

AHA 2009

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VH-IVUS Findings of Thin-Capped Fibroatheroma (TCFAs) in Acute Coronary Syndrome

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VH-TCFA

- ♠ The rupture of a vulnerable plaque and subsequent thrombus formation are the most important mechanisms leading to acute coronary syndrome (ACS). A thin fibrous cap contributes to plaque instability and rupture and ACS.

(Naghavi M et al, *Circulation* 2003;108:1664 –1672.)

(Virmani R et al, *Arterioscler Thromb Vasc Biol* 2000;20:1262–1275.)

(Virmani R et al, *J Am Coll Cardiol* 2006;47:C13–C18.)

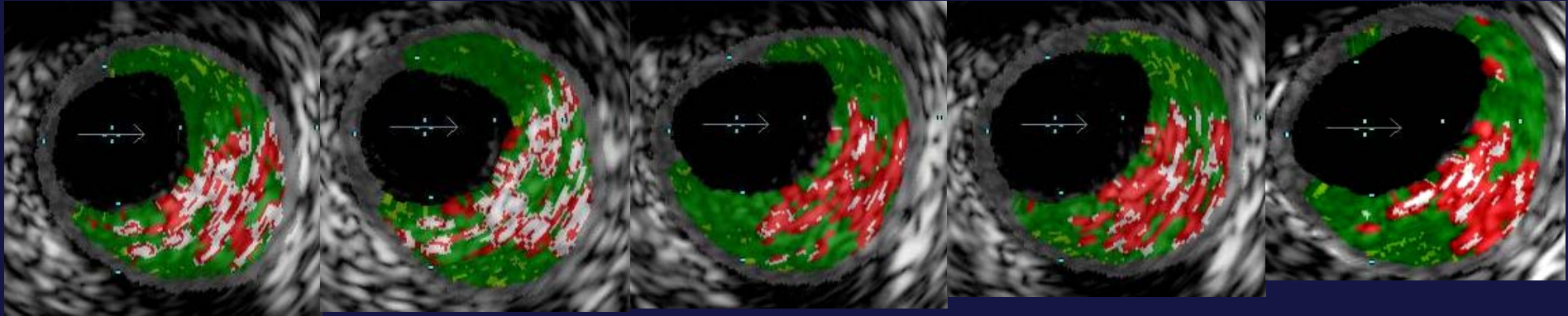
- ♠ Ruptured plaque and TCFAs are clustered within the proximal portions of large epicardial coronary arteries.

(Hong et al *J Am Coll Card* 2005;46:261-5)

(Fujii et al *J Am Coll Cardiol*. 2008;52:787-8)

- ♠ However, ruptured TCFAs were often hard to assess.

Thin-capped Fibroatheroma



Histopathologic Criteria

Necrotic core

Thin fibrous cap < 65 μm

Cap infiltrated by macrophages and lymphocytes

Cap composition – type 1 collagen and few smooth muscle cells

VH-IVUS Criteria

Plaque burden > 40%

Thin cap not measurable

Necrotic core >10% of plaque area

Necrotic core contact lumen at least 3 image slices

Male/61, Acute STEMI, inferior wall

Chief complaint: chest pain, for 2 hours

P/I

61 yr old male pt visited emergency center due to severe substernal chest pain. ECG showed ST segment elevation at II, III, aVF. Emergency coronary angiography and primary PCI was done immediately.

Risk Factors:

