



One stop evaluation:  
is it dream or true  
?

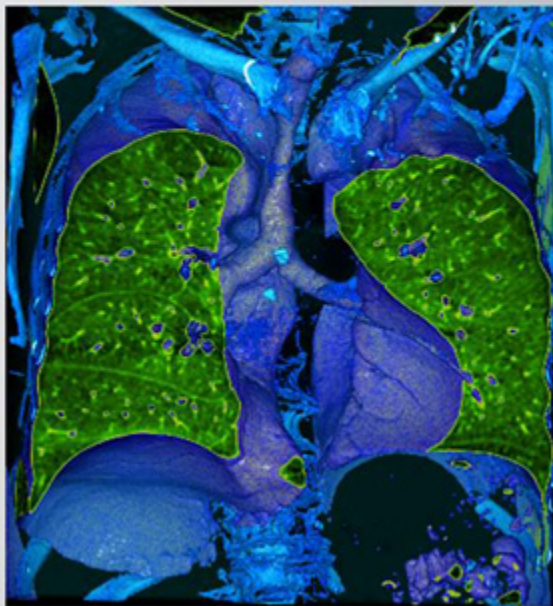
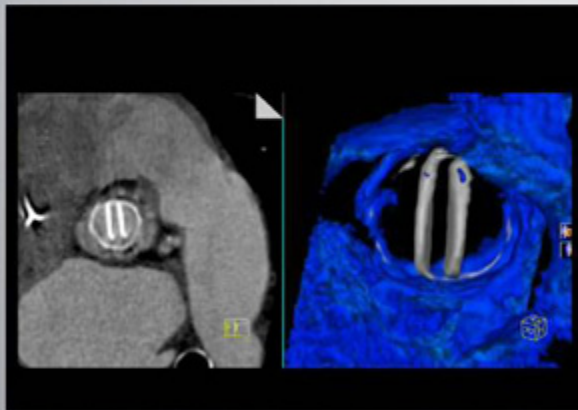
G. Feuchter, MD, Ao. Univ. Prof  
Innsbruck Medical University, Austria

One stop instead of non-stop?



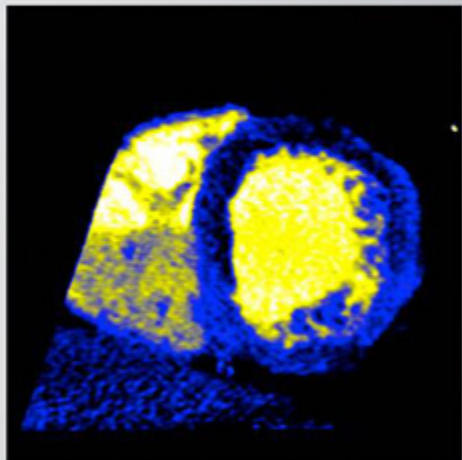
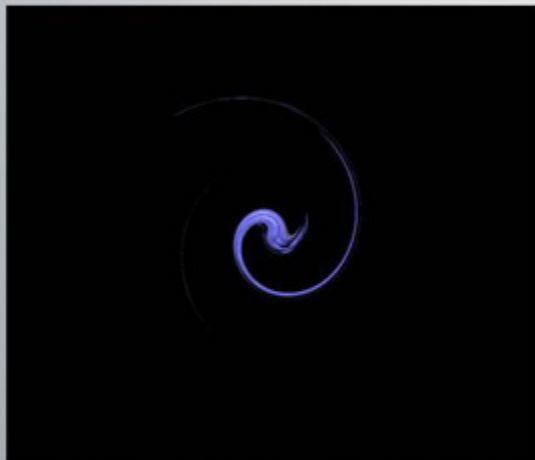
# CT- One stop evaluation?

- CORONARIES & PERFUSION
- ACUTE CHEST PAIN
- VALVES & FUNCTION



# CORONARY & PERFUSION

- From one CT scan...



# ACUTE CHEST PAIN

- 8 Mio referrals /year US
- SOC (ECG, serial enzymes,....imaging) time consuming and high costs
- Coronary CTA\* is recommended in patients with low-intermediate risk of CAD





## CT Angiography for Safe Discharge of Patients with Possible Acute Coronary Syndromes

Harold I. Litt, M.D., Ph.D., Constantine Gatsonis, Ph.D., Brad Snyder, M.S.,

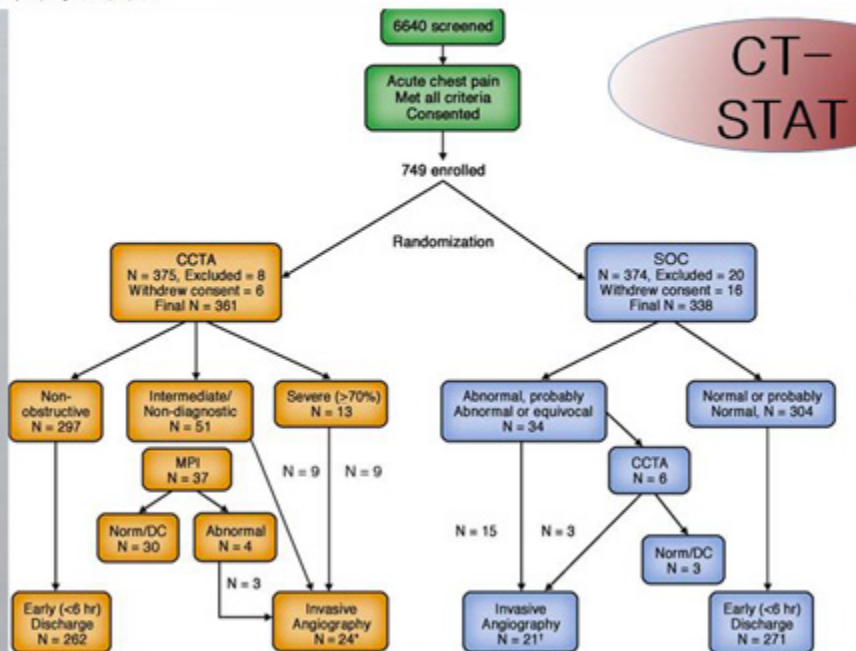
- 1370 pts with low–intermediate risk ACS: 908 CCTA vs 462 SOC
- 0% 30–day event rate if CCTA negative (640pts)
- CTA vs SOC: shorter length of stay (18.0 vs. 24.8 h;  $p < 0.001$ )



## The CT-STAT (Coronary Computed Tomographic Angiography for Systematic Triage of Acute Chest Pain Patients to Treatment) trial.

