Management of a patient with severe Coronary Artery Disease and aborted Sudden Cardiac Death

ΟΙΚΟΝΟΜΟΥ ΔΗΜΗΤΡΗΣ
Α' ΚΑΡΔΙΟΛΟΓΙΚΗ ΚΛΙΝΙΚΗ
ΓΝΑ ''ΕΥΑΓΓΕΛΙΣΜΟΣ''

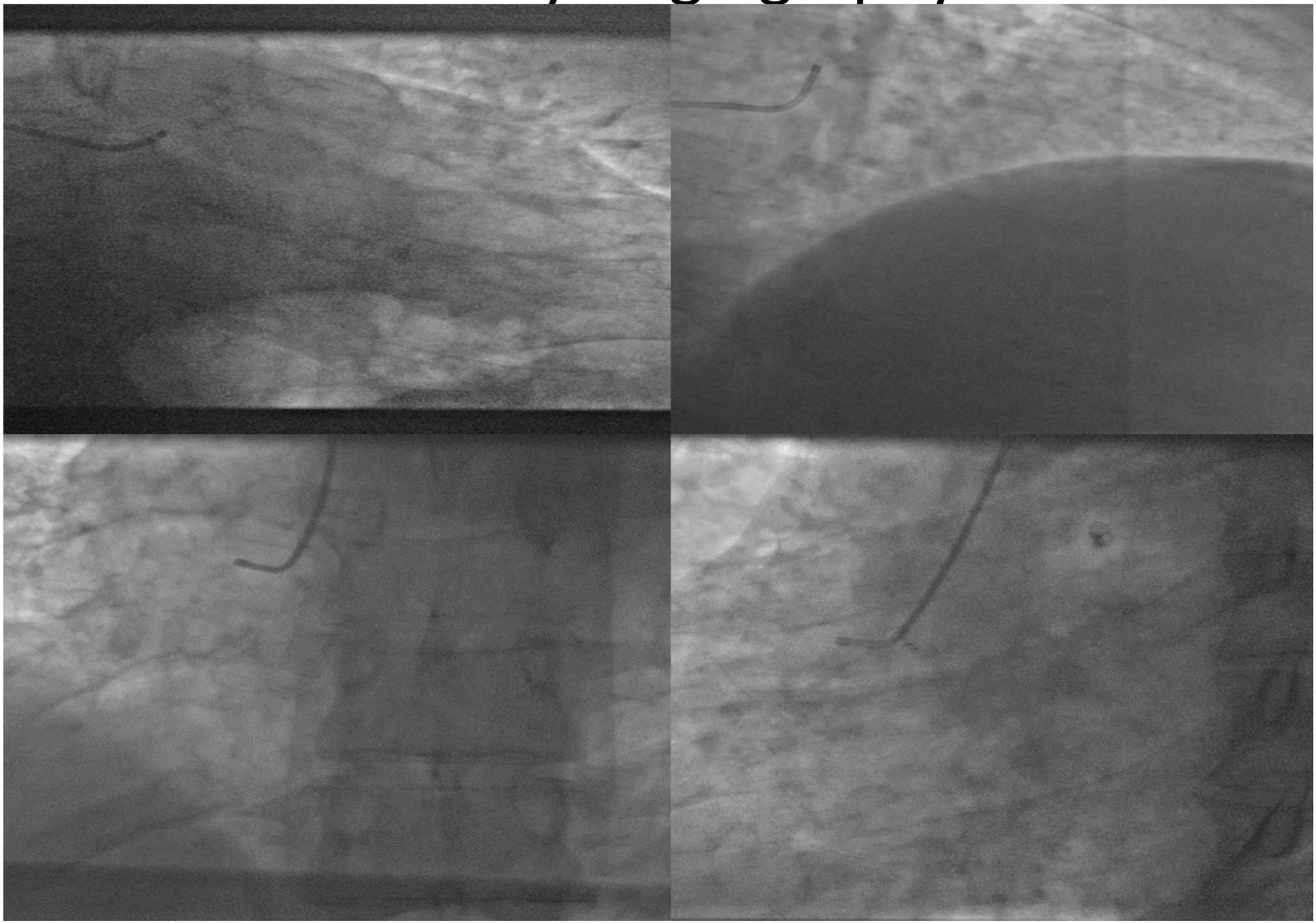
Admit date: 31/08/2017
PATIENT ID: 1125788

- **61-year-old, male, caucasian.**
- **Scheduled coronary angiography due to symptoms of stable angina and a suspicious cardiac stress test for ischemia.**
- **Upon admission, asymptomatic and hemodynamically stable**
- **ECG: SR~55bpm, without signs of ischemia**
- **Echocardiogram: LVEF=40-45% akinetic apical area and hypokinetic basal and mid inferoseptum. A normal size right ventricle. Diastolic dysfunction grade I.**

