

Thymoma Arising from Aberrant Cervical Thymus : Case Reports¹

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Thymoma is one of the most common neoplasms of the mediastinum, and the most frequent tumor of the anterosuperior compartment. Thymoma developing from arrested undescended thymic cells in the neck is, however, rare. The most common extrathoracic location is the vicinity of the thyroid.

Two cases of aberrant cervical thymoma are presented. Both manifested as mass lesions at the thoracic inlet, with superior displacement of the thyroid. The masses had clinical features similar to those previously reported for cervical thymoma: preponderance in women, and the absence of myasthenic symptoms, but in one case there was malignant transformation.

Index words : Thymus, CT
Thymus, US
Thymus, neoplasms

The thymus is the central organ of an infant's lymphoid system, originating high in the neck in early fetal life and reaching its definitive location in the mediastinum after a process of descent, generally leaving no trace behind. Occasionally, during this descent, remnants of thymic tissue can be implanted along the cervical pathway, representing the so-called ectopic or aberrant cervical thymus. Thymoma arising from aberrant cervical thymus in the neck is very rare and is an unusual cause of asymptomatic neck mass in adults.

We report two cases of thymoma which arose from aberrant cervical thymus in which the patient complained of an asymptomatic palpable neck mass.

Case 1

A 52-year-old woman presented with a pulsating mass in the left supraclavicular area; it had been present for 3 months.

Radiologic evaluation included a chest radiograph, which showed rightward deviation of the trachea at

the level of the thoracic inlet (Fig. 1A). CT of the neck revealed a mass which was partially cervical and partially thoracic, with superior displacement of the left lobe of the thyroid (Fig. 1B). The mass was homogeneously enhanced without necrosis. Ultrasound scans of the neck showed a solid mass in the left supraclavicular region and separated from the thyroid (Fig. 1C); its echogenicity was lower than that of the thyroid. The nodule was cold, and technetium-99m pertechnetate thyroid scanning indicated an extrathyroidal location.

Surgical exploration showed that the mass was round and well encapsulated, and adjacent to but separate from the left lobe of the thyroid. Microscopic examination disclosed benign thymoma.

Case 2

A 25-year-old woman had a one-year history of a palpable mass on the right side of the neck.

Chest radiography was normal, but ultrasound scans of the neck showed a heterogenous hypoechoic mass in the lower aspect of the right thyroid (Fig. 2). Technetium-99m pertechnetate thyroid scanning indicated that the nodule was cold.

Surgery revealed a solid mass barely attached to the right side of the thyroid gland and mediastinal pleura. No lymph node enlargement or other organ involve-

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Received June 11, 1998; Accepted October 1, 1998

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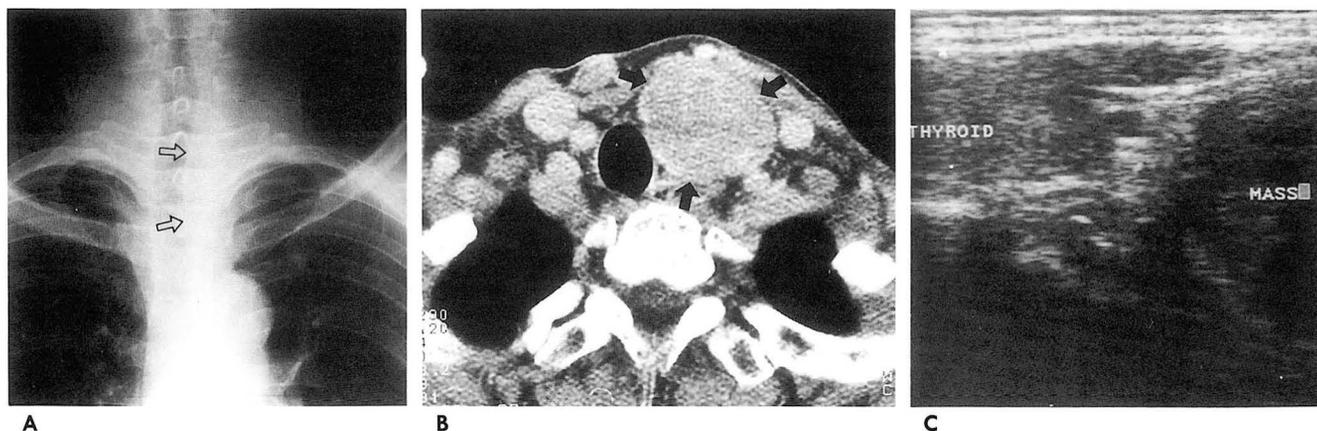


Fig. 1. Ectopic cervical thymoma in 57-year-old woman.

A. Chest radiograph reveals deviation of the upper trachea to the right.

B. CT scan obtained at thoracic inlet demonstrates a well-defined mass (arrows), which is adjacent to the left carotid artery and displaces the trachea.

C. Longitudinal ultrasound scan of the neck shows a large solid mass in the lower aspect of the left side of the thyroid and left supraclavicular area. The mass is separated from the thyroid gland.

