2023 ACC India

Revascularization
When is CABG Preferred over PCI?

Patrick T. O'Gara, MD

Watkins Family Distinguished Professor of Cardiology
Brigham and Women's Hospital
Harvard Medical School

Disclosures

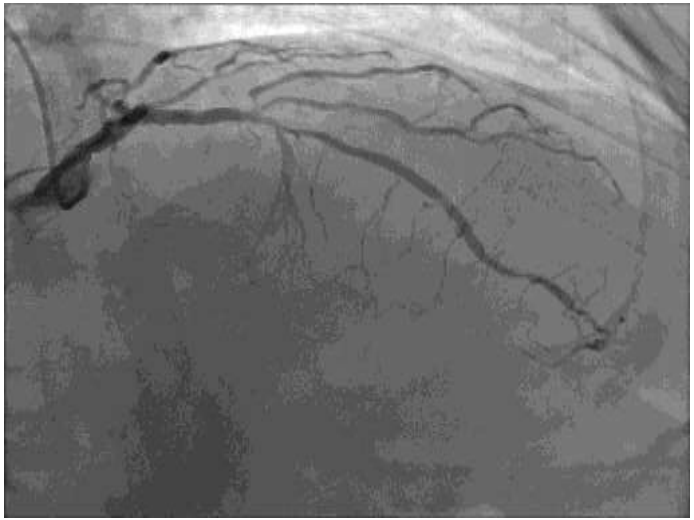
- None

Revascularization

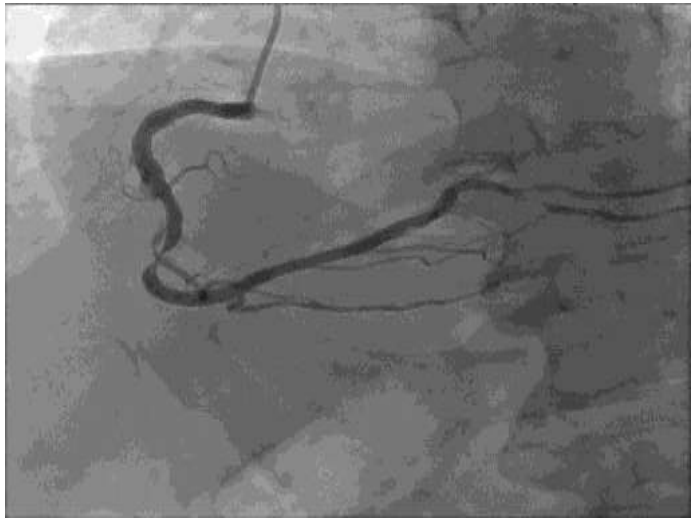
- **67-year-old man**
  - **Hyperlipidemia**
  - **Abdominal aortic atherosclerosis; iliac artery ectasia**
- **12/25/2022**
  - **Chest pain**
  - **Elevated hs-CTnI (167-203)**
  - **Non-specific ST-T abnormalities**
  - **TTE: normal LV function (EF 55-60%)**

67-year-old man with ACS

LCA



RCA



CABG or PCI?

- Coronary Artery Disease
  - Acute Coronary Syndromes
    - STEMI
      - pPCI
        - MVD, shock
    - Anti-T Rx
    - NSTEMI
      - Revasc*
        - *Risk-based
  - Chronic Coronary Syndromes
    - Medical Rx
    - Revasc
      - Indications
      - Strategy

