

relieved only with repeated doses of nitroglycerine. Another patient—a 63-year-old woman—had three minor myocardial infarctions in six years. She has spontaneous episodes of chest pain in the evening or night, lasting a half-hour to an hour despite the use of two to three sublingual nitroglycerine tablets. These attacks recur six to ten times a year. No changes are found in the ECG or serum enzymes, and she returns to moderate physical activity (e.g., climbing low hills) without discomfort.

- *Preinfarction angina* is an inaccurate term in two respects: many of the attacks prove to be minor infarcts; and 50 to 80 per cent of patients never develop myocardial infarction.

- *Accelerated angina pectoris* (or prolonged anginal pain) is a generally descriptive term, but it does not cover the variations in clinical patterns.

- *Prodromata in acute myocardial infarction; premonitory period of myocardial infarction; impending myocardial infarction; impending coronary artery occlusion; and preliminary pain in coronary thrombosis.* These five terms emphasize the hazard of an impending myocardial infarction, but they do not account for the many cases where immediate small infarctions have already occurred, and the many more in which infarction never develops.

The duration of this premonitory, intermediate coronary syndrome is not given detailed attention in many reports. Four weeks would seem to be a rational limit of duration of the acute episode, but the physician must take into account the dynamic modifications that result from serial angiographic and scintigraphic studies, as well as the concentration and clearance of radioactive indicators in areas of infarction.

A four-week duration of the syndrome is evident and expected after aorto-coronary bypass surgery, because of the alteration of collateral flow, and because of the possibility of acute thrombotic and presumably atherosclerotic advance of the arterial occlusion. A surprisingly rapid advance of atherosclerosis has been observed on serial coronary angiograms, and such progression is seen more frequently after aorto-coronary bypass than during the course of medical therapy. Although many authors suggest a four-week duration of the intermediate syndrome, others believe the limit may be six weeks to two months.

It is important to recognize that the acute coronary insufficiency is a labile process which may or may not advance to serious infarction. The clinical evidence may not indicate that a myocardial infarct, generally minor, often exists at the onset of this syndrome. Therefore, it is the physician's responsibility to carry out without delay, diagnostic proce-

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dures (e.g. radioactive scintigrams) that will reveal the myocardial lesion.

In identifying these patients with suspected or proven minor infarct, the same care should be applied as if they presented with the clinical and laboratory evidence of a major infarction.

The importance of accurate diagnosis is that the presence of minor infarcts may modify the decision to perform an aorto-coronary bypass because of increased operative risk. □

Practice Procedures

Criteria for Diagnosis

The criteria for diagnosis of intermediate coronary insufficiency have varied in extent, and to some degree in content, from one author to another. But all definitions include the elements listed below:

1. *New cardiac symptoms, or recurrence of symptoms after freedom from pain.* The symptoms may be anginal pain precipitated by effort or occurring spontaneously; episodes of spontaneous dyspnea; fatigability; giddiness; or faintness.

2. *Worsening of symptoms:* pain with increased severity, duration (over 15 or 30 minutes), frequency, or spontaneity (nocturnal or during rest); or pain precipitated by less stress than in previous attacks. Some authors classify patients within a more serious subgroup if they have spontaneous pain recurring persistently after a day of bedrest.

3. *Nitroglycerine or other nitrites have less effect or give no relief from chest pain.*

In most reports, the following objective findings are considered pertinent:

1. Electrocardiogram showing depressed or elevated S-T segment; flattened or inverted T-wave (likely to be transient for 1-24 hours); no new Q deflections.

2. Serum enzymes not rising to "diagnostic" levels. The fallacy of this criterion—especially with respect to CPK-MB isoenzyme—is the transiency of the elevation, so that if blood is not taken at the critical time, the peak level may be missed. CPK, SGOT, LDH (and LDH isoenzymes 1 and 2) may rise from base levels but remain within the customary maximum limits (40 units). However, on daily testing for three to five days, these enzymes may present a curve with over 10 per cent variation to the peak level.

3. Coronary angiogram revealing greater than 50 per cent occlusion in one, two, or all three major coronary arteries, with rare exception.