Goldstein JA, Chinnaiyan KM, Abidov A, Achenbach S, Berman DS, Hayes SW, Hoffmann U, Lesser JR, Mikati IA, O'Neill BJ, Shaw LJ, Shen MY, Valeti US, Raff GL: CT-STAT Investigators.

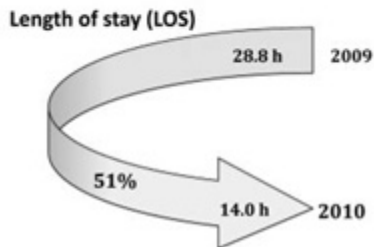
William Beaumont Hospital, Royal Oak, MI, USA.



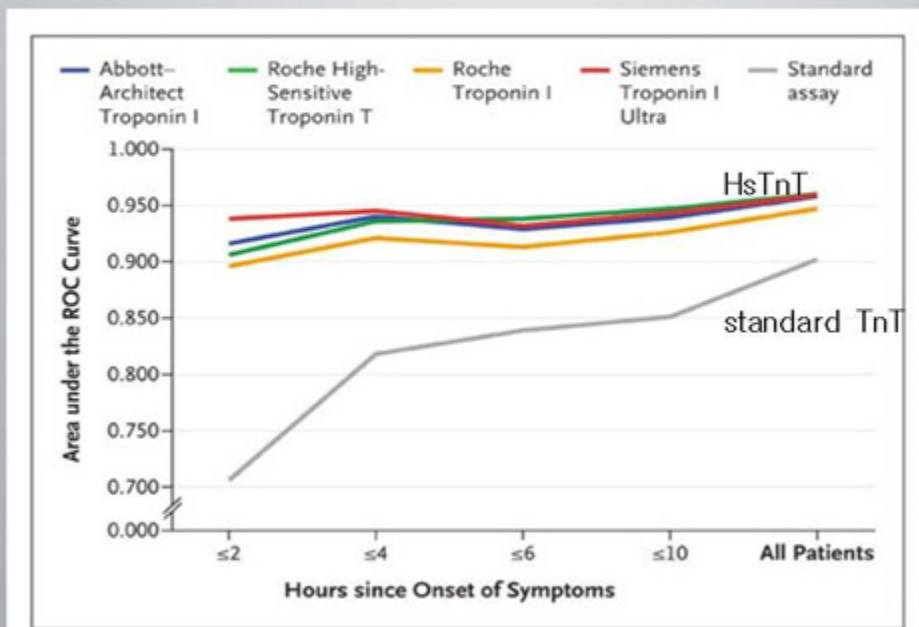


# Coronary CTA in the ED

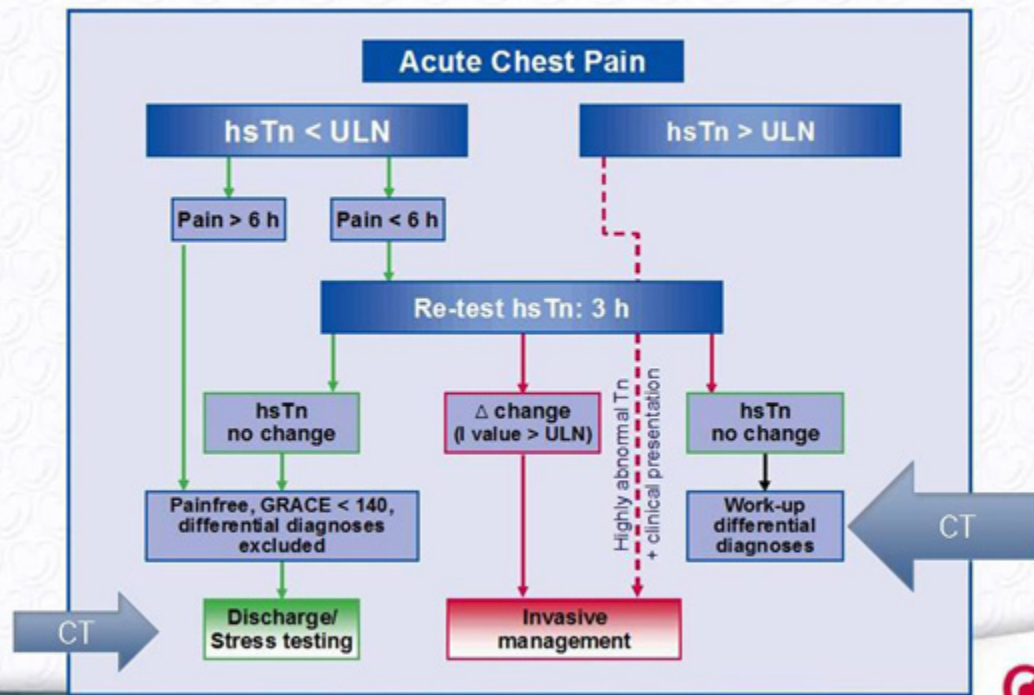
- 529 pts
  - \*low-intermediate TIMI risk ACS
  - \*negative TnT after 6 hours
- 0% MACE if CTA negative (60%)