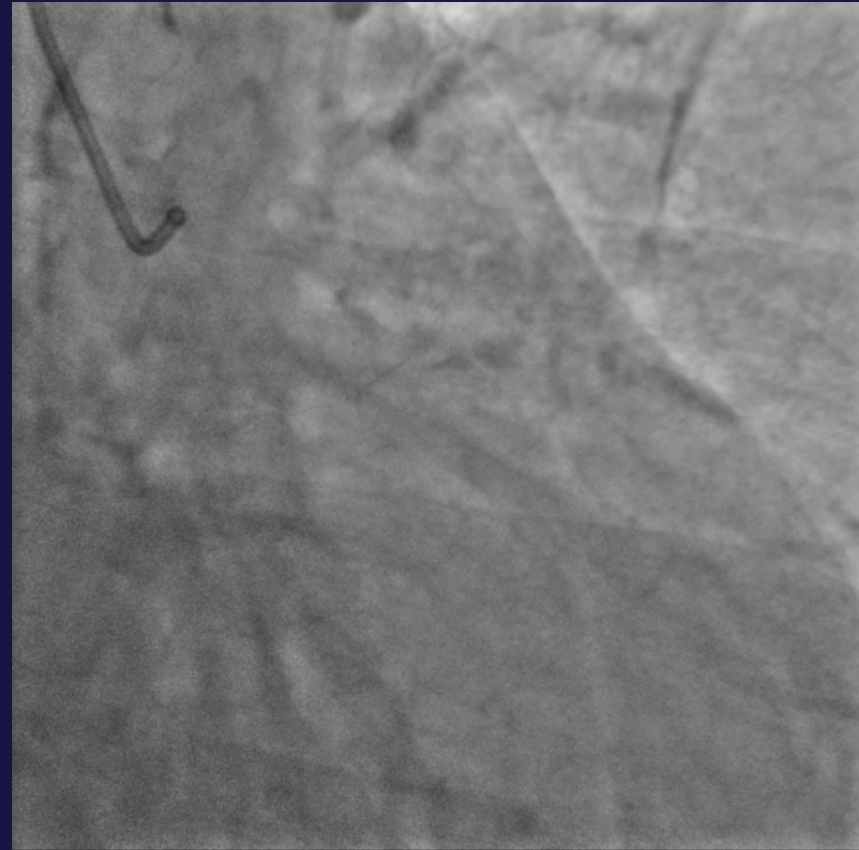
smoking (+) 30 pack year

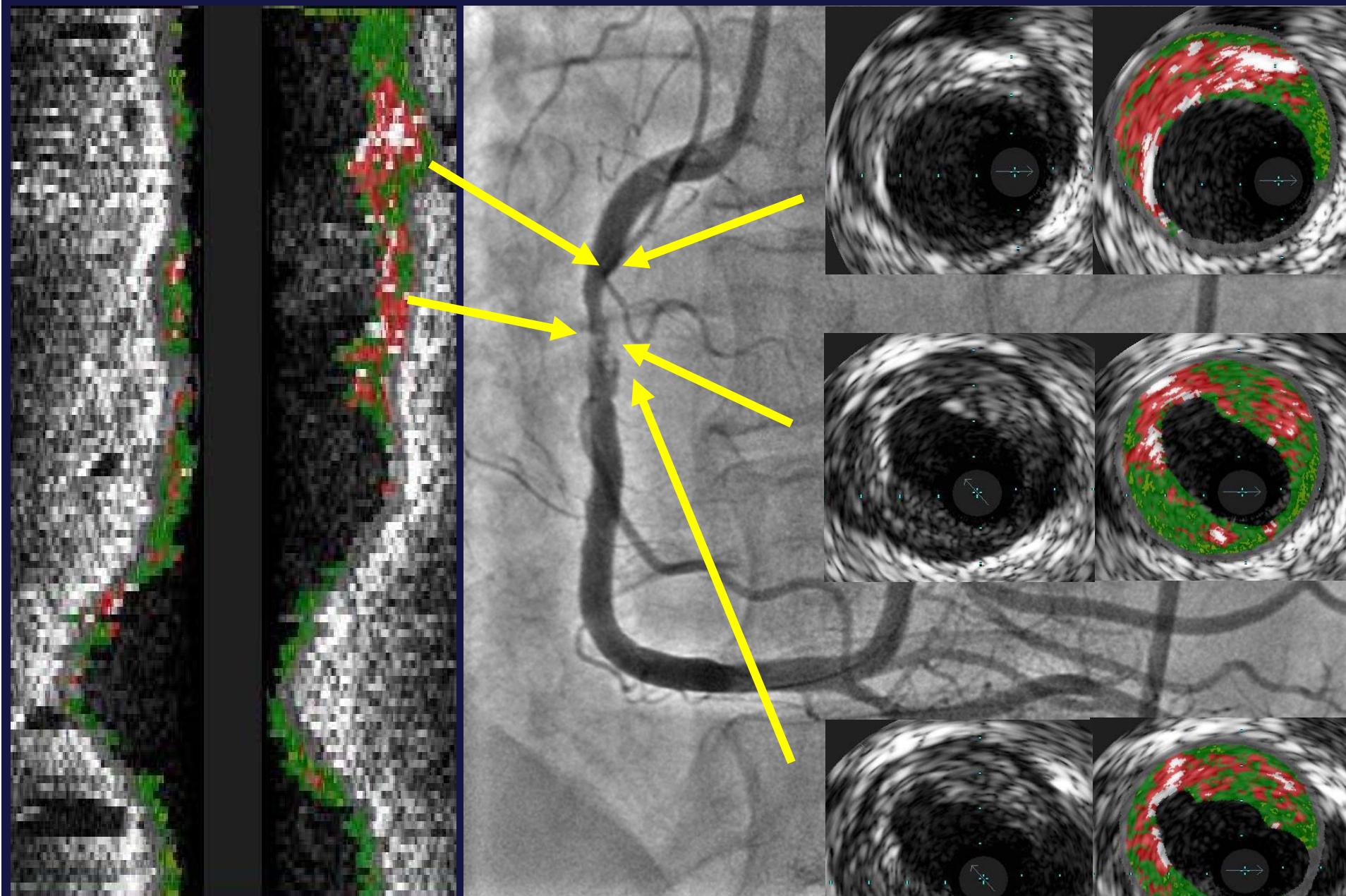
ECG: Q wave & ST elevation, II, III, aVF

