Case Report

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Lateral aberrant thyroid having papillary carcinoma: a case report

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ABSTRACT

Aberrant thyroid is a mass of tissue having the structure of a pathological thyroid gland situated at some definite distance from the normal thyroid gland. In all the variants of carcinoma of thyroid the papillary variant is the most common. Predominantly seen in females ranging in the age group of 25-45 years. It is often well differentiated, slow growing and localised. Here we report a case of a 35-year-old lady with a swelling in the right anterior triangle of the neck with normal thyroid gland. Histopathological report was suggestive of papillary carcinoma of thyroid. The origin of lateral ectopic thyroid tissue is not fully understood and controversial. The lateral localisation is a rare entity and debated extensively in the literature. Though rare, the possibility of an ectopic thyroid carcinoma must always be considered by the surgeon in cases of a pathological mass in the neck. This case report demonstrates that a normal thyroid gland on clinical examination does not exclude the presence of thyroid carcinoma in an ectopic tissue.

Keywords: Aberrant thyroid, Carcinoma, Papillary carcinoma, Thyroid, Total thyroidectomy

INTRODUCTION

Ectopic thyroid is defined as the presence of thyroid tissue in locations other than the normal anterior neck region. Traditionally 'lateral aberrant thyroid' tissue present in cervical lymph nodes in the face of a clinically normal thyroid gland is held to be a metastasis from an occult primary thyroid carcinoma.1 It is a rare developmental abnormality that involves aberrant embryogenesis of the thyroid gland when it migrates from the floor of the primitive foregut to its final region between the second and fourth tracheal cartilages. The prevalence reported as 1 per 1,00,000-3,00,000 people, rising to 1 per 4,000-8,000 patients having thyroid disease.2 Ectopic thyroid may become goitrous or associated with thyroid dysfunction, hypofunction or hyperfunction but malignancy is uncommon particularly primary thyroid carcinomas is less than 1%.3-6 On the other side however, making the difference between primary carcinoma and a metastatic carcinoma is a challenging situation.

CASE REPORT

A 35-year-old lady presented to the outdoor patient department of department of general surgery with complaints of swelling in the right anterior part of the neck for 2 years. The swelling had rapidly increased from a size of approximately 0.5×0.5 cm to the current size. She had no history of diabetes mellitus, hypertension or exposure to radiation in the past. She showed no signs of hyperthyroidism or hypothyroidism or any pressure symptoms.

Physical examination revealed a mass of approximately 2×2 cm in the right anterior triangle of the neck. The swelling was non-tender, firm in consistency and did not move with deglutition. There were no other visible

swellings in the region. Rest of the clinical examination was unremarkable.

Neck and chest X-ray showed no abnormalities.

Excision biopsy for the swelling was planned and the HPE report was suggestive of follicular carcinoma was capsular invasion- right thyroid mass. Results of thyroid function tests (free T3, free T4, and thyroid stimulating hormone (TSH)) were within normal range. She was planned for total thyroidectomy with neck dissection. Total thyroidectomy was combined with neck node dissection.

HPE report of the total thyroidectomy with neck node dissection was suggestive of follicular variant of papillary carcinoma with 5 nodes out of the 6 suggestive of papillary carcinoma without perinodal extension.

The patient was referred to the nuclear medicine service for evaluation with a 131-iodine whole-body scan (WBS) and possible treatment with radioiodine (RAI). The patient is on follow-up (more than 18 months) and remains well with no evidence of recurrence.



Figure 1: Pre-operative image.



Figure 2: HPE of excised swelling.

