

# Differential diagnosis of dyspnea and chest pain

## Part four: Clinical Cases II

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**VFN PRAHA**  
VŠEOBECNÁ FAKULTNÍ  
NEMOCNICE

**LEADING SIGN:  
CHEST PAIN**

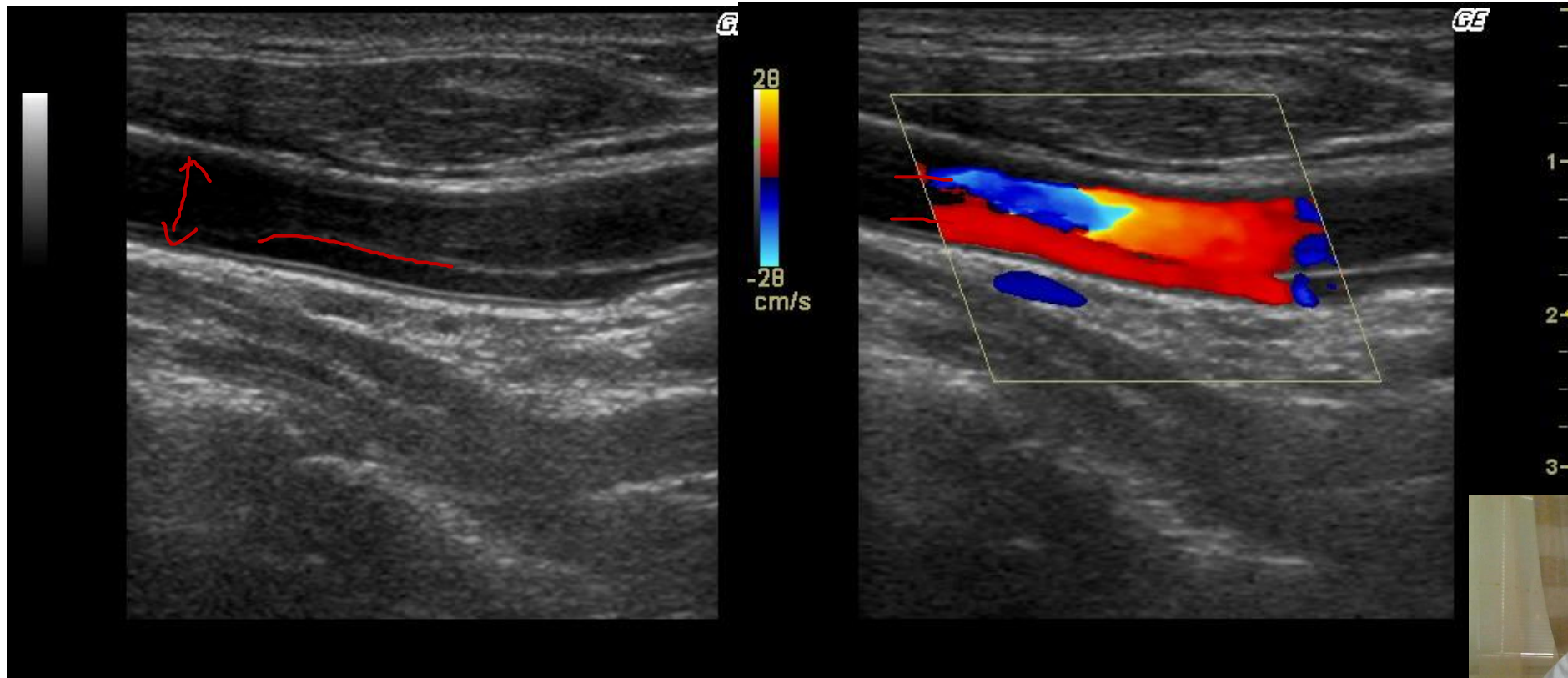


## Woman, 36 years old

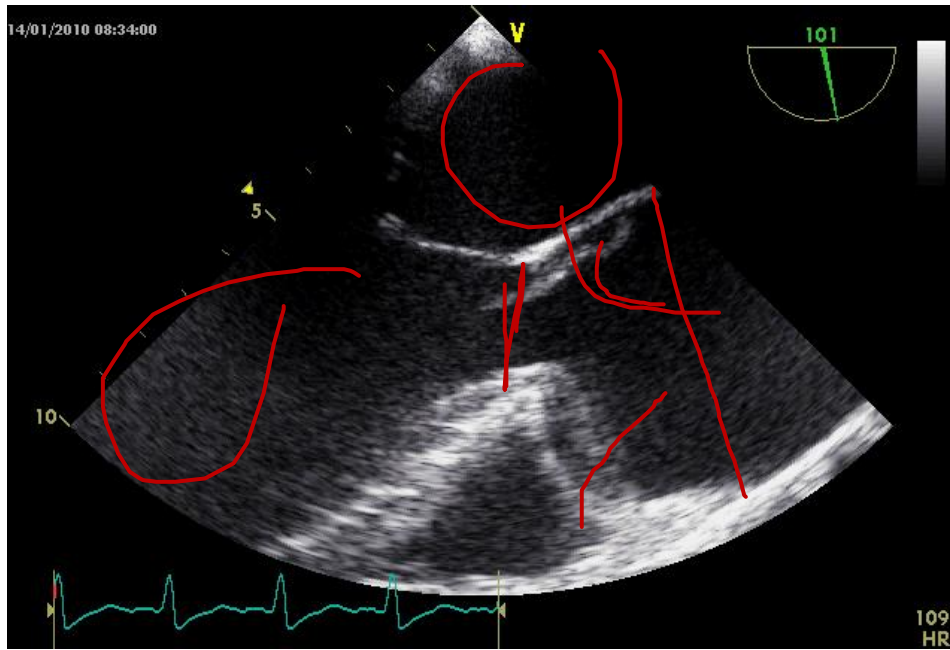
- Type 2 diabetes
- Known aortic valve disease
- Pregnant – 32nd week
- Admitted for excruciating precordial chest pain
- Echocardiography at admission shows mild pericardial effusion and moderate aortic regurgitation, mildly dilated aorta
- High blood pressure 180-190/90-100 mmHg
- Admitted to ICU, pain relief after blood pressure lowering
- Transferred to another hospital where antihypertensive medication has been stopped
- 7th day of hospital stay – loss of consciousness, pulmonary

