REFERENCES

1. Skolnik PR, Lisak RP, Zweiman B. Monoclonal antibody analysis of blood T-cell subsets in myasthenia gravis. *Ann Neurol* 1982;11:170-6.
2. Izumi T. Sarcoidosis: allergic pulmonary disease, Tokyo: Nankodou Press, 1986:296.
3. Andonopoulos AP, Papathanasopoulos PG, Karatza C, Angelopoulos S, Papapetropoulos T. Sarcoidosis in a patient with myasthenia gravis: case report and review of the literature. *Clin Rheumatol* 1991;10:323-5.
4. Saper JR, Fry MB. Sarcoidosis presenting as a mediastinal mass in a patient with myasthenia gravis. *Dis Nerv Syst* 1977;38:57-9.

Mediastinal vagal neurilemmoma causing tracheal stenosis

Junya Katoh, MD, Shinpei Yoshii, MD,
Osamu Suzuki, MD, Shigeru Hosaka, MD,
Ryoichi Hashimoto, MD, and Yusuke Tada, MD,
Yamanashi, Japan

Neurogenic tumors of the mediastinum are common and constitute the majority of neoplasms of the posterior mediastinum.¹ Usually such tumors arise from the intercostal nerve or the sympathetic chain. However, tumors originating from the vagus nerve are rare. A review of the literature revealed no patient with vagal neurilemmoma causing severe tracheal stenosis. We report here a case of vagal neurilemmoma in which hemoptysis resulted from compression of the membranous trachea.

A 68-year-old man was admitted with a 6-month history of feeling pressure on swallowing and recent onset of frequent hemoptysis. He had retired from his post as a public official 8 years previously, did not smoke, and had no history of serious illness. Physical examination showed no abnormalities, and results of laboratory findings including urinalysis, complete blood count, blood chemistry, arterial blood gases, and tumor makers were within normal limits. A spirogram also showed no abnormalities. Posteroanterior and lateral roentgenograms of the chest showed a mass compressing the trachea from behind. A computed tomographic scan revealed a well-circumscribed, heterogeneously enhanced mass, which was causing tracheal stenosis. Magnetic resonance imaging was performed for further anatomic definition of the mass (Fig. 1). Examination with a fiberoptic bronchoscope disclosed severe extrinsic pressure on the distal trachea and mucosal injection (Fig. 2). Transtracheal biopsy was impossible because the mucosa had a tendency to bleed. It was difficult to establish a definite preoperative diagnosis

Fig. 1. Magnetic resonance imaging showing a well-circumscribed mass compressing the membranous trachea.

computed tomography and magnetic resonance imaging suggested a benign tumor, such as neurilemmoma or neurofibroma, but we could find no case report of benign mediastinal tumor associated with frequent hemoptysis, and a pathologic diagnosis could not be obtained because of bleeding from the tracheal mucosa.

With the preoperative diagnosis of mediastinal neurogenic tumor, which was most likely a neurilemmoma but possibly a malignant tumor, a right thoracotomy incision was made. A smooth, encapsulated tumor with the dimensions of 4 × 4 × 3 cm was encountered behind the trachea, and careful observation revealed that it was originating from the right vagus nerve. Inasmuch as examination of frozen sections of the mass showed that the tumor was a neurilemmoma originating from the vagus nerve, we decided to resect the tumor completely. Because the tumor could not be dissected from the nerve, the tumor was extirpated with proximal and distal ligation and division of the vagus nerve. At that time, a 2 cm defect in the membranous trachea of the carina occurred, and a double-lumen endobronchial tube was placed into the left

From the Second Department of Surgery, Yamanashi Medical University, Yamanashi, Japan.

J THORAC CARDIOVASC SURG 1995;109:184-5

Copyright © 1995 by Mosby-Year Book, Inc.

0022-5223/95 \$3.00 + 0 12/8/56255

Fig. 2. View through a fiberoptic bronchoscope showing severe extrinsic pressure on the distal trachea from behind. Tracheal mucosa is injected and has a tendency to bleed.

main bronchus to ventilate the left lung selectively. A pedicled pericardial flap was harvested and sutured to the membranous trachea with interrupted Maxon sutures (Davis & Geck, Danbury, Conn.). In addition, a pedicled omentum was harvested through a median incision of the upper part of the abdomen and wrapped around the repaired defect to avoid anastomotic leakage. Pathologically this tumor was characterized as an encapsulated neurilemmoma. The tissue was composed of compactly arranged spindle cells and the nuclei were arranged in palisades that were designated Antoni type A. No post-operative complications developed. A bronchoscopic study performed 8 weeks after the operation showed complete epithelialization of the pericardial patch.

Tumors originating from the vagus nerve are rare. Besznayák, Tóth, and Szende² observed two intrathoracic vagal tumors among 741 mediastinal tumors seen in a 25-year period. Das Gupta and colleagues³ identified two cases of vagal tumor from 303 benign solitary schwannomas. Usually vagal tumors are recognized at the paramedian portion of the mediastinum because of the anatomic situation of the vagus nerve. Intrathoracic neurilemmomas are usually detected as incidental findings at chest radiography. Symptoms, such as hoarseness, chest pain, or cough, however, may occur by involvement of the recurrent laryngeal nerve or from compression of the trachea or bronchi.⁴ This is the first reported case of a vagal neurilemmoma that grew behind the trachea and compressed it, thereby causing frequent hemoptysis.

Benign vagal tumor with hemoptysis is rare, but it may be of benefit for the thoracic surgeon to establish methods of diagnosis and treatment of this disease.

REFERENCES

1. Shields TW, Reynolds M. Neurogenic tumors of the thorax. *Surg Clin North Am* 1988;68:645-68.
2. Besznayák I, Tóth L, Szende B. Intrathoracic vagus nerve tumors: a report of two cases and review of the literature. *J THORAC CARDIOVASC SURG* 1985;89:462-65.
3. Das Gupta TK, Brasfield RD, Strong EW, Hajdu SI. Benign solitary schwannomas (neurilemmomas). *Cancer* 1979;24:355-66.
4. Stickland B, Wolverson MK. Intrathoracic vagus nerve tumors. *Thorax* 1974;29:215-22.

Cardiac cannulation, sodium and water balance, and ANF plasma levels

S. Böhm, MD, R. M. Arendt, MD, B. Reichart, MD,
R. H. G. Schwinger, MD, and M. Böhm, MD,
Köln, Germany

Atrial natriuretic factor (ANF) is released in response to atrial distention and has been suggested to play an

From the Klinik III für Innere Medizin, Joseph-Stelzmann Str. 9,
D-50924 Köln, Germany.

J THORAC CARDIOVASC SURG 1995;109:185-6

Copyright © 1995 by Mosby-Year Book, Inc.

0022-5223/95 \$3.00 + 0 12/8/54522