

Syncope in a patient with spontaneous hemorrhage into a thyroid nodule

Sahin SB¹, Belice T², Ogullar S³, Ayaz T², Cure E²

¹ Department of Endocrinology and Metabolism Disease

² Department of Internal Medicine

³ Department of Radiology

Recep Tayyip Erdogan University Medical School, Rize, Turkey

Abstract

Background: Spontaneous hemorrhage into a thyroid nodule occurs exceedingly rare and rarely a neck hematoma can develop. We report a case of syncope due to spontaneous hemorrhage into a thyroid nodule during anticoagulant and antithrombotic therapy.

Case presentation: A 64-year-old man was transferred to the emergency department of our hospital because of syncope. His physical examination revealed a 7 x 5 cm hard and painless mass at the left neck region. The neck MRI confirmed a heterogeneous, hyperintense mass in the left lobe of thyroid compressing the trachea and left common carotid artery, internal jugular vein, and vagus nerve bundle. He did not require a surgery in the follow-up. As the hematoma underwent subtotal shrinkage, he remained well without syncope.

Conclusion: Hemorrhage into a thyroid nodule should always be considered in patients presenting with neurally mediated syncope. Hippokratia 2014; 18 (2):177-179.

Keywords: Syncope, hemorrhage, thyroidnodule

Corresponding author: Sahin Serap Baydur, MD, Recep Tayyip Erdogan University Medical School, Department of Endocrinology and Metabolism Disease, 53020, Rize, Turkey, tel: +905054698294, fax: +904642170364, e-mail: serapbaydur@gmail.com

Introduction

Hemorrhage into a thyroid nodule is a rare complication of fine-needle aspiration biopsy (FNA). A recent report indicates that bleeding complications are not increased after FNA even in patients taking antithrombotic and/or anticoagulant therapy¹. Spontaneous hemorrhage into a thyroid nodule occurs exceedingly rare. In most of the cases, it causes mild neck pain and rarely a neck hematoma can develop. In the current literature, a few case reports which present with acute airway obstruction and thyrotoxicosis associated with the spontaneous hemorrhage into a thyroid nodule have been reported²⁻⁴.

We describe a case of syncope due to spontaneous hemorrhage into a thyroid nodule during anticoagulant and antithrombotic therapy.

Case report

A 64-year-old man was transferred to the emergency department of our hospital because of syncope. The patient had the complaints of nausea and vomiting after dinner while sitting at home and lost consciousness for a few minutes. A day before admission, he reported feeling a hard swelling on his left side of neck about 5-6 cm in diameter. The patient denied any history of trauma. The medical history was remarkable for hypertension, diabetes mellitus and coronary artery disease, but he did not have a history of nodular goiter. The patient was taking

clopidogrel (75 mg once daily), acetylsalicylic acid (300 mg once daily) and low molecular weight heparin (60 mg enoxaparin once daily).

On arrival at the emergency room, his physical examination revealed a 7 x 5 cm hard and painless mass at the left neck region. He did not have respiratory distress. His blood pressure was 90/60 mmHg and his pulse rate was 100 beats per minute and regular. The remainder of the examination was normal.

The electrocardiogram confirmed the previous anterior myocardial infarction and subsequent echocardiography revealed normal findings.

Blood examination, chest X-ray, and brain computed tomography were unremarkable. The results for laboratory tests were as follows: fT3: 3.5 pg/mL [Normal range(N): 1.71- 3.71], fT4: 1.35 ng/dL (N: 0.7-1.48), TSH: 2.04 uIU/mL (N: 0.35-4.94), hemoglobin: 15.6 g/dL (N: 12.2- 18.1), platelets: 219,000 K/uL (N: 142,000-424,000), INR: 1.26 (N: 0.8-1.2), PT: 15.5 (N:11-15 seconds), erythrocyte sedimentation rate (ESR): 4/11, CRP: 1.74 mg/dL (N: 0-0.8).

The patient underwent sonography of the neck revealing a large hemorrhagic thyroid nodule in the left lobe of thyroid measuring 73 x 54.5 x 59.5 mm which leads to displacing of the left lobe to medial and superior side (Figure 1). The neck MRI confirmed a heterogeneous,



Figure 1: Neck sonography showing a large hemorrhagic nodule in the left lobe of thyroid measuring 73 x 54.5 x 59.5 mm which leads to displacing of the left lobe to medial and superior side.

hyperintense mass in the left lobe of thyroid compressing the trachea and left common carotid artery, internal jugular vein, and vagus nerve bundle (Figure 2). These findings suggested neurally mediated syncope due to the spontaneous hemorrhage into the thyroid nodule.

