sounds. This, indeed, may suggest a ventricular origin. Unlike most of the other reported cases, these sounds were recorded at the nadir of each flutter wave, which would correspond in time to the second low-frequency component of a recorded S₄ gallop rhythm, which is thought to be ventricular in origin. That the amplitude of these sounds increased as diastole proceeded and as the tension in the ventricular wall presumably increased also may suggest that these sounds were ventricular in origin. Again, the absence of these sounds in systole would support the fact that they are not simply due to atrial tensing, since atrial flutter is continuous throughout the cardiac cycle. The echocardiographic examination confirmed that each flutter wave in diastole could generate enough force to impart an "A kick" on both leaflets of the mitral valve and to partially open the pulmonic valve.

The etiology of our patient's heart disease remains undetermined. The aortic regurgitation may be luetic in origin, but the cause of the tricuspid regurgitation remains speculative.

**References**

5. Hecht HH, Myers GB: Auricular heart sounds in auricular flutter. Am Heart J 29:610, 1945

**Acute Cavitary Histoplasmosis**

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A case of acute cavitary histoplasmosis in the upper lobes is documented. The relationship of this entity to chronic cavitary histoplasmosis is discussed.

*Cavitary histoplasmosis as a progressive chronic pulmonary disease, usually involving the upper lobes of the lungs, has been recognized for nearly three decades. More recently the question of whether cavitary histoplasmosis can be an acute event has been discussed. We present a case in which a series of fortuitously obtained roentgenograms document the existence of acute histoplasmosis of the upper lobes with cavity formation, and detail the time course of the illness from onset to spontaneous resolution.*

**Case Report**

The patient is a 51-year-old construction worker. During the week of August 9, 1976, he was employed tearing off the roof of an old house. Underneath the roof was a crawl space inhabited by numerous bats. The bats were killed with shovels and large amounts of bat droppings were shovelled from the rooftop. Prior to this date, the patient had been employed for several months on an inside job installing insulation. The patient had no other exposure to bats or birds and had not travelled out of the state in over a year. He had no respiratory symptoms concurrent with this exposure.

On August 23, while working on another job, the patient struck his chest against a concrete wall and developed tenderness over the right anterior chest with associated pleuritic pain. After one week, he went to his local physician and a chest roentgenogram was obtained, which showed normal findings. (Fig 1).

The pain persisted and the patient came to the Minneapolis Veterans Hospital on September 8 for further evaluation. The chest roentgenogram on this date showed bilateral upper lobe infiltrates with a suggestion of cavitation.

On admission, the patient denied cough, dyspnea, fever, or weight loss. He admitted to a 50-pack-year exposure to cigarettes. Physical examination was normal except for point tenderness over the ninth rib anteriorly on the right. Initial laboratory evaluation was unremarkable. Skin testing re-
revealed a negative reaction to tuberculin, but there was a 25 mm reaction to histoplasmin. Multiple examinations of the sputum were negative for acid-fast and fungal organisms. Tomograms of the upper lobes showed nodular interstitial infiltrates with cavities, and fluoroscopy documented a fracture of the right ninth rib. Bronchoscopic examination consisted of washings, brushings, and transbronchial lung biopsy. Cultures for bacteria, fungi, and acid-fast organisms were negative. Biopsy revealed noncaseating granulomas; special stains for fungi and for acid-fast organisms were negative. Pulmonary function tests revealed mild obstructive lung disease.

A follow-up chest film on September 13, 1976, showed progression of the infiltrates (Fig 2). The patient remained asymptomatic and was not given therapy. A positive complement-fixing serologic titer to the yeast antigen of Histoplasma capsulatum was present in a 1:32 dilution of serum drawn September 8. Antibody to the mycelial antigen of H capsulatum and to other fungal antigens was absent.

The next chest roentgenogram, on October 1, 1976, showed marked clearing of the infiltrates. Minimal fibrosis was present, but no cavities were seen. Repeat fungal serologies showed a decrease to a 1:8 titer in antibody against the yeast antigen of H capsulatum (serum obtained October 1).

The chest pain from the rib fracture resolved quickly. The patient is working full time and has no symptoms. More recent chest roentgenograms have shown further improvement (Fig 3).

**DISCUSSION**

Upper lobe cavitary histoplasmosis closely resembles reinflection tuberculosis in roentgenographic appearance and indeed was first well described among sanatorium patients being treated for presumed mycobacterial infection. However, it has been known since the report of Goodwin and colleagues that some cases show rapid spontaneous improvement. This improvement was ascribed to rest therapy in that report.

In 1974, Chick and Bauman reviewed studies in Rhesus monkeys suggesting acute cavitary histoplasmosis as a function of heavy exposure. They pleaded for closer documentation of acute cavitary disease in man to establish its existence and detail its time course.

Goodwin and associates make a further contribution in their current review of chronic cavitary histoplasmosis. They note that it is the occurrence of histoplasmosis in patients with abnormal air spaces (ie heavy smokers with centrilobular emphysema) which predisposes to an early or subacute cavitary illness which resolves spontaneously in 80 percent of such patients. In the remaining 20 percent, large air spaces become infected and persist as cavities, leading to the progressive fibrosing cavitary illness described from the sanatoria in the 1950's. The general thesis is in harmony with the observations of Tosh who understood cavitary histoplasmosis as an "exogenous reinflection" which could be acute. Tosh's belief was based on his observation of eight cases of cavitary disease in an epidemic setting. His patients were also middle-aged men with heavy cigarette exposure and presumably some degree of structural change in the lung.

Our report documents the occurrence of acute bilateral upper lobe histoplasmosis with cavity formation in a middle-aged smoker with mild obstructive lung disease. The patient had massive exposure to bat droppings during the week of August 9, 1976, after having spent the entire summer to that date working indoors. Although he was entirely asymptomatic, the chance occurrence of a rib fracture led to a series of roentgenograms which demonstrated the clinical course of acute cavitary histoplasmosis proceeding from a negative chest film to extensive infiltrates to scant residual fibrosis over a five-week period.
We feel that the classification of acute histoplasmosis should be expanded to include cases such as ours and that the term, chronic pulmonary histoplasmosis, should be reserved for those few patients whose infiltrates either do not resolve or do indeed progress into the fibrosing cavitary lesions which imply the need for specific antifungal chemotherapy.

REFERENCES


Echocardiographic Features of an Aneurysm of the Left Sinus of Valsalva

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The echocardiographic features of an aneurysm of the left sinus of Valsalva are described and correlated with angiographic findings. The echocardiogram showed the presence of a thin line of echoes occurring proximal to the anterior leaflet of the mitral valve and moving in and out of apposition with the posterior aortic wall. During systole, this line of echoes moved away from the aorta into the left atrium, and during diastole, the line moved into the aorta. Recognition of these features provides a potential noninvasive way to diagnose aneurysms of the left sinus of Valsalva prior to rupture.

Aneurysms of the sinuses of Valsalva are usually diagnosed after they have ruptured, when they may be rapidly fatal; however, they can be successfully repaired by surgery. Thus, early diagnosis prior to rupture is important. Recently, the echocardiographic fea-

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Figure 1. Supravalvular aortograms in left anterior oblique position during diastole (upper) and systole (lower). Aneurysm of left sinus of Valsalva (SVA) originates from below left coronary artery (LC), expands into left atrium during systole, and empties during diastole. AO, Aorta.