Thyroid metastasis from clear cell renal carcinoma

Metástasis tiroidea por carcinoma renal de células claras

To the Editor:

Clear cell renal cancer (CCRC) is a tumor with great metastatic potential, but solitary metastases, especially in the thyroid gland, are uncommon and difficult to diagnose. A patient with a solitary thyroid metastasis from CCRC is reported, and the literature is reviewed.

The patient was a 66-year-old male patient with a history of high blood pressure, chronic renal failure, hyperuricemia, current smoking and moderate alcohol consumption, atrial fibrillation, and early cognitive impairment due to Alzheimer’s disease. In 2005 the patient had undergone, at another hospital, left partial nephrectomy for a clear cell tumor. No subsequent adjuvant therapy was given, and abdominal ultrasound and computed tomography (CT) performed in April 2008 showed complete local remission. In October 2008, the patient attended the otolaryngology clinic reporting dysphonia having started one month earlier, with no dysphagia or odinophagia, associated constitutional symptoms, and two cervical tumors also detected in the previous month, a 3-4 cm tumor in the right thyroid lobe (RTL) and a 2-3 cm tumor in the left thyroid lobe (LTL), both hard and adherent to deep planes. Laboratory test results were normal, except for a TSH value of 9 microIU/mL with normal T4 and antithyroid antibodies, and a creatinine level of 1.7 mg/dL. Direct laryngoscopy detected paralysis in the right vocal cord with no other lesions. CT revealed a heterogeneous cervical mass at the expense of the RTL with laryngotracheal displacement and retrosternal extension, with subcentimetric cervical adenopathies and internal jugular vein (IJV) thrombosis (Fig. 1). Fine needle aspiration (FNA) was not diagnostic due to the lack of cells. Positron emission tomography combined with CT showed thyroid uptake with a low suspicion of malignancy. Based on a preoperative diagnosis of locally advanced thyroid neoplasm with no histological confirmation, total thyroidectomy with lymph node removal from the central and right lateral compartments was decided.

Surgery performed in July 2009 found in the RTL a solid, whitish tumor adherent to adjacent tissues, approximately

Figure 1  Cervical PET-CT image showing high uptake by a thyroid mass with infiltration of adjacent structures: trachea, esophagus, internal jugular vein, and prethyroid muscles.
venous vessels and anterior jugular veins. The central thrombi inside (fig. 2), as did most of the thyroid arterial trapped inside the tumor.

esophageal wall, and the right recurrent nerve, which was prethyroid and cricothyroid muscles, muscle fibers of the were performed, including a large part of the right

1 (ttf-1), positive for clear renal cells) in both thyroid and

incidence of solitary ccrc metastases ranges from 1%-4%, and 1% of them involve the thyroid gland, although autopsy studies have reported a 24% rate1-4. Approximately 150 cases have been reported in the literature 1,5. The tumors most commonly metastasizing to the thyroid gland include skin (39%), breast (21%), kidney (12%), and liver (11%) tumors.

Mean age at onset is in the sixth decade1-2. Thyroid disease may either lead to diagnosis of CCRC or occur years after nephrectomy. The condition has no specific symptoms, and may occur as painless palpable nodules associated to compressive symptoms (dyspnea, dysphagia, dysphonia, stridor) or cause no symptoms1-4. Thyroid function is usually preserved1-4. The tumor appears as a hyper- or hypoechogenic mass in ultrasound examination, and as a cold or exceptionally hot nodule in scintiscans2,6-8-9. Isolated cytological study of the sample collected by FNA has a high specificity and a relatively good sensitivity (the presence of clear cells in the primary thyroid follicular carcinoma)10, and immunohistochemical procedures using thyroglobulin or TTF-1 antibodies are required1-4. Bilateral thyroid involvement has been reported in 18% of cases, while invasion of adjacent vascular structures occurs in 11%1-4.

Clinical diagnosis of metastatic thyroid tumor is therefore difficult7.

Survival depends on a disease-free period from nephrectomy to the occurrence of metastasis and on radical resection of the latter. Mean survival reported after resection of metastasis is 6.4 years1-4,7.

In conclusion, a detailed clinical history is relevant for the diagnosis of solitary thyroid metastases from CCRC because of the non-specificity of supplemental tests. Only immunohistochemical study of the thyroidectomy specimen is valid. Preoperative diagnosis may be improved using immunohistochemistry for thyroglobulin on FNA samples from patients with a history of CCRC and thyroid nodules with an aggressive behavior. Surgical treatment has the highest survival rate, provided complete resection is possible.

References

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