

CASE STUDY

Cervical and mediastinum haematoma secondary to spontaneous thyroid rupture

Alfonso González-Cruz,^a Luis García-Ferrer,^{b,*} Carmen García^c

^aServicio de Radiología, Consorcio Hospital General Universitario de Valencia (CHGUV), Valencia, Spain

^bERESA, Unidad de TAC y RM, Servicio de Radiología del Consorcio Hospital General Universitario de Valencia (CHGUV), Valencia, Spain

^cServicio de ORL, Consorcio Hospital General Universitario de Valencia (CHGUV), Valencia, Spain

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PALABRAS CLAVE

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Bocio;
Rotura espontánea;
Hemorragia

Abstract

We present a case of spontaneous haemorrhage of a thyroid nodule with diffusion of the haematoma to cervical spaces and mediastinum, which began as a progressive cervical mass affecting the airway and which required surgical treatment for control. The diagnosis was made using ultrasonography and cervicotoracic CT scan, giving high quality images to determine the site of bleeding as well as the extent of the process.

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Hematoma cervical y mediastínico secundario a rotura espontánea de tiroides

Resumen

Presentamos un caso de hemorragia espontánea de nódulo tiroideo con difusión del hematoma a espacios cervicales y mediastino, que debutó como una masa cervical de crecimiento progresivo, con afectación de la vía aérea y que requirió tratamiento quirúrgico para su control. El diagnóstico se realizó mediante ecografía y TAC cervicotorácico, aportando imágenes de gran utilidad para la determinación del punto de sangrado, así como extensión del proceso.

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Case study

We present a 73-year-old woman with a history of chronic renal failure (on haemodialysis) and multinodular goitre

(MNG), who attended the emergency department at our hospital due to the appearance of a left lateral neck mass, along with dysphonia and painful dysphagia of 8 h evolution. The patient reported having gone to bed in a normal condition and waking up the next morning with the mass and symptoms mentioned.

On physical examination, she was afebrile, eupneic at rest and without stridor. We observed a clear increase in the soft tissue of the anterior cervical region and chest

*Corresponding author.

E-mail address: garcia.luifer@gmail.com (L. García-Ferrer).

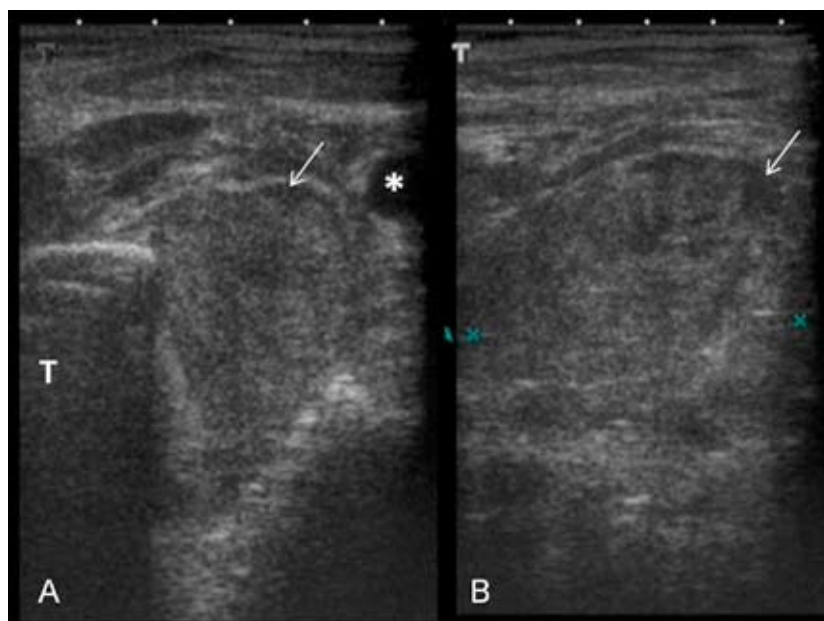


Figure 1 Cervical ultrasound focused on the left thyroid lobe (A and B). Enlarged glandular size with a heterogeneous mass showing hypoechoic areas in its interior and periphery (thin arrow). T indicates trachea. *Common carotid.