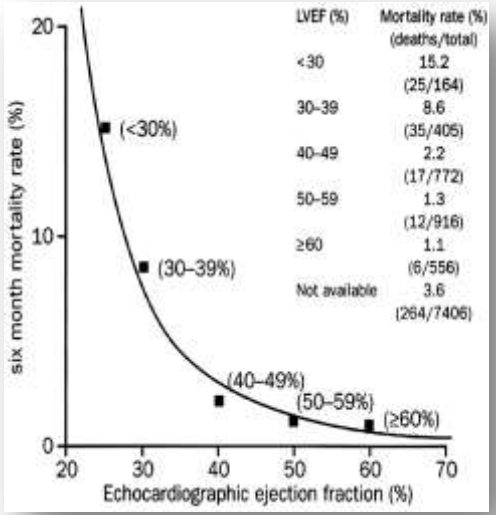
Chronic Coronary Syndromes

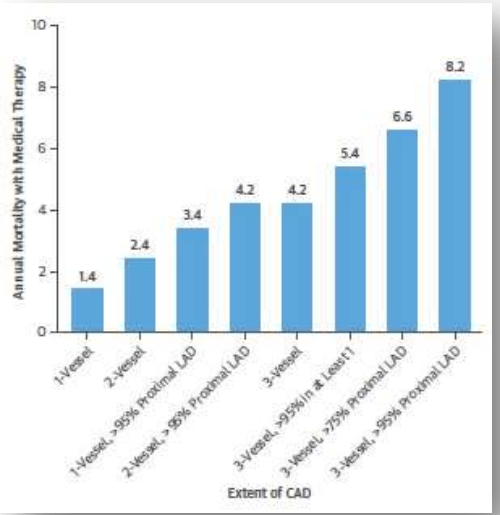
- **Goals of Therapy**
  - **To reduce the risk of death and MI**
  - **To reduce symptoms and signs of ischemia**

- **Principle**
  - **The intensity of therapy should be targeted to the magnitude of risk and the severity of symptoms and signs of ischemia.**

Predictors of Risk

- LV Function
- Extent/severity CAD
- Recent ACS
- Patient factors*





Age, sex, DM, CKD, etc

GISSI Study Group

2014 ACC/AHA SIHD GL

The Heart Team

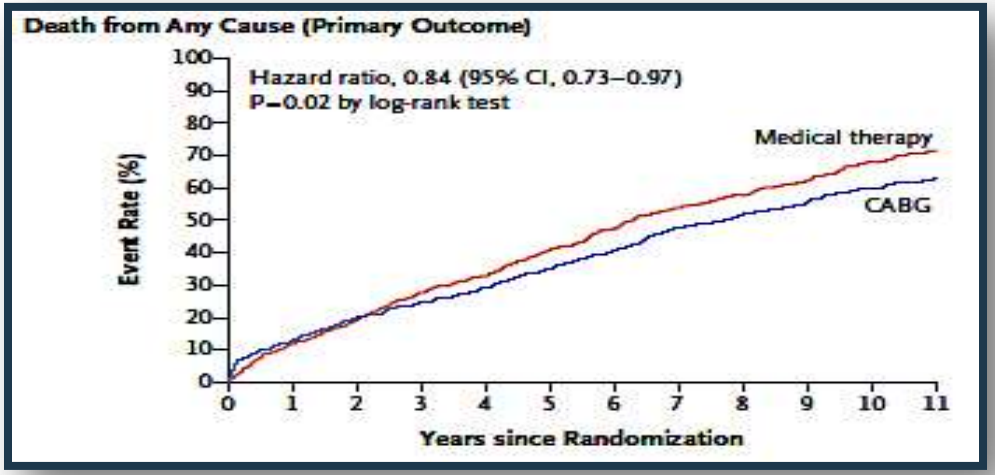
Recommendation for the Heart Team		
COR	LOE	Recommendation
1	B-NR	In patients for whom the optimal treatment strategy is unclear, a Heart Team approach that includes representatives from interventional cardiology, cardiac surgery, and clinical cardiology is recommended to improve patient outcomes.

Scenarios in which CABG is Generally Preferred over PCI

- **LMCA and high complexity MVD**
- **MVD and severe LV dysfunction (EF < 0.35)**
- **DM, MVD with LAD involvement**
- **MVD, severe ischemic MR, other structural heart or aortic disease**
- **Poor PCI candidate (access, anatomy, incomplete revascularization, DAPT adherence)**

