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### RESEARCH ARTICLE

#### UNCOMMON COMPLICATION: A CASE REPORT ON ACUTE AND TEMPORARY THYROID EDEMA POST FINE NEEDLE CYTOLOGY

Mohammed-Amine Essafi<sup>1</sup>, Zineb EL Azime<sup>1</sup>, Hayat Aynaou<sup>1,2,3</sup> and Houda Salhi<sup>1,2,3</sup>

1. Department of Endocrinology, Diabetology, Metabolic Diseases and Nutrition. Hassan II University Hospital Center. Fez. Morocco.
2. Laboratory of Epidemiology, Research in Health Sciences.
3. Faculty of Medicine and Pharmacy, USMBA, Fez, Morocco.

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#### Abstract

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#### Introduction:-

We present a case involving a 72-year-old patient undergoing radiotherapy for sinonasal adenocarcinoma, with no reported history of allergies. The patient was referred due to swelling in the anterior cervical region

Clinical evaluation indicated an euthyroid WHO stage 1a goiter. Ultrasonography (US) demonstrated a thyroid gland that was slightly enlarged and homogeneous, with a right lobar nodule measuring 26x18 mm, categorized as Eu-TIRADS 3 (**Figure 1A**).

Subsequently, an echoguided thyroid Fine Needle Cytology (FNC) was carried out seamlessly using a 25-gauge fine needle in two passes.

Nevertheless, around five minutes post-FNC, a follow-up cervical ultrasonography revealed that the right lobe exhibited a hypoechoic appearance and had doubled in volume compared to the initial presentation (**Figure 1B**). The patient remained asymptomatic with no signs of airway compression or pain, and her vital signs remained stable. No ecchymosis was detected at the needle FNC site, and there was no evidence of hemorrhage, with Doppler showing no abnormal blood flow.

Compression was applied to the FNC site. Following 30 minutes of clinical and radiological observation, the edema subsided (**Figure 1C**). Pathological analysis identified a benign lesion, leading to the decision to monitor the patient.

FNC serves as an invasive and dependable method for assessing thyroid nodules. The most common complications typically involve localized pain post-procedure and minor hematomas [1]. An exceedingly rare complication is acute, transient thyroid swelling [2], with few reported cases in the literature and none in our specific context to date.

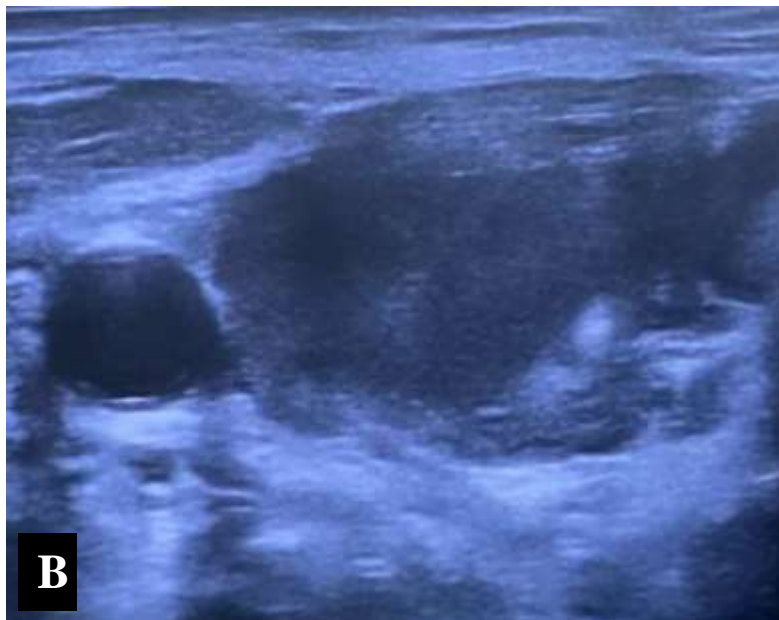
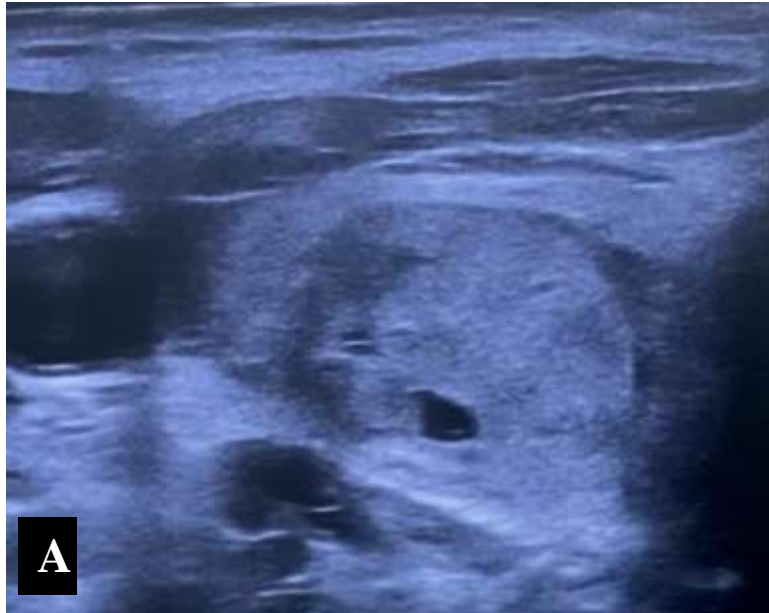
The exact mechanism behind this complication remains unclear. Possible explanations include an allergic reaction, hypersensitivity to thyroglobulin, or a vasodilatory mechanism involving the release of vasodilatory peptides and