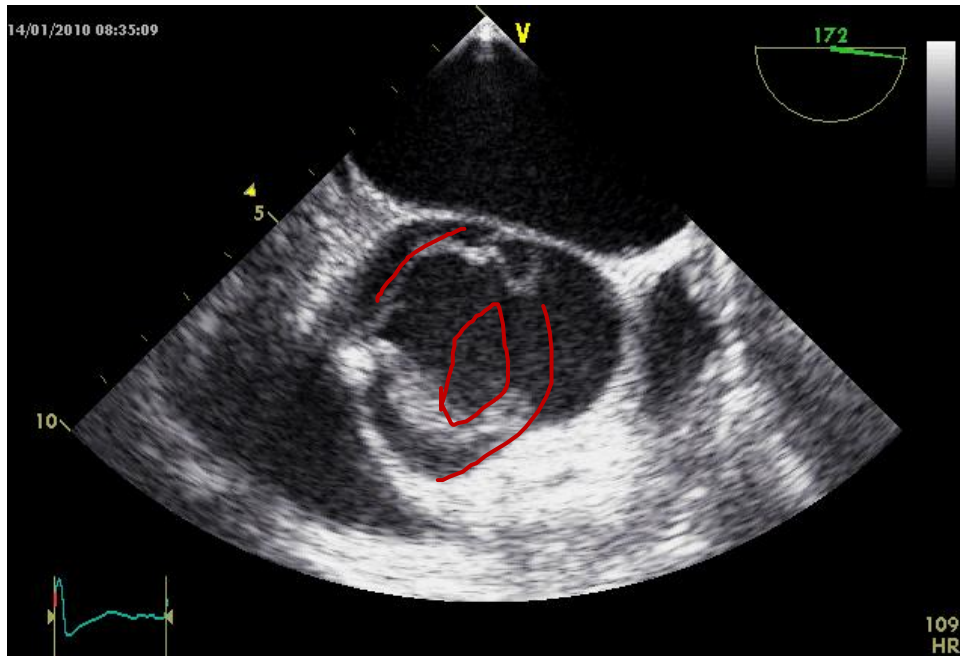


# Vascular ultrasound – carotid artery dissection propagation from the aorta

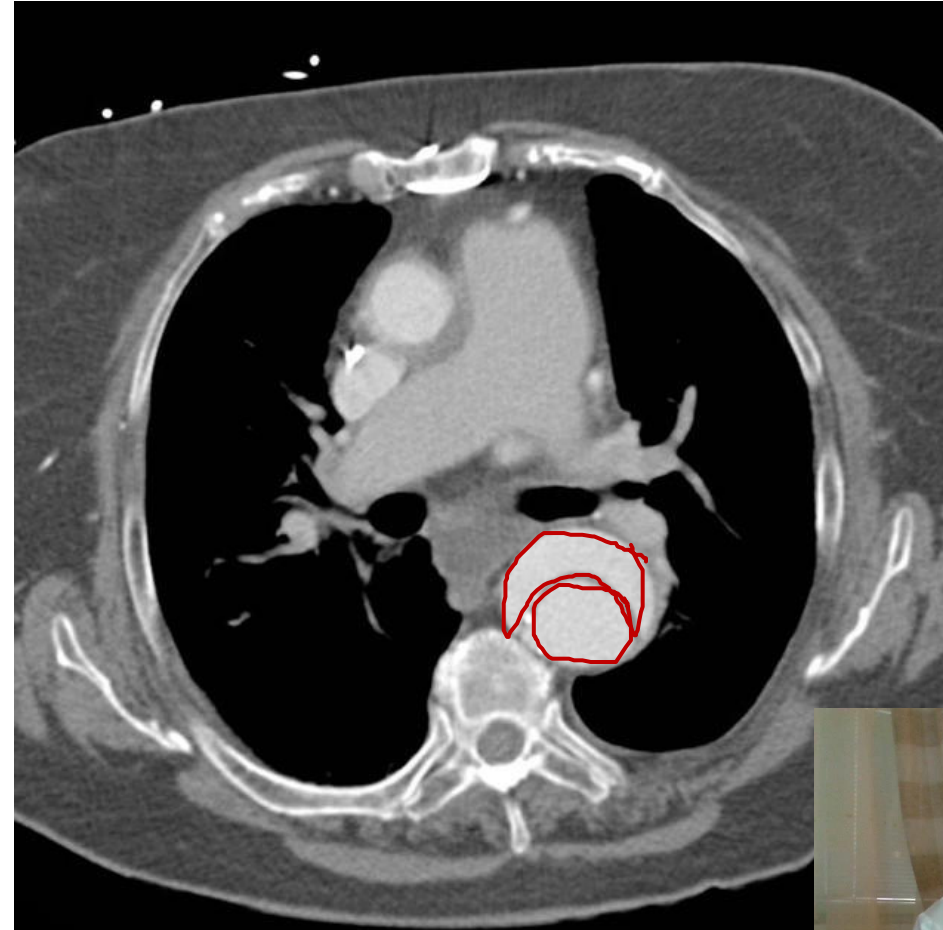


# A type aortic dissection with intimal flap propagating to the left ventricular outflow tract





# CT angiography



**LEADING SIGN:  
CHEST PAIN**



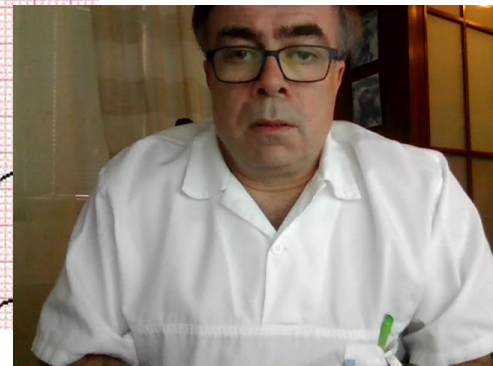
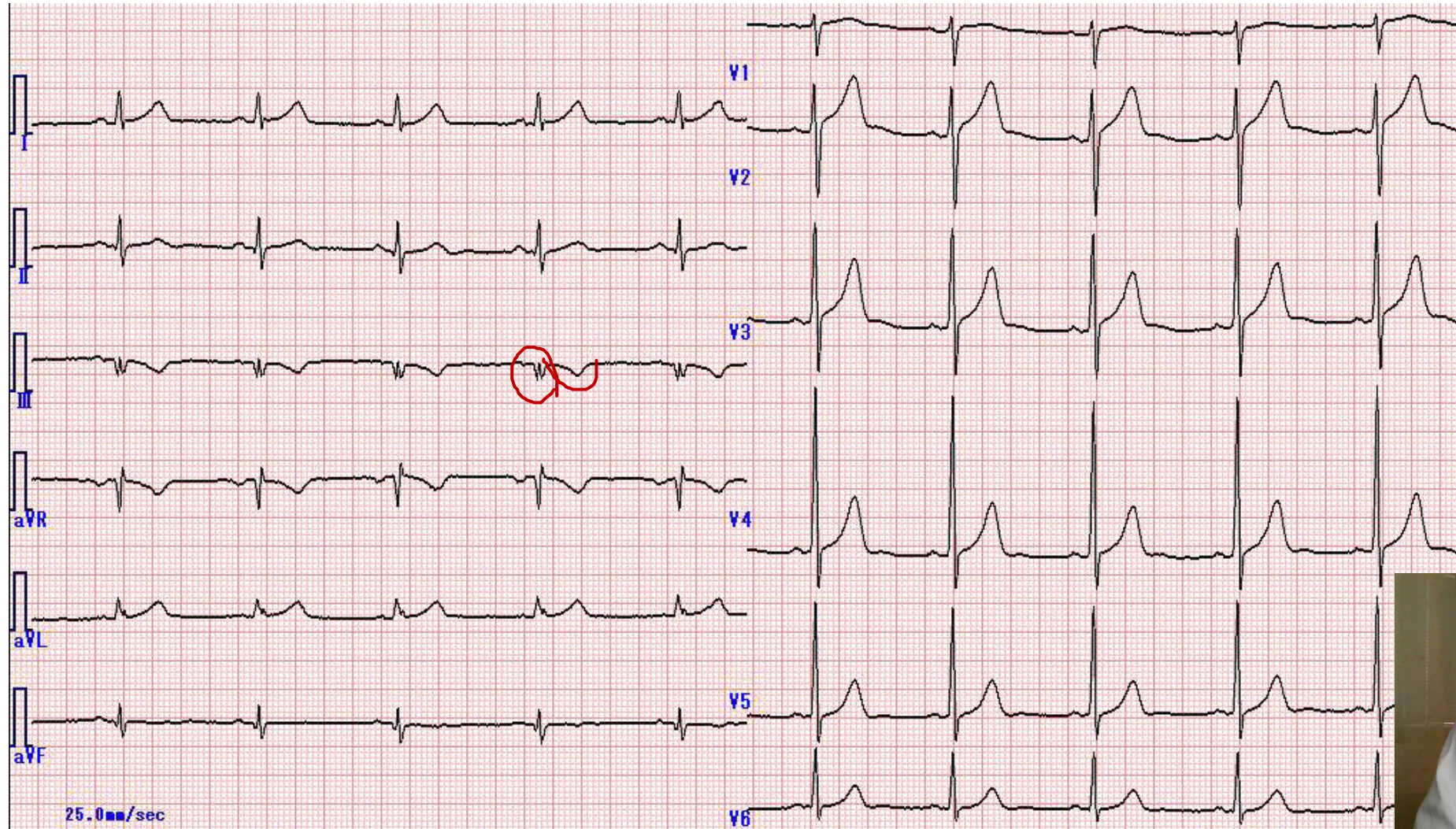


## **Man, 56 years old**

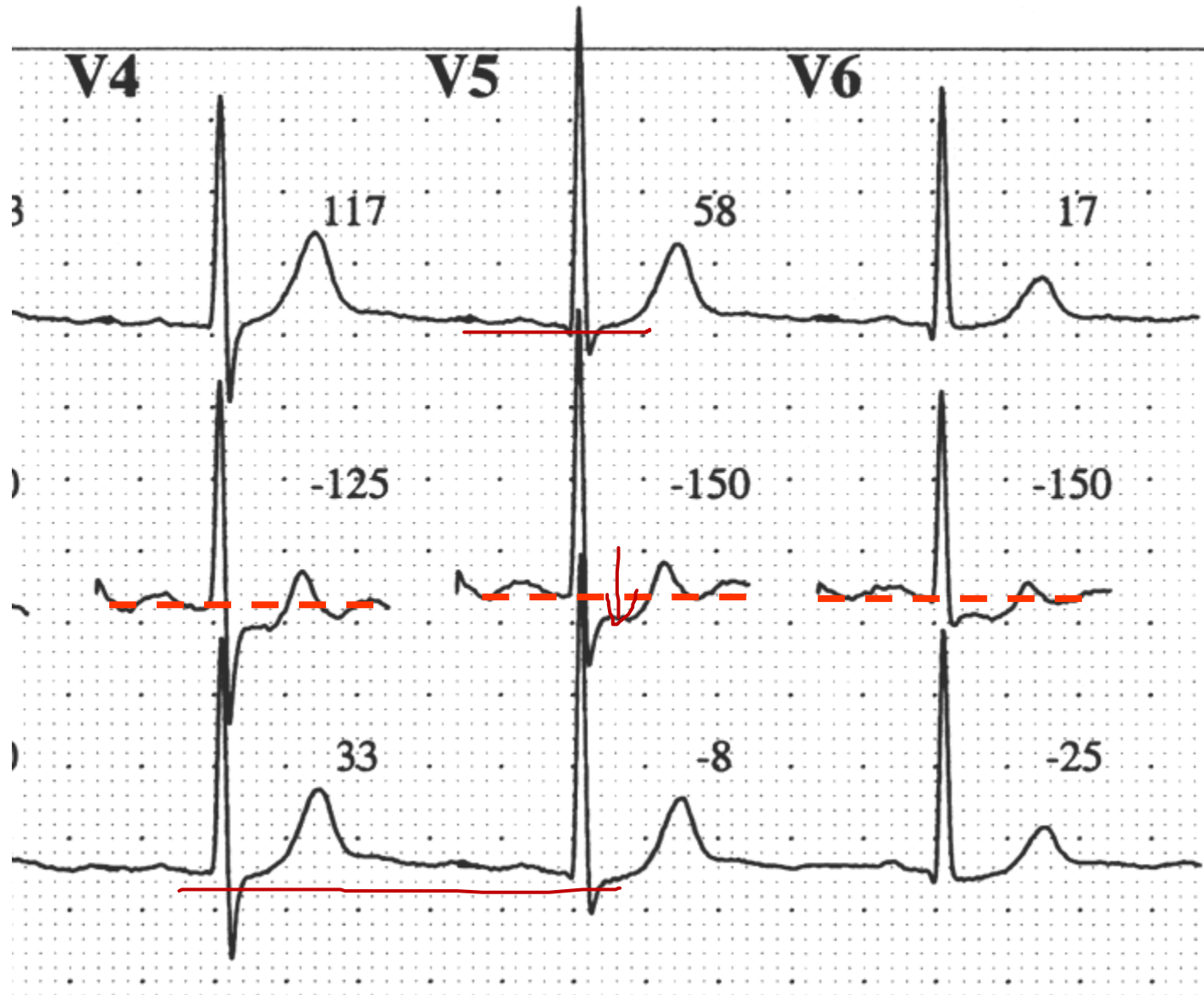
- **Active heavy smoker – up to 2 packs per day**
- **Treated for high blood pressure since 15 years**
- **Known hypercholesterolemia, refused medication for potential side effects of statins – a knowledge he acquired on internet**
- **Since several weeks a strong burning precordial pain upon mild exercise (moderate pace walking), worse in cold weather, relief after exercise cessation within 2 to 3 minutes**
- **Has been seen by his GP – received a prescription for nitroglycerin – he had a rapid pain relief but severe subsequent headache**



