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CASE STUDY

Proliferative thyroid tumor with massive bleeding – a case report

Rozrostowy guz tarczycy z masywnym krwawieniem – opis przypadku

Authors' Contribution:
A – Study Design
B – Data Collection
C – Statistical Analysis
D – Data Interpretation
E – Manuscript Preparation
F – Literature Search
G – Funds Collection

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ABSTRACT:

Introduction: Thyroid tumors are a common condition in all age groups. Their etiology can be either non-cancerous or cancerous. Cancerous tumors can be either benign or malignant, requiring different therapeutic approaches.

Aim: The paper presents the case of a 39-year-old man who was admitted to the hospital due to the sudden appearance of a rapidly growing tumor in the neck region.

Case report: The presented case is that of a 39-year-old male patient with a rapidly growing neck tumor having formed following intense physical exertion (playing soccer, albeit without any signs of injury to the area), leading to acute respiratory failure as a result of airway compression. Radiological imaging revealed a thyroid lobe tumor with possible arterial bleeding. Treatment included emergency airway management using the rapid sequence intubation (RSI) protocol and emergency surgical revision of the neck.

Conclusions: Thyroid tumors that grow rapidly and cause bleeding are rare in clinical practice. Proper and timely diagnosis, along with appropriate therapeutic management, are crucial for effective treatment of the patient and avoidance of potential complications.

KEYWORDS: bleeding, tumor of the neck, thyroid gland

STRESZCZENIE:

Wstęp: Guzy tarczycy są często występującym schorzeniem niezależnie od wieku. Ich etiologia może być zarówno nienowotworowa, jak i nowotworowa. Guzy nowotworowe mogą mieć łagodny, a także złośliwy charakter, co w konsekwencji wymusza różne postępowanie terapeutyczne.

Cel: W pracy zaprezentowano przypadek 39-letniego mężczyzny, który do szpitala zgłosił się z powodu nagłego pojawienia się guza w okolicy szyi, z jego szybkim wzrostem.

Opis przypadku: Przedstawiono przypadek 39-letniego mężczyzny, u którego po intensywnym wysiłku fizycznym (grze w piłkę nożną) pojawił się na szyi szybko powiększający się guz (ale bez cech urazu tej okolicy), który doprowadził do ostrej niewydolności oddechowej w następstwie kompresji guza na drogi oddechowe. W radiologicznych badaniach obrazowych stwierdzono guz w płacie tarczycy z możliwym krwawieniem tętniczym. Postępowanie terapeutyczne obejmowało pilne zabezpieczenie dróg oddechowych w protokole szybkiej intubacji (ang. rapid sequence intubation; RSI) oraz pilną chirurgiczną rewizję szyi.

Wnioski: Guzy tarczycy, które szybko rosną i powodują krwawienie są rzadkie w praktyce klinicznej. Właściwa i pilna diagnoza wraz z odpowiednim postępowaniem terapeutycznym mają kluczowe znaczenie dla skutecznego leczenia pacjenta i uniknięcia potencjalnych powikłań.

SŁOWA KLUCZOWE: guz szyi, krwawienie, tarczyca

ABBREVIATIONS

CT – computed tomography
CTA – computed tomography angiography
ED – Emgency Department
ENT – ear, nose, and throat
RSI – rapid sequence intubation

INTRODUCTION

Hematomas developing within the neck region secondary to bleeding from the thyroid gland are rare in clinical practice [1–5]. Cases described in the literature involve patients with structural changes within the thyroid gland [5, 6]; at the same time, the causes of spontaneous bleeding into the thyroid gland remain largely unknown [7]. Due to its location, bleeding into the thyroid gland primarily presents with an increase in neck circumference accompanied by airway insufficiency. In 2017, Lemke et al. reviewed the literature on the topic of bleeding in thyroid injuries as published over a period of 30 years to that date. Only 32 cases of patients with intrathyroid bleeding secondary to traumatic events were identified in the available literature [8]. After 2017, 2 other cases of thyroid injury with bleeding due to blunt neck trauma were reported in the literature [9, 10].

Thyroid tumors are quite a common finding. Most frequently, these are benign lesions accounting for about 24.82% of thyroid diseases [11]. Spontaneous bleeding around these lesions is relatively rare.

AIM

The aim of this paper is to present a rare case of a rapidly growing, hemorrhagic thyroid tumor leading to acute respiratory failure, and to discuss the key diagnostic and therapeutic aspects that enabled effective and timely life-saving management of the patient.

