Case Report

Retropharyngeal Hematoma Secondary to Minor Blunt Trauma Neck : A Rare Case Report

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ABSTRACT

Introduction

Traumatic retropharyngeal hematoma is rare, but can be lethal, if not identified and managed promptly. It is clinically important because of the close proximity of the retropharyngeal space to the upper airway.

Case Report

A case of upper airway obstruction in a 75 year old man due to a large retropharyngeal hematoma following minor injury to neck is presented. Progressive dysphagia, hoarseness and dyspnoea developed over time. Emergency tracheostomy and subsequent surgical drainage was performed.

Conclusion

Retropharyngeal hematoma is a rare but potentially lethal problem that can be faced in an emergency department. Clinicians should be alert to the potential occurrence of this cause of acute or delayed airway collapse. Thus, an awareness of the possibility of airway obstruction secondary to massive hematoma formation after an asymptomatic interval is needed.

Keywords:

Hematoma, Tracheostomy, Hoarseness, Deglutition disorders/etiology, Dyspnea

Traumatic retropharyngeal hematoma is rare but may cause life-threatening airway compromise. Relatively few cases of airway obstruction due to minor traumatic retropharyngeal hematoma has been reported in literature.[1] This potentially fatal condition necessitates prompt diagnosis and treatment. Airway compromise may develop insidiously, usually several hours after the trauma. Thus hospitalisation with close monitoring is essential, preferably in intensive care units.[2]

Management starts with securing and maintaining the patient's airway. Diagnosis rests upon clinical examination and radiological studies. Treatment depends upon the size of the hematoma as well as the clinical course of the patient.[3] Intubation may be difficult due to distorted anatomy. Surgical airway management is often necessary as part of resuscitative measures.[2] Treatment is mostly conservative but large hematomas may require drainage.[4]

This study presents a unique case of a massive retropharyngeal hematoma following a minor blunt trauma presenting with severe stridor which was managed in a tertiary care hospital.

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Case Report

A 75 year old man fell down a staircase and suffered a minor trauma to his neck. He was able to resume his daily activities immediately. After few hours, he insidiously developed a pain in the neck which was gradually progressive and increased in severity with deglutition. He then developed progressive dysphagia both to solids

and liquids. After about 6 hours, he started experiencing some difficulty in breathing for which he attended our institution.

On general survey, it was found that the patient was anxious, alert and agitated. There was inspiratory stridor with tachypnea, tachycardia and mild cyanosis. On examination of the neck, there was no evidence of any external injury or tenderness. There was hoarseness of voice and rigid 70° fibreopticlaryngoscopy revealed only a bulged posterior pharyngeal wall. The patient had no known bleeding disorder and was not on anticoagulant therapy.

A lateral skiagram of soft tissue neck revealed significant widening of the pre-vertebral shadow which had pushed the airway anteriorly. The radiological evidence of pre-vertebral collection from the level of C1 vertebra extending into the mediastinum and a small round radioopaque structure, possibly a fractured bony fragment from the cervical vertebra, was significant (Fig. 1). Emergency tracheostomy with insertion of a cuffed tracheostomy tube was done. Intraoperatively, posterior wall of trachea was found excessively bulged. Patient was shifted to ICU and put on appropriate intravenous fluids, broad spectrum intravenous antibiotics and parenteral hydrocortisone.

ECG revealed an old inferior wall ischemia. Echocardiography and Chest X-ray were also performed. Complete blood count & arterial blood gas (ABG) analysis were performed and serum electrolytes were serially monitored. Prothrombin time (PT), activated partial Thromboplastin time (aPTT) and bleeding time (BT) were also normal. Neurosurgery and Cardiology consultation were done.

After stabilisation of the patient, Contrast-enhanced computed tomography (CECT) scan of the neck was performed the next day. There was evidence of large retropharyngeal hematoma, measuring approximately 11 cm X 2.4 cm X 4 cm in size and causing severe compression of the adjacent airway (Figs. 2 and 3). The hematoma was drained via an intraoral incision and drainage but no active bleeding point was identified. Large amount of blood clots were sucked out. Finally,

Fig. 1 X-ray soft tissue neck (lateral view) showing significant widening of prevertebral space with evidence of huge collection. Airway is pushed anteriorly.

a Ryle's tube was inserted under vision. Edema and swelling of the posterior pharyngeal wall subsided over next 3 days. Then, Ryle's tube feeding was started. Unfortunately, on the10th post-operative day, the patient succumbed to his cardiac comorbidity.

Discussion

Retropharyngeal hematoma, although extremely uncommon, is a well-known complication of cervical trauma, neck surgery, deep neck infections, foreign bodies, great vessel trauma, carotid aneurysm and hemorrhagic parathyroid adenoma. In addition, violent neck and body movements caused by coughing, vomiting or muscular exercise have also been reported as etiologies.[3,5,6]

It can occur spontaneously in patients with bleeding disorders.[7] Three such cases were reported in patients taking anticoagulants by Owens et al.[8]

