

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Thoracic Surgery Quiz – Case 6

A 57-year-old lady was referred to our hospital due to a tumor of the superior mediastinum. The patient has undertaken a chest CT scan 4 months before the admission to our hospital, where a tumor was identified at the superior mediastinum, diagnosed as thymoma. A node was also found on the right lung and adenomas of both adrenal glands. The scanning test with radionuclide I¹³¹ showed remnants of thyroid tissue.

Her medical history included subtotal thyroidectomy 3 years ago due to hyperplasia. She also had prolactinoma and she was under supervision of endocrinologist. The patient was euthyroid and she was under medication for the prolactinoma.

On physical examination she was healthy-looking with normal vitals. There were no palpable lymph nodes and the rest of the examination was normal.

The patient underwent a new chest CT scan on admission and the tumor of the superior mediastinum was increased (fig. 1). Thus, in the thought of potential malignancy, the patient underwent an operation. Under general anesthesia partial sternotomy was performed and the tumor was resected (figures 2, 3). Pathologic examination of the specimen showed thyroid tissue with hyperplasia and thymus with two lymph follicles and two minor epithelial tumors.

The patient was released from the hospital 5 days after the operation under the medical directions of the endocrinologist.

Comment

Differential diagnosis of tumors of the superior mediastinum include benign diseases, including descending thyroid gland, ectopic thyroid tissue, thymus and neoplasms, such as thymic tumors, neurogenic tumors (nerve sheath tumors, neurilemoma-schwannomas, neurofibroma and ganglion cell tumors), lymphomas – the most common malignancy of the mediastinum, mediastinal germ cell tumors, teratomas, seminomas and nonseminomatous germ cell tumors.

Ectopic thyroid tissue has been found from the tongue to the diaphragm. Ninety percent of the reported cases of ectopic thyroid are found in the base of the tongue superficial, then in the submandibular region, the cervical lymph nodes, larynx, trachea, esophagus, mediastinum, diaphragm and the heart.

Mediastinal ectopic thyroid carcinoma is extremely rare as most cases do not meet the criteria of ectopic thyroid tissue, i.e. the ectopic tumor derives its blood supply from intrathoracic vessels rather than cervical arteries, the cervical thyroid gland is normal or absent with no history of surgery, the cervical thyroid gland does not have a similar pathologic process as the ectopic tumor, and no history or evidence of malignancy is documented.

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2009, 26(3):426–427

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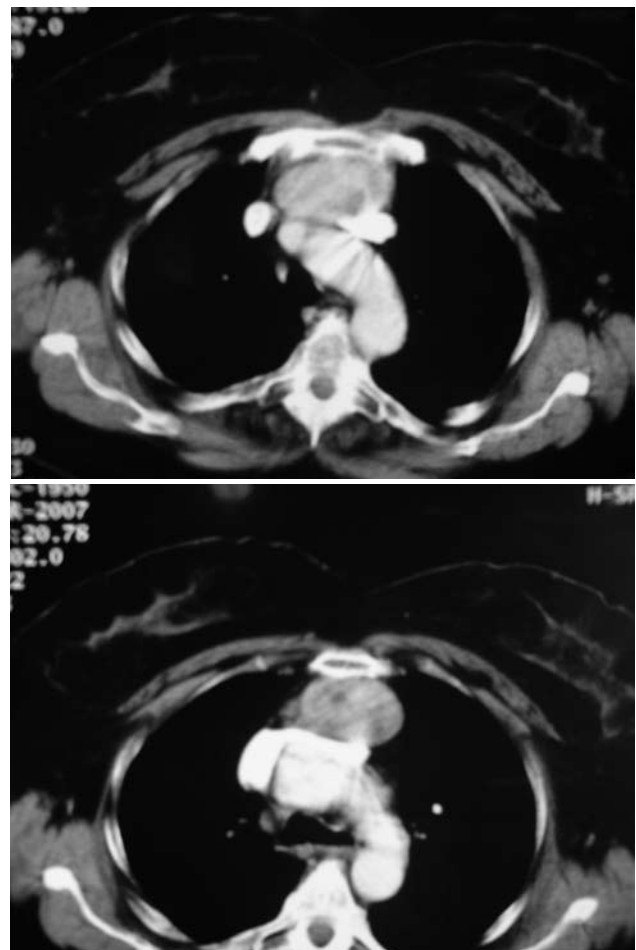


