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Acute Intrathyroidal Hematoma in a Multinodular Thyroid Presenting With Sudden Neck Swelling and Tracheal Deviation: A Case Report

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Abstract

Acute hemorrhage within the thyroid gland is uncommon but can cause rapid neck swelling and, in severe cases, airway compromise. We report a 65-year-old woman with hypertension and a history of partial thyroidectomy performed more than 25 years earlier who presented with painful neck swelling that developed overnight. The swelling was associated with pain on swallowing, without shortness of breath, voice change, drooling, fever, or recent neck trauma. She was hemodynamically stable with an oxygen saturation of 99% on room air. Examination showed marked neck swelling, thyromegaly, thyroid tenderness, and left-sided neck induration. Contrast-enhanced computed tomography (CT) demonstrated a multinodular thyroid with a large heterogeneous mass in the left thyroid lobe causing mass effect and rightward tracheal deviation. Subsequent ultrasonography demonstrated a heterogeneous intrathyroidal collection consistent with hematoma. The patient remained clinically stable and was discharged after approximately five hours of observation. At otolaryngology follow-up 10 days later, repeat ultrasonography showed a progressively enlarging left thyroid nodule, and fine-needle aspiration cytology was reported as a follicular neoplasm. She subsequently underwent total thyroidectomy without reported complications. Final pathology demonstrated thyroid follicular nodular disease (multinodular goiter), while gross examination of the left thyroid lobe identified a 5.5-cm hemorrhagic cyst, further supporting the diagnosis of intrathyroidal hemorrhage. This case highlights the importance of prompt airway assessment, imaging, and continued follow-up in patients with sudden thyroid enlargement, even when respiratory compromise is initially absent.

Categories: Otolaryngology, General Surgery, Emergency Medicine

Keywords: airway compression, intrathyroidal hematoma, multinodular thyroid, neck swelling, thyroid hemorrhage, thyroid nodule, tracheal deviation

Introduction

Hemorrhage into a thyroid nodule or goiter is an uncommon cause of sudden neck swelling. Patients may present with acute neck pain, swelling, dysphagia, or pressure symptoms, and extensive bleeding can rarely progress to airway compromise [1-4]. Pre-existing thyroid nodules and multinodular goiters are recognized settings for intrathyroidal bleeding, while reported precipitating factors include trauma, procedures, anticoagulation, and other causes of altered hemostasis [2,5,6].

Because the presentation can resemble infection, thyroiditis, or another rapidly enlarging neck mass, imaging is important for defining the thyroid origin of the lesion and assessing its relationship to the airway. We present this case to highlight intrathyroidal hemorrhage as an important cause of sudden neck swelling and to emphasize the importance of prompt airway assessment and imaging, even in patients without initial respiratory compromise.

Case Presentation

In May 2026, a 65-year-old woman presented to the emergency department of a tertiary hospital in Beirut, Lebanon, with acute painful neck swelling that had developed overnight. Clinical information for this report was obtained through retrospective review of the patient's institutional electronic medical record, including emergency department documentation, imaging studies, follow-up records, operative records, and pathology reports. Her medical history included hypertension and a partial thyroidectomy performed more than 25 years earlier; the indication and exact operative details were not available. She was a smoker. She reported no symptoms before the sudden onset of swelling. The swelling was associated with pain on swallowing. She denied shortness of breath, sore throat, drooling, trismus, voice change, chest pain, fever, or chills. There was no recent dental procedure or dental pain. She also reported no recent neck injury, insect bite, skin infection, upper respiratory tract infection, or known sick contact.

On arrival, her blood pressure was 145/73 mmHg, temperature was 36.8°C, pulse was 76 beats/minute,

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respiratory rate was 18 breaths/minute, and oxygen saturation was 99%. She was awake, alert, and oriented. Examination showed significant neck swelling with thyromegaly and thyroid tenderness. The left side of the neck was swollen and indurated without overlying erythema, warmth, fluctuance, or skin changes. The swelling was clearly visible on inspection at the time of presentation (Figure 1). The area was tender. The mass was mobile with good mobility of the overlying skin. Neck range of motion was almost normal, with mild limitation because of pain. An anterior surgical scar from the previous thyroid operation was present.



