

SCIENTIFIC LETTER

Metastatic adenopathy from a thyroid microcarcinoma: final diagnosis of a presumed paraganglioma

Adenopatía metastásica de un microcarcinoma tiroideo, diagnóstico final de un supuesto paraganglioma

To the Editor:

A 29-year-old female patient attended the clinic for a painless, mobile tumor in the left posterolateral cervical region. There were no associated clinical signs or personal or family history. The patient provided a computed tomography scan (CT) of the neck showing a 4 x 3 x 3 cm lesion lateral to the cervical vessels sparing the fat plane. There was contrast uptake, and the lesion had a homogeneous appearance, with a vascular pedicle in its upper part. Paraganglioma with no thyroid changes or cervical adenopathies was suspected (Fig. 1). Laboratory tests showed normal chemistry, hematology, and thyroid function values; urinary analysis revealed the following levels: epinephrine less than 2 mcg/24 h (NV less than 20 mcg/24 h), norepinephrine 486 mcg/24 h (NV less than 80 mcg/24 h), dopamine 95.4 mcg/24 h (NV less than 400 mcg/24 h), total metanephrine 223.2 mcg/24 h (NV 170–700 mcg/24 h), normetanephrine 144 mcg/24 h (NV 105–354 mcg/24 h), and metanephrine 792 mcg/24 h (NV 74–297 mcg/24 h). Paraganglioma was suspected, and a meta-iodo-benzylguanidine scan was performed after thyroid blockade with potassium iodide, which showed no pathological uptake. A subsequent ^{111}In -pentetreotide scan (Octreoscan®) revealed an abnormal focal uptake in the left side of the neck (periretroclavicular) consistent with paraganglioma expressing somatostatin receptors (Fig. 2). An echo-Doppler of supra-aortic trunks showed a 30 x 28 x 42 mm mass in the left side of the neck, lateral to the vascular bundle and highly vascularized in its base. The tumor was resected by vascular surgery. Pathology reported the specimen as a 3.5 x 3 cm lymph node with metastasis from a papillary thyroid carcinoma. Total thyroidectomy and a nodal resection of the central compartment were performed. A 0.8 x 0.6 cm papillary carcinoma of the follicular variant with areas of high cells affecting the

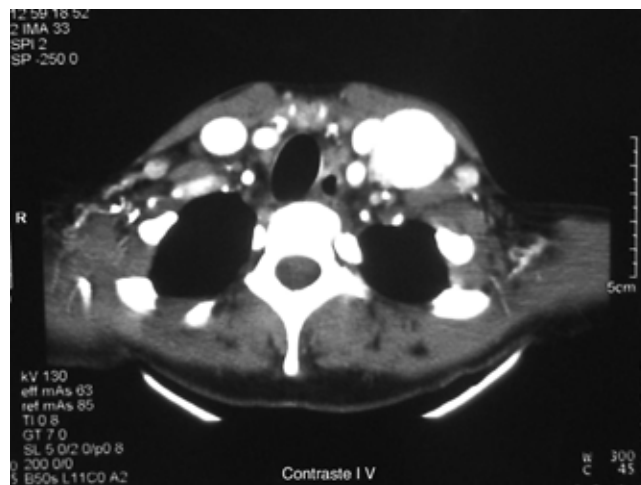


Figure 1 Contrast-enhanced CT of the neck.

isthmus at its junction to the left lobe was found. In addition, one out of the six lymph nodes removed was invaded by papillary carcinoma (T1N1M0). After surgery, a iodine-131 (^{131}I) scan detected uptake by the thyroid bed. Ablation therapy with 100 mCi of ^{131}I was performed, after which the patient had undetectable thyroglobulin and no pathological uptake at the ^{131}I scan one year after surgery.

This case report shows the atypical presentation of a papillary thyroid microcarcinoma of the follicular variant

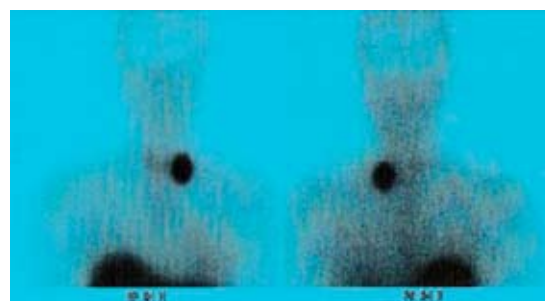


Figure 2 ^{111}In -pentetreotide scan (Octreoscan®).

detected by the presence of a cervical nodal metastasis showing uptake in the ^{111}In -pentetreotide scan which initially suggested a probable paraganglioma.

Thyroid microcarcinoma (TMC) has been defined as any thyroid cancer, usually papillary, 10 mm or less in diameter. Guidelines for the management of thyroid nodules and differentiated thyroid cancer (DTC) of the American Thyroid Association state that small nodules rarely have distant metastases (10%-20%), and fine needle aspiration should therefore seldom be required for nodules less than 1 cm in diameter unless they show in a ultrasound examination characteristics suggesting malignancy or there is a history of thyroid carcinoma in a first-degree relative, prior head and neck radiation, prior hemithyroidectomy with microcarcinoma found in the surgical specimen, thyroid uptake with positron emission tomography with fluorodeoxyglucose- F^{18} (PET- ^{18}F FDG), multiple endocrine neoplasia, or cervical adenopathies¹. Our patient had a highly vascularized cervical lesion possibly consistent with paraganglioma, and a CT scan showed no thyroid nodule. No lesion or thyroid puncture was therefore performed.

The ^{111}In -pentetreotide scan is a molecular imaging technique which uses a synthetic somatostatin analogue, octreotide, bound to a radiotracer (indium-111) to produce an image showing tissues which express somatostatin receptors. This technique has been shown to be helpful in head and neck tumors, particularly medullary and Hürthle cell thyroid carcinoma, paraganglioma, Merkel cell carcinoma and esthesioneuroblastoma, but is not routinely used for the preoperative study of DTC. Research groups have reported the use of the ^{111}In -pentetreotide scan for the detection of residual or recurrent disease in DTC². The proportion of patients with octreotide but no ^{131}I uptake ranged in the different studies from 19% to 100%, but was higher than 50% in most of them³. In a comparative study of patients with metastatic DTC, the ^{111}In -pentetreotide scan did not show itself to be more sensitive than PET- ^{18}F FDG and standard radiographic techniques regarding the detection of tumor lesions⁴. Future studies may possibly contribute to defining the role of this technique for the staging of differentiated thyroid carcinoma.

The uptake of radiolabeled octreotide by thyroid carcinomas has opened up the possibility of using radiotherapy with radiolabeled somatostatin analogues as an alternative treatment for tumors not responding to standard therapies. This possibility has been particularly explored in progressive or recurrent metastatic thyroid carcinoma not responding to ^{131}I due to tumor dedifferentiation^{3,5,6}. Thus, clinical and preclinical studies using ^{90}Y -DOTA-TOC and ^{177}Lu -DOTA-TATE as radiolabeled analogues have shown encouraging results in neuroendocrine tumors, thus opening up a new therapeutic alternative for

cases refractory to ^{131}I , although their therapeutic use is still controversial and should be tested in future clinical studies⁷.

To conclude, the reported patient had an atypical clinical presentation of a differentiated thyroid carcinoma which was discovered following pathological diagnosis of a nodal metastasis showing uptake in the ^{111}In -pentetreotide scan. This illustrates the potential role of radiolabeled somatostatin analogues for the staging and treatment of these tumors in the future.

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