



SCIENTIFIC LETTER

Thyroid metastasis from clear cell renal carcinoma[☆]



Metástasis en tiroides de carcinoma renal de células claras

Renal carcinoma accounts for 3% of all adult tumors, and clear cell renal carcinoma is the most common (70–80%).^{1–3} It is characterized by being a highly vascularized tumor with an unpredictable clinical progression and a high potential to metastasize to uncommon sites such as the thyroid gland (5–7%).^{1,4} At diagnosis, approximately 40% of patients have synchronous metastases because of its great nodal and hematogenous dissemination capacity.^{4–6}

Metastases in the thyroid gland are rare, accounting for 1.4–3% of thyroid malignancies.¹ In most cases these are metastatic implants of renal carcinoma (50%).^{4,6}

The case of a patient with a history of renal carcinoma and thyroid metastasis is reported here to illustrate the management required and to review the literature. The reported patient was a 70-year-old male with a history of high blood pressure, hyperuricemia, and left partial nephrectomy for clear cell renal tumor (T3aNxMx) in 2011. One year and a half after nephrectomy, the patient complained of a neck mass. A computed tomography scan of the neck and chest showed multiple thyroid nodules, with a dominant nodule 30 mm in diameter in the lower portion of the right lobe. Pathological examination of fine needle aspiration (FNA) of the nodule revealed a metastasis from the clear cell renal carcinoma. Immunohistochemistry was negative for thyroglobulin and TTF1, and positive for cytokeratins 8 and 19, EMA, and CD10. Total thyroidectomy was performed with no postoperative complications. Pathological examination of the surgical specimen confirmed the cytological diagnosis.

Renal tumors are the source of a majority of the uncommon metastases occurring in the thyroid gland.^{1,3} Metastases in lung, salivary glands, parathyroid glands, breast, or gastrointestinal tract are even less common.⁷ The time of occurrence of thyroid metastases is variable; they may be

synchronous to the primary tumor or appear years after treatment.^{1,5,7} Metastases may occur either as a single nodule or as multiple nodules inside the gland. Most patients are asymptomatic and euthyroid at diagnosis. Symptoms secondary to neck compression and/or thyrotoxicosis are uncommon.⁸ Radiographic studies may help guide diagnosis, but pathological study is needed to establish the final diagnosis.¹ In neck ultrasound, thyroid metastases are seen as hypoechogenic images with ill-defined margins and hypervascular. Unlike in primary tumors, calcifications are rarely seen.^{4,6}

As regards pathological examination, when FNA containing clear cells is taken from the thyroid gland, several diagnostic possibilities should be considered, including primary follicular lesions with clear cells, medullary thyroid carcinoma, parathyroid tumor, or metastatic renal carcinoma.⁶ Immunohistochemistry makes it possible to ascertain the presence or absence of the expression of proteins that may be related to the carcinogenesis of certain tumors. It also makes it possible to direct the genetic study to the altered gene. For example, some genes such as *ERR*, *RAS*, and *BRAF*, amongst others, which are altered due to genetic or epigenetic changes have been identified in thyroid cancer. Because of this, the immunohistochemical study of a thyroid lesion is very helpful for achieving a final diagnosis. While lesions of a thyroid origin express thyroglobulin (95%) and thyroid transcription factor 1 (TTF1) (90–100%), lesions of renal origin do not express such proteins. However, positive CD10 antigen and cytokeratin 8 highly suggest renal carcinoma.

Some studies state that the presence of metastases in the thyroid gland after thyroidectomy does not change the prognosis of primary disease. Other authors suggest that overall survival may be the same or higher as compared to the prognosis of metastasis in other sites.^{1,4,5,7,9}

It may be concluded that thyroid metastases should be suspected in patients, particularly elderly, with a thyroid nodule and a history of tumors, especially in the kidney, lung, breast, or gastrointestinal tract.¹⁰

References

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