Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/mjafi

Case Report

Isolated thyroid hematoma after blunt neck trauma presented with aphonia

Ismail AL-Njadat ^a, Moh'd Obeidat ^{a,*}, Wisam EL-Sukkar ^b,
Mahmoud AL-Swalgh ^a

^a Department of General Surgery, Prince Hashem Bin Abdullah II, Jordan

^b Department of Anesthesia and Intensive Care, King Husain Medical Center, Jordan

ARTICLE INFO

Article history:

Received 4 September 2018

Accepted 2 February 2019

Available online 7 May 2019

Keywords:

Thyroid rupture

Neck injuries

Aphonia

Hematoma

ABSTRACT

Isolated thyroid rupture and hematoma are rare following blunt neck injury and can lead to airway compromise and the need for emergency management. We report a 23-year-old male patient who presented with neck swelling and aphonia following a road traffic accident. Contrast-enhanced CT scan showed laceration and hematoma involving left thyroid lobe. The patient underwent left hemithyroidectomy and accomplished complete recovery. A high index of suspicion for thyroid rupture must be maintained when patients presented with voice changes or respiratory distress.

© 2019 Director General, Armed Forces Medical Services. Published by Elsevier, a division of RELX India Pvt. Ltd. All rights reserved.

Introduction

Hematoma of the thyroid gland due to blunt trauma is extremely uncommon.¹ It may result in airway compromise that needs emergency intervention.² Most of the cases reported in the literature describe this injury in association with a previously goiterous gland,³ but its occurrence in a normal gland is very rare. Also, none of the patients reported in the literature presented with complete aphonia as did our patient. The management of such injury ranges from emergent airway securing to watchful observation.⁴ We report a case of isolated thyroid hematoma in a 23-year-old male with a previously normal thyroid gland who presented with aphonia.

Case report

A 23-year-old male patient with no previous medical illness experienced a blunt neck trauma due to a bus accident. The patient's neck hit the metallic bar of the front seat after the bus driver lost control and hit the side fence. He was evacuated to the emergency department. He was conscious. His vitals were normal, and oxygen saturation was 97%. He was aphonic and had anterior swelling localized to the left side of the neck, non-expanding, no thrill, or bruit. After primary resuscitation, a series of radiological procedures were performed. Cervical and chest radiograph show normal cervical vertebrae. The trachea was mildly shifted towards the right, no subcutaneous emphysema, no hemothorax or

* Corresponding author.

E-mail address: obaidat84@hotmail.com (M. Obeidat).

<https://doi.org/10.1016/j.mjafi.2019.02.001>

0377-1237/© 2019 Director General, Armed Forces Medical Services. Published by Elsevier, a division of RELX India Pvt. Ltd. All rights reserved.

pneumothorax. Cervical computed tomography (CT) showed neither bony fractures nor displacement. Neck CT angiography revealed a laceration of the left thyroid lobe with a diffuse hematoma and tracheal deviation to the right without evidence for laryngotracheal trauma (Fig. 1). An ENT specialist was consulted for possible fiberoptic laryngoscopy, and this procedure revealed normal and patent larynx and unilateral vocal cord paralysis. Owing to progression of voice changes (from normal speech to hoarseness and then aphonia as reported by the emergency medical technicians during the evacuation of the patient from the scene to the emergency department) and after consulting the chief of the head and neck surgery at our institution who advised neck exploration, the patient was taken to the operating room. The findings were left thyroid lobe hematoma and laceration (Fig. 2) and no vascular injury. The patient underwent left hemithyroidectomy. He was transferred to the intensive care unit on a mechanical ventilator. On the third postoperative day, he was extubated. Fifth-day postoperative neck ultrasonography and fiberoptic laryngoscopy were performed and showed no collection at the site of surgery and mobile vocal cords. The patient regained his voice with mild hoarseness. Two weeks later, the patient came for follow-up, and his voice was recovered completely.

Discussion

Trauma to the neck whether blunt or penetrating is a serious and common event. Thyroid hematoma secondary to such trauma is extremely rare.^{2,5,6} The goiterous gland carries a high risk of bleeding after trauma due to its size and vascularity.^{1,3,7} In a recent literature review, Johannes et al.² found

Fig. 1 – CT scan shows the left thyroid laceration, hematoma, and mild tracheal deviation to the right. CT, computed tomography.

