Occult Thyroid Carcinoma

—A Case Report—

Noritake WATANABE

Department of Otolaryngology, Yamaguchi University School of Medicine
Ube, Japan.

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SUMMARY

A case of occult thyroid carcinoma is presented. A 35 year-old woman was admitted because of a mass in the right sided neck. The histological examination revealed that this mass was papillary adenocarcinoma of the thyroid origin. However, the thyroid was found to have no abnormalities by functional and scintigraphic examinations. Moreover, the surgical exploration revealed that the thyroid gland seemed to have normal appearance. She received radiation therapy with total 6900 rad of high voltage x-ray during 57 days following the surgery, and she has been well and free from any recurrence for 6 months after the surgery. The etiology and pathogenesis of this disease were discussed.

INTRODUCTION

Carcinoma of the thyoid gland shows histopathologically varied features and its clinical course is curious in some instances. Thyroid carcinomas characterized by well-differentiated type usually grows slowly and cured well when properly treated, while the undifferentiated type is in rapid-growing and fatal. However, some of carcinomas of this organ metastasize early to the regional lymph nodes, although the primary lesion in the thyroid gland is impalpable or very small. Some patients with untreatable neck metastasis live for a long period of time with tumor lesion[1]. In some instances, thyroid carcinomas cause extreme malignancies.

Thyroid carcinoma, in which the neck metastasis is dominant even though the primary lesion is undetectable, has been desingnated as "occult thyroid cancer"[2,3] or "lateral aberrant thyroid carcinoma"[4]. It is difficult to establish the diagnosis of this type of the thyroid cancer unless the physician recognizes this condition, because the thyroid gland is usually in normal aspect. This lesion may invade the neiboring organs, such as the

larynx, trachea, esophagus, recurrent nerve and others, causing various symptoms, such as air way obstruction, dysphagia, or recurrent nerve paralysis. There is a possibility that the occult thyroid cancer is discovered incidentally by the neck surgery for other reasons. However, the precise diagnosis of this disease can be made only by the histologic examination of the lateral neck tumors.

Three hypotheses concerning the etiology and pathogenesis of the occult thyroid cancer, have been proposed. One of them explains the pathogenesis by such a way that the carcinoma may arise from lateral aberrant thyroid tissue existing in the neck lymph nodes, which is the result of embryonal displasement of the tyroid[5,6,7]. The second hypothesis is that this metastatic tendency is attributed to the biologic behavior of this tumor[2,3,4,11,12,13,14]. The third one explains that the normal thyroid cells are transported via lymphatics and become neoplastic under certain environments[8,9,10]. Therefore, the surgical treatment for this disorder may be influenced by these hypotheses. If the metastatic hypothesis is true, thyroidectomy with radical neck dissection should be performed, while the neck lesion should be removed without thyroidectmy if the embryonal hypothesis is belived.

In a previous paper[15], we reported a case of the occult thyroid carcinoma, and an additional case is added in this paper.

CASE REPORT

A 35 year-old woman was admitted to this department on October 15, 1973, complaining of a mass, hen-egg sized, in the right sided neck. She noticed a mass in the right sided neck on July, 1973. However, she did not have any medical treatments, because the mass was painless and produced no symptoms. In september of the same year, she consulted with a surgeon due to shoulder stiffness. At that time, the surgeon examined her mass and postulated the mass to be benign. However, the mass did not disappear, so she visited to this department to consult about the mass on October 8, 1973.

Physical examination revealed a well neutrient woman. A mass, 5×3 cm in size, was detected in the portion of the anterior margin of the sternoclaidomastoid muscle at the level of the thyroid cartilage on the right side. This mass was elastic and not fixed with surrounding tissues.

Blood cell count, blood chemistry, and serological examinations did not show any abnormalities. The scintigram of the thyroid gland showed normal up-take (Fig 1). Thyroid test and microsome test were negative.

PBI was 7.3 γ/dl. T_3 was 25%, and T_4 was 11.5% in measurement of thyroid hormane.

The removal of the mass in the neck was performed on October 18, 1973. The surgery revealed a cystic and nodular mass under the sternoclaidomastoid muscle and at the level of the thyroid cartilage. The mass was well encapsulated and not adhesive to the surrounding tissues. Histological examination disclosed that the mass was papillary adenocarcinoma of the thyroid origin.

The postoperative course was uneventful. However, a mass was noticed in the right sided neck at the lower level of the previous incision, 27 days after the surgery. This mass was 3×2 cm in size, being removed on November 29, 1973. Thyroidectomy with radical neck dissection could not be done because the patient refused to have a more extended surgery. The surgery disclosed that two masses located close to the internal jugular vein. The gross appearance of these masses was similar to the previously removed one. Histological examination disclosed papillary adenocarcinoma of the thyroid origin. In this operation, the thyroid gland was exposed and found to be noraml. The irradiation therapy with high voltage x-ray was begun 13 days after the surgery, and 6900 rad, totally, was given for 57 days.

HISTOPATHOLOGY

The removed masses were cystic and nodular and well encapsulated as shown in Fig. 2. The cysts contained brownish fluid which included dominantly erythrocytes and leukocytes. Microscopically, the tumor epithelium was arraged on fibrovascular stalks which projected into the cystic spaces (Fig. 3). Usually, the tumor epithelium was single layered, but multilayering occured occasionally. The tumor cells were cuboidal and columnal with a homogeneous cytoplasm surrounding a central large ovoid nucleus, although squamous metaplasia was found in cells lining large cysts (Fig. 4). The nuclei had the finely dispersed chromatin giving a ground-glass appearance. Psamona bodies were scattered and found to be basophilic (Fig. 4). Mitotic feagures were rare, and the atypism and anisocytosis of the tumor cell swere not extensive. Tumor cells invaded into the lymph follicles and destroied them. Therefore, metastases to the cervical lymph nodes of papillary adenocarcinoma originating to the thyroid gland was diagnosed.

