Late presentation of acute myocardial infarction due to ramus intermedius disease

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A 59-year-old male housekeeper at the hospital, who had smoked one-half pack of cigarettes per day for 30 years, developed severe chest pain that radiated to his left shoulder at 8:00 PM. It was accompanied by dyspnea, nausea, and vomiting. He did not come to the hospital until 3:00 AM the following morning. Examination disclosed no abnormalities. His blood pressure was 111/80 mm Hg. An electrocardiogram (ECG) was recorded (*Figure 1*), and then a nitroglycerin drip was started.

The ECG showed normal sinus rhythm; Q waves in leads II, III, and aVF suggesting the possibility of an inferior myocardial infarct, probably old; and ST-segment elevation in leads I, II, aVL, and V₄–V₆ with no elevation in V₁–V₃. There was reciprocal ST depression in leads III, aVR, and V₁. This pattern indicated a predominantly lateral location of the acute infarct (1). This was confirmed by coronary arteriography, which showed a normal left main artery, a 25% narrowing of the left anterior descending artery, and only luminal irregulari-

Figure 1. Admission electrocardiogram in a 59-year-old man with 7 hours of chest pain. See text for explication.

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ties in the left circumflex and right coronary arteries. The culprit artery was the ramus intermedius, which supplied the myocardium between the distributions of the left anterior descending and left circumflex coronary arteries. Although the ramus was only 40% narrowed in diameter, it contained intraluminal clots, and its two major branches were occluded, presumably from embolized clot.

The occluded branches of the ramus intermedius were not deemed suitable for angioplasty/stenting. Thrombolysis was not undertaken because of the long time interval from the onset of pain, which had almost completely resolved at the end of the diagnostic catheterization, and the angiographic finding of normal left ventricular function. In addition, the patient had given a history of three strokes, one recent, and although there was no evidence to support this, the physicians declined to risk thrombolysis.

Although the ramus intermedius can supply a large volume of myocardium, it is usually much less than that supplied by the left anterior descending, left circumflex, or right coronary arteries, and instead is similar to that supplied by a proximal diagonal or obtuse marginal branch. This patient's troponin I peaked at 25 ng/mL (reference < 0.04), indicating an infarct of moderate size. He had no further symptoms and was discharged the fourth hospital day on daily aspirin 325 mg, clopidogrel 75 mg, lisinopril 10 mg, atorvastatin 80 mg, metoprolol 75 mg twice a day, and sublingual nitroglycerin as needed. He was instructed not to smoke and to come to the cardiology clinic in 2 weeks.

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