The association between Graves’ disease and thyroid cancer: coincidence or causality? Case report

Stefana Bilha1,2, Ionut Repede3, Alina Gatu1,2, Emilia Ghita1, Radu Danila4, Cristian Velicescu4, Voichita Mogos1,2, Dumitru D. Branisteanu1,2


INTRODUCTION

Graves’ disease (GD) has been related to a higher incidence of thyroid cancer. Thyroid nodules found in GD seem to have a higher risk for malignancy. The prognosis of thyroid cancer may be aggravated by the association with GD. We present a rare case of simultaneously diagnosed GD and thyroid cancer.

CASE REPORT

N.I., 56 year old woman, 2 months follow-up after the initial diagnosis of “toxic nodular goitre”

Medical history:
- 2007: Multinodular goitre;
- 2014 (2 months before the patient’s visit to our endocrinology department):
  - Overt hyperthyroidism;
  - Carbimazole 40 mg/d and Proporanol 80 mg/d;
  - Average smoker.

On current admission complains of:
- marked weight loss (11 kg in 2 months),
- palpitations,
- fatigue,
- recent swelling of the neck.

Clinical examination:
- Fig. 1: Painless large goitre
- Fig. 2: Mild exophthalmia
- Fig. 3: Massive enlargement of left cervical lymph node

Thyroid ultrasound:
- Right lobe: ill-delineated, hypoechogenic mass (volume = 5ml);
- Left lobe: large conglomerate mass:
  - occupies the entire lobe (volume = 15 ml);
  - microcysticatons;
  - minimal internal vascularization.

Thyroid surgery:
- Intraoperative: malignant mass within left thyroid lobe, with invasion of the infrahyoid muscles, trachea and larynx.
- Total thyroidectomy was performed “shave excision” (residual microscopic remnant tissue at the level of the larynx).

Histopathology report:
- Invasive papillary thyroid carcinoma follicular variant pT3N0G2
- Cytology highly suspicious of malignancy (Bethesda V).
- Background: typical findings of Graves’ disease

CONCLUSIONS

1. In this rare case of simultaneously diagnosed GD and thyroid carcinoma, the tumor had a rather invasive and aggressive phenotype, in contrast to histopathology: rapid growth with lung metastases at the moment of diagnosis.
2. The evolution of this patient is in accordance with studies proposing GD as a negative prognostic factor in thyroid cancer.
3. This may be explained by TSHB stimulation of thyroid cells, which could be responsible for the onset of an oncogenic mutation. Also, immunological disturbance associated to cancer development may lead to TSHB production. TSHB enhance cell proliferation in already established thyroid carcinoma, promoting a rather aggressive evolution.
4. We suggest managing patients with thyroid cancer and GD according to high-risk protocols.
5. We recommend a closer ultrasound follow-up for nodules in GD and the performance of FNAB when nodules are found.

REFERENCES