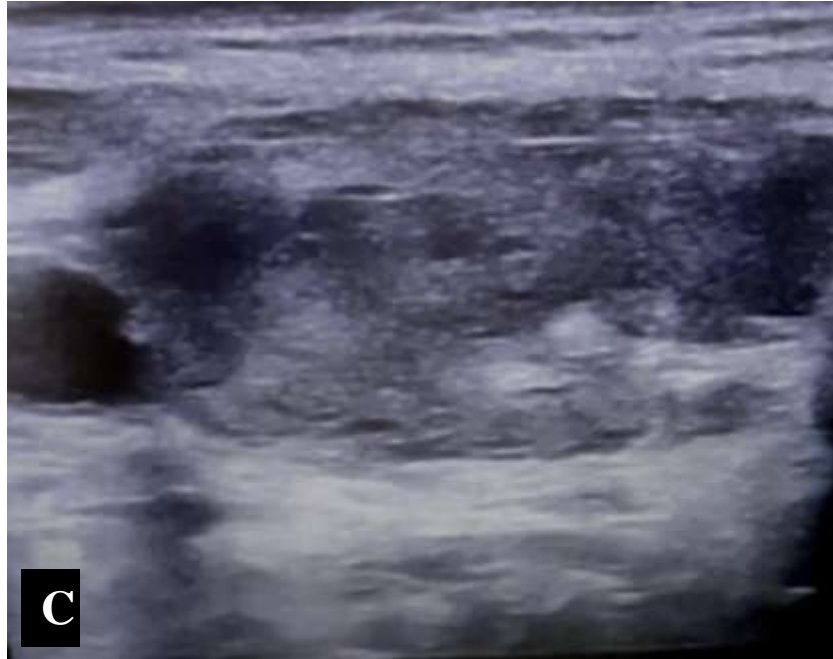
**Corresponding Author:- Mohammed-Amine Essafi**

Address:- Department of Endocrinology, Diabetology, Metabolic Diseases and Nutrition. Hassan II University Hospital Center. Fez. Morocco.

leakage from a delicate vascular system [3]. In our patient, we suspect vascular fragility secondary to radiotherapy as a contributing factor.

While acute, transient thyroid edema often resolves spontaneously [2], the rarity of the condition and the unknown mechanism warrant caution. Awareness of this complication is crucial for clinicians to avoid unnecessary interventions.





**Figure 1:**-Thyroid ultrasound images of the patient.

(A):Initial thyroid ultrasound showed a 26x18 mm right lobar solid cystic nodule classified as Eu-Tirads 3

(B):Five (5) minutes after FNC, a striking right lobar swelling of the thyroid with hypoechoic appearance

(C):After 30 minutes of thyroid FNC, the edema resolved spontaneously, with a rapid reduction in thyroid swelling.

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