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Case Report

A very rare malignant tumor of the thyroid gland: A case report of primary osteosarcoma

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Abstract

Osteosarcoma forms a small percentage of rare malignant non-epithelial neoplasms of the thyroid gland and has been reported in only a few dozen cases.

A 61-year-old female patient was hospitalized for operation due to enlarged tumor in the right thyroid lobe and substernal goiter seen in thyroid USG, and shortness of breath that continued for ten days and developed suddenly. Bilateral total thyroidectomy was performed to patient and in order to prevent tracheomalacia, trachea was fixed to the skin due to its deviation to the left and soft consistency. The pathology result was reported as primary thyroid osteosarcoma.

Differential diagnosis of a rapidly growing nodule in the thyroid gland includes primary or secondary tumor or cyst. If ultrasound and/or CT show compact, regular calcifications throughout the mass without mass findings, the primary extraosseous osteosarcoma of the thyroid gland should be included in the differential diagnosis. In the differential diagnosis of the nodule, which grows rapidly in the thyroid gland and causes sudden shortness of breath, the primary osteosarcoma tumor of the thyroid should be considered and rapid surgery should be performed.

***Keywords*:** Thyroid, primary osteosarcoma, malignant tumor

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INTRODUCTION

Osteosarcoma forms a small percentage of rare malignant non-epithelial neoplasms of the thyroid gland and has been reported in only a few dozen cases (1). In this study we aimed to present a female patient in accompany of the literature, who operated on due to rapidly growing tumor in the right thyroid lobe and who suffers shortness of breath for ten days which developed suddenly.

CASE REPORT

A 61-year-old female patient was hospitalized for operation due to enlarged tumor in the right thyroid lobe and substernal goiter seen in thyroid USG, and shortness of breath that continued for ten days and developed suddenly. In the USG report of patient performed in 2015, a large number of heterogeneous hypoechoic nodules containing cystic areas were detected in some lobes, the size of largest one was approximately 5 cm and localized in the right inferior lobe. In the USG report of patient performed in 2017 there are iso-hypoechoic multiple nodules, and the largest one was measured approximately 11 mm, is observed in the left lobe. In the right lobe, hypoechoic nodules, the largest one was measured approximately 9 cm in the middle part, are observed and microcalcifications in they. In the scintigraphy report of patient, the size of the right lobe increased and the hyperactive nodule is observed covering the entire right lobe. TNAB was not performed to patient. Thyroid function tests (TFT) were normal. In preop indirect laryngoscopy, bilateral vocal cords were observed normal and the patient was operated on after the necessary preparations. After obtaining the patient's consent form for surgery bilateral total thyroidectomy was performed to patient and in order to prevent tracheomalacia, trachea was fixed to the skin due to its deviation to the left and soft consistency. In postop indirect laryngoscopy bilateral vocal cords were observed normal. Sutures were removed in postoperative fifth day.

Pathology results:

Macroscopy: Right lobe 9x6x5.5 cm, isthmus 3.5x4.5x2 cm, left lobe 8x3.5x3.2 cm in size, lobulated structure, encapsulated purple colored bilateral total thyroidectomy pia. In the sections, a solid, capsule nodule with 8x5x5 cm of middle part fibrocalcification covering the right lobe and a cream-colored, bleeding foci around the cartilage and bone structure was observed. The nodule capsule is thin and well-limited in appearance (Figure 1).

Microscopy: In the sections of the right lobe, solid malignant neoplasia was observed, surrounded by a thin fibrous capsule, generally containing osteoid matrix/trabeculae and cartilage formations, and large coagulative necrosis. Neoplasia consists of atypical mesenchymal cells with spindle and oval shape, narrow cytoplasm, pleomorphic, coarse granular-hyperchromatic, nucleolus evident nuclei that develop by forming thin bundles that cross each other in both intertrabecular and osteoid tissue-free areas. There are frequent atypical mitotic figures. The tumor is invasive from place to place in the surrounding thyroid tissue

Immunohistochemical examination:

Vimentin and p53 diffuse positive. HBME1 focal positive. Galactin 3 patch style positive. TTF1, CK19, synaptophysin, chromogranin, calcitonin, pansitokeratin, thyroglobulin, EMA, S100, CD31, desmin and PAX8 negative. The pathology result was reported as primary thyroid osteosarcoma. (Figure 2, 3). In immunohistochemical examination, pansitokeratin and CK19 are negative. When this finding is evaluated together with the literature information, it is compatible with primary thyroid osteosarcoma rather than anaplastic thyroid carcinoma.

