

The Recommendation for Stenting in Stable Coronary Artery Disease—Ignoring the Evidence, Excluding the Patient

A Teachable Moment

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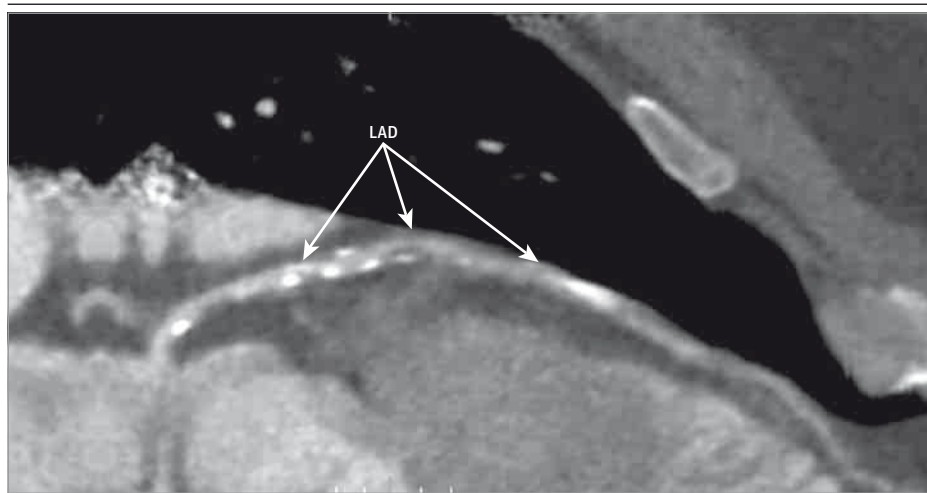
Story From the Front Lines

A 61-year-old executive recently came to me for a second opinion. He was hypertensive but otherwise in good health. He had been exercising regularly until 2 weeks earlier when he developed chest discomfort while walking briskly outside his office after lunch on a cold day. The discomfort subsided spontaneously when he stopped walking and returned to work. However, later that evening he grew concerned and went to a local emergency department the following day for evaluation. He described no additional episodes of chest pain. Results from 2 troponin tests were negative, and findings from his electrocardiogram (ECG) were normal. Although this episode of angina was his first, it did not occur at rest and did not result in myocardial injury as determined by biomarkers and ECG. The etiology was therefore most likely the progression of a stable, hemodynamically significant atherosclerotic lesion as opposed to a ruptured plaque with overlying

thrombus as is seen in an acute coronary syndrome. A cardiology consultant who was an interventional cardiologist recommended that the patient undergo coronary angiography with a stent placement if a clinically significant blockage was found. While in the emergency department, the patient used his smart phone to search “treatment of coronary artery disease” and found abundant information indicating that optimal medication is the recommended initial treatment and that a stent would not prevent a heart attack or extend his life.¹ When he asked the cardiology consultant if this was true, he was told “not necessarily” and advised to “do more research.” He declined the procedure and was discharged from the emergency department with instructions to follow up with his primary care physician.

The patient was referred by his primary care physician for a coronary computed tomographic angiogram (CTA). This test accurately determines the presence or

Figure. Coronary Computed Tomographic Angiogram Curved Multiplanar Reformat Reconstructed From Data Obtained in Diastole



The left main and left anterior descending (LAD) coronary artery (arrows).

absence of coronary atherosclerotic plaque but currently cannot determine the hemodynamic severity of the plaque. Because it cannot determine if any identified plaque is capable of causing angina, it is not particularly helpful in guiding treatment decisions with medications intended to alter myocardial oxygen supply and demand such as nitrates or β -blockers. By assessing the hemodynamic severity of coronary atherosclerotic plaque, exercise stress testing provides more therapeutically useful information. The coronary CTA revealed diffuse calcific disease of the left anterior descending coronary artery with a stenosis estimated at 70% distally (Figure). The patient's ejection fraction was normal at 61%. His primary care physician then recommended that he undergo coronary angiography with stent placement. His only medication at that time was losartan for his hypertension. The patient attempted to contact the cardiologist to whom he was referred for the catheterization to ask about the procedure and the criteria that would be used to decide if he got a stent, and what type of stent he would likely receive. He was told the cardiologist was not available to discuss these matters before the procedure. The patient then decided to pursue a second opinion.

While in my office he confided that, up until that time, he had felt rushed, uninformed, and not confident that all of his options had been explored and explained to him. He went on to say that he preferred that consideration be given for conservative treatment first and that he was committed to a strict program of diet, exercise, and stress reduction, including retiring from his job, if necessary.

I carefully explained to him that, as his coronary CTA demonstrated, atherosclerosis is a diffuse rather than a focal disease, and, consistent with that fact, the clinical trial data and meta-analysis of these data¹ clearly indicate that an initial treatment strategy of

optimal medical therapy is preferred, with revascularization only in the case of recurrent angina symptoms on optimal medical therapy. He began treatment with aspirin, a statin, a β -blocker, and a long-acting nitrate in addition to his losartan. He also consulted with a dietician to improve his diet and began a cardiac rehabilitation program. Three months after his initial episode, he lost 6.8 kg and his low-density lipoprotein cholesterol (LDL-C) level had decreased from 120 mg/dL to 22 mg/dL (to convert LDL-C to millimoles per liter, multiply by 0.0259).

Teachable Moment

Faced with the same situation, many patients would have complied with the recommendations of 2 physicians to undergo an unnecessary invasive coronary angiogram and stent placement rather than seek out a second opinion. As physicians, we are obliged not only to fully and accurately inform our patients of the risks and benefits of the various treatment options but also to involve them in the decision-making process. As was pointed out in a recent *New York Times* article,² the number needed to treat is a useful tool to convey to patients how likely a treatment is to benefit them. That article points out that because there is no demonstrated benefit of stenting in preventing death or myocardial infarction, the number needed to treat to prevent 1 death or heart attack in a patient with stable coronary artery disease by stenting is effectively infinity.² That 2 physicians, an interventional cardiologist (with an inherent conflict of interest) and a primary care physician (without a conflict of interest), both suggested invasive treatment without any scientific evidence of a benefit to be derived from that recommendation is indicative of how difficult it is to incorporate evidence-based treatments into practice.

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