

Airway Emergency From Spontaneous Haemorrhagic Thyroid Cancer

Ananth VIJENDREN, BM MRCS MRCS(ENT)*; Nida LADHA, MBBS; Andreas HILGAR, FRCS*****

*ENT Specialist Registrar, Ipswich Hospital Trust, Heath Road, Ipswich, Suffolk IP4 5PD, **FY2 in ENT, Ipswich Hospital Trust, Heath Road, Ipswich, Suffolk IP4 5PD, ***Consultant Otolaryngologist and Head and Neck Surgeon, Ipswich Hospital Trust, Heath Road, Ipswich, Suffolk IP4 5PD, United Kingdom

SUMMARY

Spontaneous thyroid haemorrhages are rare. There are reported cases occurring in thyroid nodules and cysts but none in thyroid malignancies. We describe a 48 year old who presented to the on-call ENT team with a rapidly progressing neck swelling that was interfering with his airway. After resuscitation, the patient underwent a right lobectomy to stop the bleeding. Histology showed a thyroid follicular carcinoma. As per the regional multidisciplinary team discussion, he underwent a completion thyroidectomy followed by radioactive iodine treatment. We conclude that spontaneous haemorrhages of the thyroid gland can occur in malignancies and stress the importance of early histological diagnosis.

KEY WORDS:

Airway emergency, thyroid haemorrhage, neck swelling, thyroid cancer

INTRODUCTION

Spontaneous haemorrhages of the thyroid gland are remarkably rare phenomenon. Isolated cases have been reported in thyroid cysts and benign thyroid nodules^{1,2}. In extensive circumstances, these haemorrhages can rapidly occlude the airway and be life threatening³. Here, we present a case of impending airway compromise from a spontaneously haemorrhagic follicular cancer of thyroid, which to the best of our knowledge has never been reported.

CASE REPORT

A 48 year male patient, presented to the on-call ENT team with a sudden onset of a rapidly enlarging neck mass over the course of 2-3 hours. He was noted to be increasingly dysphagic and dysphonic however was able to maintain his own airway and hold a conversation. He was otherwise fit and well with no relevant past medical history.

On arrival in the emergency department, his observations were stable with saturations more than 95%. Initial examinations revealed a large right-sided mass in his anterior neck, which was firm but compressible. His neck movements were severely reduced in the flexion-extension plane. Flexible nasoendoscopy revealed a posteriorly

displaced anterior pharyngeal wall and pooling of saliva in the valleculae with a patent glottic airway. Blood tests were normal.

Due to increasing concerns about an impending airway obstruction, an urgent CT scan of the neck was organised. This showed a 11cm x 10cm x 7cm complex mass arising from the right thyroid lobe and isthmus which was likely to contain a haematoma. This had displaced the midline structures of the neck to the left and was compressing the adjacent trachea to 50% of its diameter (Figure 1). The decision was then made for surgical exploration.

Intra-operatively, an actively bleeding haematomatous cavity was found in the right thyroid lobe containing copious clots and necrotic tissue. The superior and lateral blood supply was ligated prior to the opening of the cavity. Most of the lobe was then excised and sent for histological diagnosis. Clots and debris were removed and the remnant oversewn. Two drains were inserted into the neck prior to closure. Post-operatively, the patient was closely monitored in intensive therapy unit (ITU) before discharge.

The specimen of the right thyroid lobe underwent extensive histological review. The final report suggested that in view of a capsular and vascular invasion alongside the presence of a follicular neoplasm, it was strongly indicative of a thyroid follicular carcinoma with vascular invasion.

The case was discussed in the regional thyroid multidisciplinary meeting (MDT). He underwent further SPECT scanning which showed physiological tracer uptake within the left lobe of the thyroid and a remnant superior right thyroid lobe. As a result, the MDT concluded that the optimal management would be a completion thyroidectomy followed by radioactive iodine treatment, which occurred uneventfully (Figure 2). Both the left lobe and the right thyroid remnant were removed. The patient kept a normal vocal cord function and stayed normocalcaemic. His final staging read T3 N0 M0.

DISCUSSION

Thyroid malignancies account for less than 1% of newly diagnosed cancers in England, however remains the commonest form of an endocrine tumour. There is a stronger

This article was accepted: 12 May 2014

Corresponding Author: Ananth Vijendren, ENT Specialist Registrar, ENT Department, Ipswich Hospital Trust, Heath Road, Ipswich, Suffolk IP4 5PD, United Kingdom. Email: shivan5@yahoo.com

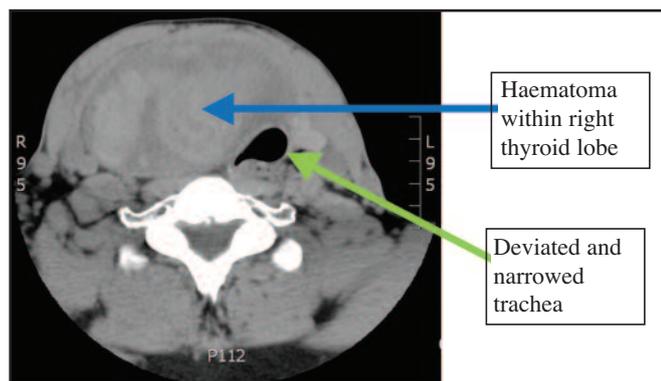


Fig. 1: Axial CT view of CW's neck on presentation.

