Submandibular Lateral Ectopic Thyroid Tissue: Ultrasonography, Computed Tomography, and Scintigraphic Findings

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1. Introduction

Ectopic thyroid tissue is derived from incomplete migration of thyroid gland and can be found anywhere between the base of tongue and pretracheal region. Ectopic thyroid tissue most commonly appears in the midline in the cervical region (90% of the cases) [1]. Its prevalence is approximately 1/100,000–1/300,000 [2]. Lateral ectopic thyroid tissue is a much less common condition [3]. Herein, we aimed to present the findings of a female case with ectopic thyroid tissue localized in the left submandibular region. A 44-year-old female patient, who underwent bilateral subtotal thyroidectomy four years ago with the diagnosis of multinodular goiter, was admitted to our hospital due to a mass localized in the left submandibular area that gradually increased in the last six months. Neck ultrasonography, contrast-enhanced computed tomography, and scintigraphic examination were performed on the patient.

2. Case Presentation

A 44-year-old female patient, who underwent bilateral subtotal thyroidectomy four years ago with the diagnosis of multinodular goiter, was admitted to our hospital due to a mass localized in the left submandibular area that gradually increased in the last six months. Informed consent was obtained from the patient. Neck ultrasonography revealed newly developed nodules with heterogeneous echo pattern in residual thyroid tissue in the normal localization, as well as a 30 × 25 mm mass lesion with parenchymal echo pattern containing cystic degenerative areas in the left submandibular region (Figure 1). On the neck CT, there was residual thyroid tissue with heterogeneous density in normal localization and a well-circumscribed left submandibular mass with equal density (Figure 2). On thyroid scintigraphy with Tc-99m pertechnetate, thyroid
tissue activity uptake showing massive radioactivity was observed in the normal localization of the thyroid gland and in the submandibular localization (Figure 3). Preoperatively, thyroid hormone levels and biochemical values of the patient were normal. The focus in the submandibular region was excised. The patient had spontaneous euthyroidism in the postoperative period. Pathological examination of the specimen showed normal thyroid follicle cells with no signs of malignancy. Thus, it was confirmed that the submandibular mass was a rarely encountered lateral ectopic thyroid tissue.

3. Discussion

Abnormalities of thyroid gland during embryologic development and migration may result in ectopic thyroid gland. Ectopic thyroid gland can be seen in any localization from the base of the tongue to the mediastinum in the midline on the neck [4, 5]. Normally, migration of the thyroid gland is from the foramen cecum to the pretracheal position [6]. In addition to normal migration pathway of the thyroid gland, ectopic thyroid tissue can be seen even in mediastinal, intracardiac, gastrointestinal, and intraperitoneal localizations [2, 4, 5]. Ectopic thyroid tissue is mostly (90%) localized in sublingual position. Ectopic thyroid tissue in the submandibular space with the thyroid gland in its normal location is an extremely rare phenomenon [4]. There are few available case reports in the literature on this issue [2–9].

Ectopic thyroid gland is more prevalent in females than in males and is usually asymptomatic [10]. Asymptomatic ectopic thyroid tissue may become symptomatic particularly in the adolescence and pregnancy period due to increase in thyroid stimulating hormone level and to thyroid tissue hyperplasia [11]. Ectopic thyroid tissue is usually hypoactive but may rarely be hyperactive. Etiology of ectopic thyroid tissue is unclear; however, it has been suggested that gene mutations play a role [12]. “Thyroid transcription factor 2” (TTF-2) mutation is associated with thyroid agenesis and other defects. “PAX8 gene” mutation has been found to be associated with various forms of thyroid dysgenesis, whereas TTF-1 gene mutation has been found to be associated with thyroid agenesis or dysgenesis. These gene mutations also cause ectopic migration [12]. In 70% of the ectopic thyroid tissues, only thyroid tissue is present [13]. All thyroid gland diseases can be seen also in ectopic thyroid tissue. All diseases that involve thyroid tissue in its normal localization also involve ectopic thyroid tissue. Thyroglossal duct cyst, hyperplastic lymphoid tissue, lymphangioma, fibroma, lipoma, dermoid cyst, squamous cell carcinoma, minor salivary gland
has been reported that possibility of malignant degeneration in ectopic thyroid tissue is not higher than in normal tissues [16], there are recent case reports on malignant degeneration in ectopic thyroid tissues within a branchial cleft cyst [17].

In conclusion, lateral ectopic thyroid tissue is a very rare condition found most commonly in submandibular localization and the number of cases reported in the literature is limited. Less than 1% of ectopic thyroids have malignant transformation, of which papillary carcinoma is the most common (approximately 85%) malignancy [7]. US and CT are the auxiliary methods in the diagnosis. Scintigraphy, the guide in demonstrating functional thyroid tissue and in planning treatment, should certainly be performed.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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