DISCUSSION

Thyroid gland embryologically is an endodermic derivative which starts to develop at the 24th day of gestation and arrives to its final location by the 7th week of gestation; originates from two different structures. During this migration, part or all of the thyroid-forming

may not descend to its normal location; resulting in the appearance of ectopic tissue. 7.8 This ectopic tissue may be found anywhere from the base of the tongue to the diaphragm. Lingual, thyroglossal, laryngotracheal are the most frequent sites. Other less frequent sites are the esophagus, mediastinum, heart, adrenal glands, and pancreas. The location in lateral neck to the jugular vein is controversial; this is called lateral aberrant thyroid because it was thought to be metastasis from thyroid carcinoma. 10,11 The origin of lateral ectopic thyroid tissue is not fully understood and controversial. This can be explained by the fact that several disease processes can conduct detaching fragments of thyroid tissue in the neck which is not associated with lymph nodes; and it includes nodular goiter and chronic lymphocytic thyroiditis. 10 Thus some authors suppose that it originates from lateral thyroid anlagen (ultimobranchial bodies) that failed to fuse with the median anlage during caudal migration. 12,13 An example from the literature is that of Ibrahim et al., where three separate ectopic thyroid masses in the lateral neck region were associated to ectopic goitre.

Most of patients having ectopic thyroid do not present symptoms; they become symptomatic only if there is endocrine dysfunction and/ or with increase size. Regarding age, there is two statistical peaks of ages which are 12.5 and 50 years. 14 The clinical examination shows characteristically a mass with smooth margin, soft in consistency, mobile and non-tender. It should be differentiated from thyroglossal duct cyst, epidermal cyst, lymphadenopathy, lipoma, lymphangioma, and other subcutaneous swellings and neoplasms. 15

Radionucleotide thyroid imaging employing technetium-99 m pertechnetate, iodine-131 or iodine 123 is useful in the evaluation for ectopic thyroid but high resolution ultrasound (US) is favoured in the initial assessment. 16 It is non-invasive, cost-effective and does not expose patients to ionizing radiation. 17 On CT scans, ectopic thyroid tissue is seen as a homogeneous, wellcircumscribed mass that, it enhances contrast after the administration of iodinated contrast. 18,19 The lateral localisation is a rare entity and debated extensively in the literature.²⁰ For this, and according to some authors lateral ectopic tissue is defined as a lateral tissue, superficial to the strap muscles without midline continuity because most of cases have been reported closely related to the strap muscles.²¹ Only few cases have been in the submandibular region, jugulodigastric region, or within the parotid gland substance. 22-24

The probability of malignancy in ectopic thyroid is low, less than 1%, and when it happens papillary carcinoma is the most common cancer, but most authors agree that lateral thyroid tissue is rarely benign in nature. Thus aberrant thyroid tissue of the head and neck should also guide to metastatic disease from an occult primary carcinoma of the thyroid specially when it is agreed that lymph node metastasis is common, distant metastases can happen in 10% of cases; otherwise lymph node

metastases in malignant ectopic lesions are present in 30% of cases.^{27,28} The differentiation between metastatic carcinoma and primary ectopic thyroid tissue is a real challenge because it is important to exclude a primary thyroid malignancy before making the diagnosis of benign aberrant thyroid tissue; this is due to the fact that well-differentiated thyroid carcinoma might metastasize even in small or occult tumors.

In our case, the histopathological study objectified the presence of lymph node tissue with neoplastic changes, and the specimen of total thyroidectomy showed signs of neoplasia.

Although there is no consensus regarding the optimal therapeutic strategy, due to the rarity of this entity, most authors indicate surgery depends on size and local symptoms (airway obstruction, dysphagia, and dysphonia), complications as (ulceration, bleeding, cystic degeneration, or malignancy), as well as on other parameters, such as patient's age, functional thyroid status. Salvatori et al. reported an incidence of remnants tissue in 6.9% of the patients having undergone total thyroidectomy for carcinoma.^{29,30} Higher doses of radioiodine may be required for size reduction.³¹ Ablative radioiodine should be avoided in children and young adults, due to deleterious sides effects on the gonads and other organs.³²

CONCLUSION

Thyroid cancer arising from ectopic tissue remains a rare entity. The possibility of an ectopic thyroid cancer in the setting of a normal thyroid gland on clinical examination should be considered as a differential diagnosis in cases of an identified neck mass. This case report demonstrates that a normal thyroid gland on clinical examination does not exclude the presence of thyroid carcinoma in an ectopic tissue.

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