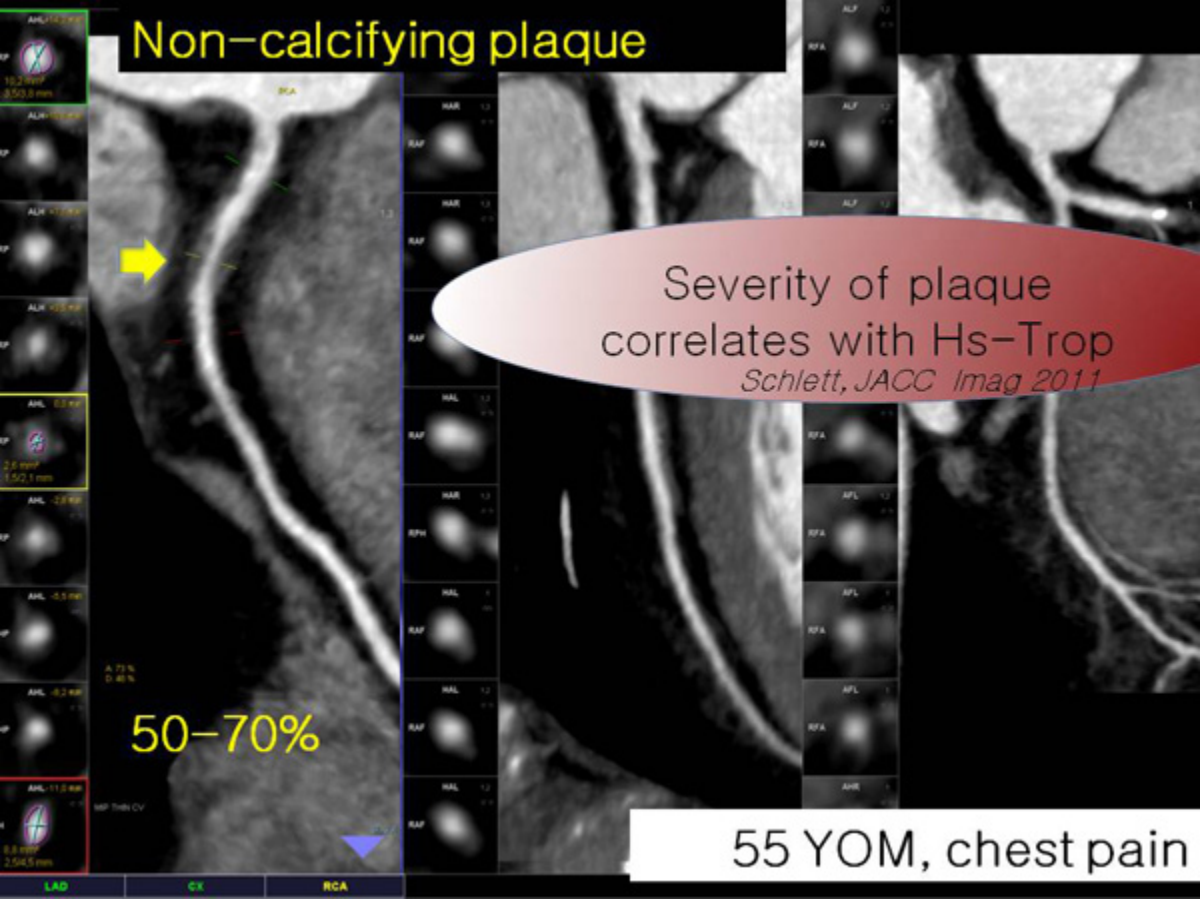
# Hs-TnT vs standard TnT



# Rapid rule-out of ACS with high-sensitivity troponin



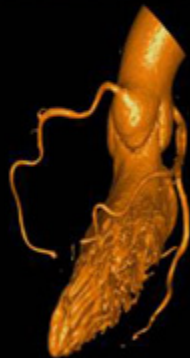
# Non-calcifying plaque



# Triple rule out (TRO) protocol



Pulmonary embolism



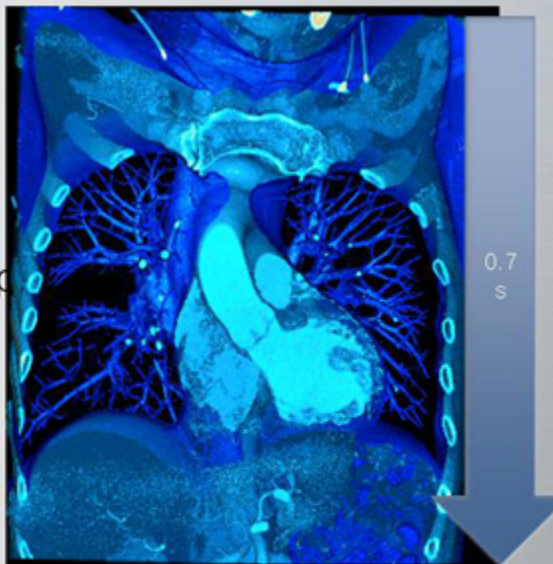
CAD



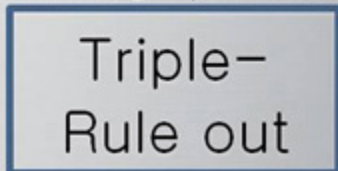
Ao-diss

# 74 YOM

- acute back pain + CP
- +10 min dyspea during sleep
- HS Troponin 44.8ng/l
- D-dimer 829 ug/l (elev)



