

CASE REPORT

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Parasitic nodule of the thyroid in a patient with Graves' disease

Received: 21 January 1998 / Accepted: 15 April 1998

Abstract We report a case of a parasitic nodule of the thyroid in a patient with Graves' disease, which mimicked a lymph node metastasis from a primary occult thyroid carcinoma. The patient was a 67-year-old Japanese woman with a past history of subtotal thyroidectomy for Graves' disease, who was referred to our hospital because of a right cervical mass. A lymph node-like lesion measuring 1.5 cm in diameter was palpable, distinct from the remnant of the right thyroid lobe. Thyroid scintigraphy using ^{123}I -Na revealed a hot lesion at the upper lateral portion of the right thyroid lobe, and this was resected. Microscopically, the mass showed thyroid follicles with lymphocytic infiltration and lymphoid follicles. Clear ground glass nuclei, nuclear grooving and intranuclear inclusions were not observed. No morphological evidence of the lymph node was found in the mass by reticulin staining. Parasitic nodules of the thyroid in patients with Graves' disease may mimic a metastatic carcinoma of the thyroid.

Key words Thyroid · Parasitic nodule · Graves' disease · Papillary carcinoma · Aberrant lateral thyroid

Introduction

Thyroid tissue is sometimes encountered in specimens taken from the laterocervical region, and when normal thyroid tissue is found in laterocervical lymph nodes, it is usually considered to represent metastasis from an occult thyroid carcinoma [7]. When thyroid tissue is located outside the laterocervical lymph node area, it is referred to as a parasitic nodule [1], lateral aberrant thyroid, or se-

questered nodular goitre [4–6, 8, 10]. The term lateral aberrant thyroid is sometimes also used for cervical lymphadenopathy that proves to be lymph node metastasis from primary thyroid carcinoma [11]. Because of the poor definition, Kozol et al. suggested that the term lateral aberrant thyroid should probably be abandoned [4].

A parasitic nodule is defined as an accessory thyroid nodule with or without a thin pedicle to the original thyroid. No lymph node remnant should be found around the parasitic nodule [1]. Here we report a case of a parasitic nodule in a patient with Graves' disease mimicking a lymph node metastasis from a primary occult thyroid carcinoma.

Clinical history

A 67-year-old Japanese woman was referred to our hospital because of a right cervical mass. She had undergone subtotal thyroidectomy for Graves' disease 3 years before. Physical examination revealed enlargement of the remaining thyroid. A lymph node-like lesion measuring 1.5 cm in diameter was palpable, distinct from the remnant of the right lobe. Thyroid scintigraphy using ^{123}I -Na revealed a hot lesion at the upper lateral portion of the remnant

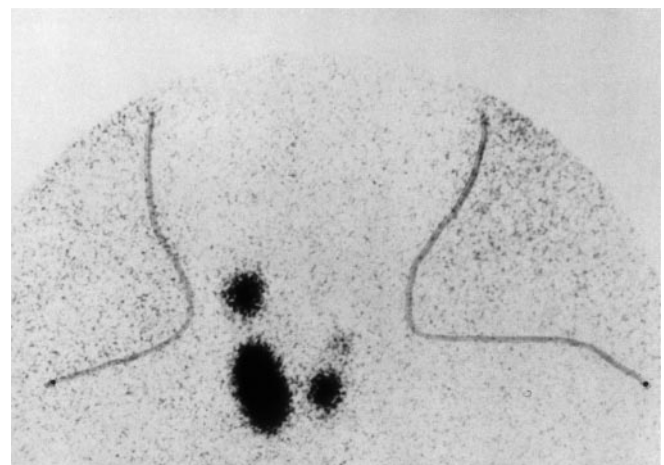


Fig. 1 ^{123}I -Na thyroid scintigraphy showing a hot lesion in the upper lateral portion of the remnant of right lobe

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right thyroid lobe (Fig. 1). Preoperatively, aspiration biopsy cytology was done and showed cells coming from the thyroid. The possibilities of metastatic thyroid carcinoma of the lymph node, mechanical implantation of thyroid due to a previous operation, and parasitic thyroid nodule were considered. Resection of the mass was performed.

Materials and methods

The resected surgical specimens were fixed in 10% formalin solution, routinely processed and embedded in paraffin. Deparaffinized sections were stained with haematoxylin-eosin stain and silver impregnation stain.