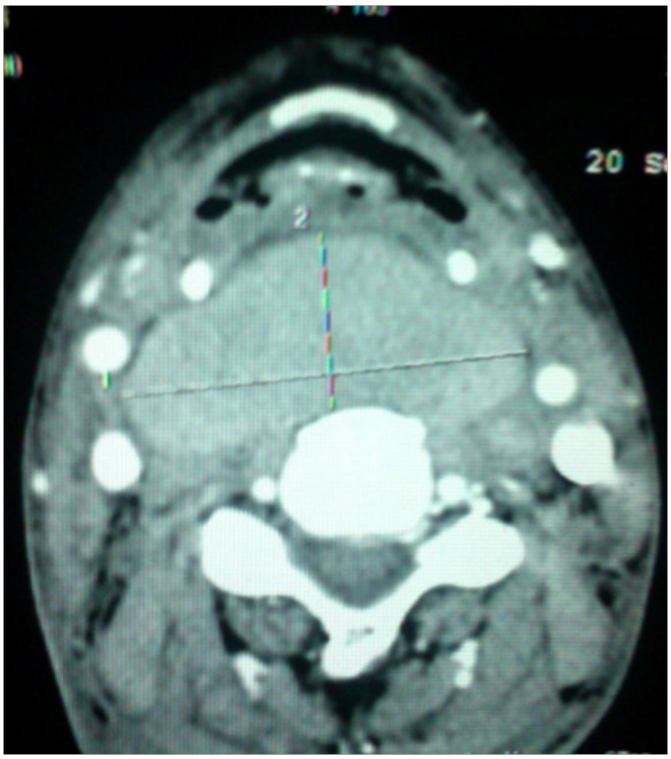

Fig. 2 CECT scan neck (axial cut) showing retropharyngeal hematoma compressing the adjacent airway.

Fig. 3 CECT scan neck (sagittal cut) showing large retropharyngeal hematoma and its extent. Tracheostomy tube is in situ.

Traumatic retropharyngeal hematoma is thought to be due to the rupture of the small anterior branches of the vertebral arteries during hyperextension injury, which can be isolated or associated with cervical spine or occipital condyle fractures. Tearing of longus coli muscles or the anterior longitudinal ligament is another cause.[7,9]

Elderly patients have multiple risk factors for ligamentous injury, fractures and hematoma formation, including laxity of connective tissue, presence of degenerative osteophytes, ankylosing spondylitis and pharmacologic anticoagulation.[5,10]

Minor bleeding in the retropharyngeal space will thus usually stop spontaneously in young patients, while the bleeding may continue in elderly patients.[9] Consequently, apparently minor trauma causing hyperextension injury of the neck may be associated with retropharyngeal hematoma in elderly patients.[1,5]

Knowledge of the anatomy of the various fascial planes in the neck is essential to understand the clinical implication. The fascial planes can be divided into three layers: the superficial, middle, and the deep divisions (with the carotid sheath formed by all three). The retropharyngeal space is located anterior to the alar layer of the prevertebral fascia and extends from the base of the skull to the superior mediastinum up to the level of the tracheal bifurcation at T_4. Here, the alar layer of the prevertebral fascia merges with the anterior border of the retropharyngeal space, the middle visceral layer of the deep cervical fascia. The retropharyngeal space is posterior to the nasopharynx, oropharynx, hypopharynx, larynx, and trachea. Laterally, the space is continuous with the parapharyngeal space and bound by the carotid sheath. It contains lymph nodes and connective tissue and is a potential space for blood or pus to accumulate

and compromise the airway.[1,3,5]

Massive bleeding in the retropharyngeal space affects the pharynx, larynx, esophagus, and trachea. The amount of bleeding is directly related to the severity of signs and symptoms such as inspiratory stridor, dyspnea, hoarseness, neck pain, dysphagia, and odynophagia, which usually appear several hours after the trauma.[3,5]

The local increase in volume causes dysphagia and salivation. A compression of the arytenoid cartilages can also occur, closing the vocal cords and thus obstructing the airway. A lateral neck skiagram or a cervical CT image may show marked widening of the prevertebral space confirming the clinical diagnosis of retropharyngeal hematoma. Usually a CT scan is sufficient to make the diagnosis, but occasionally, an MRI is needed to differentiate blood from pus.[1]

Management of retropharyngeal hematoma starts with the maintenance and protection of the airway from obstruction. Many authors advocate tracheotomy as the procedure of choice for maintaining the airway. Some consider retropharyngeal hematoma as a relative contraindication to endotracheal intubation because of the potential for perforation of the retropharyngeal bulge during the procedure.[11] Once the airway is secured, two options are available: drainage or observation.[10]

Some authors advocate observation and prescribe drainage for those hematomas that do not resorb. These authors cite that many hematomas have been reported to decrease over a 2-3 week period. Patients with small, non-expanding hematomas can be treated conservatively with cervical spine immobilization.[7]

In case of rapid expansion of the hematoma or secondary bacterial infection of the retropharyngeal hematoma, surgical drainage may be emergently needed to relieve the tracheal compression.[1,3]

Two routes of drainage have been described - transoral aspiration and external drainage. Surgical drainage is essential for large hematomas, especially for those expanding rapidly.[10] We drained the hematoma intraorally under local anaesthesia.

Moitra et al reported one case after minor trauma due to an anterior longitudinal ligament injury and a minor vascular injury around the injured ligament.[12] Shaw et al, reported another case following a cervical hyperextension injury in an elderly man. A bleeding vessel in a small tear in the anterior spinous ligament was identified and cauterised.[13] Iizuka et al reported a case of a 30 year old female presenting 4 hours after a motor vehicle accident with severe dyspnea and neck swelling. As extravasation of contrast agent was observed on emergency CECT scan, emergency angiography was performed and hemorrhage from the right thyrocervical artery was diagnosed.[14] All of the above cases had been managed successfully.

Conclusion

Although rarely encountered, retropharyngeal hematoma is a serious problem that can be faced in an emergency department. Retropharyngeal hematoma with life-threatening airway compromise can develop hours or days after an apparently minor injury. The elderly appears to be especially at risk. Clinicians should be alert to the potential occurrence of this cause of acute or delayed airway compromise. However, rapidly securing the airway in these patients may be hazardous due to the presence of concomitant cervical spinal or head injuries.

It may also be considered as a cause of stridor with history of minor trauma to neck, especially in the elderly. Thus, an awareness of the possibility of airway obstruction secondary to massive hematoma formation after an asymptomatic interval is essential.

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