Fig. 2 – Intraoperative view of the left thyroid lobe hematoma.

33 cases of thyroid rupture reported over the past 30 years. More than half of these patients had previous thyroid disease, and 48% of reported patients underwent surgical exploration. Von Ahnen et al.³ reviewed the literature and reported 36 cases of thyroid rupture; 59% of cases underwent surgery, and none of the patients died of this injury.

The most common symptoms of thyroid rupture in the previous two reviews were painful neck swelling, airway obstruction, and dyspnea. Dysphagia and dysphonia also have been reported,⁴ but none of these patients presented with complete aphonia as did our patient. In about half of the reported cases, there was a delayed onset of symptoms, sometimes beyond 24 h. In eight of 33 patients, airway compromise was so severe that these patients needed emergent intubation and mechanical ventilation.²

The diagnosis is made by a combination of fiberoptic laryngoscopy, CT, and ultrasonography.^{5–10} However, in some situations, the diagnosis of isolated thyroid injuries can only be confirmed intraoperatively. Most of the reported patients are operated urgently, and neck exploration confirms the diagnosis of thyroid gland injury.^{6–10}

Management of thyroid injury has been reported to range from emergent exploration to observation.^{1–3,5–7,9} In this regard, Heizmann et al.¹ proposed a management plan based on the CT classification of the injury. A small parenchymal laceration is staged as grade I injury, a rupture with a parathyroid hematoma or a neck hematoma as grade II and III, respectively. An additional laceration of surrounding tissue corresponds to grade IV injury. Overnight observation is enough for grades I and II, whereas grades III and IV need surgical intervention.

Conclusion

Any injury to neck should be taken seriously. The patient should be resuscitated according to advanced trauma life support (ATLS) principles of airway, breathing, and circulation

management. CT, angiography, fiberoptic laryngoscopy, and/or ultrasonography should be applied to check for bony, vascular, esophageal, and tracheal injury. High suspension of thyroid injury should be considered in patients presented with voice changes.

REFERENCES

1. Heizmann O, Schmid R, Oertli D. Blunt injury to the thyroid gland: proposed classification and treatment algorithm. *J Trauma*. 2006;61:1012–1015.
2. Lemke Johannes, Schreiber Markus N, Henne-Bruns Doris, Cammerer Gregor, Hillenbrand Andreas. Thyroid gland hemorrhage after blunt neck trauma: case report and review of the literature. *BMC Surg*. 2017;17:115.
3. Von Ahnen T, Von Ahnen M, Wirth U, et al. Traumatic thyroid rupture: case report and review of the literature. *Wien Med Wochenschr*. 2014;164:239–244.
4. Rivera-Serrano CM, Park BJ, Ferris RL. Traumatic thyroid hematoma associated with thyroid carcinoma. *Ear Nose Throat J*. 2012;91:25–26.
5. BarisSaylam MD, BülentÇomçali MD, Mehmet Vasfi Ozer MD, Faruk Coskun MD. Thyroid gland hematoma after blunt neck trauma. *West J Emerg Med*. 2009;10:247–249.
6. Hara Hirotaka, Hirose Yoshinobu, Yamashita Hiroshi. Thyroid gland rupture caused by blunt trauma to the neck. *BMC Res Notes*. 2016;9:114.
7. Tsukahara Kohei, Sato Keiji, Yumoto Tetsuya, et al. Soft tissue hematoma of the neck due to thyroid rupture with unusual mechanism. *Int J Surg Case Rep*. 2016; 26:217–220.
8. Arana-Garza Sebastian, Juarez-Parra Marco, Monterrubio-Rodríguez Jeronimo, et al. Thyroid gland rupture after blunt neck trauma: a case report and review of the literature. *Int J Surg Case Rep*. 2015;12:44–47.
9. Schippe Ellis E, Kool Digna R, Wobbles Theo, Geeraedts Jr Leo MG. Management of thyroid gland hemorrhage after blunt trauma: a case report and review of the literature. *Eur J Trauma Emerg Surg*. 2009;35:587–590.
10. Oka Y, Nishijima J, Azuma T, et al. Blunt thyroid trauma with acute hemorrhage and respiratory distress. *Emerg Med*. 2007;32:381–385.