A nonpalpable toxic thyroid lobe besides a malignant lobe

To the Editor: we would like to present an interesting case with two entire thyroid lobes having different pathologies. A 60 years old female from a remote village in India presented with classical symptoms of thyrotoxicosis which was uncontrolled since 2 years. The patient was on carbimazole 20mg daily prescribed by her local physician. She had a pulse rate of 100/min and fine tremor of the outstretched hands. She had a 6x4cm firm to hard multinodular right thyroid lobe (Fig. 1) and no enlargement of the left lobe. A bruit only over the left lobe was heard. Her serum thyroxine (T4) was >20μg/100mL (normal: 4.2–13.1μg/100mL) and thyroid stimulating hormone (TSH) level was 0.01μIU/mL (normal: 0.25–5.1μLU/mL). She was instructed to stop carbimazole and undergo a 0.925 MBq ^{131}I neck uptake and scan after 5 days, as a part of work up for radioiodine treatment. In addition, noting the hard consistency of the right lobe, a fine needle aspiration (FNA) from the same was advised, despite the clinical thyrotoxic status. The FNA smear of the right lobe nodule (Fig. 2) showed flat sheet of epithelium with abundant cytoplasm. Most of the nuclei showed prominent grooving. Occasional intranuclear inclusion was also seen. The Giemsa smear revealed the "fire flare sign" within these sheets. The diagnosis rendered was, "With activity of the follicular epithelium, papillary carcinoma should be considered. However, in view of clinical impression of toxicity, it is necessary to have a tissue diagnosis."

The 0.925MBq ^{131}I neck uptake revealed a 24h uptake of 78.42%. The scan picture clarified the apparent diagnostic dilemma, demonstrating an entirely "cold" right lobe with avid tracer concentration in the left lobe (Fig. 3). An ultrasound examination of the neck revealed enlarged (6.1x3.2x3.4cm) grossly multinodular right thyroid lobe with a few calcified foci and increased vascularity on colour Doppler examination, the left lobe and isthmus being unremarkable. This finding was consistent with the ^{131}I scan, the FNA smear and the clinical suspicion. The diagnosis of dual pathology involving the two lobes was made i.e. papillary carcinoma of the right lobe and a hyperfunctioning diffuse left lobe. The initial impression was that of a toxic nodule, on the right lobe. This was subsequently found to be malignant coexisting with the nonpalpable left lobe which was found to be hyperfunctioning. Thereby the management option was changed from the usual radioiodine treatment to near-total thyroidectomy, which, in this case, reiterated the preoperative diagnosis.

A somewhat similar scan picture can be at times obtained in the presence of diffuse toxic goiter in the Marine-Lenhart syndrome [1, 2]. An incidentally functioning thyroid stimulating hormone (TSH)-dependent but not dependent to TSH immunoglobulins, nodule can occur in the setting of diffuse Graves disease and is designated as Marine-Lenhart syndrome. The nodule in this entity appears as a "cold" or poorly functioning nodule within a diffuse hyperfunctioning goiter that is usually TSH independent. Malignancy cannot be excluded if the cold nodule is not visualized following TSH stimulation. Hence, it is always advisable to consider a tissue diagnosis in cold nodules in patients with Graves' disease. The present case illustrates the often-overlooked fact that patients with thyrotoxicosis can have coexisting malignancy and

Figure 1. A photograph of the neck showing a 6x4cm firm to hard multinodular right thyroid lobe and no enlargement of the left lobe.

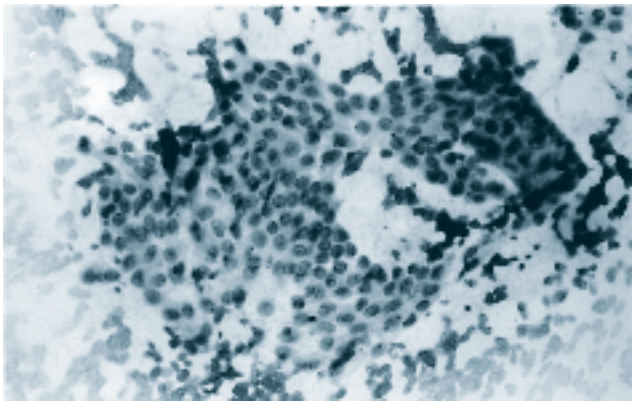

Figure 2. FNA smear from the right lobe showed flat sheet of epithelium with abundant cytoplasm. Most of the nuclei showed prominent grooving. Occasional intranuclear inclusion was also seen. The Giemsa smear revealed the "fire flare sign" within these sheets.

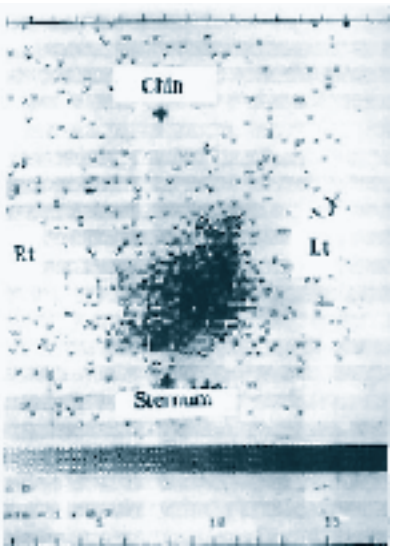

Figure 3. Neck scan after 0.925 MBq of ^{131}I were given orally demonstrating a "cold" right lobe with avid tracer concentration in the left lobe. The 24h neck uptake was 78.42%.

demonstrates the importance of obtaining a scan along with the uptake in the workup protocol of a patient for ^{131}I treatment for thyrotoxicosis. In this case, even if the FNA had not been advised initially, the scan findings would have prompted us to do so. The case imparts the following messages: a) It is possible to have entirely different dual pathologies coexisting in the two lobes of the thyroid. b) It is important to obtain a ^{131}I scan along with the uptake and a tissue diagnosis in "cold" nodules in patients with Graves' disease.

Near total thyroidectomy is a treatment of both these pathologies. Though malignant foci have been described in a toxic gland, the two entire lobes with the above two different pathologies, according to our knowledge, have not been reported previously.

Bibliography

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