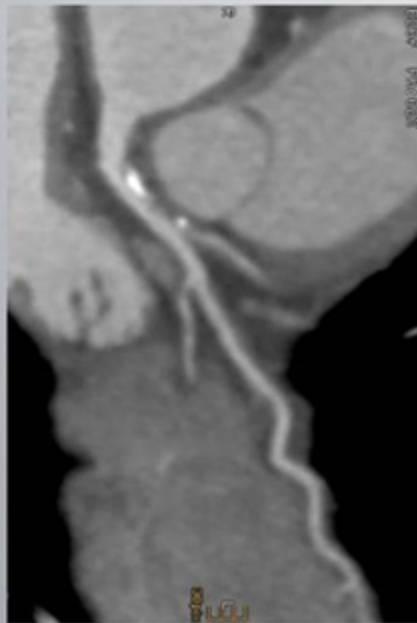
- 128-slice high -pitch dual source CTA





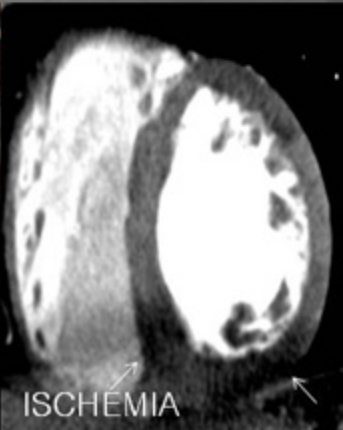
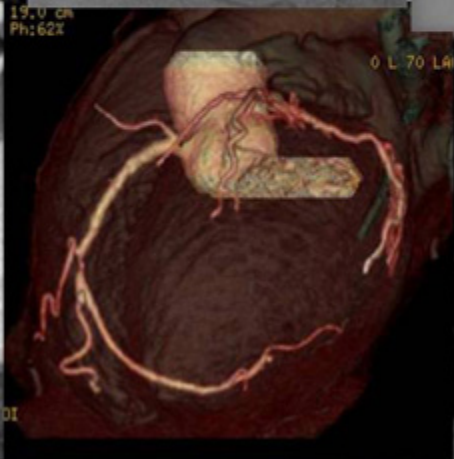
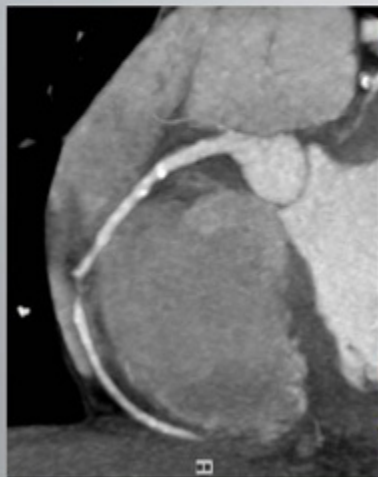
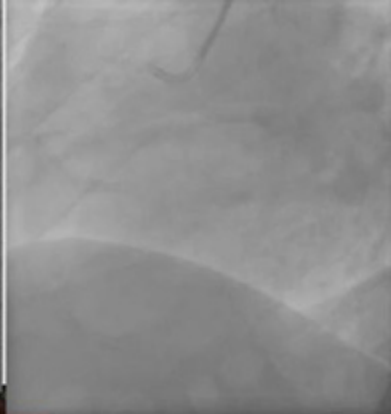
# LAD

- Non-significant plaque



# RCA

- 90%



# 74 YOM

## Time to diagnosis

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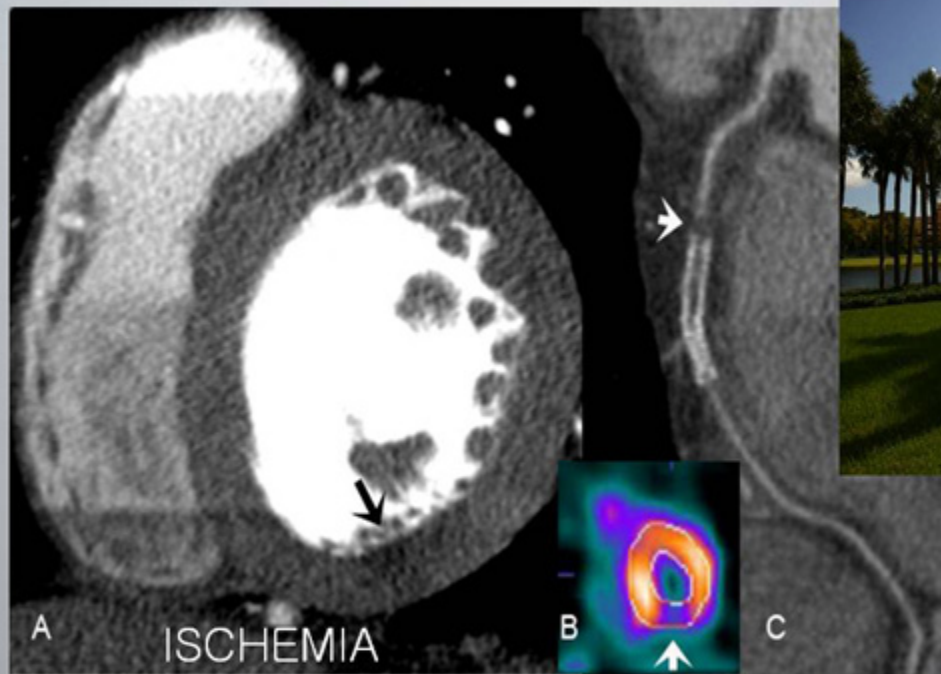
Patient admission: 11:30 am

- 1st Troponin 12:15 pm
- CT request: 12:20 pm
- CT call back 1:35 pm

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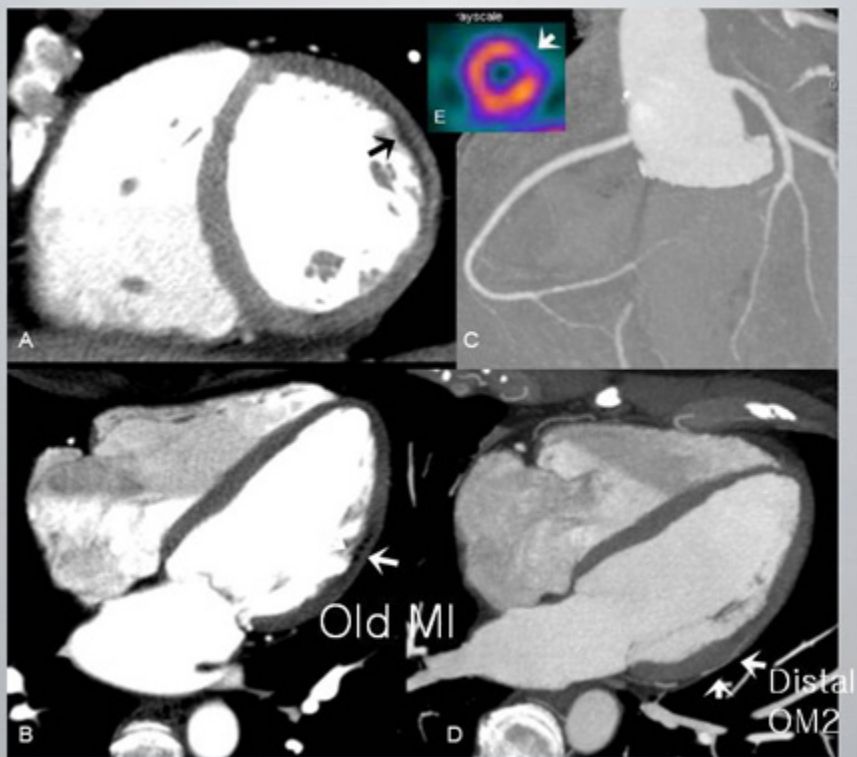
2 hours 05 min

