Irregular cardiac rhythm with combined rheumatic mitral stenosis and aortic stenosis

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Figure. Electrocardiogram in a 56-year-old man. See text for explication.

An electrocardiogram in a 56-year-old man revealed coarse atrial fibrillation with a controlled ventricular response, a single ventricular premature complex, left ventricular hypertrophy, and digitalis effect (*Figure*). The fibrillatory waves are large and superficially resemble atrial flutter, but unlike flutter waves, the waves are not uniform in voltage or timing. Coarse atrial fibrillatory waves, i.e., those with an amplitude >1 mm (0.1 mV), are more often associated

with rheumatic valvular disease (1), congenital heart disease (2), or hypertrophic cardiomyopathy, whereas fine fibrillatory

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waves are more often associated with atherosclerotic cardiac disease (1). Although any atrial fibrillation is a marker for left atrial enlargement, coarse atrial fibrillation appears to be a more specific marker (1, 3).

This patient had longstanding rheumatic heart disease with more severe mitral stenosis than regurgitation and significant aortic stenosis and regurgitation. The mitral disease was the major cause of his left atrial enlargement and atrial fibrillation. The aortic valve disease was the main reason for his left ventricular hypertrophy, manifested in the electrocardiogram by $RV_5 > 26$ mm (2.6 mV), $RV_6 > 20$ mm, $SV_1 \geq 30$ mm, $SV_1 + RV_5$ or $RV_6 > 35$ mm, and $SV_2 + RV_5$ or $RV_6 > 45$ mm (4). The repolarization changes in leads V_4 to V_6 could be due to left ventricular hypertrophy, but the essentially isoelectric J points, rounded sagging of the ST segments, and small but

upright T waves also suggest the effects of digoxin, a drug he was taking.

Because of symptomatic congestive heart failure, the patient underwent mitral and aortic valve replacement. He had an uneventful postoperative course.

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