

Spontaneous rupture of hemorrhagic thyroid nodules causing extensive laryngopharyngeal, neck, and chest hematoma

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We report a rare case of spontaneous rupture of a thyroid nodule causing extensive soft tissue hematoma involving the laryngopharyngeal, neck, and chest regions in a 41-year-old healthy woman. Spontaneous hematoma secondary to a thyroid nodule is a rare occurrence. Hematoma usually tends to be secondary to blunt cervical trauma, fine needle aspiration for cytology, and usage of anticoagulants such as heparin or warfarin. It is crucial to assess the patient's condition and airway in managing a case of spontaneous hematoma secondary to a ruptured thyroid nodule as this would determine the subsequent management. In this case, the patient presented with no obstructive signs or symptoms, and thus was managed conservatively. The hematoma subsequently resolved spontaneously.

Keywords:

chest hematoma, laryngopharyngeal hematoma, neck hematoma, thyroid hemorrhage, thyroid nodule

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Introduction

Spontaneous hematoma secondary to a thyroid nodule is a rare occurrence. Hematoma usually tends to be secondary to blunt cervical trauma, fine needle aspiration for cytology, and usage of anticoagulants such as heparin or warfarin. Here, we report a rare case of spontaneous rupture of a thyroid nodule causing extensive soft tissue hematoma involving the laryngopharyngeal, neck, and chest regions.

Case history

A 41-year-old woman who was previously healthy presented to our clinic with a history of anterior neck swelling for 3 weeks' duration. It was of acute onset and was noticed upon waking up from bed. It progressively increased in size during the initial 2 weeks but started to reduce in size over the past 1 week. Later, she started to have bruises over her anterior neck region, which progressively descended down to her upper chest during the latter 1-week period. This led to intermittent symptoms of dysphagia and odynophagia with a slight change in voice. However, there was no stridor or airway obstruction. She had no bleeding tendencies or any history of heavy labor, trauma to her neck, or insect bites. She was also not taking any traditional medications or anticoagulants.

Upon examination, the patient appeared to be alert, pink, and not in respiratory distress. There was a diffuse anterior neck swelling measuring around 8.0×4.0 cm, which was firm and nontender. Overlying it was ecchymosis over the anterior neck, which descended down to the upper chest (Fig. 1).

Oral cavity inspection revealed ecchymosis over the uvula as well as the posterior oropharynx. Further examination with fiberoptic flexible nasopharyngolaryngoscopy revealed edema of the epiglottis with ecchymosis over bilateral arytenoids, aryepiglottic folds, and postcricoid region (Fig. 2).

The vocal cord was found to be mobile and symmetrical bilaterally with a patent laryngeal inlet. There was vocal cord hematoma (Fig. 3).

Thyroid function test results were normal as were the full blood count results, which showed normal levels of hemoglobin and platelet counts. The coagulation profile was also noted to be normal.

Ultrasound of the neck showed bilaterally enlarged thyroid lobes with the presence of single, well-defined, lobulated hypoechoic nodules with solid cystic component on each side of the thyroid glands. The right-sided nodule measured 2.0×1.3×3.0 cm and the one on the left measured 2.8×2.4×3.6 cm. It was noted that the left thyroid nodule had ruptured, causing mild neck hematoma. Concurrent Doppler performed during the scan did not report any presence of abnormal vasculature such as arteriovenous fistula or malformation.

As the patient was well with no airway compromise, the decision was made for conservative treatment.