Echo: akinesia of basal to apical inferior wall, EF= 35 %



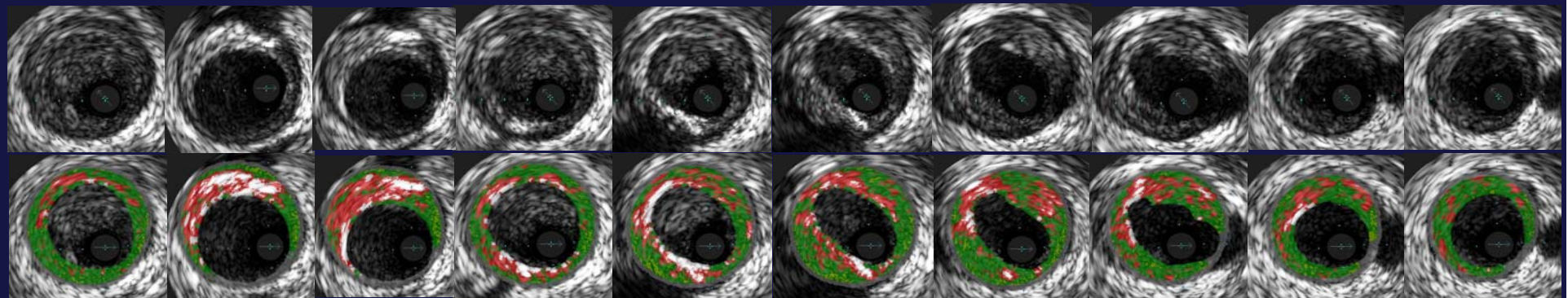
Emergency Coronary angiography





