Identical Atherosclerotic Lesions in Identical Twins
Grzegorz Kaluża, MD; John M. Abukhalil, RT(R); Albert E. Raizner, MD

In 1997, a 55-year-old man underwent percutaneous coronary angioplasty (PTCA) of a lesion in the middle segment of the left anterior descending coronary artery (LAD) (Figure, A). He subsequently informed his cardiologist that his twin brother had also been treated successfully with PTCA at another hospital for stenosis of the LAD. The cineangiographic film of the twin brother was retrieved (Jackson Heart Clinic, Jackson, Miss, courtesy Dr Jeff Fletcher) (Figure, B). Both brothers had long-standing hypercholesterolemia and had stopped smoking many years earlier.

The LADs of both brothers were similar in anatomy, size, and branching pattern. Remarkably, each had developed a stenosis in essentially the same location, and of similar shape and configuration, in the LAD. The circumflex branch and right coronary artery (not shown) were also similar in size, distribution, and branching pattern for both twins and contained no angiographically apparent disease.

The finding of “twin” atherosclerotic lesions in a pair of identical twins is of great interest. It is tempting to speculate that atherosclerotic plaque formation may be congenitally determined or at least inherently defined by specific coronary anatomy and a certain coronary flow pattern. In either event, an individual may be “fated” to develop a specific lesion at a particular site. During life, this process may be modulated. A better understanding of the anatomic determinants of coronary flow and their impact on subsequent lesion formation might allow preventive interventional therapies.

The authors would like to encourage their colleagues who are aware of twin pairs having angiographically documented CAD to contact us at the e-mail address gkaluza@tmh.tmc.edu
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