No need for serial Trop!



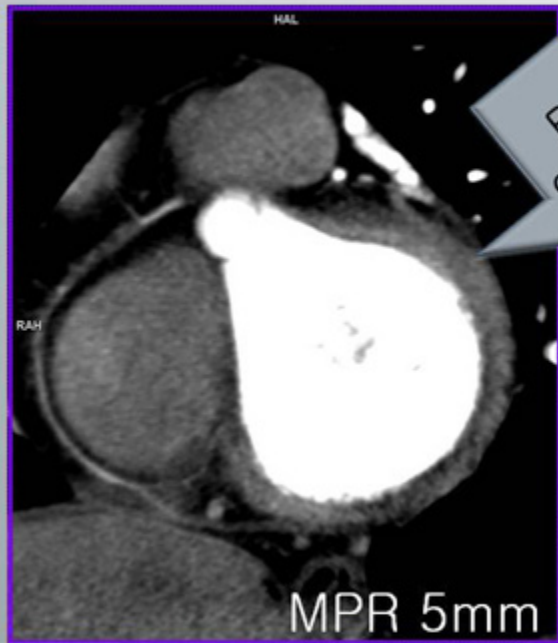
52 YOF- acute chest pain (ED)

Courtesy R Cury, Baptist CV Miami



50 YOF- acute chest pain, CCS zero

55 YOM, unknown CAD  
smoking history  
Acute chest pain 2 weeks ago



RCA  
occlusio





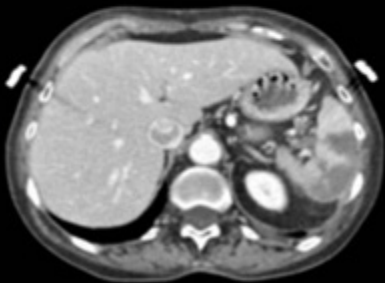
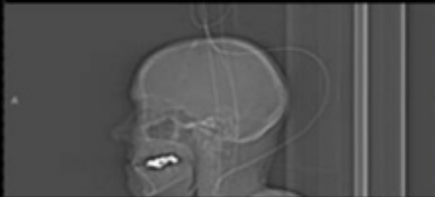
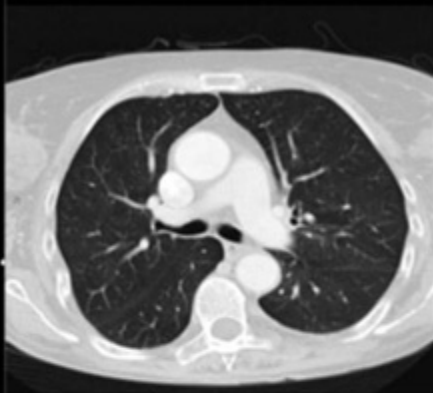
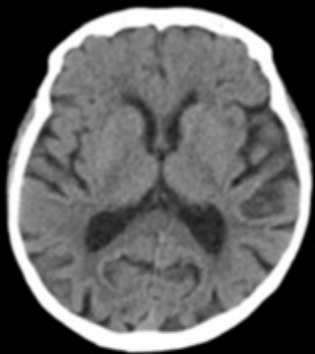


