

Myocardial infarction with normal coronary arteries

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In more than 10 years (June 1968 to December 1978), 39 patients with documented myocardial infarction and normal coronary arteries were seen at The Cleveland Clinic Foundation. The myocardial infarction was documented by electrocardiographic tracings showing a pattern of evolving myocardial infarction with pathological Q waves and/or ventriculography showing discrete segmental impairment of the myocardial contractility or segmental ventricular aneurysm. The age range was 19 to 69 years. Most patients were women (22 women and 17 men). One third of the patients had a positive family history for coronary artery disease (13 of 39). Ten of 22 women were using birth control pills for some period prior to myocardial infarction. One fourth of the patients had hypertension, hypercholesterolemia, and hypertriglyceridemia. Anterior transmural myocardial infarction was the most common pattern found in the electrocardiogram. Twenty-six or two thirds of the patients had either an anterior, an antero-apical scar or ventricular aneurysm by ventriculography. Twenty-eight patients had normal coronary arteriograms, 11 patients had barely perceptible and questionable minor irregularities of the wall in one or more coronary arteries. Eight patients underwent an ergonovine provocative test, seven showing no

spasm, but one patient had evidence of coronary artery spasm. At the time of their first visit the majority of the patients had either typical or atypical angina. Other symptoms included dyspnea, syncope, and varieties of arrhythmias. Most patients had an atrial gallop on examination (24 of 39). Other less common physical findings included cardiac enlargement, systolic heart murmur, and ventricular gallop. Routine chest x-ray film showed significant cardiac enlargement in only five patients. Nearly one half of the patients had a pattern of transmural anterior myocardial infarction in the electrocardiogram. The other half showed transmural inferior myocardial infarction, ST-T changes, and normal electrocardiogram at the time of the evaluation. Four patients with normal electrocardiogram at the time of the evaluation had had unquestionable documented evolutionary myocardial infarction in the previous electrocardiograms.

Follow-up of one to 10 years was possible in 35 of 39 patients by contacting the patient or the patient's physician. Twenty-two of the 35 patients were free

of any symptoms, and had no further hospitalization for heart disease. Atypical chest pain or pain suggestive of angina pectoris was present in ten patients. One patient died of astrocytoma, and one other patient had recurrent myocardial infarction, possibly due to embolization from mural thrombus in the left ventricle. The latter patient had repeat arteriography demonstrating distal arterial disease in one coronary artery, suggestive of embolization.

Therefore, in rare instances patients with documented myocardial infarction may have normal coronary arteriograms. This was found to be more predominant among women than men. One half the women were taking birth control preparations prior to myocardial infarction. The prognosis of patients with myocardial infarction and normal coronary arteriogram depends upon the extent of the left ventricular damage and dysfunction, but is generally more favorable, as no cardiac death occurred within the period of follow-up. Most patients remained asymptomatic with excellent effort tolerance one to 10 years after infarction.