CASE REPORT

A 39-year-old, previously healthy man presented to the hospital's emergency department due to a sudden-onset, rapidly growing lump on the right side of the neck. The lesion had developed upon physical exertion (playing soccer) and had grown significantly over the course of several hours. During the interview, the patient denied experiencing any trauma, pain in the neck area during physical exertion, or fever or upper respiratory tract infection in the recent past. The triage procedure examinations revealed cardiovascular and respiratory efficiency, absence of features of dyspnea, with baseline oxygen saturation of 99% without oxygen therapy. Complaints at presentation included an increasing feeling of distension and obstruction in the patient's throat. A tuberous lesion, about 5 × 5 cm in size, cohesive and not painful on palpation, was identified on the right side of the neck. Laboratory tests revealed normal levels of inflammatory markers. Imaging examination, i.e., computed tomography (CT) with contrast enhancement, showed a 70 × 60 × 92-mm (sd × ap × cc) hemorrhagic focus on the right side of the neck, closely adjacent to the right thyroid lobe and causing significant tracheal displacement towards the left (Fig. 1.). A computed tomography angiography (CTA) scan of the neck confirmed active bleeding into the aforementioned focal lesion (Fig. 2.). In the differential diagnosis, the radiologist describing the examination result initially suggested bleeding into a thyroid tumor. Due to the patient's reported sensation of dyspnea with saturation dropping to 80% and increasing anxiety in the ED, the patient was intubated under the rapid sequence intubation (RSI) protocol. Ventilation therapy was started. Since consultation by a vascular surgeon was not possible as no specialist was available on call at the facility at that time, the patient was consulted by an ear, nose, and throat (ENT) specialist and qualified for emergency neck revision as a result. During the surgery, no active bleeding into the superficial and deep spaces of the neck was observed, the thyroid gland was identified as extending to the upper border of the thyroid cartilage, suggesting a high probability of intrathyroid hemorrhage. The patient was urgently consulted by a general surgeon and qualified for removal of the right thyroid lobe along with the isthmus (Fig. 3.). Histopathological examination of the removed tissues revealed a proliferative thyroid tumor with a massive hematoma. After 6 days of hospitalization, the patient was discharged home in a good general condition.

DISCUSSION

Hemorrhagic thyroid tumors are a rare pathology of this gland. The exact cause of spontaneous bleeding into the thyroid tumors is not fully understood, with mechanisms suggested in the literature including trauma or the use of anticoagulants [1–4]. In addition to the aforementioned factors, arteriovenous malformation may be another significant predictor of the high risk of intrathyroid tumor bleeding. Activities that lead to an increase in vascular pressure, such as the Valsalva maneuver, coughing, and physical exertion, can lead to the rupture of a blood vessel and eventually cause bleeding in the tumor area [7]. Černá et al. presented the case of a 64-year-old male patient who developed threatening tracheal compression with dyspnea secondary to an arteriovenous malformation located within the left lobe of the thyroid gland [12]. On the other hand, Alsalamah et al. presented the case of a 49-year-old male patient who had presented to the Emergency Department due to a neck tumor that had been growing for 8 days, resulting in swelling of the neck accompanied by mild swallowing disorders and hoarseness. In the course of the diagnostic and treatment procedures, a fine-needle aspiration biopsy was performed to evacuate 110 mL of dark blood. Histopathological examination revealed a heterogeneous cystic lesion with blood clots weighing a total of 253 grams [11]. Szeto et al. presented a case of a healthy, 36-year-old man scheduled for elective nasal surgery, in whom a neck tumor with increasing swelling of the right side of the neck developed secondarily to tracheal intubation. An urgent ultrasound scan revealed a ruptured thyroid cyst, with intubation being the most likely factor causative of the rupture [13].

In a retrospective cohort study conducted between 2009 and 2018 in a population of 631,129 subjects, Covino et al. identified hemorrhagic thyroid tumors in as few as 59 patients. Four of these patients had been receiving oral anticoagulants. Thirty

patients (50.8%) had polycystic thyroid disease, while the remaining 29 presented with a single thyroid tumor [1].

Radiological diagnosis plays an important role in the evaluation of hemorrhagic thyroid tumors. In their retrospective study covering the period of 2017–2019, Yang et al. evaluated 101 patients diagnosed with benign cystic thyroid tumors. The purpose of the study was to identify radiological factors predisposing patients to bleeding from a thyroid tumor. Analyzing the radiological images, the researchers demonstrated an association between the rich vascularization of the tumor and the risk of bleeding increasing by a factor of 2.8. Tumors presenting with sharp edges in their solid parts were associated with a 1.02-fold increase in the risk of bleeding, while those with spongy internal contents were fraught with the risk being increased by the factor of 1.9 [14].

