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The significance of multiple plaque disruptions in patients with acute coronary disease

Background: Multiple plaque disruptions (PD's) are common in patients with acute coronary disease (ACD), but many are frequently unrecognized at the time of coronary angiography. The natural history of these PD's has not been determined, but they are potentially unstable because they are exposed to flowing blood.

Materials and Methods: The hearts of 83 patients who died of ACD were injected with a colored barium gelatin mass, fixed in formalin, the coronary arteries dissected from the heart, decalcified, cut at 2-3 mm intervals and all segments mounted for microscopic study.

Results: 211 PD's were identified in these 83 patients with 32 patients (39%), having 3 or more PD's. Luminal thrombosis was associated with 102 PD's (48%), with 97 (95%) located at sites with >70% stenosis. 109 PD's were not associated with luminal thrombosis, with 69 (63%) located in segments with <70% stenosis.

Conclusions: Multiple PD's are common in patients who die of ACD, are often present without luminal thrombosis, and are frequently present in plaques causing insignificant stenosis. These PD's are potentially unstable and could be the substrate for the rapid progression of insignificant lesions.

Biography

Richard J. Frink is the Principal Investigator of the Heart Research Foundation of Sacramento. He received his training at the University of Iowa, the Mayo Clinic and the University of Alabama in Birmingham. He practiced invasive cardiology in Sacramento, California for 35 years and established a laboratory to study the post-mortem heart. He has published approximately 25 research papers and a book, *Inflammatory Atherosclerosis: Characteristics of the Injurious Agent*, detailing the pathologic findings in patients who died of acute coronary disease. The primary focus of his work has been the pathogenesis of atherosclerosis and the mechanism responsible for sudden cardiac death.

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