# ECG



# Stress ECG



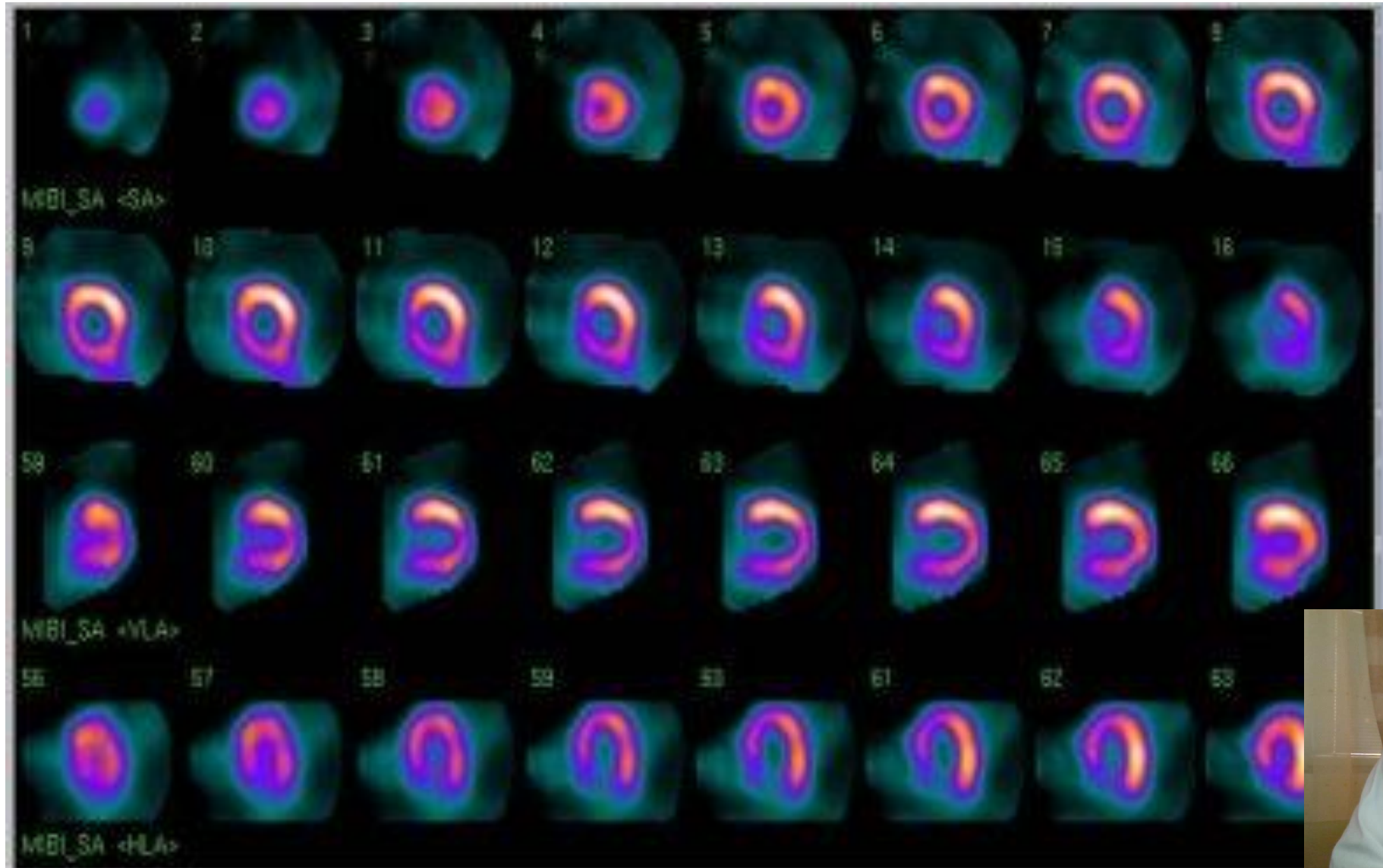
Baseline

50 W/min  
100 W 1. min  
05:17

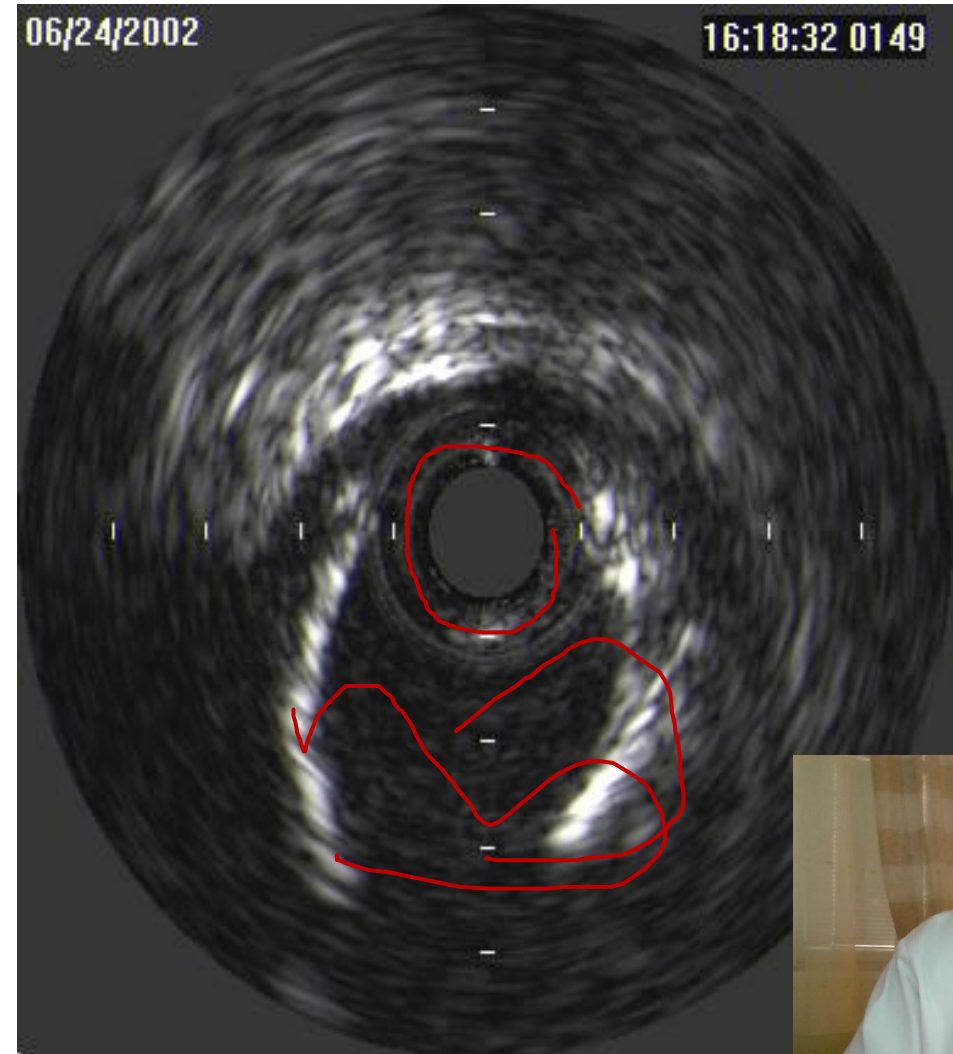