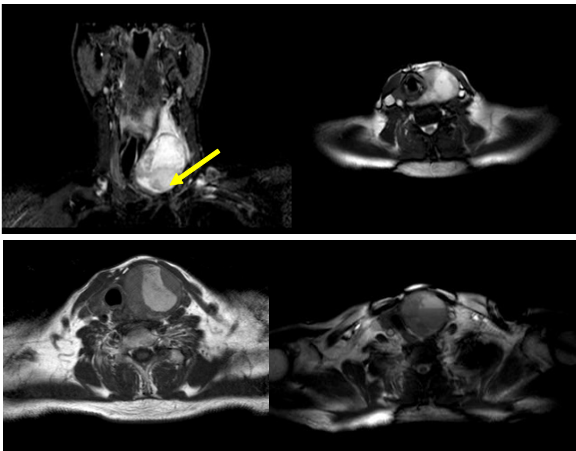


Figure 2: Axial and coronal T1 and T2 weighted MRI scans of the neck showing a 5.5 cm heterogeneous, hyperintense mass in the left lobe of thyroid compressing the trachea and vascular- neural bundle which contains fluid fluid levels on T1 weighted MRI images (yellow arrow shows the hemorrhage into the thyroid nodule).

Anticoagulant and antithrombotic therapy were discontinued. The patient was followed closely by repeated sonographic examinations and he did not require a surgery in the follow-up. As the hematoma underwent subtotal shrinkage, he remained well without syncope. One month later, neck sonography demonstrated the total resorption of thyroid hematoma (Figure 3).

Discussion

The syncope caused by spontaneous bleeding into a thyroid nodule is not a common clinical finding, but can be a reason of admission as a life-threatening symptom

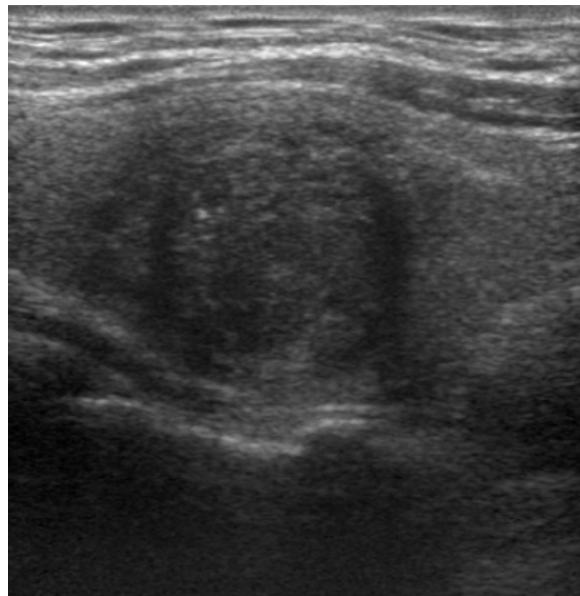


Figure 3: Neck sonography showing the total resorption of thyroid hematoma (a 18 x 13 x 22 mm, solid, hypoechoic nodule with internal microcalcifications).

and the diagnosis can be challenging. To the best of our knowledge, this is the first case in the literature.

Four cases of neck hematoma following FNA have been reported to date. Two of them presented with acute respiratory distress and only one of them was receiving 325 mg aspirin/daily at the time of biopsy⁵⁻⁸.

Spontaneous hemorrhage into a thyroid nodule is also rarely reported in the literature. One of them who was taking aspirin presented with acute airway obstruction and an emergency subtotal thyroidectomy was performed². Another case presented with a large neck mass causing dyspnea⁹. Two cases who were receiving anticoagulant therapy presented with thyrotoxicosis due to the hemorrhage into a thyroid nodule and did not require surgery^{3,4}. Recently, thyroid hemorrhage causing airway obstruction has been reported after intravenous thrombolysis with recombinant tissue plasminogen activator administered for acute ischemic stroke¹⁰. Because of the tracheal and vascular compression, total thyroidectomy was performed.

Thyroid hemorrhage would be due to abnormal vessel anatomy with resultant weakening of the veins and arterio-venous shunts into the nodule that may divert blood with high pressure to these fragile veins, causing in extravasation of blood into the nodule¹¹. It is reported mainly in patients under anticoagulant therapy⁸. In our patient, we think that aspirin, clopidogrel and low molecular weight heparin contributed to the hemorrhage into the thyroid nodule.