VH-IVUS after aspiration catheter

Ruptured VH-TCFA



Proximal

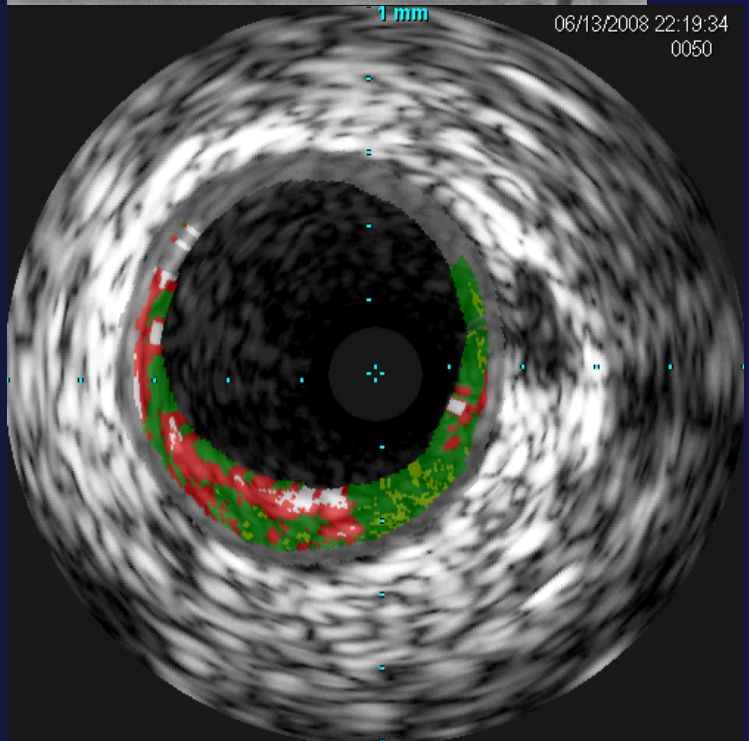
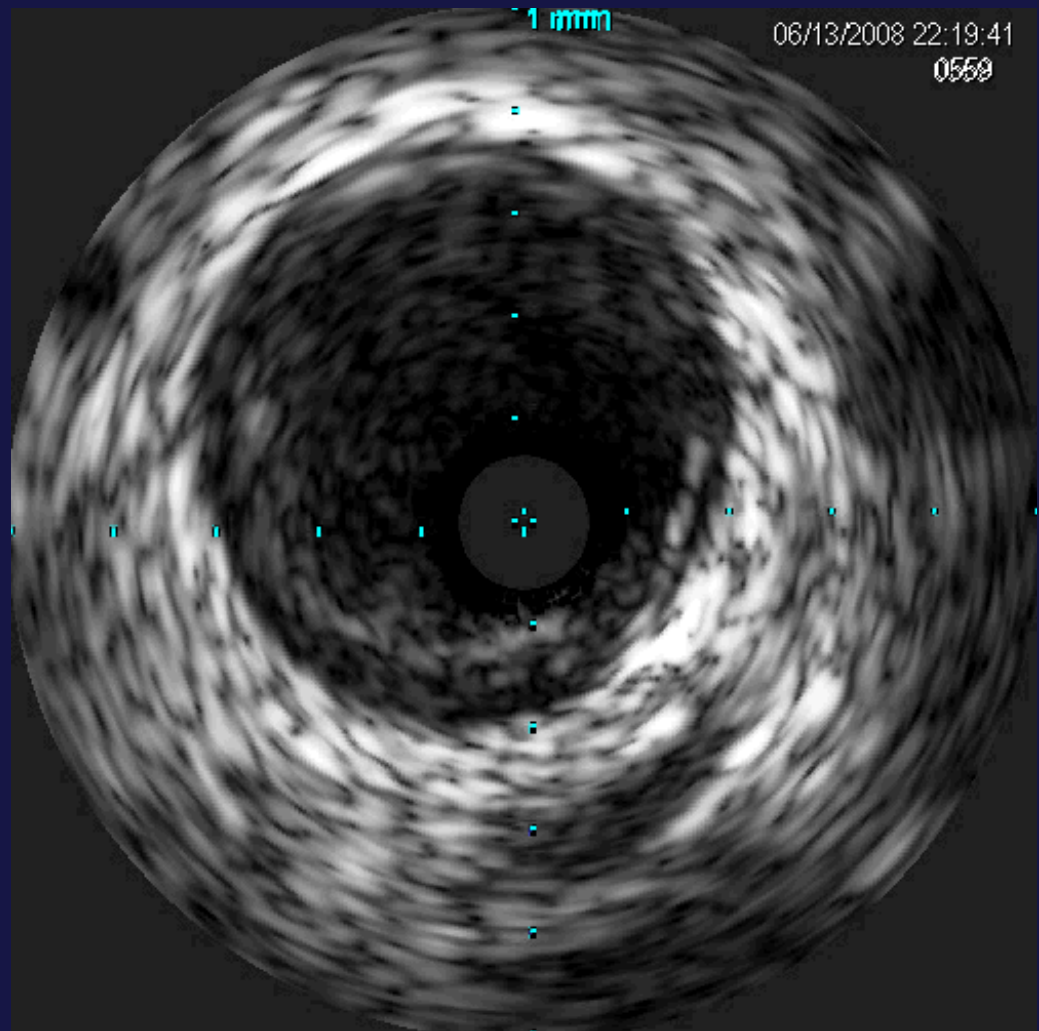


