

# SPONTANEOUS RUPTURE OF HEMORRHAGIC THYROID NODULE CAUSING EXTENSIVE LARYNGOPHARYNGEAL, NECK AND CHEST HEMATOMA

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## INTRODUCTION

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

## CASE REPORT

- A 41-year-old lady who is 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 last 1 week. Later, she started to have bruises over her anterior neck region which progressively descended down to her upper chest during the latter one week period. This led to intermittent symptoms of dysphagia and odynophagia with slight change of voice. However, there was no stridor or airway obstruction. She has 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 8.0cm x 4.0cm which was firm and non-tender. Overlying it is ecchymosis over the anterior neck which descended down to the upper chest (Figure 1). Oral cavity inspection noted ecchymosis over the uvula as well as the posterior oropharynx. A further examination by fiberoptic flexible nasopharyngolaryngoscopy noted edema of the epiglottis with ecchymosis over bilateral arytenoids, aryepiglottic folds and post cricoid region (Figure 2). The vocal cord was mobile and symmetrical bilaterally with a patent laryngeal inlet. There was vocal cord hematoma (Figure 3).
- Thyroid function test results were normal as were the full blood count results which showed normal levels of hemoglobin and platelet counts.
- Ultrasound neck shows bilaterally enlarged thyroid lobes with presence of single well defined, lobulated hypoechoic nodules with solid cystic component on each side of the thyroid glands. The right sided nodule measures 2.0cm x 1.3cm x 3.0cm while the one on the left measures 2.8cm x 2.4cm x 3.6cm. It was noted that the left thyroid nodule has ruptured causing mild neck hematoma.
- As the patient was well with no airway compromise, the decision was made for conservative treatment. 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 more usually seen in patients with deranged coagulation profiles and those using anticoagulants such as heparin or warfarin [1]. Neck trauma and iatrogenic causes such as post fine needle aspiration are some of the other causes.
- The capsule is highly vascular and has many anastomotic channels with the penetrating vessels supplying core of the nodule. The possible mechanism of which spontaneous nodular bleed can occur is due to abnormal vessel anatomy such as deficient adventitia, musculature, and elastic tissue which weakens the veins [2]. 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 which increase intravenous pressure such as physical exertion, coughing, straining during defecation or Valsalva maneuver can lead to rupture of vessels causing spontaneous nodular bleed [3].
- The clinical imaging by ultrasound neck suggests that the thyroid nodule rupture is anteriorly located. The findings noted that the anterior margin of the left thyroid nodule is irregular with protrusion onto the overlying sternohyoid and sternothyroid muscle 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 the neck and chest hematoma.
- In this rare case, besides the neck and chest hematoma, patient also presented with extensive soft tissue hematoma involving the laryngopharyngeal region which in literatures are usually associated with anticoagulation therapy. Hematomas of upper airway and larynx could be primary or in this case could be due to extravasation of blood from the spontaneous rupture of thyroid nodule causing extension of blood along the fascial planes of the neck [4]. This submucosal hemorrhage needs to be carefully assessed so as to avoid massive obstruction which could compromise patient's airway [5].



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 supraglottic region showed extensive ecchymosis over oropharynx and hypopharynx. The epiglottis was also oedematous.

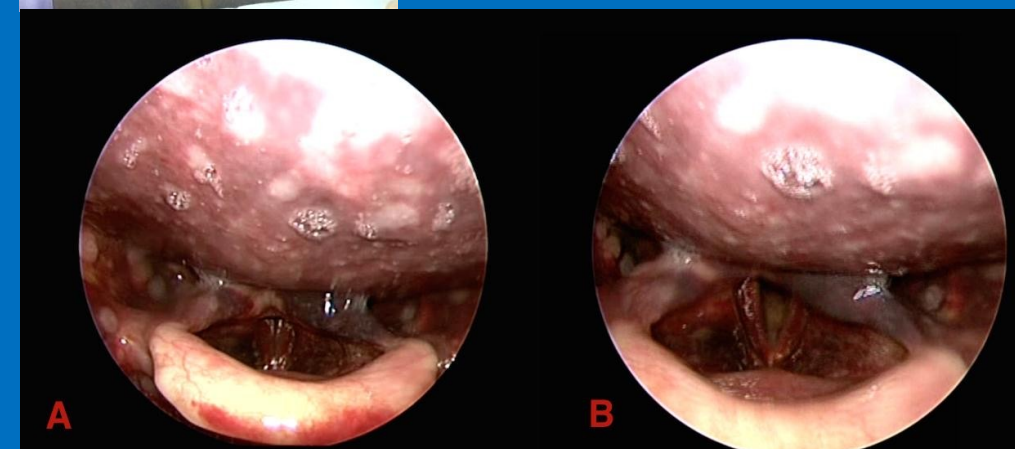


Figure 3: An endoscopic view of the larynx showed extensive hematoma over bilateral arytenoids, aryepiglottic folds and post cricoid region. There was vocal cord hematoma, however the vocal cord noted to be symmetrical and mobile with adduction (A) and fully abduct (B). The laryngeal inlet was patent.

## CONCLUSION

It is crucial to assess the patient's condition and airway in managing a case of spontaneous hematoma secondary to ruptured thyroid nodule and even more so when it involves the laryngopharyngeal region. Obstructive symptoms warrant urgent surgical intervention. However, conservative management can also be taken if patient is well with no airway compromise. History, examination and imaging can help with establishing diagnosis and managing the case.

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