Concurrent hyperthyroidism and thyroid cancer – case presentations

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OBJECTIVES

- The prevalence of thyroid carcinomas found during surgery in hyperthyroid patients is reported to vary widely, ranging from 1.6% up to 21.1% (in most studies between 3 – 8%)¹. The most frequently reported type is papillary thyroid carcinoma, followed by follicular thyroid carcinoma, and rarely by anaplastic carcinoma and medullary thyroid carcinoma.  
- If this association predisposes to larger, multifocal or more aggressive cancer (especially in Graves’ disease) is a matter of debate²,³. Most of the surgically detected cancers in Graves’ disease are, however, microcarcinomas (up to 88%)¹.  
- We describe the clinical and histopathological aspects and evolution in 2 patients with hyperthyroidism and clinically significant differentiated thyroid cancer.

CASE PRESENTATION 1

- A 42 year-old woman from a iodine deficiency area was diagnosed in 2008 with Graves’ disease:  
  - overt hyperthyroidism, TSH < 0.03 mIU/L, high T3 (413 ng/dL (N 80 -200) and T4 18.7 µg/dL (N 4.5 – 13)  
  - mild exophtalmos of the right eye (17 mm),  
  - medium goiter; on ultrasound multiple nodules in the right lobe (1.1 to 1.7 cm, one 1.5 cm ill-delineated, hypoechoic, with small calcifications).  
- She was treated with methimazole but lost to follow-up for 2 years.
- In 2011 she presents with overt hyperthyroidism, 19 mm right eye and 18 mm left eye exophtalmos and a large goiter, with a 4/2.5 cm hypoechoic nodule in the superior pole of the right lobe with microcalcifications and internal vascularisation, “cold” on ¹I131 scintigraphy (fig.1)  
- She underwent total thyroideectomy.
- HP Diagnosis: multifocal papillary carcinoma: 3.3 cm in the right lobe, with capsular invasion, and 1.5 cm in the isthmus (“follicular variant”).  
  - No metastases detected.  
  - The patient received 150 mCi I¹³¹ (100 + 50 after 6 months) and is disease-free at 2.5 years of follow-up.  

CONCLUSIONS

- Although the occurrence of thyroid cancer in hyperthyroid patients is thought to be a rare event, the presence of a suspicious nodule in a hyperfunctioning thyroid should be carefully evaluated to exclude the presence of concurrent malignancy.  
- In both our cases the cancer was multifocal papillary carcinomas “follicular variant”, but not otherwise aggressive.  
- Nodules in patients with Graves’ disease appear to have a greater risk of malignancy than nodules in euthyroid goiters.

CASE PRESENTATION 2

- A 56 years-old woman was diagnosed at the age of 35 with a thyroid nodule and lost to follow-up.  
- At the age of 56 she came with a multinodular goiter with subclinical hyperthyroidism  
  - TSH 0.09 mIU/L, FT4 1.49 ng/mL (0.8 – 2), normal TPOAb..  
  - medium goiter, palpable nodule in the left lobe  
- Thyroid US showed a 2 cm nodule with peripheral calcification in the right lobe (inferior) and a 4 cm hypoechoic nodule with increased internal vascularisation in the left lobe.
  - ¹I131 scintigraphy showed a “hot” nodule in the left lobe, the rest of the thyroid being inhibited (fig.2).  
  - She underwent total thyroidectomy after a 2 month course of methimazole.  
  - HP Diagnosis: multifocal papillary thyroid carcinoma “follicular variant”: 2 cm in the right lobe, 0.1 cm in the isthmus and 0.2 cm in the left lobe. The “hot” nodule in the left lobe was a benign follicular adenoma.  
  - No local metastases were found.  
- The patient received ¹I131 treatment in Mar 2015.

Fig.1

Fig.2

References