

Metastatic Thyroid Carcinoma

Tiroide Renal Hücreli Karsinom Metastazi

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Dear Editor,

Thyroid metastatic tumors constitute 1.4-3% of thyroid neoplasms and 0.05-0.1% of all thyroid diseases. The rate of intrathyroidal metastasis is found to be 1.25-24.4% in autopsy series (1-3). Among the tumors metastasising with thyroid, renal cell carcinoma, lung carcinoma, breast carcinoma, and, though more rarely, colon carcinoma are in the lead (2, 4, 5). Our aim is to present the case of our patient who, three years after a nephrectomy for left renal tumor, showed renal cell carcinoma (RCC) metastases first in the thyroid and then in the lung.

Our patient, a 63-year-old male, was admitted to our clinic with swelling in the neck. We found out that in his past medical history the patient had undergone nephrectomy due to left kidney tumors three years ago. The pathological examination at the time had shown renal cell carcinoma (stage III). The postoperative period had been uneventful with no additional pathologies, recurrences, or metastases according to clinical records.

The patient's general condition was very good. We observed a hard, smooth surfaced nodule of 4cm in the right lobe of the thyroid while there were many soft, palpable, and smaller nodules in the left lobe. We did not palpated any cervical lymph nodes. The patient was euthyroid. The USG examination showed many cystic nodules with calcific degeneration and retrosternal extension the largest of which was 4 cm in diameter. There was no invasive or pathological cervical lymphadenopathy that could affect the neighbouring regions on ultrasonography. The computed tomography of the neck revealed multilobuled severe thyroids lobes with multiple necrotic areas and multiple calcifications (Figure 1).

The chest and brain tomographies did not show irregularities. However, the abdominal computed tomography did not display the left kidney. The fine-needle aspiration biopsy (FNAB) was reported as papillary thyroid carcinoma.

The patient underwent total thyroidectomy. The pathological examination revealed RCC metastasis in the both thyroid lobes. The tumours were multifocal, the largest of which was 4.5 cm in diameter. The immunohistochemical study reported positive CD10, vimentin, EMA and pancytokeratin. TTF-1 (Tyroid Transcription Factor), thyroglobulin, and PTH (parathyroid hormone) were negative in the tumor cells (Figure 2).

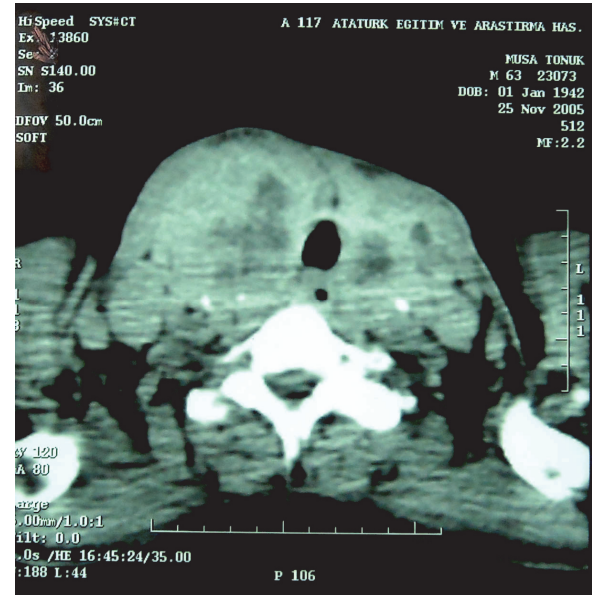


Figure 1. The computed tomography of the neck.

Four months after the thyroidectomy, the patient developed shortness of breath. The lung tomography showed tumoral mass in the right upper lobe while the bronchoscopy revealed bronchial vegetating mass in the same region. The biopsy result was reported as metastatic RCC. TTF-1 and cytokeratin 7 were negative in the tumor cells but vimentin was focally stained positive. A month after the diagnosis, the patient was lost due to respiratory failure.

Thyroid metastases usually occur within the first 3 years after primary tumor resection, but they may extend up to 25 years in RCC (5, 6). In our case, this period lasted for 3 years. RCC metastases can be solitary or multifocal, as it was in our case (6).

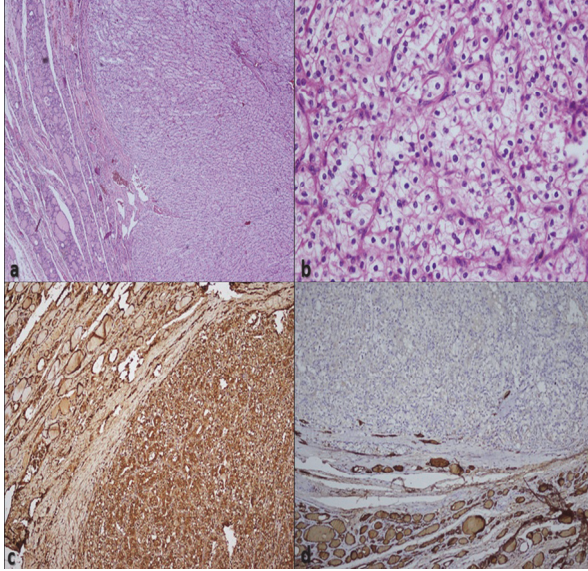


Figure 2. The pathological examination images. **a)** Nodular-structured tumor areas, x2, H&E. **b)** Epithelial tumor cells with hyperchromatic, opaque cytoplasm, central nuclei, and varying nucleus sizes, x40, H&E. **c)** CD 10 (+) **d)** Thyroglobulin (-)

It is very difficult to clinically distinguish metastatic thyroid carcinoma from primary thyroid tumors(1). However, the primary and metastatic distinction can usually be made by immunostaining thyroglobulin (3, 7).

The thyroglobulin is only positive in thyroid lesions though it is often negative in metastatic thyroid cancer. In RCC, CD 10 is mostly positive (3, 7, 8). In our case, TTF-1 was negative while CD 10 was positive, which

suggested the possibility of metastasis (7, 8). In addition, the EMA, cytokeratin, and vimentin positivity along with parathyroid hormone (PTH) negativity confirmed the diagnosis.

Thyroid RCC metastasis to the thyroid gland is very rare and it is difficult to recognize this picture in examinations and tests. The definitive diagnosis can be made with pathological examinations and specifically to and immunohistochemical studies. Practitioners should obtain detailed medical history from potential thyroid tumor patients and metastatic tumor should be kept in mind for patients with a history of cancer.

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Received/Başvuru: 14.11.2014, Accepted/Kabul: 14.01.2015

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For citing/Atıf için

Peker Y, Pinar E, Avcı A. Metastatic thyroid carcinoma. *j turgut ozal med cent* 2015;22:278-9 DOI: 10.7247/jtomc.2014.2514