STICH(ES) Trial of CABG vs Medical Therapy

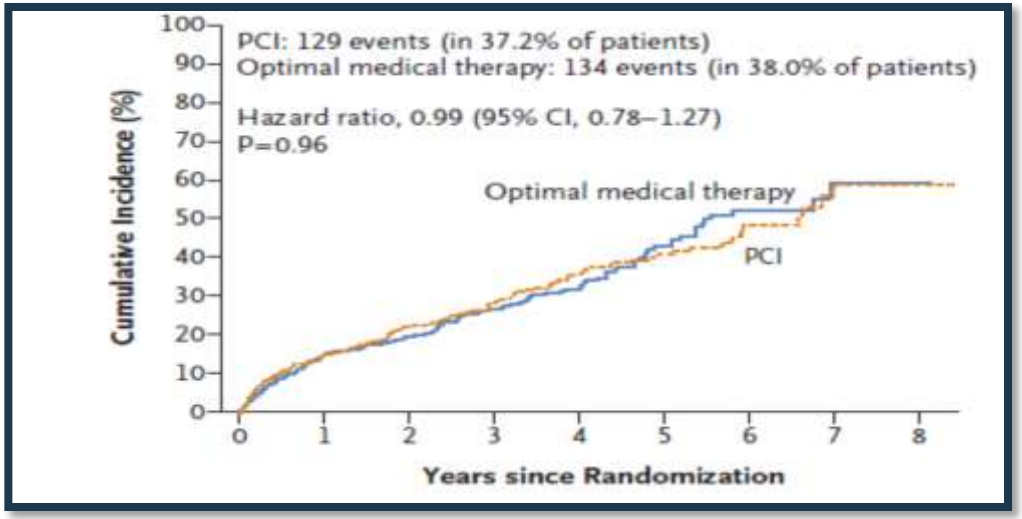
N=1212
~90% w/2 or 3VD
~2/3 w/proximal LAD
EF 28%



Velasquez EJ et al. NEJM 2016; 374:1511-20

REVIVED-BCIS2 Trial of PCI vs Medical Therapy

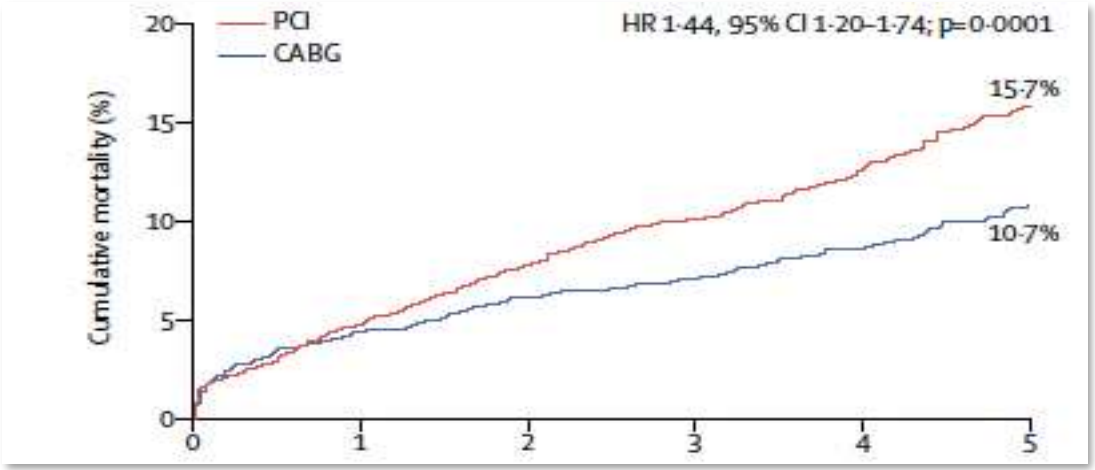
- N=700
- ~1/2 with LMCA or 3VD and ½ with 2VD
- Viability assessment
- EF 27%



Perera D et al. NEJM 2022; 387:1351-60

Mortality after CABG vs PCI in Patients with LMCA and/or MVD *and* DM

Meta-Analysis



Head S et al. Lancet 2018; 391:939-48

Scenarios in which PCI is Generally Preferred over CABG

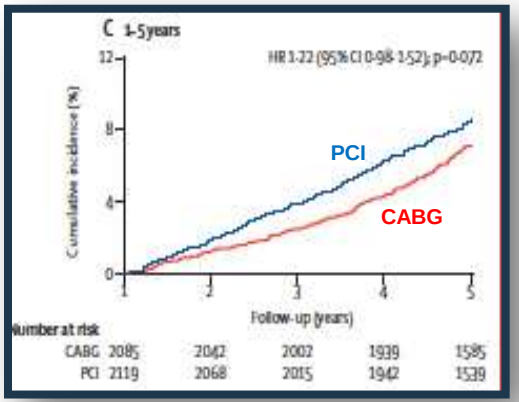
- Low(er) complexity CAD
- Prior CABG with patent LIMA
- Poor CABG candidate
  - Age, frailty, co-morbidities, conduits, targets

    hostile chest, etc.