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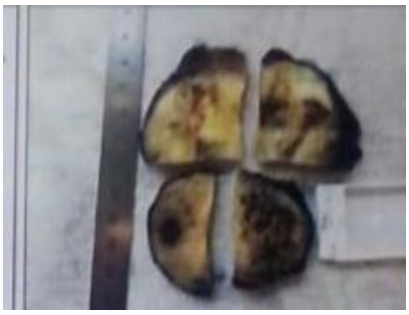

Fig.1: Macroscopically bone areas

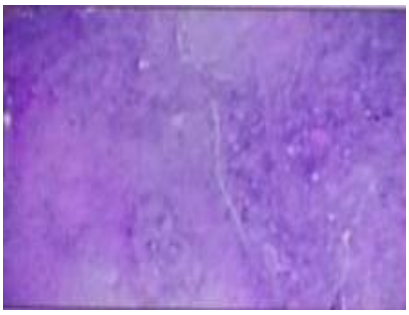

Fig.2: Tumor area with osteoid matrix

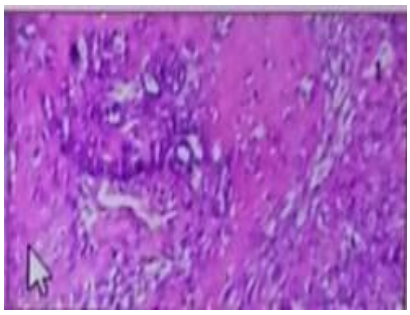

Fig.3: Atypical cells and osteid matrix

DISCUSSION

Osteosarcoma is a primary bone malignancy which seen relatively common, but extra-skeletal primary osteosarcoma is rare and has been described in the breast, thyroid gland, abdominal viscera and soft tissues (2, 3). It forms a small percentage of rare malignant non-epithelial neoplasms of the thyroid gland. It is reported that 1% of thyroid tumors are sarcomas. The extraosseous form of osteosarcoma is seen very rarely (approximately 5%) in only two cases in thyroid and fine needle biopsy diagnosed in 28 cases (4-6). The clinical course is similar to anaplastic thyroid carcinoma (6). The average age reveals 62 years, ranging from 21 to 97 years. The female-male gender ratio is 1.5:1. The clinical course mimics anaplastic thyroid carcinoma. The clinical course is characterized by rapid progression leading to weeks of death within the mechanism of lung metastasis or superior vena cava syndrome as a result of extensive leakage of perithyroid tissue and large carotid vessels. The treatment includes radical strumectomy and radiotherapy, additional chemotherapy. In this case, age 61 and sudden onset of shortness of breath were performed without a fine needle aspiration biopsy and Bilateral total thyroidectomy was performed. This tumor is characterized by rapid growth and requires rapid surgical intervention depending on the symptoms of dyspnea associated with pressure. Differential diagnosis of a rapidly growing nodule in the thyroid gland includes primary or secondary tumor or cyst. If ultrasound and/or CT show compact, regular calcifications throughout the mass without mass findings, the primary extraosseous osteosarcoma of the thyroid gland should be included in the differential diagnosis.

CONCLUSION

In the differential diagnosis of the nodule, which grows rapidly in the thyroid gland and causes sudden shortness of breath, the primary osteosarcoma tumor of the thyroid should be considered and rapid surgery should be performed.

Informed Consent: The author stated that the written consent was obtained from the patients in the study.

Conflict of interest: The author declares that there is no conflict of interest.

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Authorship contributions: Concept, Design, Supervision, Funding, Materials, Data collection &/or processing, Analysis and/or interpretation, Literature search, Writing and Critical review: RT, YB, İS, BHE, MK, HT

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