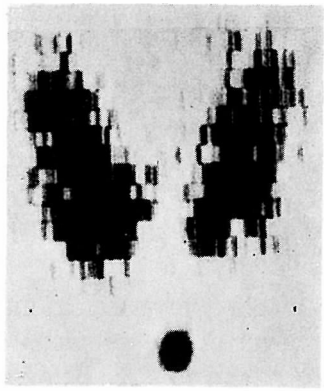

Fig. 1.

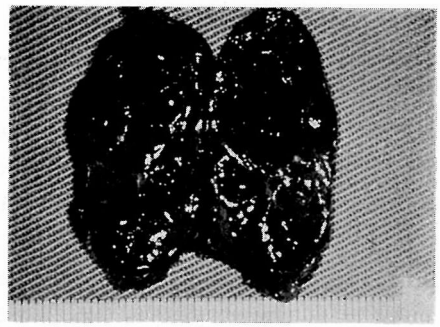

Fig. 2.

Fig. 3.

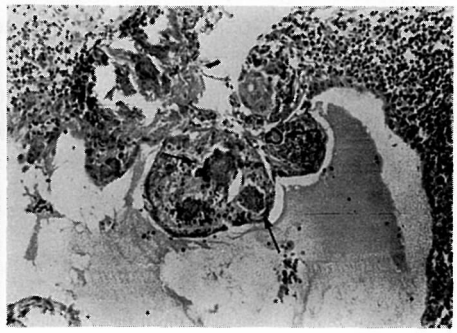

Fig. 4.

Fig. 1: Scintigram fo the thyroid gland showing normal up-take.
Fig. 2: Cut-surface of the cystic and nodular tumor removed from the right sided neck.
Fig. 3: Microphotogram (×100) of the right sided neck tumor demonstrating papillary adenocarcinoma of the thyroid origin.
Fig. 4: Psamona bodies indicated by arrows.

DISCUSSION

Eleven cases of thyroid neoplasm were experienced in this department during the past 11 years. Among them, two cases could be regarded retrospectively as occult thyroid carcinoma (Tab. 1). In both cases the thyroid gland was found normal on the bases of functional tests and scintigram. In this case, no functional and morphological abnormalities were demonstrated by examinations and surgical exposure. However, it was not determined whether or not the thyroid tissue is normal microscopically because no histologic investigation was performed on the thyroid gland.

Table 1. 11Cases of Tumor of the Thyroid Gland (1963-1973)

No.	Sex	Age	Histology	Primary Lesion	Neck Metastasis
1.	F.	62	Follicular adenocarcinoma	Left lobe	(−)
2.	F.	33	Follicular adenoma	Right lobe	(−)
3.	F.	46	Follicular adenoma	Right lobe	(−)
4.	M.	48	Papillary adenoma	Right lobe	(−)
5.	F.	63	Undifferentiated carcinoma & Papillary adenocarcinoma	Occult carcinoma*	(+)
6.	F.	47	Follicular adenoma	Right lobe	(−)
7.	M.	51	Papillary adenoma	Right lobe	(−)
8.	F.	38	Papillary adenocarcinoma	Right lobe	(+)
9.	F.	50	Follicular adenoma	Left lobe	(−)
10.	F.	20	Papillary adenoma	Left lobe	(−)
11.	F.	35	Papillary adenocarcinoma	Occult carcinoma*	(+)

According to Wezencraft et al[2], Haller first reported the existence of thyroid tissue in cervical lymph nodes in 1779. Subcequentiy, Albers also found this location of the thyroid tissue in the lymph node and termed this condition as "lateral aberrant thyroid" in 1829[4]. Formerly, it was suggested that the thyroid tissue in the cervical lymph node is due to embryonal deposits[5,6,7], and that the embryologically deposited thyroid tissue changes to neoplasm[5,6]. In the embryonal period, a few thyroid tissue masses exist separately as median and lateral anlages. These masses, in late, fuse each other, forming one thyroid mass[4,5,6,10]. This evidence supported the emaryonal hypothesis for the occult thyroid carcinoma.

However, many authors, in their detailedly histologic investigations of the thyroid gland and neck lymph nodes in the occult thyroid cancer, suggested that neoplastic thyroid tissue of the neck lymph nodes originates from a primary lesion in the thyroid gland, because, in many cases, they observed neoplastic lesion was detected in the thyroid gland, even if it was very small. These authors proposed the metastatic hypothesis[2,3,4,11,12,13,14].

In addition to these two hypotheses, the lymphatic transported hypothesis was offered by some authors[8,9,10]. According to this hypothesis, normal thyroid tissue may be transported to the cervical lymph nodes vid lymphatics and acquired neoplastic nature.

If the metastatic hypothesis is probable, total or subtotal thyroidectomy with radical neck dissection should be done for this disorder. However, there is still doubt that such small primary lesion of the cancer possesses metastatic tendency to cause so fuge metastatic lesion. Since the evidence that patients with occult thyroid cancer survived for a long period of time without any recurrence after only removal of the lesion in the cervical lymph nodes was performed, was reported by several authors[13,16], it is still uncertain whether rigorous treatments are necessary for all cases of this condition[11,14,17,18,19].

Although the observation of the present case could not prefer any one of the hypotheses, it is our opinion that only excision of the lymph node involved by the cancer lesion should be performed when the thyroid gland shows normal aspect. However, regardless of the hypotheses concerning the etiology, if the tumor is the undifferentiated type and exhibits rapid-growing, an extended surgery is essential.

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