

## Late Onset Retropharyngeal Hematoma After Blunt Cervical Trauma in a Hemophilic Patient: Letter to the Editor

### Hemofilili Olguda Künt Servikal Travma Sonrası Geç Gelişen Retrofaringeal Hematom

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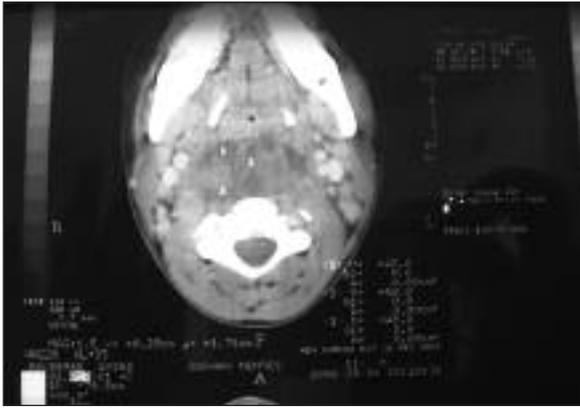
#### Anahtar Kelimeler:

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Retropharyngeal hematoma (RPH) occurs rarely but requires a prompt diagnosis. Predisposing factors include cervical extension and flexion injuries, antithrombotic therapies, coagulation disorders, vascular lesions, and pre-existing vertebral bone deformities.<sup>1</sup> Emergency physicians need to be cognizant of the fact that acute upper airway compromise may be caused by retropharyngeal hematoma after even minor head or neck injury and must be handled at the highest triage priority.

To the best of our knowledge, this is the first reported case of the delayed life-threatening retropharyngeal hematoma that occurred five days after the neck trauma.

We report a ten years old boy that had a neck trauma in a bicycle accident. Patient presented to the emergency department with dyspnea, neck pain, neck swelling and dysphonia five days after the neck trauma. On arrival, his vital signs included blood pressure of 140/85 mm Hg, pulse rate of 120 bpm, respiratory rate of 27 breaths/min, and O<sub>2</sub> saturation of 96%. His laboratory results included white blood cell count of 9.000/L, hemoglobin of 11.2 mg/dL, and platelet count of 350.000/L. Serum aminotransferase and creatinine levels were normal. Examination of oropharynx showed marked swelling of the pharyngolarynx that distorted the normal structure. Because of this, direct visualization of the vocal cords was extremely difficult by laryngoscopy. On lateral cervical radiography, a soft tissue mass narrowed respiratory tract posteriorly. The distance from the anterior cervical vertebral line to the retrotracheal wall was 45 mm at 6th cervical vertebra. Since the distance between the anterior cervical line and the retrotracheal wall was greater than the normal values, RPH was suspected. Computerised tomography of the neck disclosed a midline hypoattenuating retropharyngeal hematoma that ventrally displaced the posterior pharyngolaryngeal wall (Figure 1). The airway was narrowed significantly. Because of progressive airway compromise, urgent tracheostomy was performed and the hematoma was evacuated intraorally through 2 cm vertical incision of the posteri-



**FIGURE 1:** Neck CT: Huge RPH causes the severe airway obstruction at C3 level.

or pharyngeal wall. Hematoma recurred two days after the first drainage. Then, we investigated his family history and recognized that there were hemorrhagic disorders in his father and the other males in his family. Hemophilia A (Factor 8 deficiency) was reported after laboratory investigation. Patient recovered with appropriate transfusion of the specific factor (20 U/kg). Follow-up neck tomography obtained 14 days after presentation showed resolution of retropharyngeal soft tissue swelling. He was discharged from hospital on the 14th day, but decannulated on 6th week after tracheotomy.

Retropharyngeal space is a distensible space in the neck. The ventral border of the retropharyngeal space is the buccopharyngeal fascia, the lateral border is the carotid sheath, 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 vertebra.<sup>2</sup> Blood accumulation in this space causes RPH.