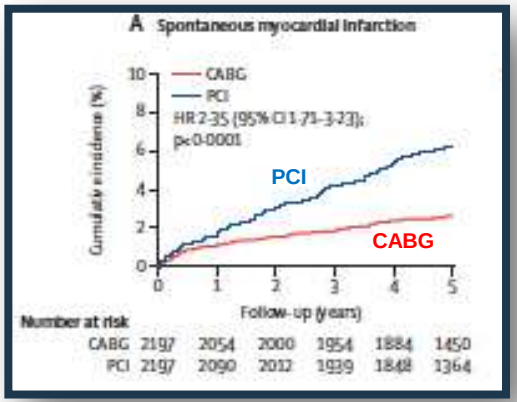
Scenarios in which There is Less Certainty Regarding CABG vs PCI

LMCA Disease with low or intermediate complexity MVD

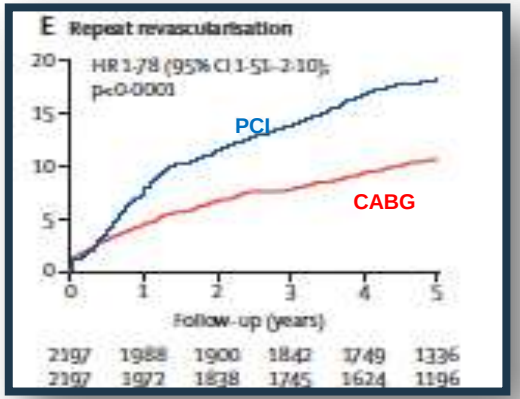
All-cause Mortality



Spontaneous MI



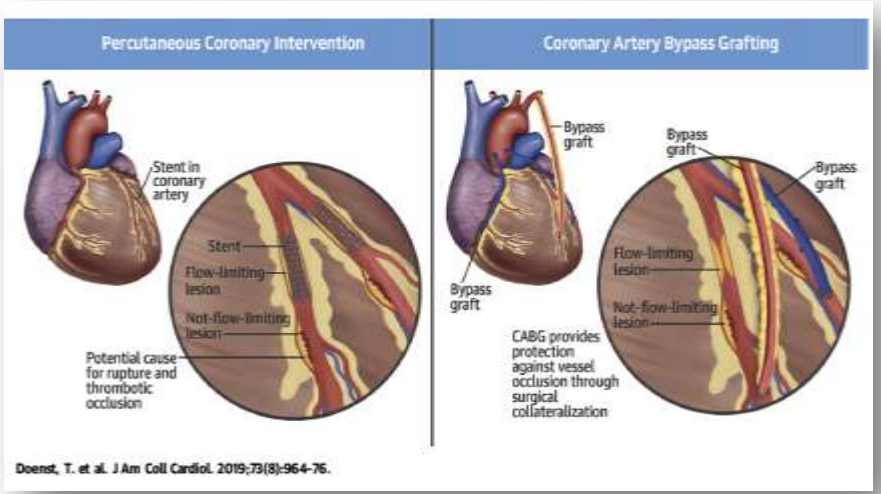
Repeat Revasc



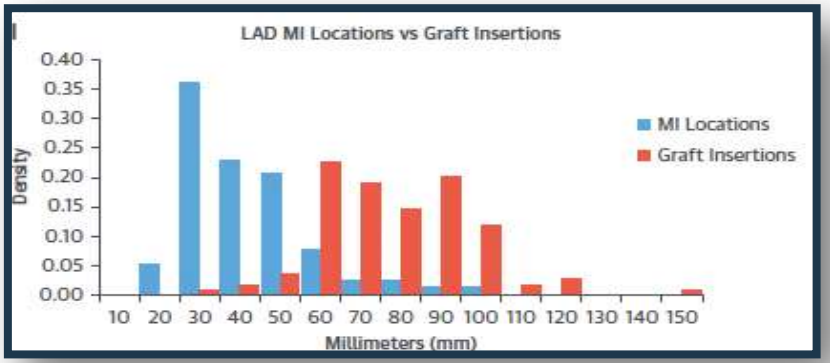
Sabatine MS et al. Lancet 2021; 398:2247-57

CABG vs PCI

Spontaneous MI



Doenst, T. et al. J Am Coll Cardiol. 2019;73(8):964-76.



