THYROID WITH A DIFFERENCE

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ABSTRACT:

It is rare to find carcinoma of thyroid and hyperthyroidism coexisting. While it is common to find occult carcinomas in specimens resected for hyperthyroidism, it is rare to find a metastatic papillary carcinoma thyroid with hyperthyroidism. We present one such case where the patient came to us with enlarged upper deep cervical nodes and thyromegaly, thyroid functions were consistent with hyperfunctioning thyroid and patient also had a meatastatic papillary carcinoma.

Key words: *Papillary carcinoma, hyperthyroidism, hyperfunctioning, thyroid malignancy.*

INTRODUCTION:

The idea that hyperthyroidism is insurance against thyroid cancer has been prevailed for a long time. Hyperthyroidism and malignancy was considered mutually exclusive for long time. We report one such rare association; wherein a patient presented with hyperthyroidism associated with metastatic papillary carcinoma thyroid.

Case Summary

A 25 year old multi parous woman presented with a history of swelling in the lateral aspect of neck of 1 year duration. She complained of anxiety, sweating and palpitations. She had lost weight, however her appetite was normal. Her menstrual cycles were regular and normal .There was no past history of radiation to head and neck .The patient did not receive any other form of treatment. Her mother had suffered from papillary carcinoma and was operated upon, at general hospital 10 years back.

Physical examination revealed an anxious patient with a staring look and fine tremors of the out stretched hands. Her resting pulse rate was 110/min. On examination of the neck, she had a 4x3 cm, firm, and mobile lymph node present in the right posterior triangle. We also found that she had a multinodular goiter, the largest nodule was in the right lobe which was 5x4 cm (Figure 1).

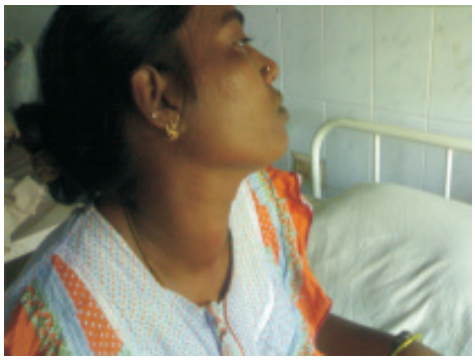

Fig. 1 : 4 x 3 cm upper deep cervical node

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Thyroid function tests confirmed that the patient was in hyperthyroid state, TSH: 0.003micro IU /ML, T3: 10.80pg/dl, T4 :3.59ng/dl. FNAC of the lymph node showed metastatic deposit from papillary carcinoma. Patient was administered antithyroid drugs, T. Neomercazole 30 mg once a day and T.Inderal 20 mg thrice a day for 10 days. After controlling her symptoms she was taken up for surgery. Total thyroidectomy with functional neck node dissection on the right side was done. During surgery the gland was found to be very vascular and the nodes had a characteristic blackish hue of a metastatic deposit of papillary carcinoma. Patient also had pretracheal and suprasternal nodes enlarged which were also removed [Figure2].

Histopathological examination was a 5x3x2 cm right lobe and 3.5x2 x1.5 cm left lobe, cut surface showed multiple tiny whitish foci. Microscopy showed papillary carcinoma pT1, N1 b M0. (T1- tumor size of 1 cm, N1b - suprasternal nodes and pretracheal nodes were positive for malignancy,M0- No distant metastasis).

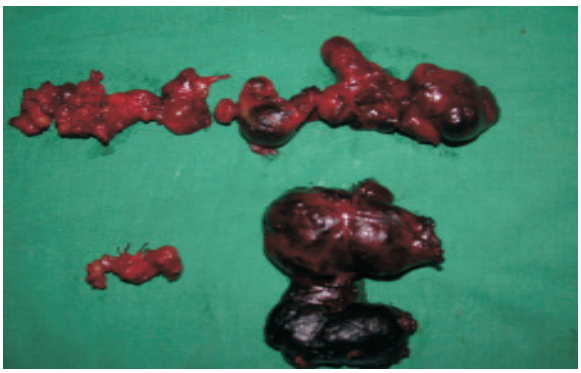

Fig. 2 : Thyroid specimen with right internal jugular nodes and suprasternal node

DISCUSSION

Here is a patient who had concurrent papillary carcinoma thyroid with hyperthyroidism. Risk of malignancy in clinically hyperthyroid patients was considered low until recently. The incidence in various world wide literature ranges from 0.8 t0 4%[1]. In the past five years at our institute there were about 115 cases of papillary carcinomas operated and none of them had hyperthyroidism.

The association can be in two forms. One is an incidental foci of carcinoma in specimens resected for

hyperthyroidism .Second scenario could be carcinoma thyroid presenting as hyperthyroidism which was the case in our patient. The latter association being rare than the former. Such patient presenting with metastatic secondaries is much rare. Most of the carcinomas associated with hyperthyroidism are papillary carcinomas[2].

The basis of this interesting association of malignancy and hyperthyroidism is being investigated. Initially hyperthyroidism was attributed to sheer increased volume of thyroid tissue even in the face of decreased function associated with malignancy[3]. Some workers have raised the role of long acting thyroid stimulator (LATS) and LATS-protector (LATSP) in stimulation of carcinogenesis in Graves' disease.[4] More recently, increasing reports on the possible carcinogenic role of thyroid binding immunoglobulin (TBIg) and other immunoglobulins in Graves' disease are seen in the literature[5].

Activating mutation of thyroid hormone receptor (TSH-r) gene has been demonstrated in a hyper functioning differentiated cancer. This mutation through activation of cAMP signal transduction is believed to cause hyperthyroidism[6].

In an autonomously functioning thyroid follicular carcinoma, a combination of mutations of TSH receptor and K-RAS was found to be responsible for hyper function of the tumor and the carcinogenic process[7].

Hyper functioning thyroid carcinoma should always be considered in the differential diagnosis of thyrotoxicosis / hyperthyroidism. This association of hyperthyroidism and malignancy has considerable therapeutic significance. Functioning thyroid carcinomas require total thyroidectomy whereas incidental carcinomas, because of their small size can be adequately treated with subtotal thyroidectomy.

This case emphasizes the need for thorough evaluation of thyroid to exclude malignancy even in a clinical setting of hyperthyroidism.

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