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Figure 1



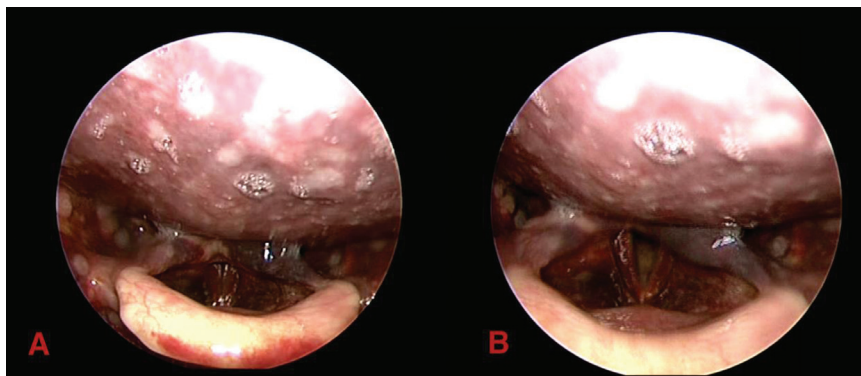
A diffuse anterior neck swelling with ecchymosis over the neck down to the upper chest and breast.

Figure 2



An endoscopic view of the supraglottis region showed extensive ecchymosis over the oropharynx and hypopharynx. The epiglottis was also edematous.

Figure 3



An endoscopic view of the larynx showed extensive hematoma over bilateral arytenoids, aryepiglottic folds, and postcricoid region. There was vocal cord hematoma; however, the vocal cord was found to be symmetrical and mobile with adduction (a) and fully abduct (b). The laryngeal inlet was patent.

The patient's condition subsequently resolved spontaneously without any active intervention.

Discussion

The thyroid gland is one of the most vascularized organs in our body. However, spontaneous intranodular hemorrhage of the thyroid gland is rare. It is usually associated more with patients with deranged coagulation profile and those using anticoagulants such as heparin or warfarin [1]. Neck trauma and iatrogenic causes such as fine needle aspiration are some of the other causes [2,3].

The capsule is highly vascular and has many anastomotic channels, with the penetrating vessels supplying core of the nodule. The causal mechanism behind spontaneous nodular bleed is abnormal vessel anatomy such as deficient adventitia, musculature, and elastic tissue, which weakens the veins [4,5]. Besides that, arteriovenous shunting into the nodule that diverts blood under high pressure to the nodular veins can result in extravasation of blood into the nodule. Therefore, activities that increase intravenous pressure, such as physical exertion, coughing, straining during defecation, or Valsalva maneuver, can lead to rupture of vessels, causing spontaneous nodular bleed [5].

Ultrasound of the neck suggested that the thyroid nodule rupture was anteriorly located. It was found that the anterior margin of the left thyroid nodule was irregular with protrusion onto the overlying sternohyoid and sternothyroid muscles, which are parts of anterior neck strap muscles. Anatomically, the thyroid gland is surrounded by the spine posteriorly, the trachea medially, and the carotid space laterally. Anteriorly are the strap muscles, which are not as tightly bound as the other compartments. Therefore, the bleeding is likely to have occurred anterior to the thyroid into the muscular plane, which would explain neck and chest hematoma [6].

In this rare case, besides neck and chest hematoma, the patient also presented with extensive soft tissue hematoma involving the laryngopharyngeal region, which, in the literature, are usually associated with anticoagulation therapy. Hematomas of the upper airway and larynx could be primary, or, in this case, could be due to extravasation of blood from the spontaneous rupture of a thyroid nodule causing extension of blood along the fascial planes of the neck [7,8]. The ecchymosis of the supraglottis and postcricoid region can be explained by the extensive bleed, which has seeped into the submucosal layer, causing the remarkable finding of ecchymosis and vocal fold. This submucosal hemorrhage needs to be carefully assessed so as to avoid massive obstruction, which could compromise patient's airway.

The management of spontaneous rupture of a thyroid nodule depends on the patient's condition. If the hematoma is progressively increasing in size leading to airway compromise, urgent intervention and surgery is required to secure the airway. If examination reveals no airway compromise and the patient is stable, a conservative management can be taken. In this case, the patient's condition resolved spontaneously without any intervention [9,10].

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Conflicts of interest

There are no conflicts of interest.

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