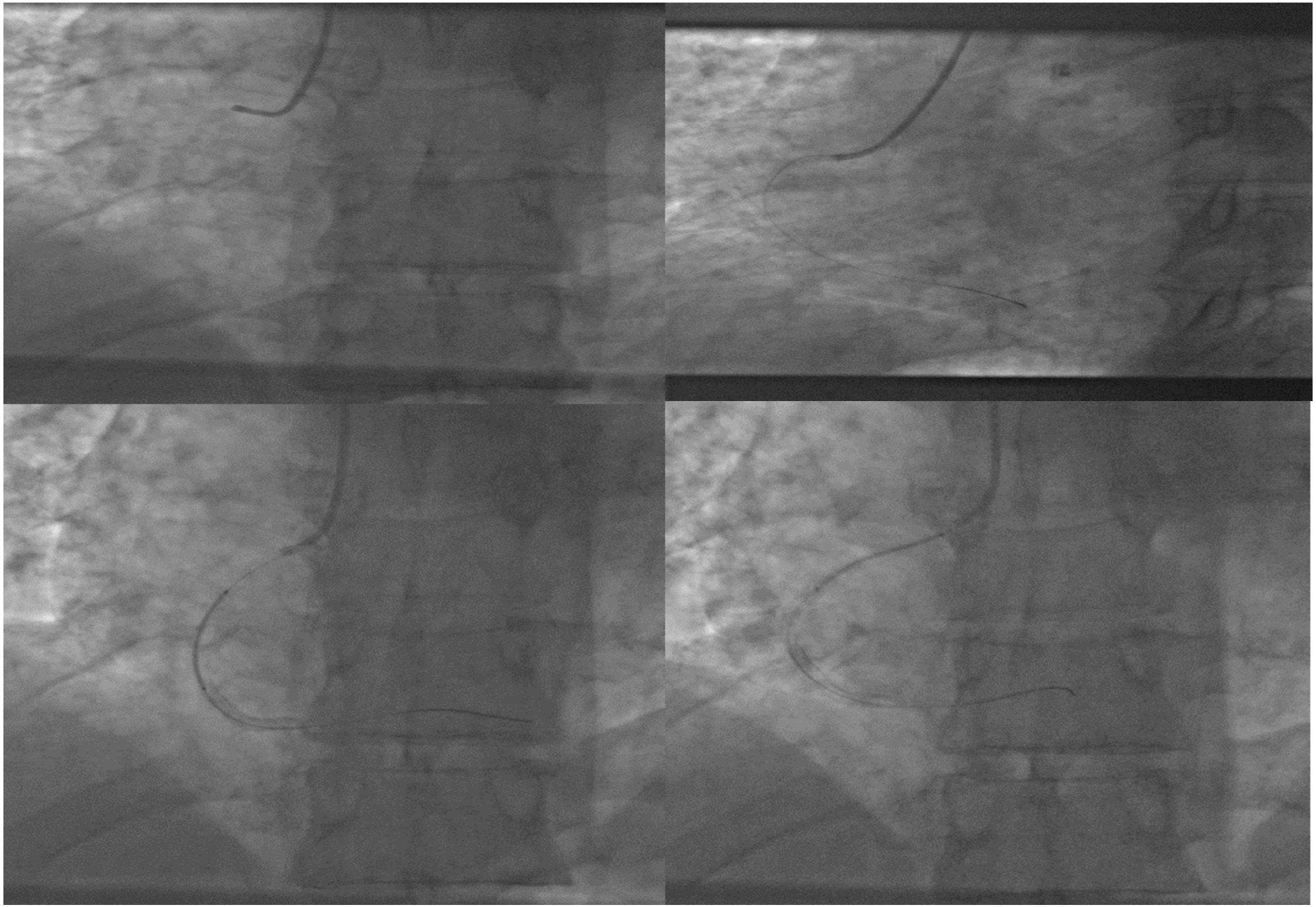
Past medical history

- **Coronary Artery Disease (Ant. STEMI pPCI -> LAD in 2007)**
- **Type II Diabetes**
- **Hypertension**
- **Hyperlipidemia**
- **Stroke (1997)**
- **Left Carotid Endartectomy (2011)**
- **Right arm amputation after a car accident.**
- **Smoker**
- ***FH positive for CHD**

