Catheter-Based Optical Imaging of a Human Coronary Artery

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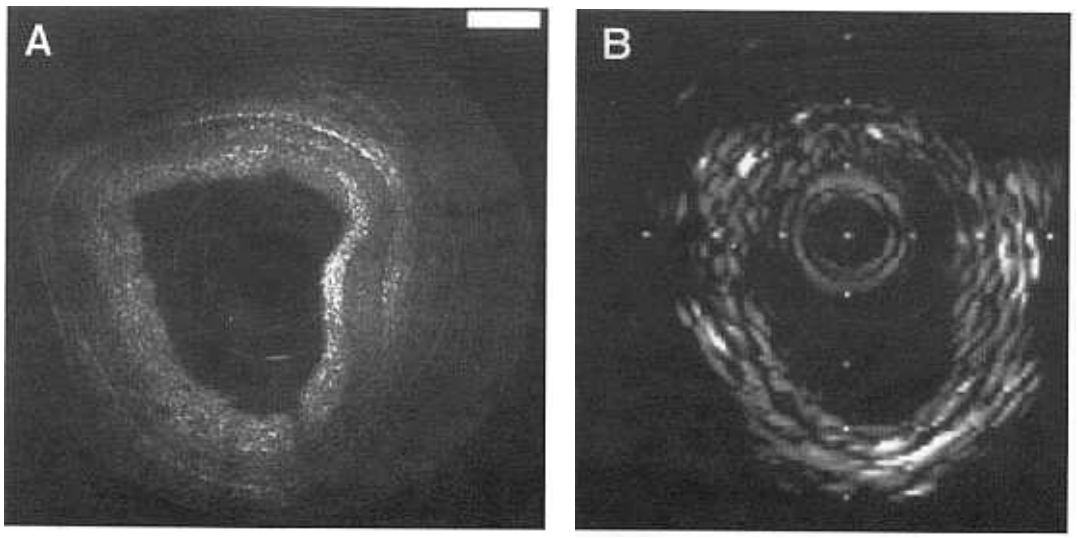
Optical coherence tomography (OCT) is a recently developed technology that uses infrared light to generate micrometer-scale cross-sectional images (*Science.* 1991;254:1178-1181). We recently demonstrated the feasibility of using OCT for assessing atherosclerotic plaque microstructure (*Circulation.* 1996;93:1206-1213) at resolutions of 4 to 16 μm. A, OCT imaging using a prototype catheter-based approach. An image of an in vitro human coronary artery generated with a recently developed OCT catheter. The prototype OCT catheter is 2.9F and contains no transducer within the catheter frame. The adventitia and media are well differentiated, in addition to moderate intimal hyperplasia. B, A 3.2F, 30-MHz intravascular ultrasound transducer (Cardiovascular Instrument Systems) was used to image the same arterial segment. The data in B were processed and displayed with an Insight III ultrasound system (Cardiovascular Instrument Systems). Bar (A) and gratings are 1 mm.



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Circulation encourages readers to submit cardiovascular images to Dr Hugh A. McAllister, Jr, St Luke's Episcopal Hospital and Texas Heart Institute, 6720 Bertner, MC 4-265, Houston, TX 77030.

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