In most cases, patients with spontaneous bleeding from a thyroid tumor require a careful and well-planned lobectomy or thyroidectomy rather than an emergency surgical intervention [4]. A certain group of patients can be treated in a conservative manner. Chan et al. reported on a case of a 93-year-old woman with bleeding from a thyroid cyst who was subjected to aspiration of the cyst contents and steroid therapy to reduce swelling as a viable alternative to surgical treatment [15]. Dell'Aquila et al. presented the case of an 81-year-old woman in whom the rapid growth of a hemorrhagic neck tumor resulted in acute respiratory failure, resulting from the compression of the trachea, which resulted in the woman's death [16]. Thirati et al. presented a similar case of a 59-year-old woman who died as a result of airway obstruction secondary to high blood pressure complicated by intrathyroid tumor hemorrhage and hemorrhagic stroke [17].

All the cases described above clearly illustrate the importance of proper diagnosis and appropriate management of rapidly enlarging neck tumors. Their proper treatment is key to stabilizing the patient's overall condition and significantly reducing potential complications.

CONCLUSIONS

Spontaneous bleeding from thyroid tumors is rare in clinical practice. Proper diagnosis and appropriate treatment prevent the potential and dangerous complications, and thus lead to complete recovery of the patient.

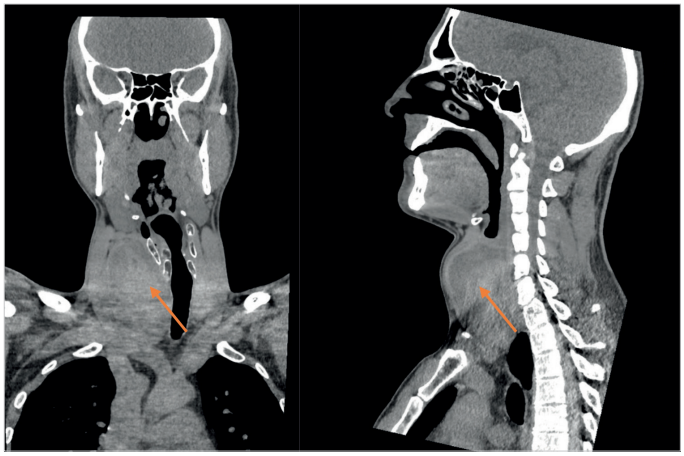


Fig. 1. CT scan (frontal and sagittal projections): thyroid tumor with visible capsule before administration of contrast agent.

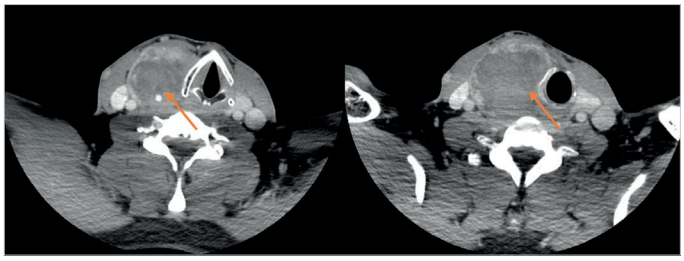


Fig. 2. CTA scan of the neck (axial view): thyroid tumor with a visible jet of contrasted blood indicating active arterial bleeding.

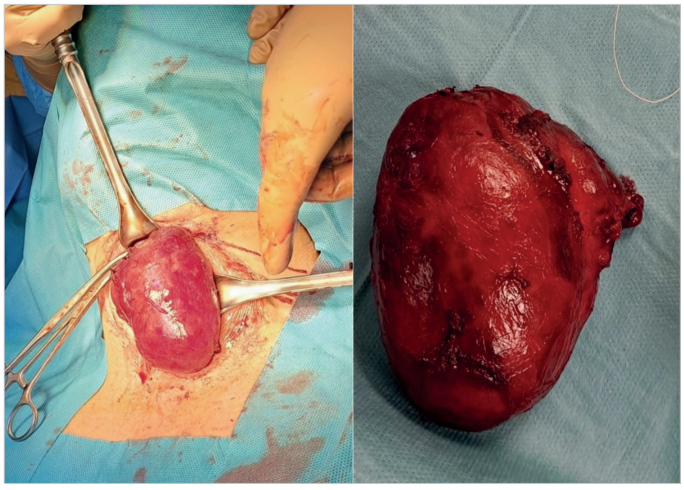


Fig. 3. Intraoperative image: right thyroid lobe with hematoma.