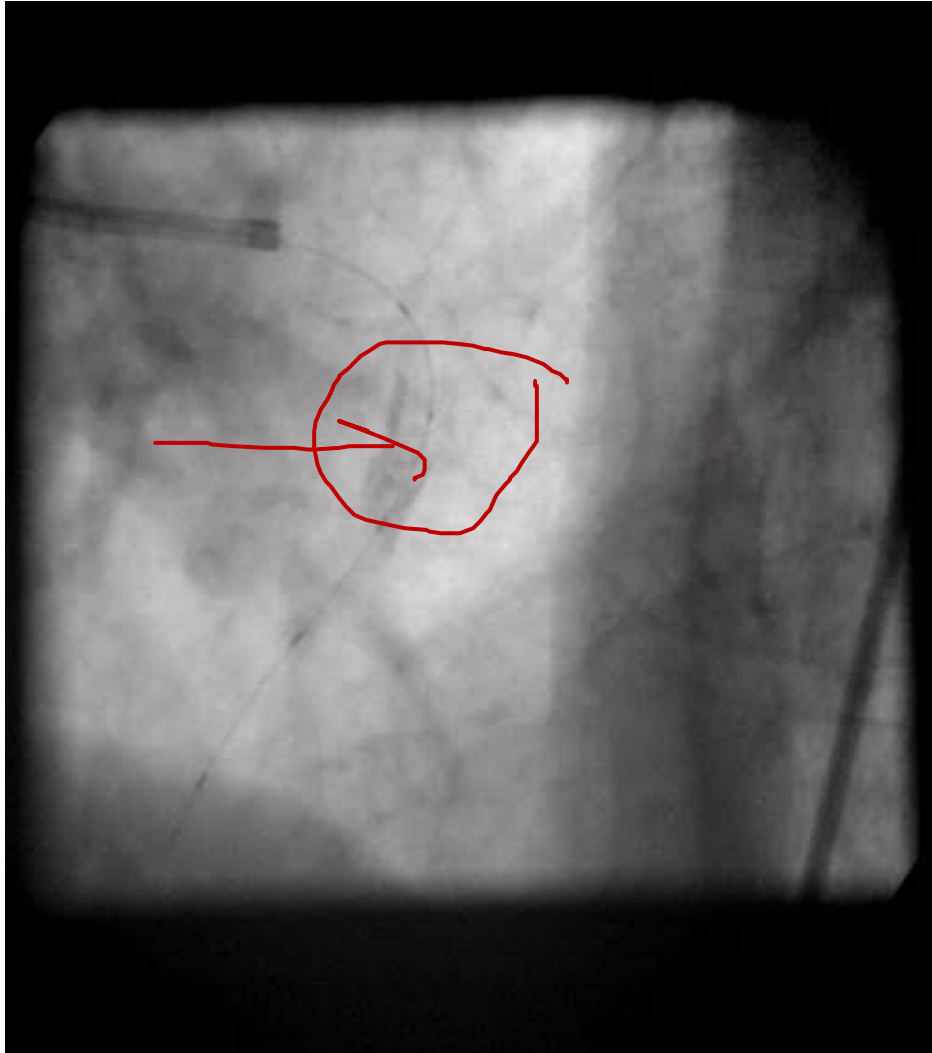
3 min recove



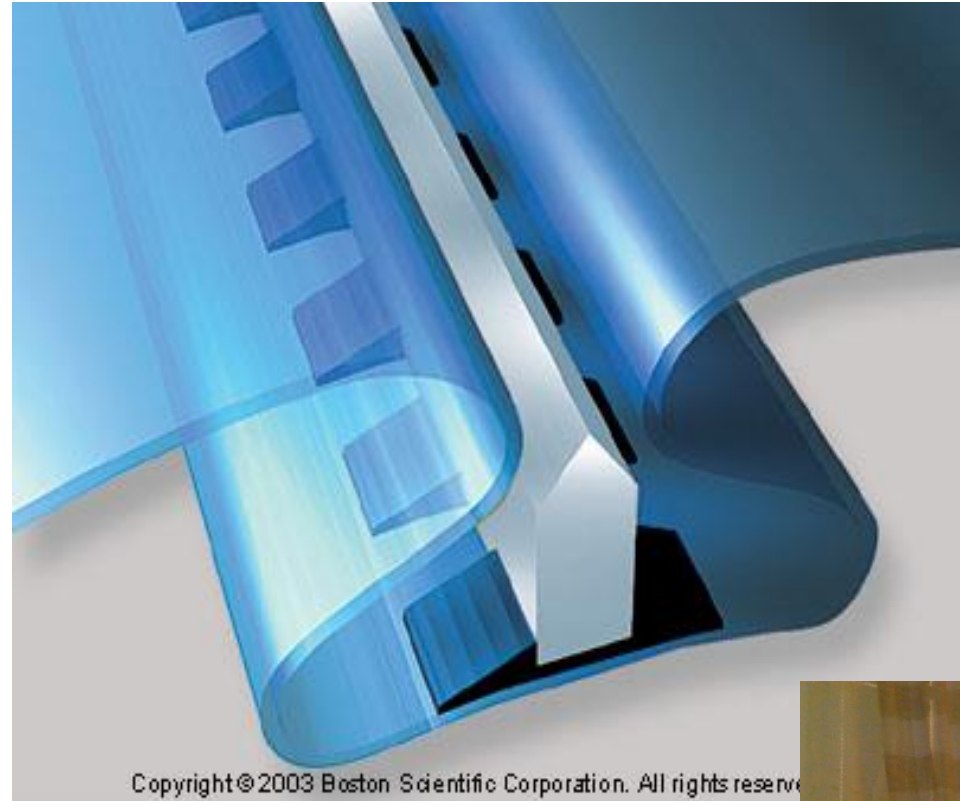
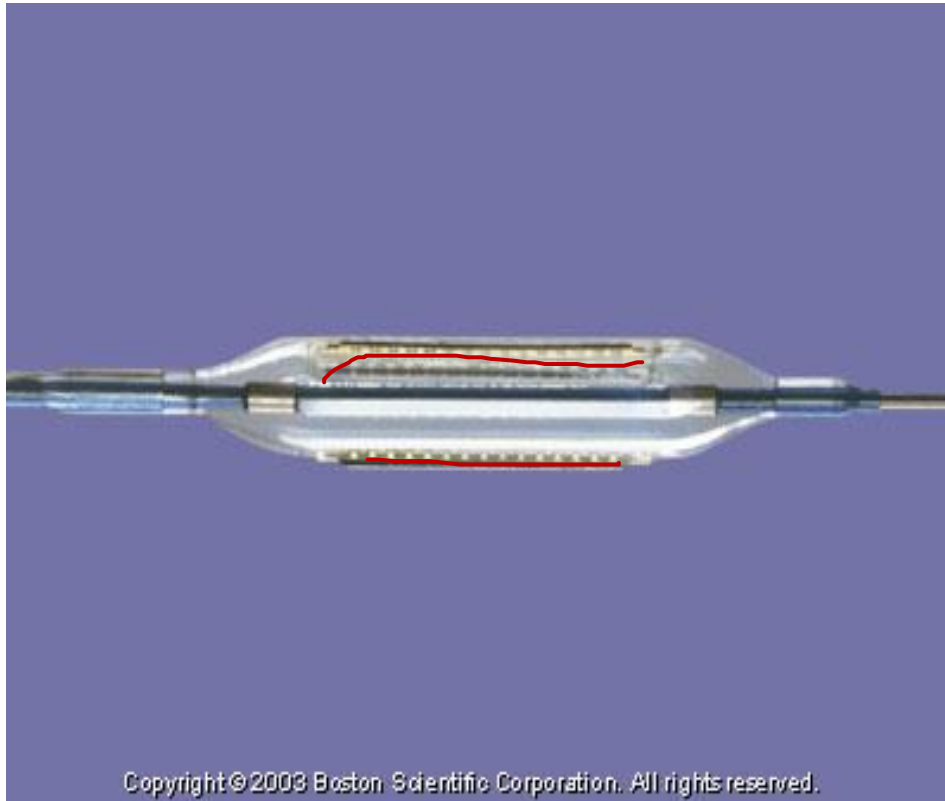
# SPECT – perfusion scan



