Hoarseness Secondary to Left Atrial Myxoma*

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A 62-year-old woman presented with a history of hoarseness. Although stable for ten years, she recently showed signs of deterioration. Investigations revealed left vocal cord paralysis and a large left atrial tumor displacing the left pulmonary artery under the arch of the aorta. The lesion was removed and the normal aortopulmonary window on computed tomography (CT) scan was restored. On review of the literature, this case appears to be the first to suggest that myxomas cause recurrent laryngeal nerve palsy through direct effects. (Chest 1989; 95:1139-40)

Left atrial myxomas are benign tumors usually found serendipitously during investigation of patients suspected of having mitral valve disease. Patients primarily present with symptoms secondary to the usual triad of obstructive effects (such as congestive heart failure), embolism (neurologic, extremity), or constitutional effects (fever, anemia). Although other symptom complexes have been reported, we report the first case of a patient presenting with hoarseness secondary to recurrent laryngeal nerve damage caused by tumor growth.

CASE REPORT

A 62-year-old woman presented to a peripheral hospital complaining of a recent deterioration in her voice in the preceding six months. She had a ten-year history of hoarseness. A chest roentgenogram revealed left atrial enlargement consistent with mitral valve disease; however, an echocardiogram showed a large left atrial tumor.

The patient was referred to the Ottawa Heart Institute. An in-depth history taken there uncovered no other symptoms. Most notably, she suffered no dyspnea, episodes of embolism, or constitutional symptoms. On physical examination, the physician heard a sound consistent with a “tumor plop,” as well as a brief early diastolic murmur. Ear, nose, and throat specialists also examined the patient, and indirect laryngoscopy exposed left recurrent laryngeal nerve palsy with the left cord lying in the lateral position on phonation.

The patient was mildly anemic (hemoglobin value, 110 g/L) with a normal MCV. There was a slight elevation of the erythrocyte sedimentation rate (44; normal 0-20 mm/h). An electrocardiogram revealed a left atrial abnormality with right axis deviation and right ventricular hypertrophy and another chest x-ray film demonstrated left atrial prominence (Fig 1). A two-dimensional echocardiogram revealed a pedunculated mass in the left atrium.

A CT scan was performed to assess possible causes of recurrent laryngeal pathology. The scan showed that the tumor mass displaced the left pulmonary artery into the aortopulmonary window under the arch of the aorta (Fig 2). Finally, tumor vascularity and a space-occupying lesion in the left atrium appeared on cardiac catheterization.

In the operating room, a midline sternum splitting incision exposed the heart. Externally, it appeared normal. Cardiopulmonary bypass was established and the tumor approached via a standard left atriotomy incision. An 8 cm pedunculated tumor arose from the fossa ovalis in the left atrium. Surgeons removed the tumor and repaired the small resulting defect in the atrial septum. The gross and microscopic pathology of the tumor confirmed an atrial myxoma.

Atrial dysrhythmias and urinary retention complicated the patient's postoperative course. However, both resolved prior to discharge.

On follow-up chest x-ray film, the changes noted before surgery had been corrected. Similarly, on a repeat CT scan (Fig 3), the left pulmonary artery had moved, clearing the aortopulmonary window. The patient improved considerably in the months since her surgery. Her voice is almost completely restored. Follow-up laryngoscopic examination showed improved adduction of the left vocal cord during phonation, suggesting resolution of the recurrent laryngeal nerve palsy.

DISCUSSION

Atrial myxomas are the most common form of primary cardiac tumor, accounting for 50 percent of the benign tumors. They are generally solitary and pedunculated,

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Figure 1. A PA chest roentgenogram. Note the double opacity, mild convex shape of the left midcardiac contour, and elevation of the left mainstem bronchus and hilum due to the enlarged left atrium.
Hoarseness arising from endothelial or subendocardial reserve cells in the fossa ovalis of the left atrium. Lobular and pale-gray atrial myxomas range in size from 0.4 to 5 cm, although they may grow as polypoid masses filling the entire cardiac chamber.

History and physical examination alone rarely uncover myxomas, requiring two-dimensional echocardiography to reveal them. They classically cause symptoms due to the clinical triad of obstruction, embolization, and constitutional symptoms. Also, these tumors have been known to mimic other diseases such as polyarteritis nodosa and bacterial endocarditis.

No one has yet described the presentation of hoarseness associated with a left atrial myxoma. Hoarseness does occur with mitral valve disease with left atrial enlargement.

In our case, we feel the tumor caused significant left atrial enlargement, elevating the left mainstem bronchus and the left pulmonary artery into the concavity of the aortic arch. This deviation obliterated the aortopulmonary window on the CT scan. Further, compression of the left recurrent laryngeal nerve as it hooks around the arch lateral to the ligamentum arteriosum caused a neuropraxia of the nerve and subsequent voice hoarseness. The follow-up CT findings are consistent with this hypothesis.

Our opinion differs from Hanson et al. who considered left atrial enlargement uncommon with left atrial myxomas. Hanson and his research group suggested that myxomas grow rapidly because there is usually high-grade obstruction. As a result, they wrote that the left atrium remains relatively small, with any tumor growth usually occurring in less than six months. Similarly, Marinissen et al. commented that myxomas must grow rapidly since one of their patients developed a tumor within 14 months of a clear echocardiogram. Other reports suggest growth rates of two to 14 months. Our patient, however, probably developed the myxoma 120 months prior to presentation. The tumor probably grew intermittently during the ten "quiet" years.

A myriad of symptoms may initiate the investigation of an atrial myxoma, or the tumor may be totally asymptomatic. We believe our patient represents a new etiology: hoarseness may be attributed to left atrial myxoma growth, and the presence of such a tumor should be considered in the differential diagnosis of left recurrent laryngeal nerve palsy.

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