Figure 1

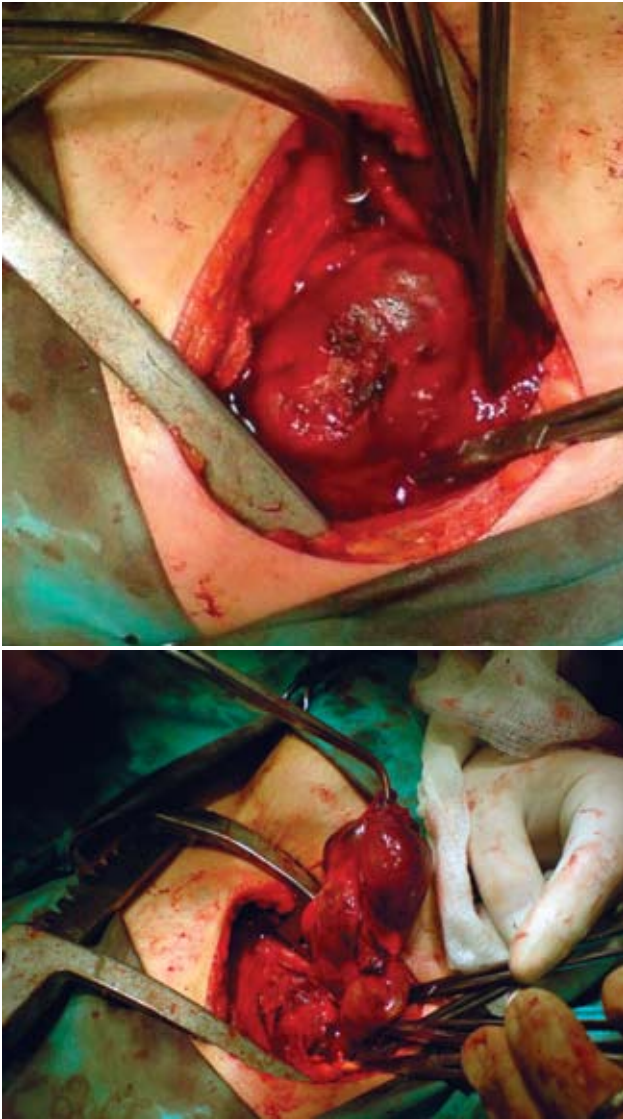


Figure 2

Patients with intrathoracic goiter are usually asymptomatic with the tumor reported as an incidental finding on x-ray. They might present with respiratory symptoms like cough, dyspnea, and hemoptysis and less commonly with dysphagia or the superior vena cava syndrome. For preoperative evaluation, plain chest x-ray, CT scan or MRI are useful. Findings on chest x-ray include tracheal displacement, tracheal compression, calcifications and soft tissue mass. Scintigraphy is effective for differential diagnosis of other mediastinal tumors such as thymoma or teratoma.

Surgical excision is the mainstay of the treatment as these tumors usually give rise to compressive symptoms. Thoracotomy or sternotomy is usually required for mediastinal thyroid tumors, alternatively thoracoscopic excision.

The thymus is the central organ of the lymphoid system in infancy. After completing its normal descent, the thymus is located in the anterior mediastinum, overlying the pericardium and the greater vessels at the

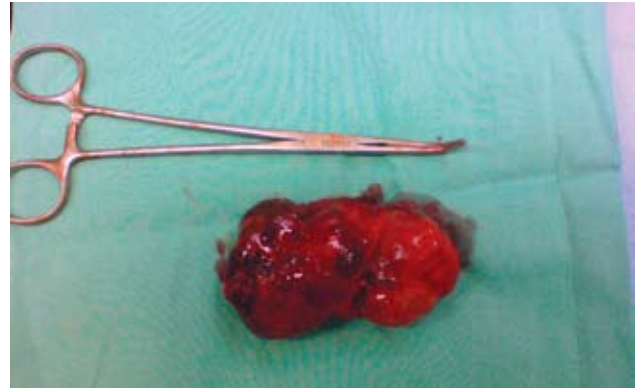


Figure 3

base of the heart. Defective pathways of the embryological descent of the thymic primordia may lead to a clinical spectrum of anomalies of the thymus. Various combinations of cystic and solid thymus have been reported, such as accessory cervical thymus (sequestration and failure of involution), cervical thymic cyst, completely undescended cervical thymus, persistent thymopharyngeal duct, persistent thymic cord directly attached to the mediastinal thymus and cervical extension of mediastinal thymus. In patients with myasthenia gravis, hyperplasia of thymic tissue occurs in both thymic gland and ectopic thymic tissue. The frequency of ectopic thymic tissue in patients without and thymic disease is about 4%.

Partial sternotomy combines the advantages of good exposure and acceptable cosmetic results. The incision is made from 1–2 cm below the sternal notch extending to the 3rd or 4th intercostal spaces. The manubrium should be completely divided and the sternotomy is carried to the level of the third or fourth interspace. Through this relatively short skin incision, with the sternum retracted, adequate visualization of the thymus and its cervical extensions is obtained for performance of a total thymectomy. Initially, both pleural spaces are opened and the phrenic nerves identified. With sharp and blunt dissection the overlying mediastinal pleurae are pushed to the sides to bring the thymus and innominate vein into view.

References

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Diagnosis: Ectopic thyroid gland and thymic tissue