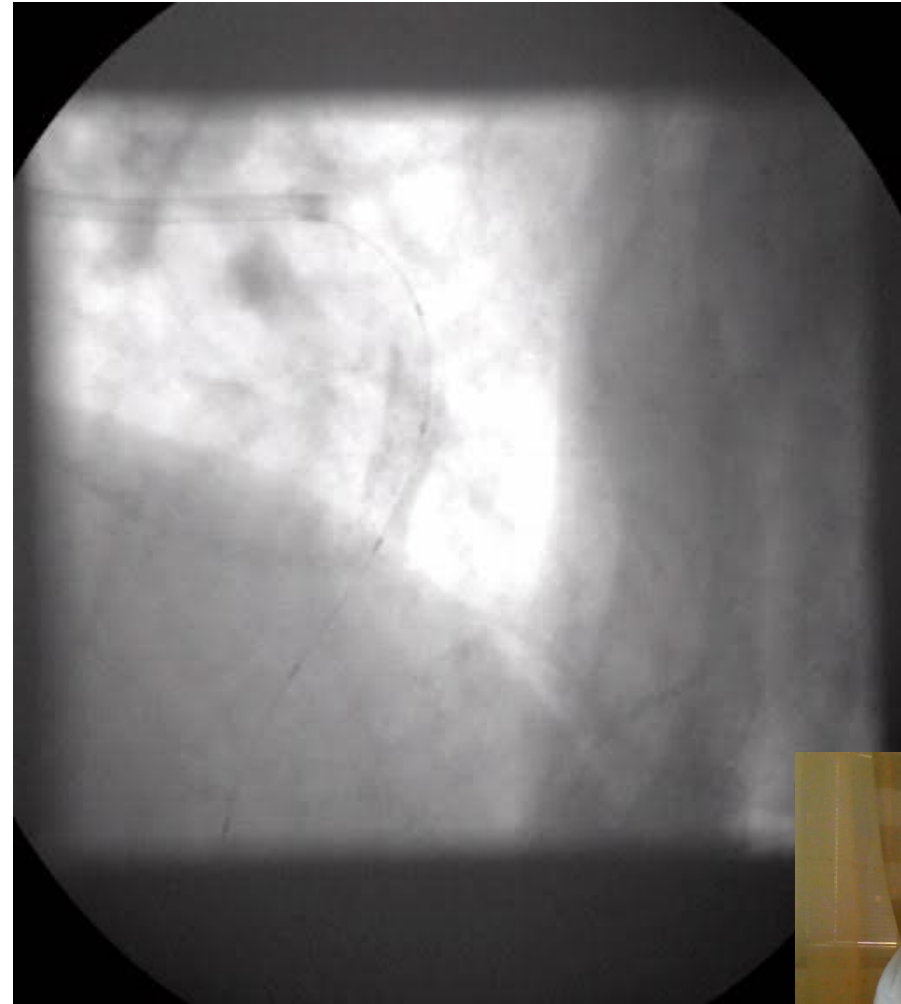
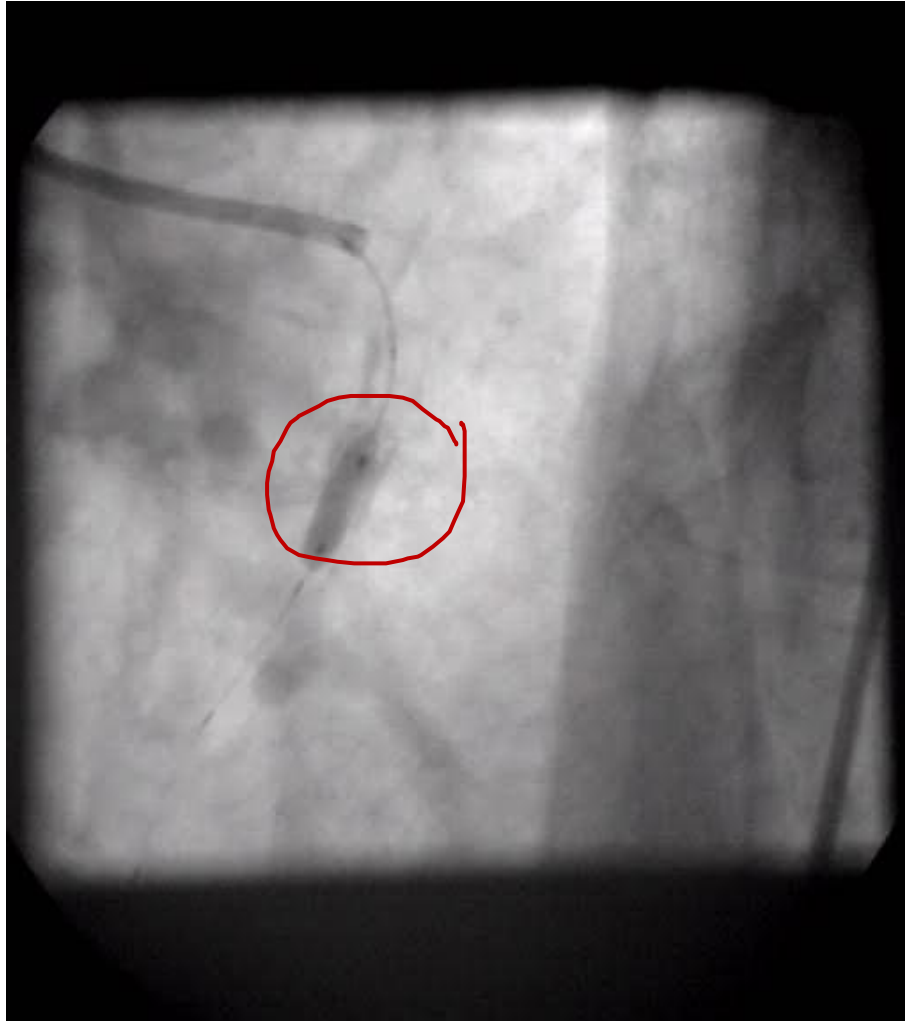
# Coronary angiography and IVUS