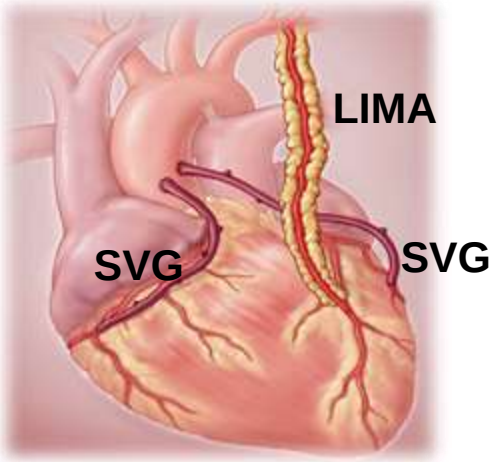
Jeon C et al. Am Heart J 2010; 160:195-201

Scenarios in which There is Less Certainty Regarding CABG vs PCI

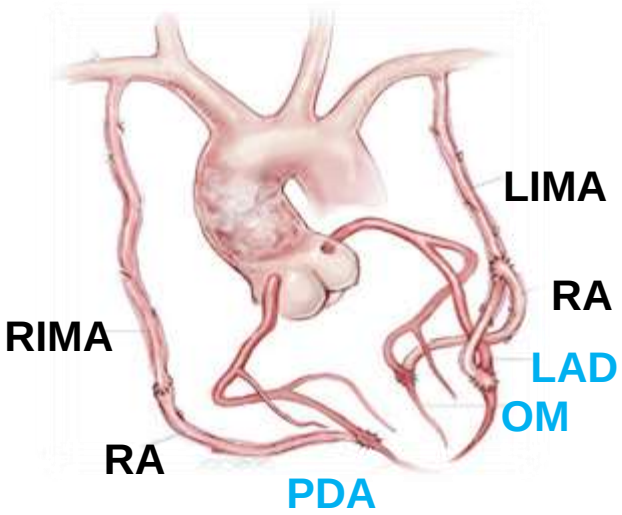
- **Isolated proximal LAD disease**
- **2VD with proximal LAD involvement**

