Hemoptysis During Sexual Arousal

An Unusual Manifestation of Amyloidosis

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Hemoptysis associated with sexual arousal is thought to be secondary to cardiac dysfunction brought on by the physiologic stress of sexual activity. A patient who presented with hemoptysis occurring only during episodes of sexual stimulation was subsequently found to have cardiac amyloidosis.

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Hemoptysis during sexual intercourse has been reported in patients with mitral stenosis, coronary artery disease, end-stage left ventricular failure, and pulmonary embolism. This report describes a patient whose presenting complaint was hemoptysis on sexual arousal. Extensive evaluation subsequently disclosed the presence of cardiac (and possibly pulmonary) amyloidosis as the cause of the patient's hemoptysis.

CASE REPORT

The patient was a 57-year-old man who noted on approximately four occasions that he coughed up small amounts of blood after being sexually aroused. Because of the hemoptysis, the patient did not go on to sexual intercourse. Concomitant with this, the patient developed progressive dyspnea on exertion and also noted bilateral lower extremity weakness and pain with exercise. He had also lost about 13.5 kg over the past four to five months and complained of intermittent abdominal pain. The patient had been entirely healthy prior to these events. He had undergone a right carpal tunnel release operation at about the same time that the hemoptysis started. On physical examination, the patient was an ill-appearing man in no acute distress. Vital signs were remarkable for a pulse of 120 and a respiratory rate of 32. Findings from the remainder of the examination were within normal limits.

Initial laboratory data showed a hemocrit of 38.7 percent. Prothrombin time, partial thromboplastin time, and platelet count were normal. Serum protein electrophoresis and urine protein electrophoresis were negative for monoclonal proteins. Resting arterial blood gases on room air showed a pH of 7.40, a PCO₂ of 37

mm Hg, and a PO₂ of 81 mm Hg. Pulmonary function tests showed an FVC that was 77 percent of predicted. The FEV₁/FVC ratio was normal. The FRC was normal. The diffusing capacity for carbon monoxide was 47 percent of predicted. A chest radiograph showed a mildly enlarged cardiac silhouette. There was an atelectatic scar in the left mid-lung field.

The patient underwent fiberoptic bronchoscopy that showed old blood present at the entrance of the right lower lobe, but no evidence of any acute bleeding. No other endobronchial abnormalities were noted. No biopsy specimens were obtained. A V/Q scan was performed that showed a matched ventilation/perfusion defect in the left mid-lung field. A chest computed tomographic scan showed a focal, linear density adjacent to the pleural surface in the left mid-chest just below the level of the carina. The patient had a cardiac evaluation that included a thallium stress test, echocardiogram, and cardiac catheterization. The thallium stress test showed some reversible inferior wall ischemia. The patient was exercised on the Bruce protocol, but he was only able to complete 1 min and 43 s of exercise because he developed severe shortness of breath and back pain radiating down the legs. An echocardiogram showed mild concentric left ventricular hypertrophy and low-normal contractility with an estimated ejection fraction of 50 percent. There was mild mitral regurgitation and tricuspid regurgitation. The patient's cardiac catheterization showed normal coronary arteries and a left ventricular ejection fraction of 55 percent. The patient had electromyograms and nerve conduction velocity studies performed that showed carpal tunnel syndrome on the left.

Subsequent diagnostic procedures included a bone marrow biopsy specimen that showed moderate, diffuse plasmaacytosis (5 percent to 10 percent), a gastroscopy that showed erythema at the gastroesophageal junction with mild erosive changes, and a colonoscopy that was normal. Bone marrow, antral, and rectal biopsy specimens were all negative for amyloid. Repeated cardiac catheterization was performed with myocardial biopsies, and these biopsy specimens showed myocardial infiltration with amyloid.

DISCUSSION

This patient had several features associated with amyloidosis, including carpal tunnel syndrome, left ventricular dysfunction, anemia, abdominal pain, and weight loss. The diagnosis was elusive (rectal biopsy specimens are diagnostic in 73 percent of cases) and finally was made with myocardial biopsy. Although exertional hemoptysis in amyloidosis has been described previously, this case is unusual in that, to my knowledge, it is the first description of hemoptysis associated with sexual arousal in amyloidosis.

Bleeding complications are fairly common in amyloidosis and are thought primarily to be due to amyloid infiltration of blood vessels with a consequent increase in vessel fragility. Hemoptysis has been reported to occur in 2 percent of all cases of amyloidosis.