Pathological findings

Gross examination of the resected mass showed a demarcated mass measuring 2.5×1.0×0.8 cm. Microscopically,

Fig. 2 Parasitic nodule showing thyroid follicles with lymphocytic infiltration and lymphoid follicle. Original magnification ×16

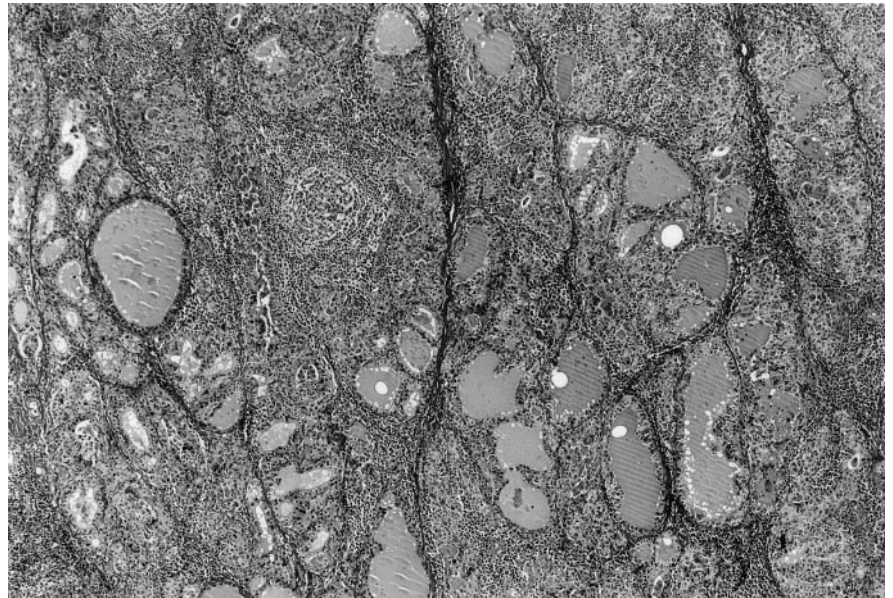
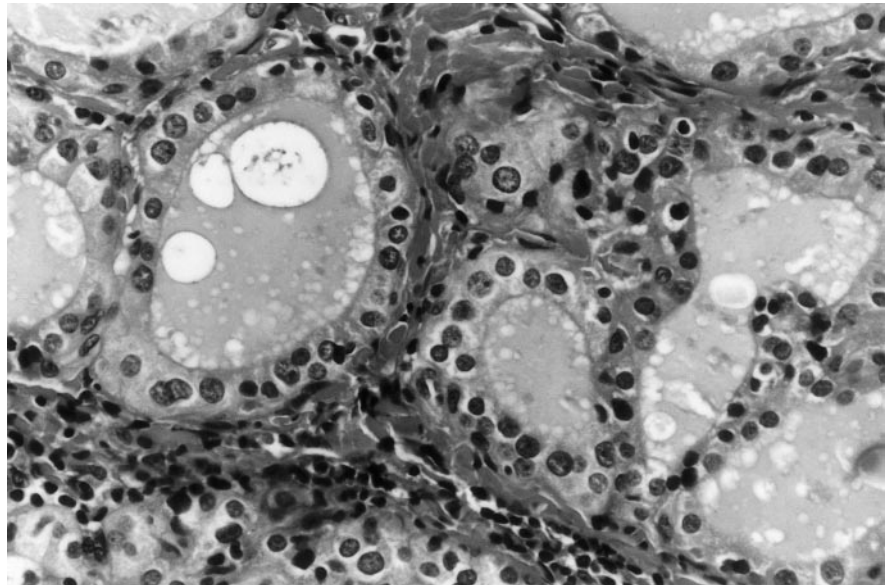


Fig. 3 Ground glass nuclei, nuclear grooving, and intranuclear inclusions are not present. Original magnification ×50



this showed thyroid follicles with lymphocytic infiltration and lymphoid follicles. Scalloping of the colloid was also seen in some thyroid follicles (Fig. 2). However, clear ground glass nuclei, nuclear grooving, and intranuclear inclusions were not seen (Fig. 3). No morphological evidence of lymph node, such as marginal sinuses, was revealed in the mass by silver impregnation stain (Fig. 4). We diagnosed this case as one of a parasitic nodule of the thyroid.

The patient has been well for 7 years since her operation.