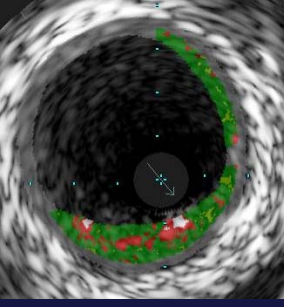
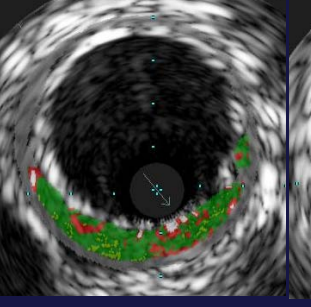
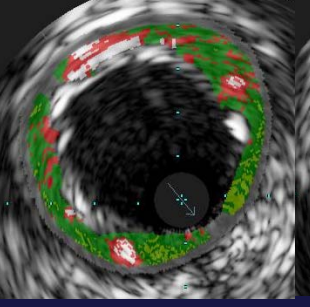
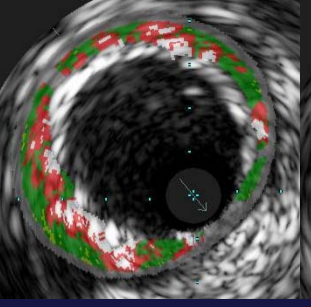
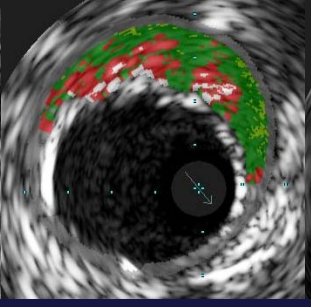
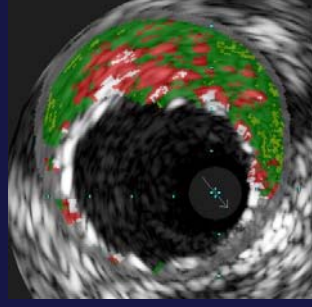
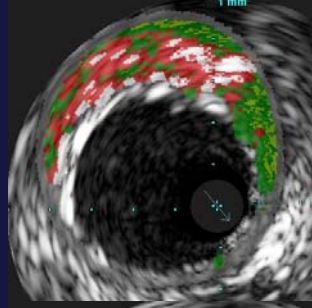
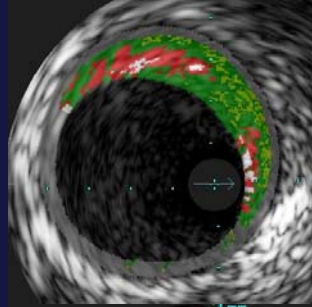
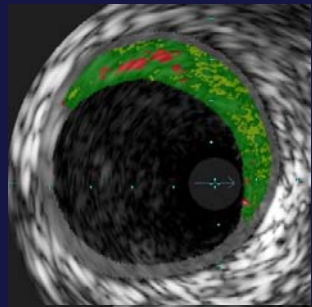
distal



KASS Investigators

Cardiovascular Ultrasound / Core Lab





PICO Elite stent 4.0x24 mm (AMG Korea)
Minimal stent area=6.2 mm²

What's the exact diagnostic criteria for the VH-TCFA ?

What about the clinical outcome of stenting in TCFA lesion ?



Chung-Ang University Cardiovascular Center and Core Lab Workshop. AUG. 22-23, 2009



감사합니다.

Thank you for your attention