Identification of critical coronary artery disease

Sir,

Although stigmata such as the occurrence of ST-segment elevation (STE) in lead aVR, with concurrent ST-segment depression in leads II, III, aVF, and V3–V6, are highly suggestive of left main stem (LMS) occlusion, and were indeed present, in part, in the recently reported case, they also occur in left anterior descending (LAD) coronary artery occlusion, and, to a lesser extent, also in left circumflex artery occlusion, thereby justifying urgent triage for percutaneous intervention in virtually all patients with acute coronary syndrome characterized, as in one study, by ST-segment elevation in aVR co-existing with ST segment depression in at least 6 leads. The latter was a study with important implications for triaging of suspected LMS occlusion although its major limitation was its retrospective methodology. The patients enrolled in the study were selected from 427 who had undergone coronary artery angiography for investigation of acute coronary syndrome. The 57 enrolled patients were characterized by the fact that they had electrocardiographic (ECG) findings, namely, ST segment elevation in aVR with concomitant ST-segment depression in at least 6 leads, suggestive of LMS disease.

ST-segment elevation in aVR was 100% specific but only 30% sensitive for LMS occlusion. ST-segment depression in lead II was, however, 100% sensitive for LMS occlusion. Conversely, in a study in which patients with acute myocardial infarction (AMI) were enrolled only if they had angiographically validated LMS occlusion, ST-segment elevation in aVR was documented in 65.85% of the 41 enrolled patients. The coexistence of ST segment elevation in aVR as well as aVL was present in 39% of the 41 patients, and its prevalence was significantly (P < 0.05) higher in non-survivors than in survivors of LMS-related myocardial infarction. In that study, as well, the coexistence of left anterior fascicular block (LAFB) was significantly (P < 0.05) more prevalent in non-survivors than in survivors of LMS-related AMI. Although, according to one view, "The search for electrocardiographic criteria to

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differentiate (LCA) left coronary artery disease from other lesions effectively requires prospective studies, especially in the case of non-ST elevation ACS. In the interim, the best we can do is to rely on current observations, to raise the index of suspicion for LMS occlusion and to inform decisions about triage for percutaneous coronary intervention.

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