RPH after the neck trauma is rare, and delayed and life-threatening RPH is even rarer. There were about 50 cases with airway obstruction which can result in respiratory arrest in literature. According to the literature, the latest onset of RPH occurred 20 hours after trauma. Our patient is the first reported case of the delayed life-threatening retropharyngeal hematoma occurring five days after the neck trauma.

The symptoms and signs of RPH after trauma are hoarseness, inspiratory stridor and dysphagia. The three primary signs of RPH are superior mediastinal obstruction, ventral displacement of the trachea, and subcutaneous ecchymosis over the neck and anterior chest wall (named Capp's triad). Common initial symptoms and signs of RPH are pain in the neck, dyspnea; neck swelling; and abnormal sensations in the upper airway. Initial symptoms of RPH may occur 2 hours or more after the injury.<sup>1</sup>

The diagnosis of RPH is made by X-ray, computerised tomography, and magnetic resonance imaging. Lateral neck X-ray examination is a simple and useful method for detecting RPH. The maximum distance from the anterior cervical vertebral line to the retrotracheal wall in adults without retropharyngeal diseases is 22 mm at C5, 20 mm at C6, and 21 mm at C7. These distances do not change with neck positions.<sup>3</sup> When the distance from the anterior cervical line to the retrotracheal wall is greater than the above values, RPH should be suspected. Computerised tomography and magnetic resonance imaging can be used to make a definitive diagnosis of RPH.<sup>2</sup> The mechanism of hemorrhage is unclear. One possible mechanism involves tearing of the longus colli muscles along the anterior aspect of the vertebral bodies during hyperextension. Alternatively, hyperextension injuries may rupture the anterior muscular and spinal branches of the vertebral column.<sup>3</sup>

The management of traumatic RPH is mainly conservative but in the presence of clinical signs of airway obstruction, tracheostomy is preferred as the safest means of securing the airway to avoid further damage to the posterior pharyngeal wall. Treatment modality changes depending on the location and size of the hematoma as well as the clinical course of the patient. Patients with small, nonexpanding hematomas should be observed in hospital.<sup>4</sup> Resolution of the hematoma can be assessed regularly radiographically. Penning also reported radiographic resolution of the prevertebral hematomas within 14 days.<sup>3</sup> Symptomatic patients should be strictly monitored to establish airway patency. Equipment should be assembled and atten-

ded for immediate use. A tracheostomy may be needed if there is upper airway obstruction or intubation is difficult. Surgical evacuation of the hematoma is required when there is life threatening airway obstruction or a rapidly expanding hematoma, and in those that fail to reabsorb.<sup>4</sup>

In conclusion, RPH after neck trauma is very rare but has a potentially fatal complication due to respiratory obstruction. If the initial symptoms

of retropharyngeal hematoma occur late or do not regress after proper treatment, physicians should be aware of coagulopathies and the other hemorrhagic disorders. Patients who had a neck trauma and coagulopathy should be warned of the possibility of delayed onset RPH and should be told that if the symptoms of RPH occur, prompt contact, as early as possible, should be made with medical staff.

## REFERENCES

1. Myssiorek D, Shalmi C. Traumatic retropharyngeal hematoma. Arch Otolaryngol Head Neck Surg 1989;115(9):1130-2.
2. Muñoz A, Fischbein NJ, de Vergas J, Crespo J, Alvarez-Vincent J. Spontaneous retropharyngeal hematoma: diagnosis by mr imaging. AJNR Am J Neuroradiol 2001; 22(6):1209-11.
3. Penning L. Prevertebral hematoma in cervical spine injury: incidence and etiologic significance. AJR Am J Roentgenol 1981;136(3): 553-61.
4. Daniello NJ, Goldstein SI. Retropharyngeal hematoma secondary to minor blunt head and neck trauma. Ear Nose Throat J 1994;73(1): 41-3.