Phrenic Nerve Schwannoma-presenting a Cystic Tumor of the Anterior Mediastinum: Report of a case

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Benign neurogenic tumors originating from the peripheral nervous system usually appear as schwannomas or neurofibromas. They represent one of the common causes of a posterior mediastinal mass and are usually found incidentally. However, tumors originating from the intrathoracic phrenic nerve are rare. We therefore report a case of schwannoma of the left phrenic nerve presenting as a lobulated mass causing hoarseness.

Key words: phrenic nerve, schwannoma, neurogenic tumors

Case Report

A 36-old-year lady with a 5-year smoking history presented to our hospital after a brief episode of left anterior chest pain and hoarseness for 1 month. Chest radiography showed a left mediastinal mass just obscuring the aortic arch without causing diaphragmatic elevation (Fig 1). A computed tomography (CT) scan demonstrated a 10.0 × 6.7 × 6.2 cm lobulated mass involving the left anterior to middle mediastinum adherent to adjacent great vessels (Fig 2) and extending from the heart to the left lower neck. Preoperative serum levels of α-fetoprotein (AFP), human chorionic gonadotropin β (β-HCG), and anti-acetylcholine receptor (anti-AChR) antibodies were all within normal limits. Results of fine-needle biopsy were inconclusive.

Since the tumor was found to be adhered to the adjacent great vessels, median sternotomy was adopted. A median sternotomy revealed a firm, inflamed tumor with thick wall that was tightly adhered to the neighboring thymus, aortic arch, pulmonary arteries, innominate vein, and aortopulmonary window, and hard to dissect. After removing the left thymic tissue and opening the outer wall, a well-circumscribed, completely encapsulated tumor arising from the left phrenic nerve just above the level of the hilum was found. We completely resected the mass including the involved phrenic nerve. Intraoperative frozen section showed a benign neurogenic tumor, and its outer wall was partially resected.

The mediastinal tumor was 45 gm in weight and 10 cm × 5 cm × 4 cm in size (Fig 3). Microscopically, the majority of the tumor showed significant degeneration with myxoid change, cystic change, hemorrhage, and lymphoplasma cell infiltration. The spindle-shaped cells displayed a highly ordered cellular component (Antoni A) and a loose myxoid component (Antoni B). The surgicopathologic diagnosis was a schwannoma originating from the left phrenic nerve. Postoperatively, the left hemidiaphragm became elevated due to left phrenic nerve paralysis, but the patient did not complain of any discomfort.

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Received: March 3, 2008 Accepted: August 19, 2008
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