CABG

Technical Evolution



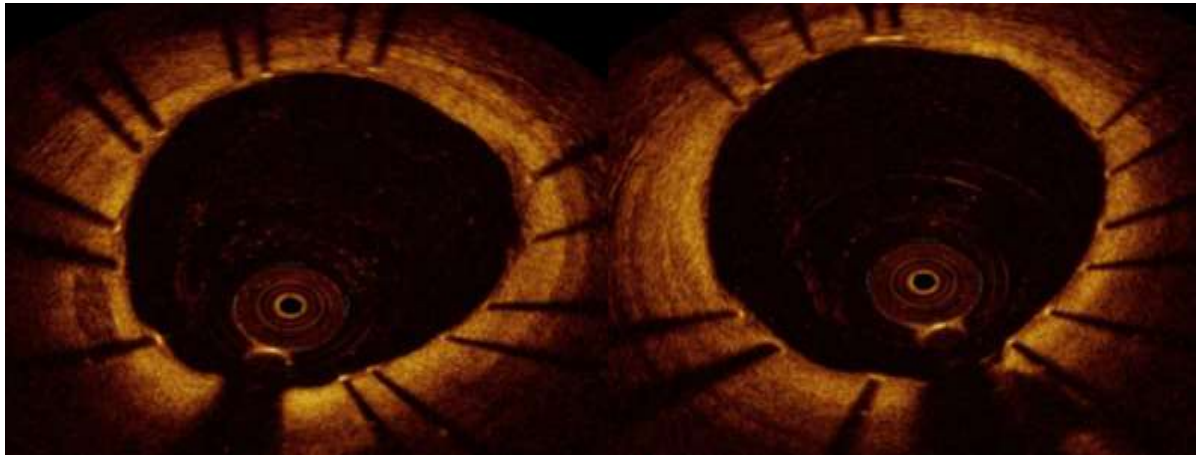
Alexander JH, Smith PK NEJM 2016



Head SJ et al. Circ 2017

OCT

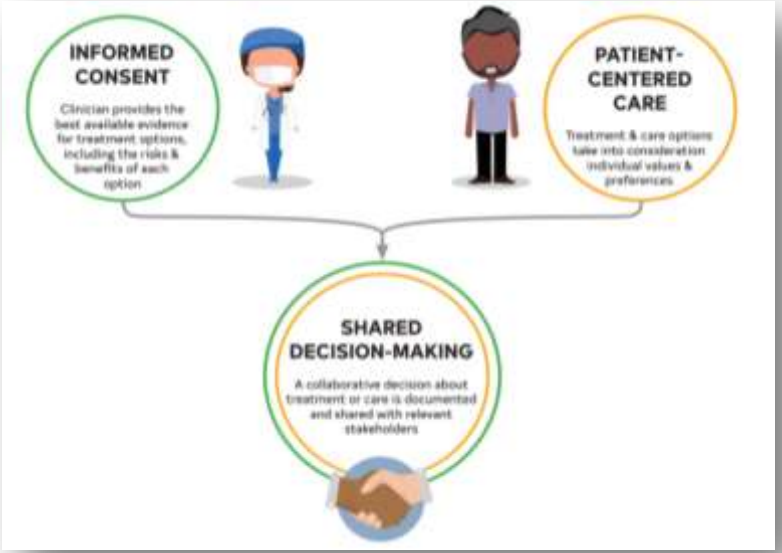
Technical Evolution



What Happens after Revascularization?

- Cardiac rehabilitation
- Attention to residual risk
  - Cholesterol (LDL-C)
  - Inflammatory (hs-CRP)
  - Thrombotic (plts, coags)
  - TG-rich LPs (IDL, VLDL, RC)
  - Lp(a)

Patient-Centered Decision Making



The "How"

- **Objective**
- **Informative**
- **Transparent**
- **Dispassionate**
- **Facilitative**
- **Collaborative**