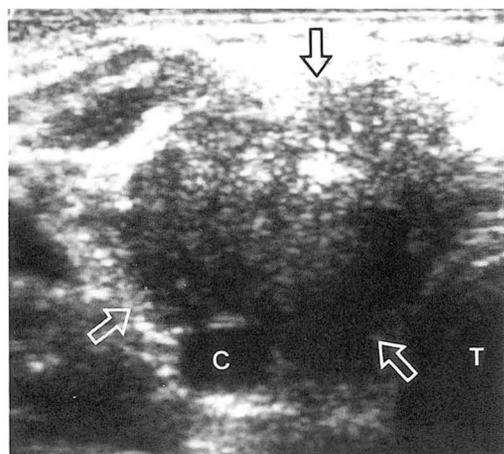


Fig. 2. Ectopic cervical thymoma in 25-year-old woman.

Transverse ultrasound scan of the neck shows a heterogeneous hypoechoic mass (open arrows) in the lower aspect of the right side of the thyroid. T, trachea; C, common carotid artery.

ment was noted, and the pathologic diagnosis was malignant thymoma without thyroid or parathyroid gland invasion. The patient underwent postoperative adjuvant external radiation therapy on the primary mass site and the mediastinum, and is currently well without evidence of tumor recurrence, three years after diagnosis.

Discussion

The thymus is derived from the third pharyngeal pouch, with minor contributions from the fourth, and by the sixth week of gestation, the bilateral primordial thymus descends medially and caudally. During the

eighth week the bilateral primordial thymus fuses in the midline and continues its descent beneath the sternum to the superior mediastinum in contact with the pericardium. Malescent of the thymus at any point along the track results in a persistent cervical thymus (1). An ectopic cervical thymus is rarely considered in the differential diagnosis of cervical masses; this lesion is essentially asymptomatic and generally occupies a position in the neck along the carotid sheath, underneath the sternocleidomastoid muscle(2). It has been estimated that residual thymic tissue in the neck is found in 1.8–21% of individuals(3, 4), though thymoma developing from cervical thymus is very rare, with less than 20 cases previously reported in the English-language literature(2, 5). The most common extrathoracic location is the vicinity of the thyroid. Miller et al.(5) reported two cases of thymomas mimicking a thyroid mass. A comparison of cervical and mediastinal thymomas reveals several differences and similarities. The average age upon diagnosis of all cervical thymoma was 45.6 years, while more than 70% of the cases in either location occur in patients over 40. Cervical and mediastinal thymoma can metastasize, but this is rare in both groups; the latter has been associated with other diseases, such as myasthenia gravis, Addison's disease, red-cell hypoplasia and congenital immunodeficiency. In the cervical thymoma group confirmed cases showed no associated disease, while in the mediastinal, there is slight male predominance; in the cervical group, female predilection is noted. Ninety percent of mediastinal thymoma occurs in the anterior and superior compartment of the mediastinum, whereas cervical thymomas can occur anywhere along its

embryogenic descent in neck(6, 7).

The diagnosis of thymoma in the neck can be challenging. The vast majority of masses in this region are of thyroidal origin, and we believe that their evaluation should begin with a careful physical examination and thyroid function test. In many instances, physical findings will be sufficiently characteristic of multinodular goiter, and the work up can end at that point. If the physical findings are atypical of multinodular goiter, however, further work up will be necessary. If physical examination suggests that the mass is extrathyroidal in origin, CT is better able to define its origin. Those masses that are likely to be dominant thyroid nodules should be evaluated with RI thyroid scanning, and if this demonstrates a cold nodule, then malignancy must be excluded by needle or open biopsy. Ultrasound scanning is useful for differential diagnosis between thyroid and extrathyroid mass, but accurate diagnosis depends on surgical excision and histologic examination.

In conclusion, thymoma arising from aberrant cervical thymus in the neck is very rare and in adults is an unusual cause of an asymptomatic neck mass. Despite its rarity, it should be considered in the differential diagnosis of such masses.

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이소성 경부 흉선에서 발생한 흉선종양 : 2예 보고¹

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박혜성·김학희

흉선종은 종격동에 빈발하는 종양의 하나로, 특히 전종격동에 발생하는 종양 중 가장 흔하다. 그러나 경부의 이소성 흉선에서 발생하는 흉선종은 매우 드물며 이들은 갑상선 인접부위에 가장 많다. 따라서 이소성 경부 흉선종은 증세없이 목에 만져지는 종양의 매우 드문 원인의 하나로 대부분 갑상선 종양으로 오진되기 쉽다. 이에 저자들은 경부에 갑상선과 인접하여 발생한 2예의 이소성 흉선종을 보고 한다. 이들은 모두 여자환자로 흉선종은 흉곽 입구에 위치하여 갑상선을 위로 밀고 있었으며 근무력증 증세는 없었으나 1예에서 악성 변형이 있었다.

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응시원서 교부	1998년 11월 9일(일) - 14일(토) 대한의사협회
응시원서 접수	11월 9일(월) - 14일(토) 학회 사무국
수험표 교부	12월 28일(월) - 30일(수) 학회 사무국
1차 시험	1999년 1월 14일(목) 10:00 - 서울의대 소아병원
합격자 발표	1월 20일(수) 12:30 - 대한의사협회
2차 시험 슬라이드 시험	1월 21일(목) 14:00 - 서울의대 소아병원
구술시험	1월 22일(금) 08:00 - 팔레스호텔 예정
최종 합격자 발표	2월 5일(금) 12:30 - 대한의사협회

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