FIGURE 1: Clinical photograph showing prominent anterior neck swelling at presentation

Arrow: Visible previous anterior neck surgical scar

Laboratory testing was largely unremarkable. Coagulation studies, including prothrombin time (PT), activated partial thromboplastin time (aPTT), and international normalized ratio (INR), were not obtained during the initial emergency department evaluation but were subsequently performed during follow-up. The available laboratory findings are summarized in Table 1

Test	Result	Reference range
White blood cell count	10,600/cu.mm	4,000-11,000/cu.mm
Red blood cell count	5.00 million/cu.mm	4.00-5.50 million/cu.mm
Hemoglobin	12.1 g/dL	12.0-16.0 g/dL
Hematocrit	38%	37-46%
Mean corpuscular volume	75.9 fL	80.0-94.0 fL
Mean corpuscular hemoglobin	24.3 pg	27.0-31.0 pg
Mean corpuscular hemoglobin concentration	32.0 g/dL	30.0-35.0 g/dL
Red cell distribution width	16.4%	11.6-14.6%
Neutrophils	76%	40-65%
Lymphocytes	15%	25-40%
Monocytes	9%	2-8%
Platelets	342,000/cu.mm	150,000-400,000/cu.mm
Glucose	123 mg/dL	76-110 mg/dL
Blood urea nitrogen	17 mg/dL	8-25 mg/dL
Creatinine	0.62 mg/dL	0.50-1.00 mg/dL
Sodium	140 mmol/L	135-145 mmol/L
Potassium	4.4 mmol/L	3.5-5.1 mmol/L
Chloride	107 mmol/L	98-109 mmol/L
Carbon dioxide	24 mmol/L	24-30 mmol/L
Magnesium	2.3 mg/dL	1.6-2.5 mg/dL
Calcium	10.3 mg/dL	8.5-10.5 mg/dL
Phosphate	2.6 mg/dL	2.7-4.8 mg/dL

TABLE 1: Laboratory findings at presentation

Contrast-enhanced CT of the neck was initially performed and demonstrated a multinodular thyroid gland with a large heterogeneous mass in the left thyroid lobe, producing significant mass effect and rightward tracheal deviation. Given the acute onset, hemorrhage, or interval lesion necrosis with secondary sudden enlargement was considered (Figure 2).

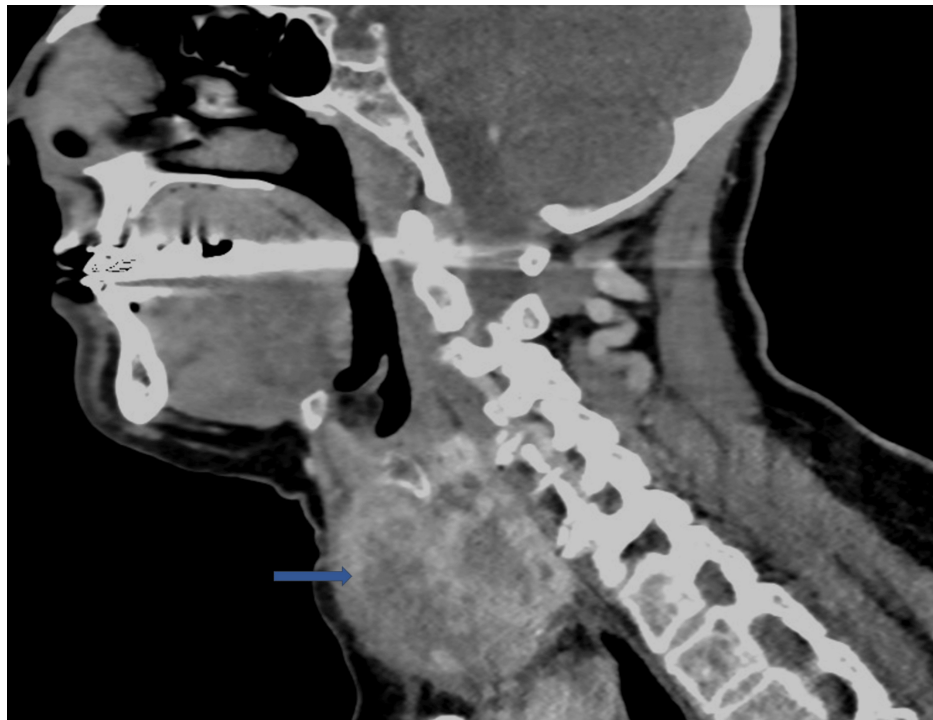


FIGURE 2: Sagittal contrast-enhanced CT image of the neck demonstrating a large heterogeneous mass involving the left thyroid lobe

Arrow: Indicates the heterogeneous thyroidal mass

Thyroid ultrasonography was subsequently obtained for further characterization and demonstrated a heterogeneous intrathyroidal collection consistent with hematoma (Figure 3).