# Cutting balloon



# After cutting balloon and stenting



**LEADING SIGN:  
CHEST PAIN**



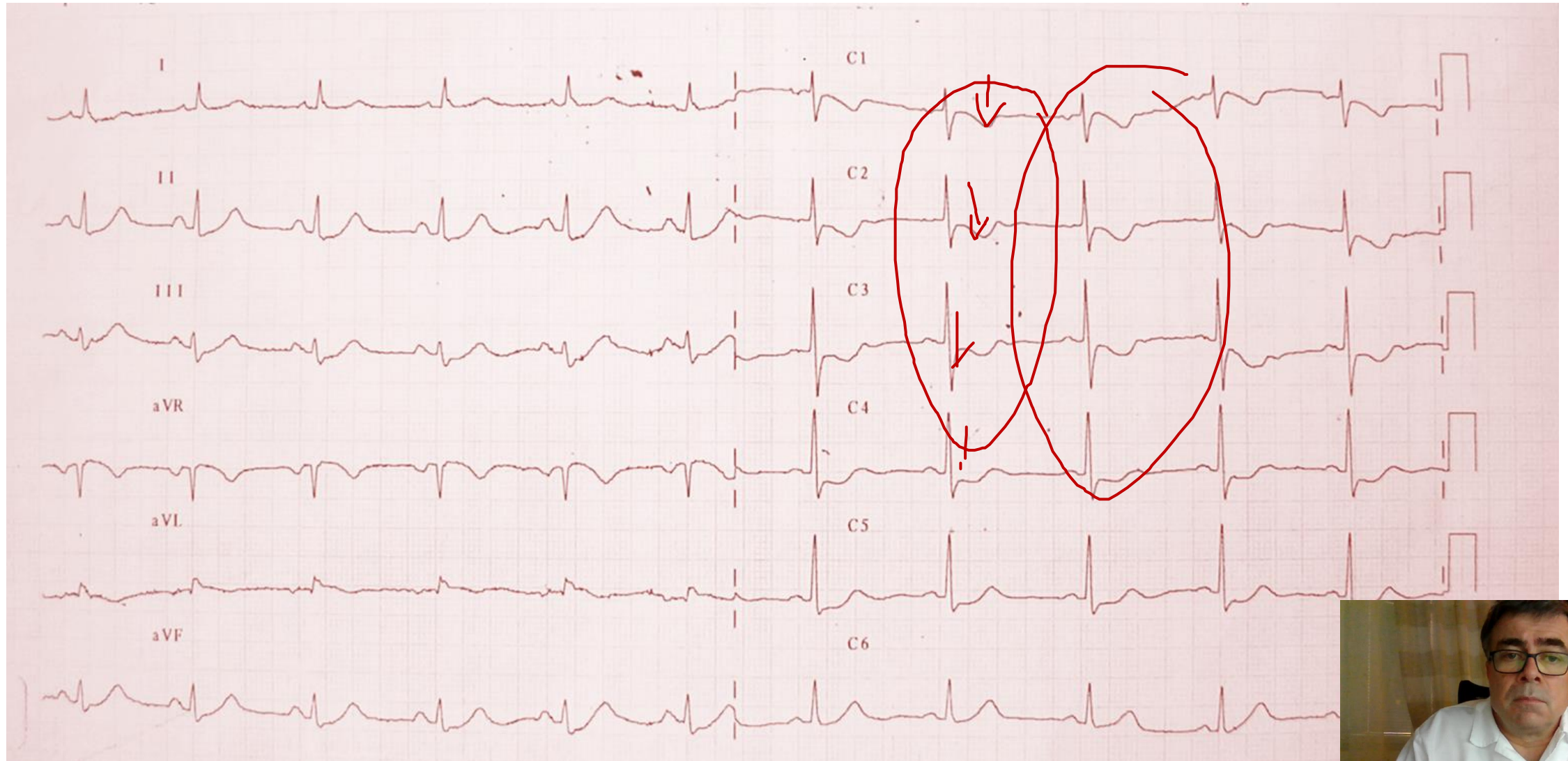


## Man, 62 years

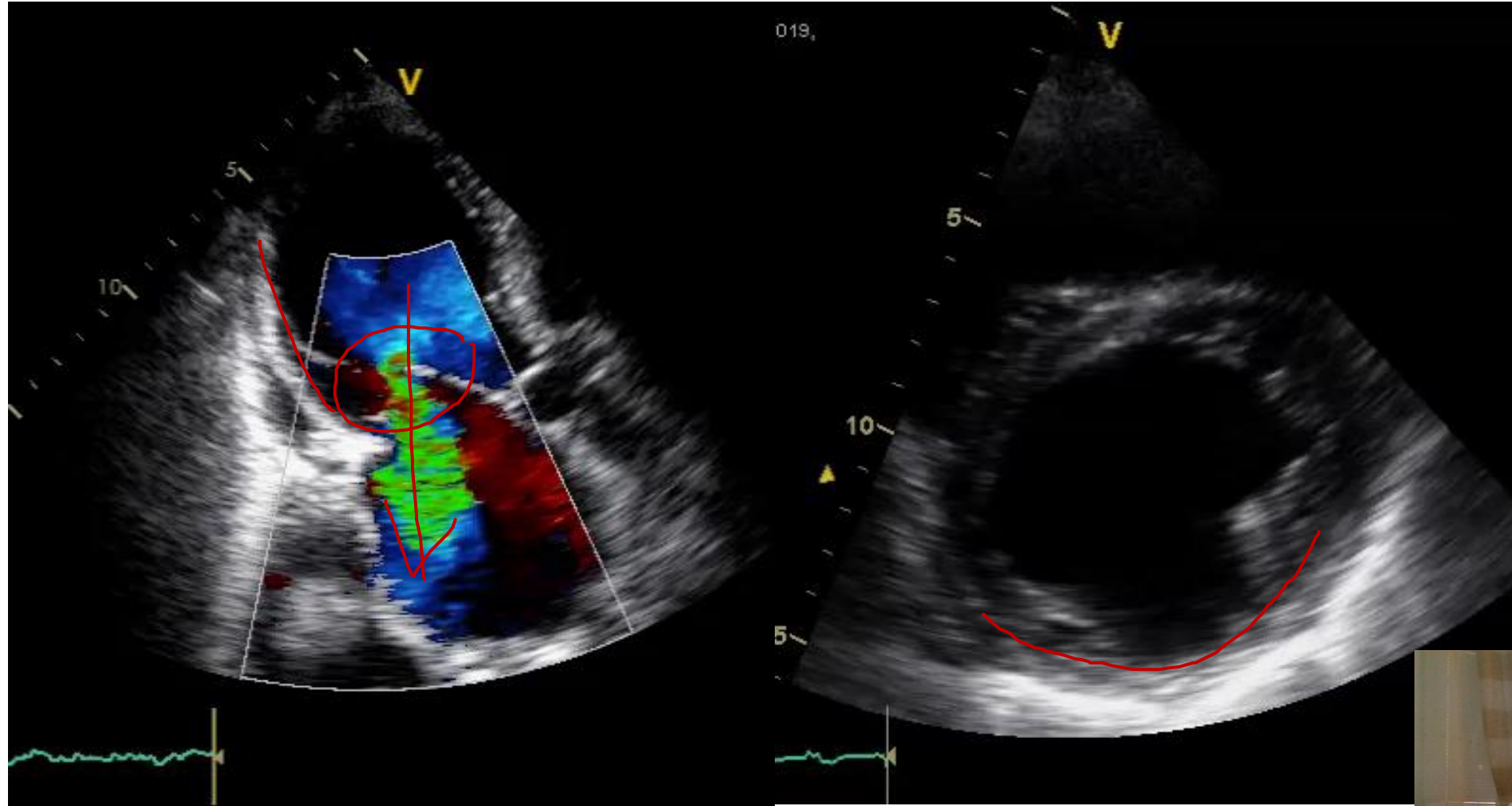
- **Hypertension, poorly controlled, admits noncompliance**
- **Type 2 diabetes, treated with metformin only, refused all additional treatments, HbA1c 76 mmol/mol**
- **Untreated dyslipidemia (CT 6,4, LDL 3,9 mmol/l)**
- **Smoker 10-20 cigarettes / day – 30 packs x years**
  
- **2004 anterior MI treated by dPCI**
- **Admitted to a regional hospital for a precordial chest pain, received ASA + heparin**
- **ECG interpreted as NSTEMI, referred with a significant ECG change after hsTnI result of 14 000 ng/l was announced**



