Metastasis of Renal Cell Carcinoma into the Thyroid Gland

Murat Dinçer¹, Selvi Dinçer³, Aliseydi Bozkurt², Engin Kandıralı¹, Atilla Semerciöz¹

¹Clinic of Urology, Bağcılar Trainig and Research Hospital, İstanbul, Turkey

²Department of Urology, Erzincan University Faculty of Medicine, Erzincan, Turkey

³Clinic of Radiation Oncology, Okmeydanı Training and Research Hospital, İstanbul, Turkey

ABSTRACT

Renal cell cancer (RCC) is the most common cancer of the kidney. Thyroid gland rarest side of RCC metastasis which usually occur after 10 years. We present a very rare case of metastatic RCC in the thyroid gland in a patient who was referred to our clinic because of a neck mass 17 months after radical nephrectomy. (*JAREM* 2015; 5: 78-9)

Keywords: Thyroid, renal cell cancer, metastasis

INTRODUCTION

Renal cell cancer (RCC) is the most common cancer of the kidney, and it constitutes 80%–85% of tumors in the kidney (1). The bones, liver, and lungs are the most common regions of metastasis for RCC. Metastasis is rarely seen in the thyroid gland and head-neck region. Thyroid metastases generally occur after 10 years (2). In our case report, a patient with RCC that spread to the thyroid gland, who was admitted 17 months after radical nephrectomy (RN), was examined.

CASE PRESENTATION

A 65-year-old female patient was admitted to our hospital with the complaint of a mass in the neck. The anamnesis of the patient revealed that she underwent left RN (clear cell carcinoma) for RCC 17 months ago. As a result of general surgery consultation, the mass was diagnosed as multinodular goiter. Based on hormonal evaluation, it was detected that she had hypothyroidism. Moreover, hypoactive nodules were found in the thyroid scintigraphy. The result of fine needle aspiration biopsy (FNAB) was benign. Bilateral total thyroidectomy was performed for suspected hypoactive nodules. In the pathological evaluation, the tumor cells displayed an alveolar sequence with a fine vascular network between them. Although immunoreactivity with RCC, CD19, and vimentin was immunohistochemically observed in malignant cells, no positivity was found with TTF-1. The case was diagnosed with RCC based on histopathological and immunohistochemical findings. No additional therapy was needed, and the follow-up protocol was initiated for the patient.

DISCUSSION

Metastatic tumors constitute 2%–3% of thyroid malignancies (3). Although thyroid nodules are encountered frequently, metastatic thyroid nodules are rare (4). The most common cancer types

that show metastases to the thyroid gland are breast, lung, and kidney cancers. Metastatic thyroid lesions often do not present with any signs. RCC that spreads to the thyroid gland constitutes 12%–34% of all secondary thyroid tumors (5). In total, 85% of general distant organ metastases in RCC are seen within 3 years following primary resection. However, some cases with metastases that occurred a few decades later have also been reported (6, 7). Thyroid metastases generally occur after 10 years (2). However, in our case, thyroid metastasis appeared 17 months after RN. It should be kept in mind that an early metastatic lesion can be seen in a patient with a mass in the neck and a history of RCC diagnosis.

The guidelines recommend the procedure of FNAB for patients having a thyroid nodule and a history of RCC (1). However, cytological findings can be similar for primary and secondary tumors, and a metastatic tumor can be diagnosed as a primary thyroid tumor. Moreover, differentiated thyroid cancers, lung and salivary gland secondary tumors, and paragangliomas that have a clear cell histopathology should also be considered (8). In the differential diagnosis of a metastatic clear cell tumor, CD10 (Figure 1) and vimentin (Figure 2) are positive but thyroglobulin, calcitonin, and TTF-1 are negative immunohistochemically (9). Thyroid metastatic tumors can be found as a single nodule or as multiple nodules, and most of them are found as euthyroid. Symptoms occur depending on the compression caused by the growing thyroid gland. Although no feature was found in the FNAB in our case, hypoactive nodules were detected in the thyroid scintigraphy; therefore, total thyroidectomy was performed. Thyroidectomy must be applied for the treatment of RCC that shows isolated thyroid metastasis (9, 10).

In the pathological examination of the thyroid gland in our case, she was evaluated to have RCC metastasis, and thyroid-

Figure 1. Malignant tumor infiltration in the thyroid tissue: CD10 ×10

Figure 2. Malignant tumor infiltration in the thyroid tissue: Vimentin ×10

ectomy was performed as the appropriate treatment method for the case.

CONCLUSION

Thyroid metastases should be kept in mind for patients who had a thyroid nodule and a history of RCC. The differentiation of primary and secondary tumors is possible only by the pathological examination of suspected thyroid nodules. The treatment for RCC with isolated thyroid metastasis is thyroidectomy.

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