cervical-spine injury

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We report a case of a 10 year old boy who presented with delayed onset of retropharyngeal hematoma post trauma with acute airway obstruction. He had motor vehicle accident 2 weeks prior and sustained extensive subcutaneous emphysema with bilateral pneumothorax due to rib fractures. CT showed hypodense collection measuring 1cm x 1cm x 2cm at retropharyngeal space with compression at the posterior wall of the trachea. He was intubated and underwent tracheostomy for persistent upper airway obstruction. (Rawal Med J 201;41:253-255).

Keywords: Retropharyngeal hematoma, airway obstruction, cervical spine injury.

INTRODUCTION

Traumatic retropharyngeal hematoma is relatively a rare condition. Its usually present in 60% of patients with cervical spine injuries but only 1.2% of patients develops acute airway obstruction secondary to retropharyngeal hematoma.[1] In this case, our patient presented with delayed post traumatic retropharyngeal hematoma with upper airway obstruction without cervical spine injury.

CASE PRESENTATION

A 10 year old boy was brought to emergency department following a motor vehicle accident with poor GCS and massive subcutaneous emphysema extending from the neck till the mid thigh. There was no bruises or hematoma on the neck. He was intubated for airway protection. Plain contrast tomography of the brain showed no intracranial hemorrhage. Contrast enhanced computer tomography (CT) from neck, thorax, abdomen and pelvis showed extensive subcutaneous emphysema from neck extending to the anterior chest wall, anterior abdominal wall and both thigh region with bilateral lung contusion, pneumothorax and multiple bilateral rib fractures. There was no associated cervical spine injury. Chest tube was inserted in both lungs and he was nursed in intensive care unit. Subcutaneous emphysema and pneumothorax resolved and he was extubated on day 3 post trauma. Subsequently, he was discharged well on day 11 post trauma.

He presented again 6 days after discharge with 2 days history of sore throat, hoarseness and noisy breathing. There was a soft biphasic stridor heard during examination, otherwise patient was not tachypneic with oxygen saturation of 99% under room air. Oral cavity and neck examination were normal. Flexible naso-pharyngo-laryngoscope showed presence of minimal adenoid tissue with normal laryngeal findings. CT of the neck and thorax was performed and revealed a hypodense collection suggestive of hematoma measuring 1cm x 1cm x 2cm at retropharyngeal space with compression at the posterior wall of the trachea with reduced transverse diameter of trachea at level C4-C5 (Fig. 1). He underwent direct laryngoscopy, bronchoscopy and neck exploration. Intra-operatively, there was a subglottic narrowing from the external compression at the posterior tracheal wall 2.5cm below the vocal cord causing 60% obstruction of the airway patency. Retropharyngeal space was explored via an external approach and revealed no significant hematoma.

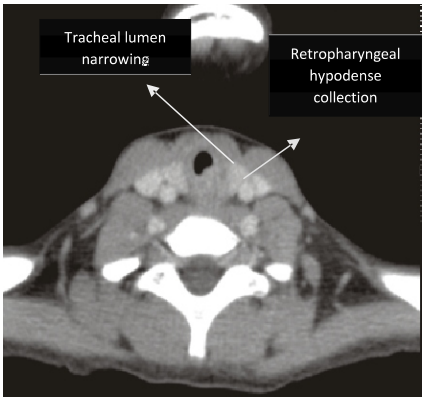

Fig. 1. CT of the neck showing a hypodense collection measuring 1cm x 1cm x 2cm at retropharyngeal space with compression at posterior wall of trachea with reduced transverse diameter of trachea.

He was closely monitored postoperatively. However, his noisy breathing persisted and worsened, which required an airway intervention. He was intubated with endoscopic guided endotracheal intubation by senior ENT surgeon. It was followed by tracheostomy. He then underwent a repeat airway assessment 6 weeks after tracheostomy that revealed improvement of the airway patency. He is planned for decanulation once narrowing completely resolves.

DISCUSSION

Retropharyngeal space is the space anterior to the prevertebral fascia of the cervical and thoracic spine and extends laterally to the carotid sheath.[1] It begins from the base of skull and ends at the superior mediastinum. In patients hospitalized for cervical spine injury, retropharyngeal hematomas after injury are found in 60%; however, airway obstruction due to retropharyngeal hematomas occurs in only 1.2% of patients, thus, it is a relatively rare condition.[2] It occurs mainly in blunt neck trauma, e.g. cervico-spine injuries, especially in hyperextended neck position.[3]

Mechanisms triggering hemorrhage into the retropharyngeal space include injuries to longus colli muscles on anterior surface of vertebral body, ligaments on the anterior surface of the vertebral body and branches of the vertebral arteries.[3] In this case, our patient did not suffer any cervico-spine injury. So far there is one case report on retropharyngeal hematoma following blunt trauma without any cervico-spine injury that was reported previously.[4] In our case, the mechanism of unexplained retropharyngeal hematoma can be due to blunt trauma to the trachea.

Expanding hematomas can cause tracheal compression, which may rapidly progress into acute airway obstruction.[5] Although patients can be symptomatic almost immediately or within hours but sometimes the onset of the symptoms can be delayed.[5] High index of suspicion should be maintained for retropharyngeal hematoma in patients with post trauma cervical injuries.[3,5] Initial symptoms are dyspnea, dysphagia, stridor, odynophagia, hoarseness and neck pain.[5]

The first step of management is establishing definitive airway control.[4] Airway management in retropharyngeal hematoma can be challenging. Oro-tracheal intubation can be more complicated in association with spinal injuries.[5] Some anesthetists prefer fiberoptic tracheal intubation.[5] Some consider retropharyngeal hematoma as a contraindication for endotracheal intubation because of the potential for perforation of the retropharyngeal mass by the procedure.[4]

Once the airway is secured, two options are available, drainage or observation.[4] If airway is not compromised and the patient has a small stable hematoma, conservative management and observation are indicated.[4] Surgical exploration have been tried but showed no advantage over conservative treatment and entailed an increased risk of infection.[4] In our case, surgical exploration did not show advantage but rather worsening of airway obstruction most probably due to post-operative edema. Many hematomas have been reported to decrease over a 2-3 weeks period.

In summary, the treating doctor must be alert of the possibility of delayed retropharyngeal hematoma post trauma causing upper airway obstruction even if there was no history of cervical spine injury before. He should be prepared to establish a definite airway control.

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REFERENCES

1. Iwashita K, Shigematsu K, Shono S, Nitahara K, Higa K. Difficult airway due to retropharyngeal hematoma after stabbing to the neck. J Anesthesiol Crit Care Med 2014;01(04).

2. Iizuka S, Morita S, Otsuka H, Yamagiwa T, Yamamoto R, Aoki H, et al. Sudden asphyxia caused by retropharyngeal hematoma after blunt thyrocervical artery injury. J Emerg Med 2012;43:451-6.
3. Hutter G, Benz R, Taub E, Kothbauer K, Baur M. Extensive cervical prevertebral haemorrhage with airway obstruction after low-energy hyperextension injury. Injury Extra 2014;45:53-5.
4. Senel A, Gunduz A. Retropharyngeal hematoma secondary to minor blunt neck trauma: Case report. Brazilian J Anesthesiol 2012;62:731-5.
5. Lazott L, Ponzo J, Puana R, Artz K, Ciceri D, Culp W. Severe upper airway obstruction due to delayed retropharyngeal hematoma formation following blunt cervical trauma. BMC Anesthesiol 2007;7(1):2.