# ECG







**LEADING SIGN:  
CHEST PAIN, DYSPNEA**

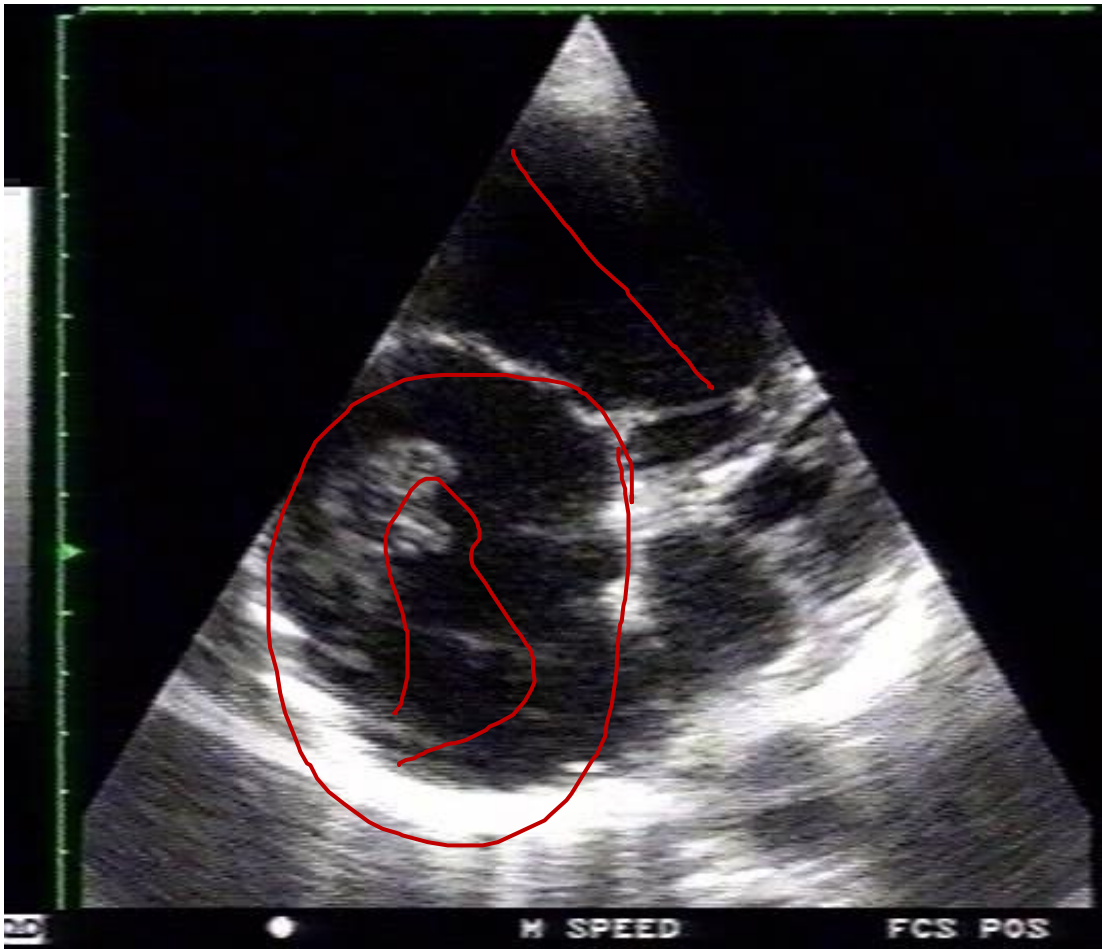


## Woman, 25 years old

- Newly prescribed oral contraception – 3 months
- One month ago – knee trauma with temporary immobilization
- 2 days ago while wearing fixation – painful leg edema, difficulty in walking
- At admission – chest pain, shortness of breath, nausea



# Bed-side echocardiography



# Conclusions

- In acute settings- exclude life-threatening causes first
  - Acute coronary syndrome
  - Pulmonary embolism
  - Acute aortic syndrome
  - Acute heart failure – lung edema
- In chronic settings – stratify by the degree of symptoms – seek prognostically severe disease first