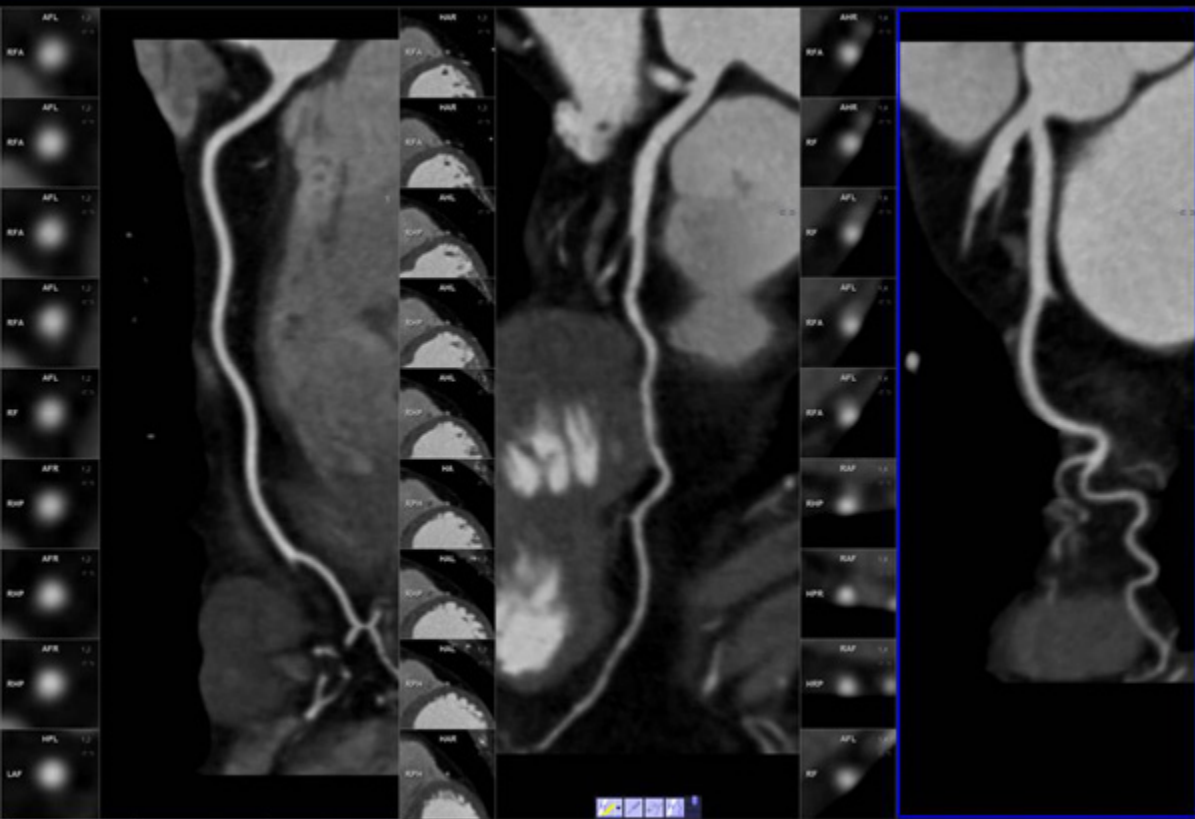
# 52 YOF found collapsed → ED

- Hemodynamic instable
- Aortic dissection/PE/  
cerebral bleeding?
- While waiting for lab....



- full body 128-slice high -pitch dual source CTA

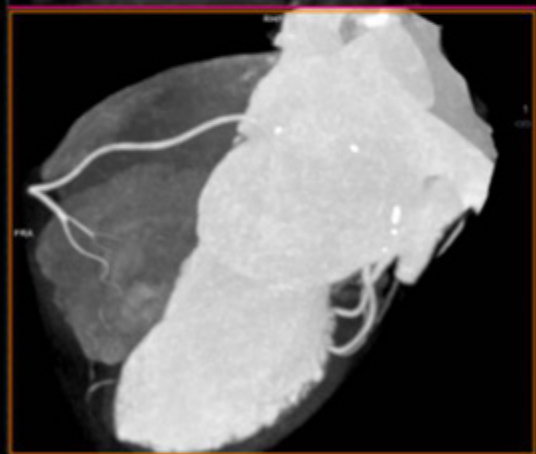
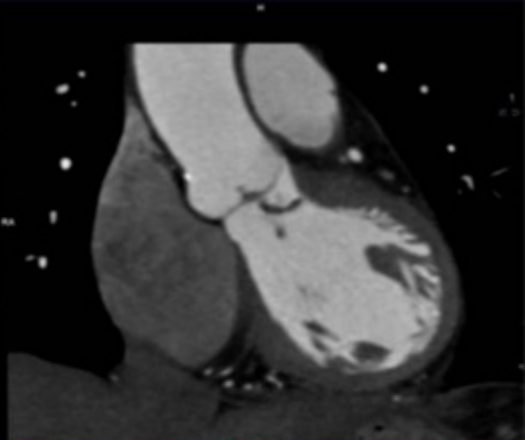
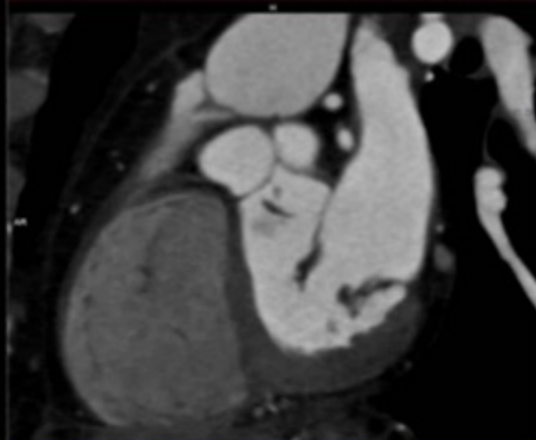