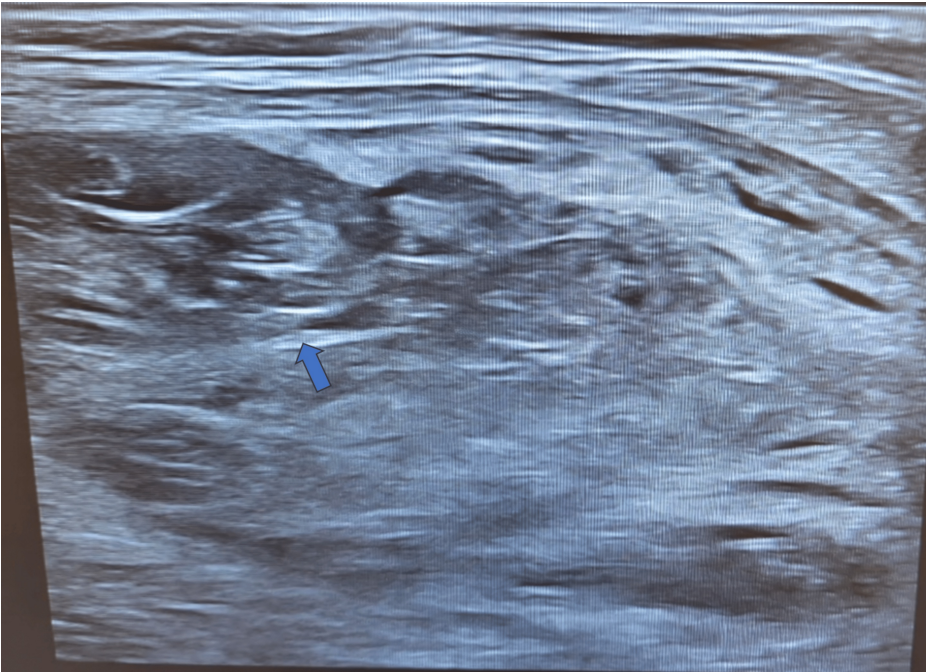


FIGURE 3: Thyroid ultrasonography demonstrating a heterogeneous intrathyroidal collection consistent with hematoma

Arrow: Indicates heterogeneous intrathyroidal collection

The patient remained clinically stable without dyspnea or oxygen desaturation and was discharged home after approximately five hours of observation with instructions for outpatient follow-up. Ten days later, she was evaluated by the otolaryngology service. Follow-up thyroid ultrasonography demonstrated a progressively enlarging left thyroid nodule, for which fine-needle aspiration was recommended. Fine-needle aspiration cytology was subsequently performed and was reported as a follicular neoplasm. Follow-up thyroid function and coagulation studies were within the provided reference ranges (Table 2). Final surgical pathology showed thyroid follicular nodular disease (multinodular goiter). Gross examination of the left thyroid lobe demonstrated a hemorrhagic cyst measuring 5.5 cm in greatest dimension, further supporting the diagnosis of intrathyroidal hemorrhage. The patient was lost to follow-up after surgery.

Laboratory test	Result	Reference range
Thyroid-stimulating hormone (TSH)	0.935	0.270–4.200 µU/mL
Free triiodothyronine (Free T3)	2.78	1.58–3.91 pg/mL
Free thyroxine (Free T4)	0.92	0.92–1.68 ng/dL
Activated partial thromboplastin time (aPTT)	27	27.0–39.0 sec
International normalized ratio (INR)	0.9	0.9–1.2
Prothrombin time (PT)	10.6	10.0–13.0 sec

TABLE 2: Laboratory assessment during follow-up

Discussion

Intrathyroidal hemorrhage is uncommon but should be considered when a patient presents with sudden painful thyroid or anterior neck enlargement. In a 10-year emergency department series of 59 patients with spontaneous thyroid nodule hemorrhage, the most common symptoms included acute neck pain, dysphagia, and dyspnea; most patients did not require hospitalization, but rare cases of active bleeding required urgent surgery [1]. Case reports and reviews similarly show that the clinical spectrum ranges from localized pain and swelling to rapidly progressive airway obstruction [2-5].