Lawton J et al. ACC/AHA Revasc GL

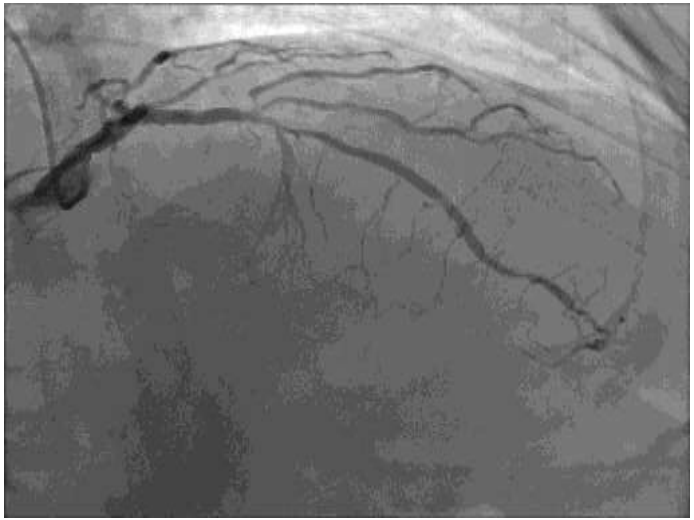
CABG vs PCI

CABG
- More extensive CAD
- LV dysfunction
- DM and MVD
- Poor PCI candidate

PCI
- Less extensive CAD
- Preserved LV
- Co-morbidities
- Poor CABG candidate

67-year-old man with ACS

LCA



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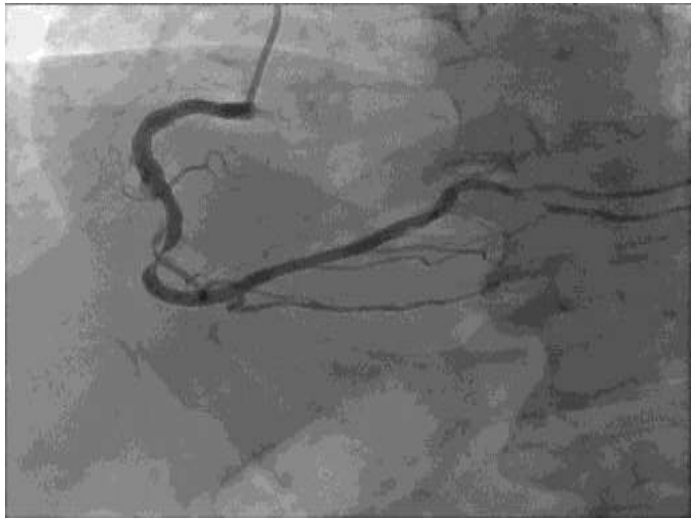
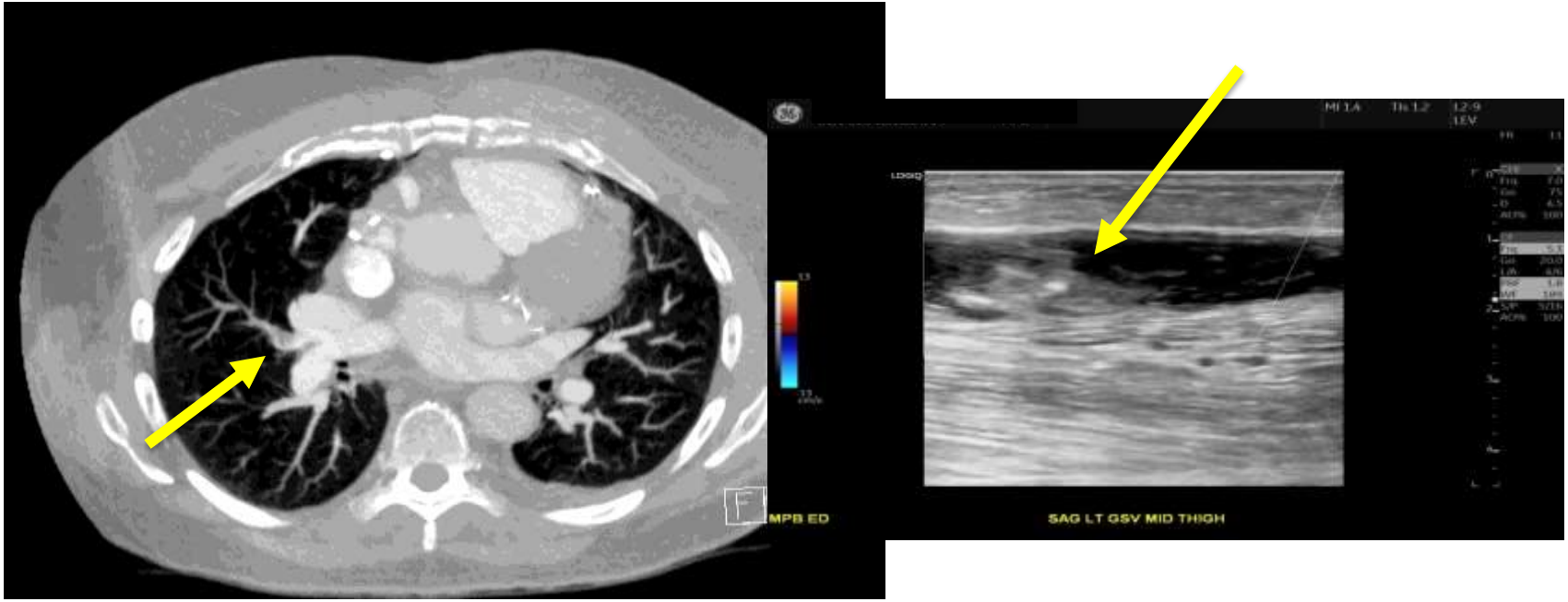


CABG or PCI?

Revascularization

- **67-year-old man**
  - **Transferred directly to Cardiac Surgery service after local hospital MDT recommended CABG**
- **12/29/2022**
  - **CABG x 7**
  - **Peri-op PAF, amiodarone, no OAC**
- **01/14/2023**

Recurrent chest pain



TTE: mild RV dilation and hypokinesis with apical sparing