Acute thyroid swelling after fine-needle aspiration biopsy

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To the Editors,

A 67-year-old woman presented with a solitary nodule in the left lobe of the thyroid gland. She was clinically and chemically euthyroid. Thyroid function test showed serum free thyroxine 1.01 ng/dl (normal 0.83–1.44 ng/dl), free triiodothyronine 1.91 pg/ml (normal 1.73–3.20 pg/m) and thyrotropin 1.25 mIU/L (normal 0.49–4.67 mIU/L). An ultrasound examination of thyroid gland showed an isoreflective nodule with cystic degeneration (figure 1). The size of the nodule and the right and the left lobes were 4.1x2.8x2.5 cm, 3.8x2.3x1.3 cm and 4.5x3.3x2.7 cm, respectively (thyroid volume 26.9 ml). Fine-needle aspiration (FNA) of the nodule was performed using a 22-gauge needle and a 20-ml disposable syringe without previous local anesthesia. There were no complications during or immediately after the procedure. Within an hour the entire thyroid gland including the unmanipulated right lobe unexpectedly enlarged to more than twice normal size (thyroid volume 62.3 ml, the right lobe 4.5x2.9x3.0 cm and the left lobe 4.8x3.7x4.5 cm). No ecchymosis or local swelling was found at the needle-insertion site. Additional ultrasonography revealed an inhomogeneous parenchyma in the enlarged thyroid gland (figure 1). There was no sign suggesting intrathyroidal bleeding or airway obstruction. Hydrocortisone (200 mg) was administered intravenously and the patient was kept in observation. The swelling disappeared 20 hours later. The right lobe measured 2.3x1.8 cm and the nodule was 2.4x2.2 cm in size.

![Ultrasonography](image)

Figure 1: Ultrasonography before and after fine-needle aspiration of a thyroid nodule in the left lobe, transverse view. TR, trachea.

It is well known that FNA is a simple, inexpensive and safe method for the diagnosis of thyroid nodules. However, adverse events can occur during or after the procedure [1]. Among them, acute thyroid swelling is a very rare complication [2-4]. Whereas the cause of this phenomenon remains unknown, the ultrasound pattern of the enlarged gland as well as acute onset and quick reversibility were indicative of vasodilatation and capillary leakage [1, 4]. The needle insertion may induce acute release of vasoactive peptides from intrathyroidal nerve terminals or parafollicular C cells [5], resulting in vasodilatation, capillary leakage and consequent thyroid swelling. Thus physicians need to pay attention to this rare complication when performing FNA. However, this

References


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frightening phenomenon may be self-limiting and transient.

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**Author Contributions**

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**Guarantor**
The corresponding author is the guarantor of submission.

**Conflict of Interest**
Authors declare no conflict of interest.

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**REFERENCES**