Pulmonary involvement in amyloidosis is not unusual, with a frequency of 30 percent reported in a large autopsy series. The incidence is closer to 90 percent in primary amyloidosis, which was this patient's most likely diagnosis, given the absence of any underlying disease. Pulmonary amyloidosis has been traditionally classified as tracheobronchial or parenchymal. Tracheobronchial involvement most commonly causes hemoptysis and/or atelectasis, but there was no evidence for this in this patient on bronchoscopic examination. Parenchymal involvement has been described as nodular, which is fairly indolent, or diffuse, in which interstitial and perivascular deposition of amyloid is usually associated with a progressive downhill course. This patient
had no biopsies performed of the lung, so it is impossible to say whether he had parenchymal pulmonary involvement. However, pulmonary involvement was found in virtually all patients with cardiac involvement associated with primary amyloidosis in one series. In addition, there may also have been interstitial disease that was not yet apparent on the chest roentgenogram, since the patient did have a low diffusing capacity.

Previous reports of recurrent hemoptysis associated with sexual activity have all been in patients with cardiac disease,1,2 the common hypothesis being that the exertion associated with sexual stimulation3 brought about transient elevations of pulmonary capillary pressure with subsequent rupture of these capillaries, resulting in hemoptysis. The patient presented in this report also had significant cardiac disease as demonstrated by his myocardial infiltration with amyloid. Although it was not documented histologically, pulmonary capillary fragility from amyloid deposition may have contributed to the development of hemoptysis in this particular case. Amyloidosis should be included in the differential diagnosis of a patient presenting with hemoptysis, particularly if the hemoptysis occurs with exertion.

REFERENCES
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Miliary Opacities Diagnosed as Lung Metastases of a Thyroid Carcinoma After 13 Years of Stability*

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A 29-year-old man was hospitalized for the diagnosis of clinically asymptomatic miliary opacities discovered 13 years earlier and unchanged since then. Transbronchial biopsy showed metastatic thyroid carcinoma. Thyroid surgery revealed massive local invasion by a papillary carcinoma. We conclude that thyroid carcinoma, whether clinically detectable or not, should be considered in the diagnostic investigation of stable miliary lesions.

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Miliary opacities, a common aspect in pulmonary tuberculosis, have also been described in pulmonary localizations of some extrathoracic malignancies, including melanoma, renal cell carcinoma, and thyroid neoplasm.1 Clinically detectable or occult thyroid neoplasms may be revealed by pulmonary metastases and diagnosed by lung biopsy.2 We report the findings in a patient with asymptomatic miliary nodules discovered 13 years before final diagnosis of a papillary thyroid carcinoma.

CASE REPORT

A 29-year-old man was referred to the hospital because of miliary micronodular densities in both lung fields detected on a routine roentgenologic examination. The patient was a nonsmoker, and his medical history did not include head or neck irradiation. On review, the miliary lesions had existed 13 years earlier, and the roentgenologic aspect had not changed since then (Fig 1). At that time, the findings from clinical examination were normal, bronchoscopic examination showed no abnormalities, and no distal biopsies were performed. The results of pulmonary function tests were normal, and no diagnosis was made. On the current admission the patient was in good condition, without fever, weight loss, or respiratory symptoms. Clinical examination detected a left cervical lymph node and an enlarged, nodular left lobe of the thyroid. A high-resolution computed tomographic scan of the thorax showed disseminated bilateral pulmonary micronodules and a calcified endothoracic goiter (Fig 2). Pulmonary function tests disclosed a loss of lung volume of 20 percent, with a normal diffusing capacity.

Bronchoscopy with transbronchial biopsies was performed, and histologic examination revealed a nodular structure with groups of epithelial cells arranged in follicles and containing colloid; a metastatic well-differentiated thyroid carcinoma with a mixed papillary and vesicular pattern was diagnosed. Ultrasound examination of the thyroid showed a heterogeneous large left lobe with calcifications. Adenopathy and contralateral cervical lymph nodes were also detected. Plasma thyroxine and thyroid-stimulating hormone levels were normal.

The patient underwent a total thyroidectomy with lymphadenectomy. Histologic examination disclosed a well-differentiated papillary carcinoma involving the two lobes, with capsular invasion, metastases to the lymph nodes, and esophageal infiltration. The patient was subsequently treated with iodine 131. One year later, no evidence of cervical recurrence was found, but remote tumor was proven by iodine 131 uptake in both lungs. Since then, the patient has remained in stable health for 2 years.

DISCUSSION

This case is remarkable for the slow evolution of an untreated asymptomatic thyroid carcinoma presumed metastatic to the lung 13 years before diagnosis. The papillary carcinoma of the thyroid is known to be clinically indolent and slow to metastasize and has a good overall prognosis.4 Pulmonary metastases occur in 2 to 20 percent of differentiated thyroid carcinomas5 and are particularly frequent in young patients.4 Their slow course is well established; however, in our patient, repeated comparisons with prior

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