bruising. A left lateral cervical hardening without crepitus could also be detected. The emergency service analytical study showed normocytic anaemia with haemoglobin at 10.2 g/dl, normal platelets and worsening coagulation, with a Quick rate of 70%. Renal function was impaired, as expected in a patient treated with haemodialysis (the last session had taken place 48h earlier). Bronchoscopy was performed, revealing a bilateral purplish swelling of the pharyngeal wall, with obliteration of the pyriform sinuses.

An emergency ultrasound study was requested (Figure 1), with a diagnosis of thyroid haematoma with blood in muscular planes. To establish the extension of the process, we conducted a cervicothoracic CT with intravenous contrast (Figure 2). We confirmed the presence of MNG, as well as the destruction of the thyroid capsule in the upper pole of the left lobe with extension of the haematoma to deep neck planes, spreading towards the posterior mediastinum. In addition, there was also significant airway compression.

An urgent tracheostomy with left hemithyroidectomy was performed, due the clinical progression of airway compression. The study of the surgical specimen confirmed the existence of haemorrhage of the thyroid nodule with capsular rupture. The anatomopathological result was multinodular hyperplasia.

The patient was discharged after 10 days. One month later, the tracheostomy had closed and there was dysphonia from left vocal cord paralysis, which required rehabilitation. After one year of monitoring, she remains stable.

Discussion

Multinodal goitre is defined as the enlargement of the thyroid gland at the expense of the presence of multiple nodules,

not secondary to inflammatory or neoplastic process. The clinical manifestations essentially derive from an increase in the size of the gland: displacement/compression of the trachea and oesophagus, superior mediastinal obstruction and even dysphonia from recurrent compression of the laryngeal nerve.¹ Bleeding is a less common complication and is usually contained in the glandular section. It is primarily secondary to trauma or manoeuvres with increased pressure (coughing, straining or Valsalva). Spontaneous cases are rare² and those where there is capsular rupture and extension of the haematoma to cervical spaces are exceptional.^{3,4}

The most plausible explanation for haematoma in MNG is venous bleeding, due to the increased blood supply. In fact, thyroid nodules are vascularised by lobular arteries with large vessels and arteriovenous fistulas, which are poorly formed.² These aspects explain the propensity for haemorrhage caused by trauma. The mechanism of spontaneous thyroid haemorrhage is less clear. An increase in venous pressure after a Valsalva manoeuvre has been postulated, although many cases seem to have a negligible relation with this event. Another possibility is haemodynamic alterations in the context of a haemodialysis session,⁵ along with the use of heparin. However, in this case, 48 hours had passed since the last session.

After clinical examination, we obtained the imaging tests. An anteroposterior and lateral cervical radiograph showed airway displacement and soft tissue component increase in the topography of the lobe where bleeding occurred. Ultrasound makes it possible to examine the patient in the ultrasound room or in the emergency service; in case, this was necessary due to the severity of the condition. For more complex cases, CT or MRI are available, if the process is extended or if the thoracic extension of the pathology needs to be assessed.

Figure 2 Cervicothoracic CT scan with contrast. A) Axial plane, extension of cervical haematoma in both carotid spaces and retropharyngeal space with anterior displacement of the glottis. B) and C) Sagittal and coronal planes, hypodense nodule (white arrow) located in the upper pole of the left thyroid lobe with capsular disruption, communicating with the haematoma. D) Sagittal plane, extension of the haematoma to the retropharyngeal space (*) and mediastinum (white arrow). E) Coronal plane, MIP (Mean Intensity Projection) image showing displacement of vascular structures by the haematoma. There are no vascular laceration data.

Conclusion

Thyroid haemorrhage can have presentations severe enough to require surgery. Imaging studies (ultrasound/ CT) are very helpful for diagnosis, as well as when considering possible treatment.

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