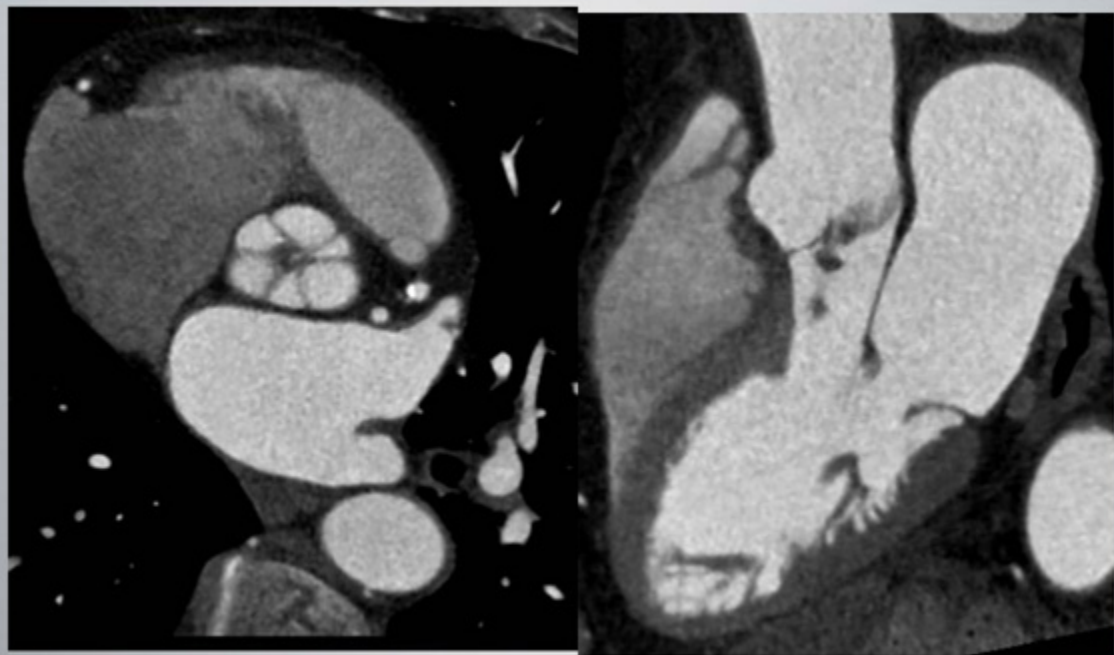
RCA

LAD

CX



Vegetation aortic+mitral → IE





# Stuck valve/ prosthesis mismatch

29.11.196...  
DS\_CorCTA 10/206f 5% - 100%

SIEMENS Ao. Univ.-Prof. Dr. Feuchtnr Gu

Assign Read

CT Cardiac

CT CaScoring

CT Coronary

CT Cardiac Function



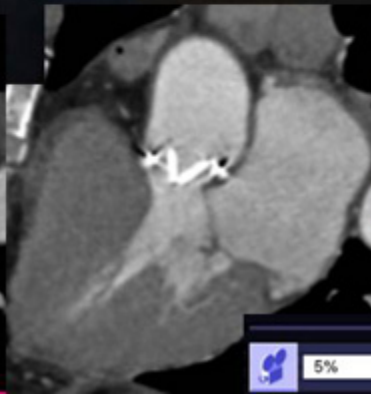
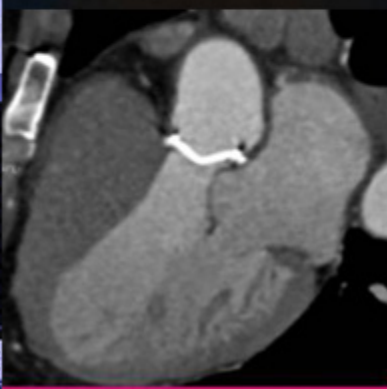
Left Ventricular Analysis

Right Ventricular Analysis

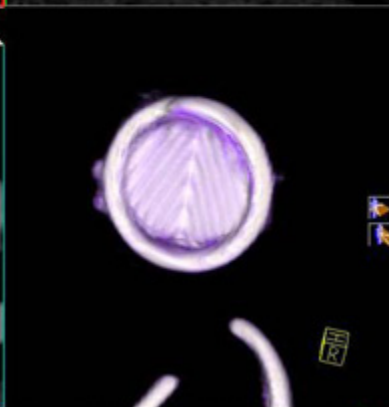
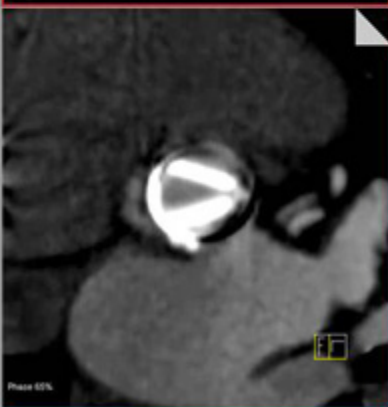
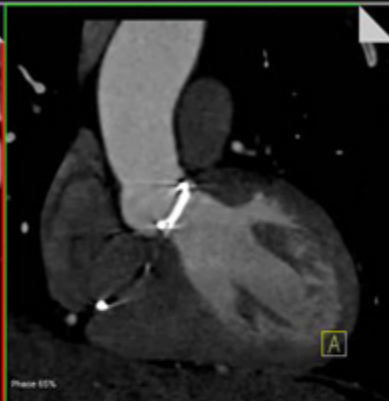
MM Reading

Archive results from current

80% 512 \* 512



5% 512 \* 512



Statistics

- Frames: 0
- Rate: 0.00 frames/sec
- Length: 00:00
- Zoom: 2500 x 1024 (100%)
- Audio:

Properties

- Size: 2500 x 1024
- Colors: True Color
- Rate: 5.0 frames/sec
- Codec: MS-MPEG4 V2

Press Pause or CTRL+SHIFT+F9 to pause

Circulation

Dual Energy

Volume

1 2

60%

Navig | Setti | Tools

Mouse

Speed

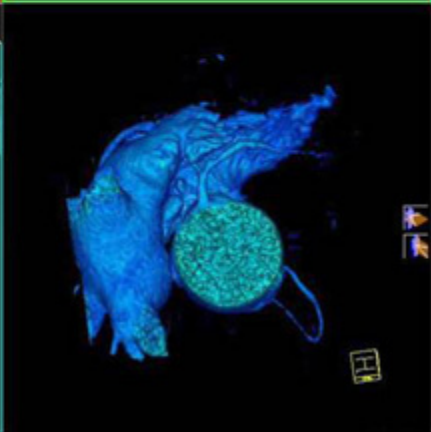
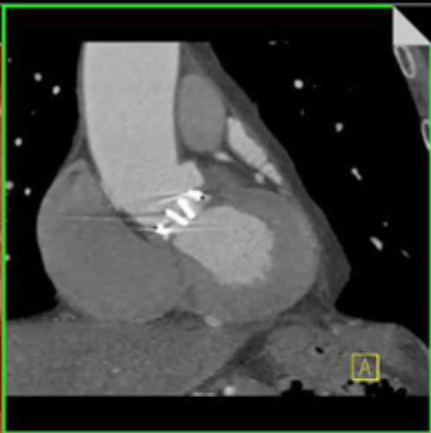
Use 3D

