Solitary fibrous tumor (SFT) was first described in the pleura in 1931, but has subsequently been reported in a wide variety of additional locations. Immunohistochemical analysis has demonstrated that these tumors arise from primitive submesothelial mesenchymal cells. Primary SFT of the thyroid gland is rare. Here, we report a case of thyroid SFT presenting as a giant intrathoracic goiter accompanied by respiratory failure. The patient underwent left subtotal thyroidectomy, and the tumor was completely resected. No recurrence was noted during 3 years of follow-up.

Keywords: intrathoracic goiter, respiratory failure, solitary fibrous tumor, thyroid

Introduction

Solitary fibrous tumor (SFT) was first described in the pleura in 1931, but has subsequently been reported in a wide variety of additional locations. Immunohistochemical analysis has demonstrated that these tumors arise from primitive submesothelial mesenchymal cells. Primary SFT of the thyroid gland is rare. Here, we report a case of thyroid SFT presenting as a giant intrathoracic goiter accompanied by respiratory failure. The patient underwent left subtotal thyroidectomy, and the tumor was completely resected. No recurrence was noted during 3 years of follow-up.

Case Report

An 88-year-old woman with a 2-month history of progressive shortness of breath was previously admitted to a local hospital for evaluation. She was diagnosed with asthma, for which she was treated with bronchodilators and steroids. The treatment was ineffective, and she suffered from respiratory failure. The patient underwent tracheostomy after prolonged intubation and was referred to our hospital for further management.

On physical examination, a left-sided neck mass was noted. A chest X-ray was suggestive of intrathoracic goiter. A computed tomographic scan demonstrated an enlarged left thyroid lobe with a large, well-demarcated, heterogeneous lesion at the lower thyroid pole. The lesion extended to the intrathoracic inlet, resulting in tracheal deviation to the right side (Fig. 1). No lung or pleural lesions were noted. Serum levels of T3, T4, and thyroid-stimulating hormone were normal.

The patient underwent left subtotal thyroidectomy. The intrathoracic part of the tumor was pulled up through the thoracic inlet and was completely resected. The resected tumor mass measured $9 \times 7 \times 5$ cm in size and weighed 190g. It was well encapsulated, circumscribed, brownish white in color, and firm (Fig. 2). Histologically, the thyroid mass was predominantly composed of plump to spindle-like cells arranged in a characteristic "patternless pattern." Regions of extracellular collagen...
formation and necrosis were noted. Throughout the tumor, entrapped thyroid follicles of varying size and shape were prominent (Fig. 3A). Mitotic figures were infrequent (1/30 HPF). The interface between tumor and stroma was jagged, with tongues of tumor penetrating into adjoining thyroid follicles. The tumor cells were strongly immunoreactive for CD34 and vimentin but negative for cytokeratin, supporting the diagnosis of a solitary fibrous tumor (Fig. 3B). The patient was discharged 3 weeks after the operation with an improved respiratory status. No recurrence was noted during 3 years of follow-up.

Discussion

Solitary fibrous tumor (SFT) of the serosal cavities was first described by Klemperer and Rabin as a separate entity in 1931. Primary SFT of the thyroid gland is extremely uncommon. Including the patient described here, only 25 patients have been reported in the English literature. The morphologic, immunohistochemical, and ultrastructural features of the thyroid SFTs are similar to their reported counterparts in other anatomic sites and their clinical outcome is similarly benign. The average age of these patients was 52.5 years (28–88 years) with a male predominance (1.5:1 male:female). The average tumor size was 5 cm (2 cm–9.5 cm). The clinical symptoms were variable, including asymptomatic thyroid nodule in 14 patients, progressed mass in 8 patients, asthma in 2 patients and hoarseness in one patient. The duration of symptoms ranged from one month to more than 10 years. The nonspecific symptoms and image...
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findings mimic thyroid goiter, making a preoperative diagnosis difficult. Fine-needle aspiration biopsy is the gold standard test for diagnosing thyroid neoplasms. However, none of the patients with SFT of the thyroid gland were diagnosed by fine-needle aspiration biopsy. Instead, all patients underwent total or subtotal thyroidectomy and were diagnosed postoperatively. None of the patients received adjuvant therapy. Among the 16 patients whose follow-up data were available, only one (6%) experienced recurrence and pulmonary metastasis 6 months after operation.5

Among patients with primary SFT of the thyroid gland, only two presented with intrathoracic goiter.6 The intrathoracic lesion caused progressive tracheal compression with respiratory failure and therefore was initially misdiagnosed as asthma. Although the tumor was large (8 and 9 cm in size) at the time of diagnosis, a cervical approach was adequate for complete tumor excision. Neither thoracotomy nor video-assisted thoracoscopic surgery was necessary for approaching the intrathoracic lesion. Respiratory symptoms were relieved immediately after operation, and no recurrence was noted in the two patients.

This case is unusual in terms of the advanced age of the patient at presentation, the primary thyroid involvement with intrathoracic extension, and the clinical manifestation of respiratory failure due to the large tumor size. This case illustrates the importance of considering SFT in the differential diagnosis of intrathoracic goiter or other mesenchymal and nonmesenchymal thyroid lesions. Complete excision of the tumor and the involved lobe of the thyroid gland is the treatment of choice.

Disclosure Statement

There is no conflict of interest involving any of the authors in this study. The authors have no financial or other interest in the manufacture or distribution of the device.

References