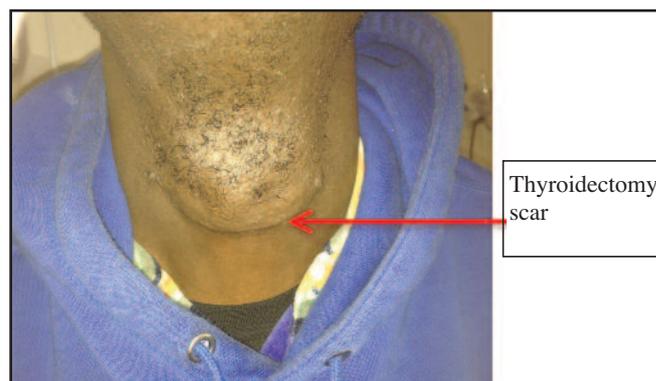


Fig. 2: View of CW's neck post completion thyroidectomy, before radioactive iodine treatment.

predilection for the female gender (ratio female : male is 3:1) and the age distribution vary between the sexes².

Common histological subtypes include papillary (80%), follicular (10%) as well as medullary (5-10%). Anaplastic (1-2%), lymphoma and sarcoma variants (<1%) are rare². Thyroid tumours usually present as painless, palpable, solitary thyroid nodules, however, investigation techniques such as Doppler ultrasonography and guided needle cytology has shown that cancers can also present as part of several nodules as well as in multinodular goiters². An extensive literature search on PubMed and Embase has not shown cases of thyroid cancers presenting with a spontaneous haemorrhage into the gland.

The aetiology of thyroid haemorrhages is not exhaustive. Cases have been reported secondary to trauma from intubation, in a patient on anticoagulation, and post-thrombolytic therapy for acute myocardial infarction^{3,4}. Furthermore, there have been isolated cases of spontaneous haemorrhage into thyroid cysts and nodules of which the pathogenesis is uncertain^{1,2}. It is postulated that as the cysts undergo degeneration, its cavities become engorged with blood and serous fluid. This process could be exaggerated in a malignant transformation in addition to the heightened process of angiogenesis, rendering the gland volatile to haemorrhagic rupture. This concept is further supported by the common sonographical finding of increase internal vascularity in neoplastic nodules in comparison to degenerative nodules⁵.

These patients typically present with an acute neck swelling which can rapidly interfere with swallowing and breathing as seen in this case. Respiratory distress and failure can soon follow alongside an increased mortality rate^{1,2,5}. It is hence, prudent to manage these patients as an acute airway emergency. Imaging of the neck can be considered for diagnostic and pre-operative planning only if the patient is

deemed stable. However, the CT neck of our gentleman could not differentiate between a benign and malignant hemorrhagic mass, justifying a surgical exploration.

On arrival in the accident and emergency department, our patient was initially thought to have had a neck space abscess or spontaneous rupture of a pre-existing thyroid cyst. However, the normality of his admission bloods (full blood count, clotting profile, renal profile, liver function tests, thyroid function tests, bone profile) and the absence of any pre-existing neck lumps on detailed questioning presented the emergency ENT team with a diagnostic dilemma that prompted the CT scan of the neck. Further blood tests of haemoglobin electrophoresis, sickle cell testing, HbA2 and HbF levels did not find any haemoglobinopathies or causes for spontaneous bleeding.

CONCLUSION

Spontaneous haemorrhages of the thyroid gland are rare causes of airway emergencies. Early surgical intervention including obtaining a histological diagnosis is key in management as there may be an underlying potential malignancy.

REFERENCES

1. Chan CC, Awobem A, Binns C, *et al*. A rare case of spontaneous thyroid cyst haemorrhage. *J Laryngol Otol*. 2012; 126(9): 960-2.
2. Medscape. Thyroid cancer. <http://emedicine.medscape.com/article/851968-overview> (accessed 25 November 2013)
3. Loustau V, Trad S, Hausfater P, *et al*. Acute airway obstruction mimicking angioedema and revealing spontaneous compressive haematoma of thyroid goiter. *Rev Med Interne*. 2010; 31(12): e7-9.
4. Chia PL. Thyroid hemorrhage after thrombolytic therapy for acute myocardial infarction. *J Cardiovasc Med (Hagerstown)*. 2008; 9(9): 935-6.
5. Thyroid Disease Manager. Thyroid Nodules. <http://www.thyroidmanager.org/chapter/thyroid-nodules/#toc-thyroid-ultrasound> (Accessed 2 December 2013)