A 72-year-old hypercholesterolemic gentleman with anginal symptoms Canadian Cardiovascular Society (CCS) class III and a positive thallium scintigraphy with ischemia localized to the anterior wall, was submitted to coronary angiography. Initial images indicated a distal left main coronary artery stenosis (left upper panel, large arrow). However, subsequent views pointed to a “phantom” artery imaged belatedly (right upper panel, short arrow). It was only after a tedious exercise that successful engagement of a separate ostium of another left coronary artery clarified the anatomy of this patient (left lower panel). It thus became apparent that it was a separately originating, diseased left anterior coronary artery descending (LAD) which explained the localization of this patient’s ischemia to the anterior wall. This was finally remedied with successful direct stenting of the long stenotic segment of the LAD performed during the same session (right lower panel), thus obviating emergency coronary artery bypass grafting, which would have been a plausible course of action, should one have relied upon the initial imaging perfectly mimicking a left main disease.