REFERENCES

1. Covino M., Princi P., Luca D., Del Ciello A., Simeoni B. et al.: Spontaneous thyroid nodule hemorrhage in the emergency deparment. Endocr Pract., 2020; 26(2): 192–196. doi: 10.4158/ep-2019-0326.
2. Gunasekaran K., Rudd K.M., Murthi S., Kaatz S., Lone N.: Spontaneous thyroid hemorrhage on chronic anticoagulation therapy. Clin Pract., 2017; 7(1): 932. doi: 10.4081/cp.2017.932.
3. Petersen N.K., Udholm S., Londero S.C.: Acute airway obstruction due to spontaneous intrathyroidal haemorrhage. BMJ Case Rep., 2021; 14(1): e238935. doi: 10.1136/bcr-2020-238935.
4. Başak H., Yücel L., Hasanova S., Beton S.: Management of a spontaneous thyroid nodule hemorrhage causing acute airway obstruction. Turk Arch Otorhinolaryngol., 2021; 59(4): 289–291. doi: 10.4274/tao.2021.2021-5-23.
5. Dworzyńska A., Luks B., Dobrogowski M., Pomorski L.: Neck trauma complicated by thyroid damage and pleural hematoma – literature review and personal case; Pol Przegl Chir., 2019; 91(Suplement 1): 27–29. doi: 10.5604/01.3001.0013.2095.
6. Ruan Z., Wang S., WangZ., Jing Y.: A rare case of bilateral massive hemothorax ftom spontaneous rupture of a primary mediastinal mixed germ cell tumor. Ann Thorac Surg., 2019; 93(2): 664–666. doi: 10.1016/j.athoracsur.2011.07.018.
7. Johnson N.: The blood supply of the thyroid gland. I. The normal gland. Aust N Z J Surg., 1953; 23(2): 95–103. doi: 10.1111/j.1445-2197.1953.tb05025.x.
8. Lemke J., Schreiber M.N., Henne-Bruns D., Cammerer G., Hillenbrand A.: Thyroid gland hemorrhage after blunt neck trauma: case report and review of the literature. BMC Surgery., 2017; 17(1): 115. doi: 10.1186/s12893-017-0322-y.

9. Dinesh B.J., Siti Z.S., Dexter L.Z.R., Hayati F.: Recurrent Laryngeal Nerve Injury Secondary to Blunt Trauma; A Rarity. Gazi Med J., 2018; 29(4): 375–377. doi: 0.12996/gmj.2018.103.
10. Nguyen C.T., Bunevich J.: Hemorrhagic Thyroid Nodule Resulting in Expanding Neck Hematoma Following Blunt Cervical Trauma. Ear Nose Throat J., 2019; 98(4): 195–196. doi: 1 0.1177/0145561318823396.
11. Alsalamah S., Albesher M., Alwabili M., Almutairy A.: Spontaneous hemorrhagic thyroid noduke: a case report and review of the literature. J Surg Case Rep., 2024; 2024(3): rjae124. doi: 10.1093/jscr/rjae124.
12. Černá M., Třeška V., Krčma M., Daum O., Šlauf F.: Atriuvenous malformation of the thyroid gland as a very rar cause of mechanical neck syndrome: a case report. J Med Case Rep., 2015; 9: 3. doi: 10.1186/1752-1947-9-3.
13. Szeto L.D., Hung C.T.: Haemorrhage of a thyroid cyst as an unusual complication of intubation. Anesth Intensive Care., 2002; 30(2): 230–233. doi: 10.1177/0310054X0203000220.
14. Yang H., Zhao S., Zhang Z., Chen Y., Wang K. et al.: The associated factors for spontaneous intramodular hemorrhage of partially cystic thyrois nodules. Medicine (Baltimore)., 2020; 99(51): e23846. doi: 10.1097/md.0000000000023846.
15. Chan C.C., Awobem A., Binns C., Jassar P.: Arare case of spontaneous thyroid cyst haemorrhage. J Laryngol Otol., 2012; 126(9): 960–962. doi: 10.1017/S0022215112001430.
16. Dell`Aquila M., De Matteis A., Bolino G., Urciuoli P., Fineschi V. et al.: Death doe to external compression of the trachea in a patient with multinodular hemorrhagic goiter. Forensic Sci Med Pathol., 2019; 15(3): 509–512. doi: 10.1007/s12024-019-00094-6.
17. Thirati P., Lertparinyaphorn I.: Spontaneous hemorrhage of the thyroid gland in a deceased with hypertensive emergency presented with hemorrhagic stroke: a case report and literature review. J Med Assc Thai., 2022; 105(12): 1267–1274. doi: 10.35755/jmedassocthai.2022.12.13711.

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