Close Help

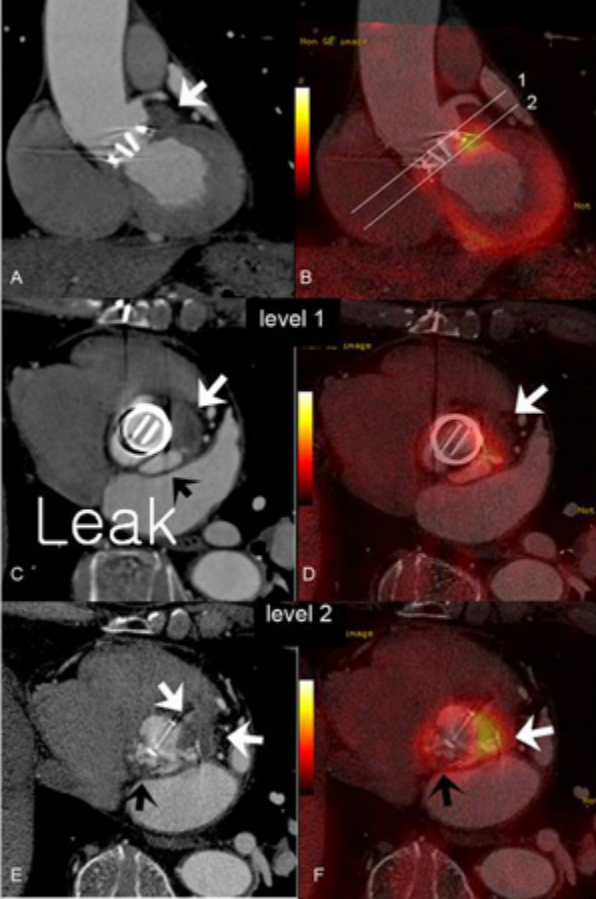
# 74 YOM

- Blurred vision, double images→ TIA
- CRP: 1.09mg/dl, 1.39 mg/dl 1.08 mg/dl over 3 days
- WBC normal
- 2 blood cultures negative.
- D-dimer elevated (1.101 $\mu$ g/l).





$^{18}\text{F}$ FDG-PET/  
128-DSCT  
Image Fusion

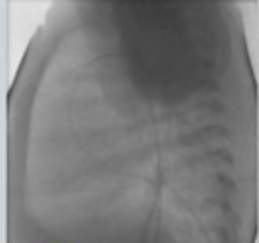


Abscess

*Courtesy Dr. Uprimny,  
Nuclear Medicine  
Innsbruck*

28 day old neonatal: 1,5kg

- CHD- high-pitch CTA



DLP 10 = 0,14 mSv

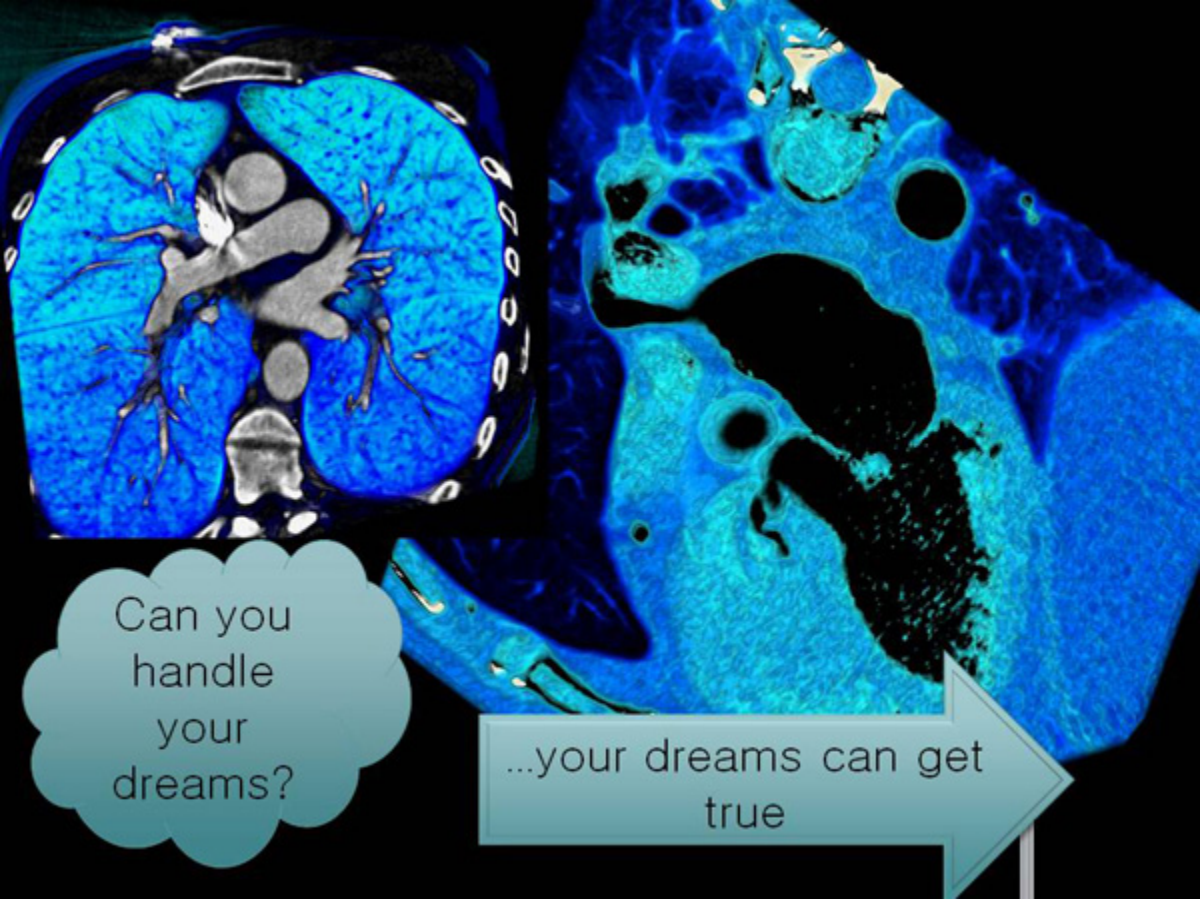




# Conclusion: CTA- one stop shop?

- PERFUSION & CORONARIES
- ACP-ED: Ruleout ACS (+/-PE->TRO)
  - >safe discharge
  - > saves time
- VALVES & FUNCTION





Can you  
handle  
your  
dreams?

...your dreams can get  
true