Discussion

Ectopic thyroid tissue has been considered to be due to migration failure during fetal life. It may be present any-

Fig. 4 Marginal sinuses seen in the lymph node are not revealed by silver impregnation stain. Original magnification $\times 10$

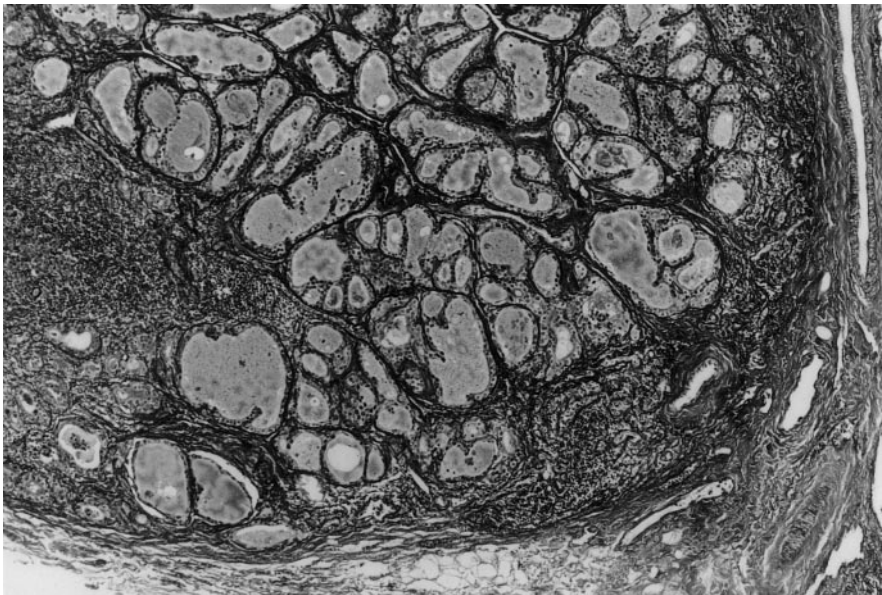


Table 1 Terminology used for thyroid tissue in abnormal location (LNs Lymph nodes)

^a Including substernal area and other organs (aortic arch, pericardium, heart, etc.)

Location	Terminology	Developmental disorder
Midline ^a	Ectopic thyroid tissue Synonyms: Ectopia, Aberrant thyroid, Accessory thyroid tissue (or gland)	Yes
Lateral neck		
Mechanical	Implantation of thyroid tissue	No
No association with LNs	Parasitic nodule	No
Association with LNs	Thyroid inclusions in the LNs	No

where from the foramen caecum at the base of the tongue to the site of the normal thyroid, usually appearing as midline lesions [8] in the substernal area, preaortic area, pericardium, heart or other organs. In these cases, the terms aberrant thyroid and accessory thyroid tissue (or gland) have been used [2, 3, 6]. Thyroid tissue located laterally in the neck is a different entity [4, 8], which can be categorized into implantations of thyroid tissue, parasitic nodules, and thyroid inclusions in lymph nodes [8]. Implantation of thyroid tissue may occur after operation or trauma. A parasitic nodule is an accessory thyroid nodule without any association with lymph nodes. Rosai et al. used the term parasitic nodule for mediastinal goitre [8], but we recommend use of this term for thyroid tissue laterally in the lateral neck not associated with lymph nodes, in order to prevent confusion. Thyroid inclusions in lymph nodes are still considered to be metastatic foci from a primary occult thyroid carcinoma by many authors, while others suggest that it is a benign inclusion [7, 9] (see Table 1).

Pathologically it was difficult to differentiate metastatic carcinoma from a primary occult thyroid carcinoma in our case, because the resected specimen showed not only thyroid follicles but also lymphoid follicles. Nodular Hashimoto's thyroiditis may be difficult to differentiate from metastatic papillary carcinoma of the thy-

roid, especially the follicular variant [8]. Although the nuclear features are important in the differential diagnosis, we would like to emphasize the usefulness of reticulin stain to rule out the possibility that the mass is in a lymph node. Marginal sinuses were not demonstrated by silver impregnation stain, and metastatic thyroid carcinoma of the lymph node was thus eliminated. We also ruled out the possibility of a mechanical implantation because of the absence of fibrous tissue around the thyroid mass and suture material [8], although our patient had a past history of subtotal thyroidectomy. There was no history of accident, which may be the cause of mechanical implantation.

In a recent article it was mentioned that a parasitic nodule may present as a carotid body tumour [1]. Clinicians should keep parasitic nodule of the thyroid in mind as a differential diagnosis in the case of a laterocervical mass. To prevent confusion in the terminology used for thyroid tissue in abnormal locations, we would like to emphasize that the term parasitic nodule of the thyroid should be used only for thyroid tissue not associated with lymph nodes in the neck laterally.

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