In our patient, hemorrhage into the nodule in left lobe of thyroid compressed the left common carotid artery, internal jugular vein, and vagus nerve bundle and further precipitated a syncope. We consider that the cause of syncope in the present case was neurally mediated syncope¹². We thought that the mechanism linking syncope and the neck mass in the present patient was the overstimulation

of the carotid sinus due to the pressure on. Syncope is common in the general population and neurally mediated syncope is the most frequent cause¹³. It is usually preceded by prodromal symptoms of autonomic activation such as sweating, pallor and nausea. Syncope due to the orthostatic hypotension occurs upon standing and is defined as an abnormal decrease in systolic blood pressure upon standing. In our case, syncope occurred while sitting at home after dinner. Therefore we thought that orthostatic hypotension was not the cause of syncope. Arrhythmias and structural cardiovascular diseases can also cause syncope. Cardiovascular syncope must be considered in the presence of definite structural heart disease, family history of unexplained sudden death, sudden onset palpitation immediately followed by syncope and ECG findings suggesting arrhythmic syncope. Our patient had findings of previous anterior myocardial infarction on the electrocardiogram and we did not observe arrhythmia at the admission and follow-up period. Additionally, echocardiography revealed normal findings. European Society of Cardiology also recommends neurological evaluation in patients in whom loss of consciousness is suspected to be epilepsy¹³. Our patient had no neurological deficits on examination.

Conservative management was reported to be useful in patients with hemorrhage into the thyroid nodule¹⁴. Emergency surgery on the day of admission was not indicated for our patient, because he showed no signs of dyspnea or stridor. Increasing size or compromise of airway integrity should be indications for early intubation and neck exploration. He was followed closely by repeated sonographic examinations and observed no increase in the size of hematoma. Therefore, we think that if the patients do not have any life-threatening symptoms like airway obstruction because of hemorrhage into a thyroid nodule, they may be safely observed. Early surgical decompression should be considered in acute airway compromise².

Conclusion

The present case is the first report of spontaneous hemorrhage into a thyroid nodule presenting with neurally mediated syncope. Careful history taking and physical examination (i.e., mass at the left neck region) led us to the diagnosis without delay.

Conflict of interest

Nothing to declare.

References

1. Abu-Yousef MM, Larson JH, Kuehn DM, Wu AS, Laroia AT. Safety of ultrasound-guided fine needle aspiration biopsy of neck lesions in patients taking antithrombotic/anticoagulant medications. *Ultrasound Q*. 2011; 27: 157-159.
2. Lee JK, Lee DH, Cho SW, Lim SC. Acute airway obstruction by spontaneous hemorrhage into thyroid nodule. *Indian J Otolaryngol Head Neck Surg*. 2011; 63: 387-389.
3. Olchovsky D, Pines A, Zwas ST, Itzhak Y, Halkin H. Apathetic thyrotoxicosis due to hemorrhage into a hyperfunctioning thyroid nodule after excessive anticoagulation. *South Med J*. 1985; 78: 609-611.
4. Onal IK, Dağdelen S, Atmaca A, Karadağ O, Adalar N. Hemorrhage into a thyroid nodule as a cause of thyrotoxicosis. *Endocr Pract*. 2006; 12: 299-301.
5. Noordzij JP, Goto MM. Airway compromise caused by hematoma after thyroid fine-needle aspiration. *Am J Otolaryngol*. 2005; 26: 398-399.
6. Roh JL. Intrathyroid hemorrhage and acute upper airway obstruction after fine needle aspiration of the thyroid gland. *Laryngoscope*. 2006; 116: 154-156.
7. Hor T, Lahiri SW. Bilateral thyroid hematomas after fine-needle aspiration causing acute airway obstruction. *Thyroid*. 2008; 18: 567-569.
8. Donatini G, Masoni T, Ricci V, D'Elia M, Guadagni A, Baldetti G, et al. Acute respiratory distress following fine needle aspiration of thyroid nodule: case report and review of the literature. *G Chir*. 2010; 31: 387-389.
9. Chang CC, Chou YH, Tiu CM, Chiou HJ, Wang HK, Chiou SY, et al. Spontaneous rupture with pseudoaneurysm formation in a nodular goiter presenting as a large neck mass. *J Clin Ultrasound*. 2007; 35: 518-520.
10. Sutter R, Bruder E, Weissenburg M, Balestra GM. Thyroid hemorrhage causing airway obstruction after intravenous thrombolysis for acute ischemic stroke. *Neurocrit Care*. 2013; 19: 381-384.
11. Johnson N. The blood supply of the thyroid gland. II. The nodular gland. *Aust N Z J Surg*. 1954; 23: 241-252.
12. Kenny RA. Neurally mediated syncope. *Clin Geriatr Med*. 2002; 18: 191-210.
13. Task Force for the Diagnosis and Management of Syncope; European Society of Cardiology (ESC); European Heart Rhythm Association (EHRA); Heart Failure Association (HFA); Heart Rhythm Society (HRS), Moya A, Sutton R, Ammirati F, Blanc JJ, Brignole M, Dahm JB, et al. Guidelines for the diagnosis and management of syncope (version 2009). *Eur Heart J*. 2009; 30: 2631-2671.
14. Weeks C, Moore FD Jr, Ferzoco SJ, Gates J. Blunt trauma to the thyroid: a case report. *Am Surg*. 2005; 71: 518-521.