CT demonstrated a large heterogeneous left thyroid mass with rightward tracheal deviation, while ultrasonography demonstrated a heterogeneous collection consistent with hematoma. Subsequent gross pathological examination after total thyroidectomy identified a 5.5-cm hemorrhagic cyst in the left thyroid lobe, further supporting the diagnosis of intrathyroidal hemorrhage.

The immediate concern in thyroid hemorrhage is the airway. Extensive hematomas can enlarge over hours or days, displace or compress the trachea, and occasionally require urgent intubation, drainage, or thyroid surgery [3–5,7–10]. Best et al. described an intrathyroidal hemorrhage that progressed over several days before causing respiratory distress and requiring intubation and hemithyroidectomy [3]. Petersen et al. and Başak et al. also reported severe airway compromise from spontaneous intrathyroidal bleeding requiring airway control and surgery [4,5]. Similar cases reported by Wong et al., Lee et al., and Testini et al. show that rapid thyroid hemorrhage can produce marked tracheal compression and life-threatening airway obstruction [7,8,10]. These reports illustrate why the absence of respiratory symptoms at the first examination does not eliminate the need for careful airway assessment when imaging shows substantial mass effect.

Potential causes of thyroid hemorrhage include bleeding into a pre-existing nodule or goiter, trauma, procedures, and anticoagulation or other disturbances of hemostasis [2,3,6,9]. Kokatnur et al. reported severe intrathyroidal hemorrhage with airway obstruction in a patient receiving anticoagulation, illustrating the importance of reviewing antithrombotic therapy and coagulation status in these patients [9]. In the current case, no recent neck injury or local trigger was reported. The medication history did not clearly document anticoagulant or antiplatelet use. Coagulation studies were not performed during the initial emergency department evaluation; however, follow-up prothrombin time, activated partial thromboplastin time, and international normalized ratio were within the provided reference ranges. Therefore, although the presentation was nontraumatic, the precise precipitating cause of the hemorrhage could not be established. The underlying multinodular thyroid disease likely provided a structural setting for bleeding, and subsequent surgical pathology demonstrated a large hemorrhagic cyst within the left thyroid lobe.

Management depends on airway status, hemodynamic stability, hematoma progression, active bleeding, and the underlying thyroid lesion. Selected stable patients have been managed conservatively with observation and outpatient follow-up, whereas airway compromise or ongoing bleeding may require airway protection and operative treatment [1,3–10]. In selected cases with active thyroid bleeding, endovascular embolization has also been reported as a less invasive means of controlling hemorrhage and relieving compression [11]. In the present case, the patient remained clinically stable and was discharged after approximately five hours of observation. Subsequent otolaryngology follow-up, repeat ultrasonography, fine-needle aspiration, and ultimately total thyroidectomy allowed further evaluation of the underlying thyroid lesion. Surgical pathology demonstrated multinodular thyroid disease, while gross examination identified a large hemorrhagic cyst within the left thyroid lobe.

This report has several limitations. The medication history did not clearly document anticoagulant or antiplatelet use. Coagulation studies were not obtained during the initial emergency department visit, although follow-up PT, aPTT, and INR were within the reference ranges. Long-term postoperative follow-up was unavailable because the patient was lost to follow-up after surgery. Despite these limitations, the case remains clinically relevant because it demonstrates significant thyroid hemorrhage with tracheal deviation in the absence of initial respiratory compromise.

Conclusions

Intrathyroidal hemorrhage should be considered in patients presenting with sudden painful neck swelling, particularly in the presence of underlying nodular thyroid disease. Although our patient had marked thyroid enlargement and tracheal deviation, she remained clinically stable without respiratory compromise at presentation. CT and ultrasonography supported the diagnosis of a hemorrhagic thyroid lesion, and subsequent total thyroidectomy demonstrated multinodular thyroid disease with a large hemorrhagic cyst in the left lobe. This case emphasizes the importance of early airway assessment, appropriate imaging, and continued follow-up even when initial respiratory symptoms are absent.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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