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***Basic Science/Cardiovascular
Disease in the Young/Cardiovascular
Radiology/Clinical Cardiology:
Magnetic Resonance Imaging/
Ultrafast Computed Tomography
Coronary Imaging***

Wednesday Morning

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**SIGNIFICANCE OF CORONARY CALCIFICATION BY
ULTRAFAST COMPUTED TOMOGRAPHY:
COMPARISON WITH INTRAVASCULAR ULTRASOUND**

*Mukesh Goel, Junko Honye, Shigeru Nakamura, James Hagar,
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The site and severity of coronary artery calcification (Ca^+) by ultrafast computed tomography (UFCT) were compared with the extent of atherosclerosis (ATH) and Ca^+ by intravascular ultrasound (IVUS) imaging in 20 studies, at stenotic sites and in angiographically normal adjacent segments. Ca^+ was present in 80% of stenotic segments by UFCT and 85% by IVUS vs. 15% by fluoroscopy. Ca^+ was also present in 35% of adjacent non-stenotic segments, and in 25% of angiographically normal left main arteries. Ca^+ by UFCT was always associated with ATH by IVUS. The density of Ca^+ was greater in stenotic vs. adjacent segments (363 ± 58 vs. 192 ± 71 HU, $P < .02$); the area encompassing Ca^+ in the stenotic segment tended to be higher as well (25 ± 7.5 vs. 12.4 ± 5.4 mm², $P = .15$). However, atheroma area, % diameter stenosis and extent of Ca^+ by IVUS in the stenotic segment were not related to calcified atheroma area or peak density by UFCT. It is concluded that 1) Ca^+ detected by UFCT invariably indicates ATH, even in angiographically normal segments; 2) the presence of Ca^+ by UFCT correlates with Ca^+ by IVUS; 3) the Ca^+ is more frequent and more dense in segments with more complicated, stenotic atheroma.