A Case of Primary Endobronchial Neurilemmoma Without Intraspinal Extension

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Neurilemmoma is a benign and slowly growing neurogenic tumor. Intrathoracic neurilemmoma often develops in the chest wall and posterior mediastinum, but endobronchial neurilemmoma is extremely rare. The diagnosis of endobronchial neurilemmoma with preoperative imaging findings is challenging and is usually made via postoperative pathological examination. These authors encountered a case of primary endobronchial neurilemmoma in a 52-year-old woman who had no symptoms. A 3.0 × 2.6 cm mass in the right lower lobe projecting into the mediobasal segmental bronchus was shown in the results of the contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI) of the chest. Benign neurilemmoma was confirmed via bronchoscopic biopsy, and surgical resection (sleeve bronchial excision and end-to-end anastomosis) was performed.

Key Words: Neurilemmoma, Bronchi, Pulmonary surgical procedures

INTRODUCTION

Neurilemmoma is a benign, slowly growing tumors of Schwann cells that may arise in any nerve, including cranial nerves, spinal roots or peripheral nerves. Neurilemmoma occurs with equal frequency in men and women. The tumor has been reported in patients of all ages (mean age 41 years).¹

Neurilemmomas of the endobronchial origin are rare and only few cases have been reported previously in the literature. It is conceivable that neurilemmoma rarely occur in the trachea, bronchus, bronchioles and alveoli, even though the exact frequency is unknown.²

Prognosis is excellent, and recurrences are rarely reported after surgical resection. We report a case of primary endobronchial neurilemmoma in a 52-years-old woman. Surgical resection (sleeve bronchial excision and end to end anastomosis) was performed.

CASE

A 52-year-old woman who was taking medication for anxiety disorder presented with anterior chest pain. She was diagnosed with unstable angina, and underwent an coronary angiography with percutaneous transluminal coronary angioplasty. She presented ambiguous abdominal pain and was found to have lung mass in right lower lobe by abdominal CT. But, she had no respiratory symptom and never smoked.

The patient’s vital signs included blood pressure of 150/100 mmHg, temperature of 36.5°C, respiratory rate of 20 breaths per minute and oxygen saturation of 97% on room air. There is no abnormal finding by lung auscultation.

Chest X-ray were normal (Fig. 1) and routine laboratory tests revealed only increased LDL-cholesterol (142 mg/dL) with normal liver function, normal renal function and normal coagulation tests.

Contrast enhanced CT of chest showed about a 3.0 × 2.6 cm sized, well-demarcated round mass in right lower lobe projecting into mediobasal segmental bronchus. Bronchoscopy showed a small polypoid lesion in mediobasal segment of the right lower bronchus (Fig. 1). The bronchoscopic biopsy showed that tumor was histopathologically and immunohisto-
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Fig. 1. Chest X-ray is shown to be normal (A), and the chest CT scan image shows an about 3.0 × 2.6 cm well-demarcated mass in the right lower lobe (B) projecting into the mediobasal segmental bronchus (C) (white arrow). The bronchoscopic view shows a polypoid protruding mass in the mediobasal segmental bronchus (D).

Fig. 2. Enhanced T1-weighted fat suppression image shows a soft-tissue mass with a globular enhancing portion in the right mediobasal segment (A). Enhanced T2-weighted fat suppression image shows a mainly high-signal-intensity lesion at the same site as with A (B).

Fig. 3. A 3.5 × 2.9 × 2.4 cm, oval mass is connected to the bronchus (white arrow). The cut section shows a yellowish translucent glistening appearance and the focal area of hemorrhage (A). The tumor shows hypercellular Antoni A and hypocellular Antoni B areas (B: hematoxylin-eosin stain, × 40). The tumor cells are spindle-shaped and have wavy, tapering nuclei (C: hematoxylin-eosin stain, × 100). The tumor cells are positive for S-100 protein (D: immunohistochemical stain, × 100).

DISCUSSION

Neurilemmomas are typically single, circumscribed, encapsulated tumors attached to any nerve, including cranial nerves, spinal nerves or peripheral nerves. More than 90% of neurilemmoma are benign. Neurilemmoma occurs with equal frequency in men and women. The tumor has been reported in patients of all ages (mean age 41 years).

Neurilemmoma may occur in any peripheral nerve and is often found in the chest wall and the posterior mediastinum. Although being very rare, pulmonary neurilemmoma can occur in all respiratory tracts including the trachea, bronchus, bronchioles and alveoli. Only few cases of pulmonary neurilemmoma was reported in Korea.

Neurilemmoma have an equal distribution in trachea, central bronchus and pulmonary parenchyma. They usually have a long natural history, causing symptoms only after they have attained a large size. The tracheobronchial tumors can present with respiratory dyspnea, wheeze, dry or productive cough, chest pain and hemoptysis. Bronchial obstruction can cause recurrent pneumonia and lung collapse.

The Contrast enhanced CT of chest is helpful in assessing lung parenchyma distal to obstruction and delineation of the tumor inside the lumen as well as outside the wall of the respiratory tract. The computed tomographic appearace of neurilemmoma usually consists of a well demarcated round or

chemically compatible with neurilemmoma. On MRI, mass had globular enhancing portion on T1-weighted fat suppression images and had areas of high signal intensity on T2-weighted fat suppression images without intraspinal tumor extension (Fig. 2).

The patient underwent an operation for surgical resection. The mass was occupying the mediobasal segment of right lower lobe and connected to mediobasal segmental bronchus. It was measured a 3.5 × 2.9 × 2.4 cm sized oval mass (Fig. 3). A postoperative biopsy was conducted and the subsequent hematoxylin and eosin (HE) stain revealed that the lesion consisted of dense lymphoid infiltration and spindle cell (Fig. 3). The S-100 immunohistochemical stain was positive, leading to our diagnosis that the lesion was a neurilemmoma (Fig. 3).