Pulmonary Varices*

Report of Two Cases and Review of the Literature

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Two cases of pulmonary varices are presented. The lesion is rare, and only 32 cases have been reported in the literature. Although the lesion is benign in nature, complications are possible, and death has occurred from rupture of the varix intrapleurally or into the bronchial tree.

The aneurysmal dilation of a pulmonary vein, known as pulmonary varix, is a relatively rare lesion and should be distinguished from the more common arteriovenous malformation. According to Rizk and associates,1 the first case of pulmonary varix was reported by Puchelt in 1843. Since then, only 32 cases have been recorded.3-21

Herein we report two cases of our own and review the pertinent literature.

Case Reports

Case 1

A 45-year-old asymptomatic man was referred because of a round shadow in the right lung which was discovered on routine x-ray examination of the chest. The lesion was 2 cm in diameter and located in the middle lobe. Findings from routine examinations were normal. At thoracotomy, the lung looked normal, and no palpable mass could be found. The chest was closed, and the chest x-ray film taken immediately after surgery showed the round shadow still to be present. The chest was reentered; and, again, careful palpation failed to reveal any mass. The middle lobe was resected, and the pathologic examination revealed a pulmonary varix. The patient had an uneventful recovery.

Case 2

A 18-year-old woman was recently referred because of a well-delineated shadow discovered incidentally at x-ray examination of the chest. The mass was located in the medial aspect of the lower lobe, close to the hilum and pericardium, extending down to the diaphragm (Fig 1). A vascular malformation of the lung was suspected, and a pulmonary angiographic examination was performed, confirming the

Figure 1. Plain chest x-ray film showing well-delineated mass (arrows) in lower part of right hemithorax.

Figure 2. Angiocardiogram (early arterial phase). Mass is not yet opacified.
Among patients, one was discharged. The varix was found in the lower part of the right hemithorax. Mitral valvular disease was present in five patients,\textsuperscript{7,10,15,18} congenital heart disease was noted in one patient,\textsuperscript{19} and coarctation of the aorta was found in another.\textsuperscript{1}

The varix was diagnosed at autopsy in seven cases. Among these, transient hemiplegia had been present in Nauwerk's\textsuperscript{9} patient and right hemiplegia in the patient of Perret and Fortelius.\textsuperscript{13} Cerebral encephalomalacia was found at autopsy in Nieman's\textsuperscript{5} patient. One may well attribute these cerebral complications to a possible embolic event originating in the varix.

Rupture of the varix leading to fatal exsanguination was found at autopsy in three cases. In Nauwerk's\textsuperscript{9} patient the varix had ruptured into the bronchus; while rupture into the pleural cavity had occurred in the patients of Klinck and Hunt\textsuperscript{4} and of Perret and Fortelius.\textsuperscript{13}

In 1951, Mouquin and associates\textsuperscript{7} were the first to use angiocardiography for the diagnosis of pulmonary varices, and since then, this procedure has been used in most cases.

The lesion is commonly considered to be benign and, when diagnosed, is not treated surgically. The patient of Hagen and Heinz\textsuperscript{12} was operated on because of recurrent pulmonary infection. The varix could not be incriminated after pathologic examination of the specimen. The patient of Papamichael and associates\textsuperscript{20} underwent a right pneumonectomy because of repeated hemoptysis due to bronchiectasis. Also, the patient of Davia et al\textsuperscript{21} was operated on because of a coin lesion in the lung.

The fate of most patients with pulmonary varices remains unknown, and the only long-term follow-up of patients has been reported by Hipona and Jamshidi.\textsuperscript{18} They stated that the varix did not change after 4, 7, and 15 years. Pending further reports and considering the possible complications and fatal outcomes which were occasionally recorded, one may question the benign nature of this lesion.

**REFERENCES**

Striking Electrocardiographic Changes Associated with Pheochromocytoma

Masquerading as Ischemic Heart Disease

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A patient with pheochromocytoma presented striking electrocardiographic changes mimicking ischemic heart disease at one time and acute pulmonary embolism at other times. Diffuse left ventricular hypokinesia was demonstrated in the presence of normal coronary arteries. Following removal of the pheochromocytoma, the electrocardiographic abnormalities disappeared.

Electrocardiographic changes in pheochromocytoma have been the subject of only a few reports.1-3 Such changes were explained on the basis of hypertension, myocardial necrosis, or infarction, or by a direct toxic action of epinephrine on the myocardium. The latter, if sustained, may lead to a cardiomyopathy-like picture.4-5

We wish to describe another case of pheochromocytoma with striking paroxysmal abnormalities of repolarization, consisting of marked prolongation of the Q-T interval and deep and wide symmetrically inverted T waves. Cardiac catheterization revealed diffuse myocardial dysfunction and normal coronary arteries. Surgical removal of the tumor resulted in disappearance of the electrocardiographic abnormalities. It is suggested that profound labile changes of repolarization on electrocardiograms should alert the physician to the possibility of a pheochromocytoma with diffuse, but still reversible, cardiomyopathy.

Case Report

A 51-year-old black woman had chief complaints of episodic palpitations, nervousness, nausea, and diaphoresis dating back to 1965. Most recently, the episodes were occurring more frequently without provocation, lasting two to three minutes, and were associated with marked fluctuations of blood pressure. While hypertension was noted most of the times, two episodes were associated with hypotension, atypical midprecordial chest discomfort, expectoration of blood-streaked sputum, and prominent P waves in the ECGs, which led to the erroneous diagnosis of acute pulmonary embolism. Past history included a hysterectomy for fibroids when the patient was 40 years old. Her family history was noncontributory.

Physical examination during a typical episode revealed

Figure 1. Symmetric giant T-wave inversion with markedly prolonged Q-T interval in patient with pheochromocytoma.