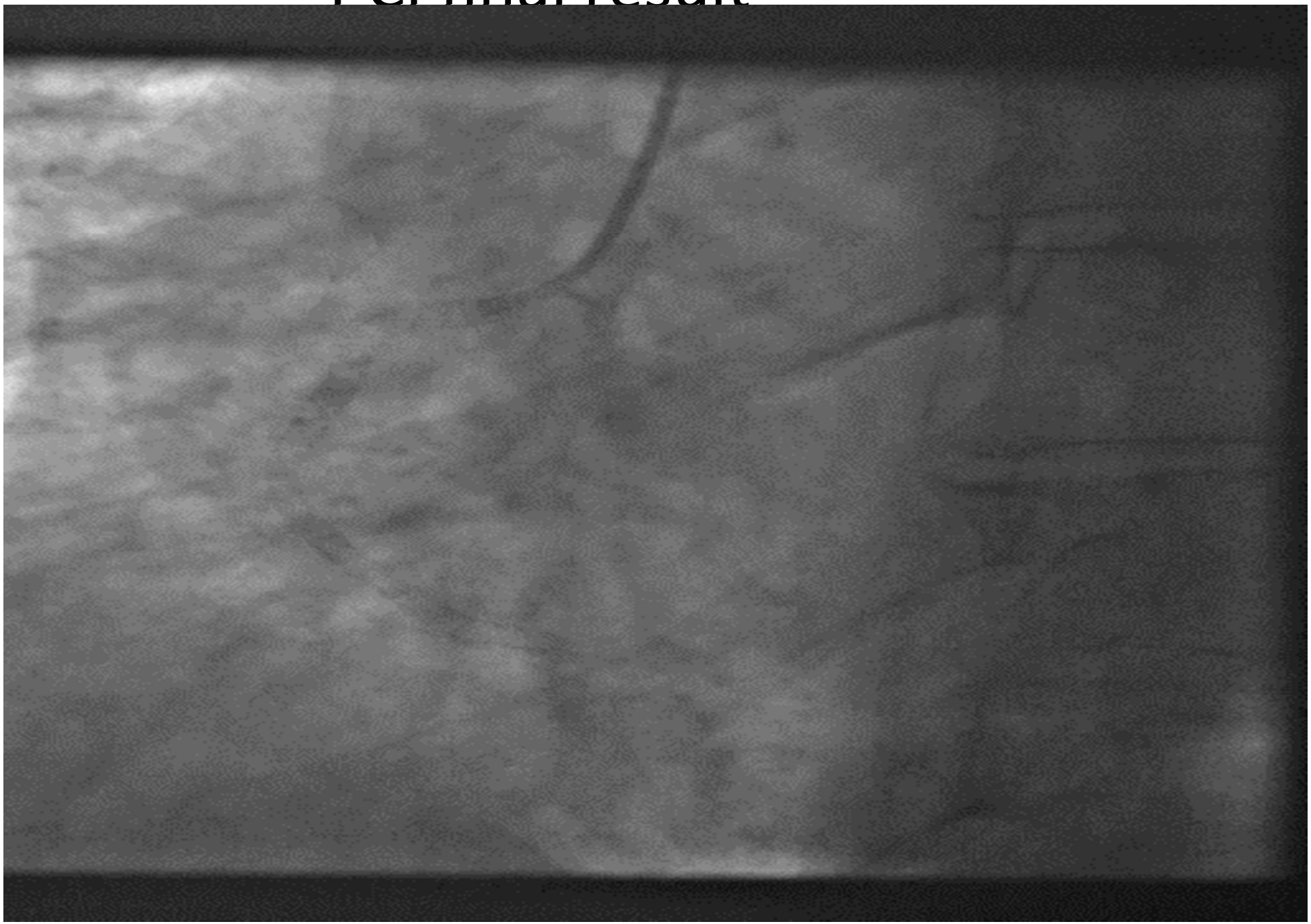
Coronary Angiography



PCI -> RCA



PCI final result



AFTER PCI

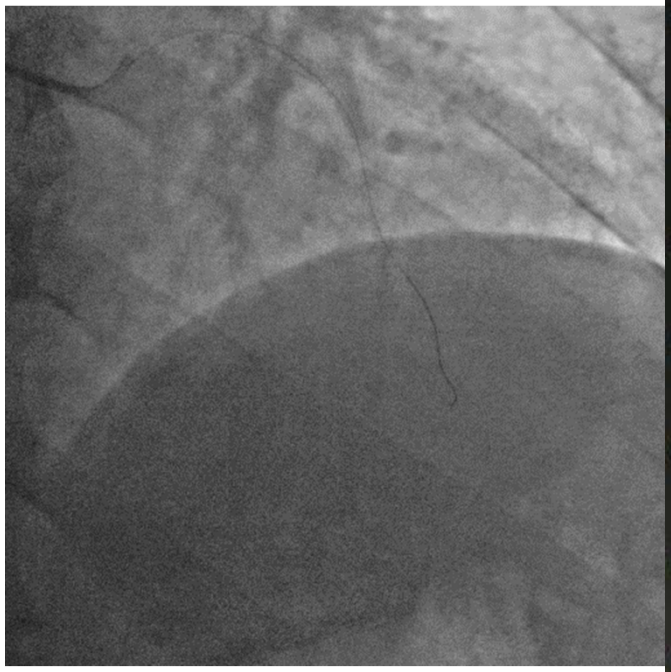
- **After PCI the patient was transferred to the ward.**
- **Soon after, cardiac arrest with VF (first rhythm)**
- **Defibrillation and ROSC (x4)**
- **ECG after ROSC : SR with ST elevation V1->V3.**
- **Immediate transfer to the cath lab**

Coronary Angiography 2

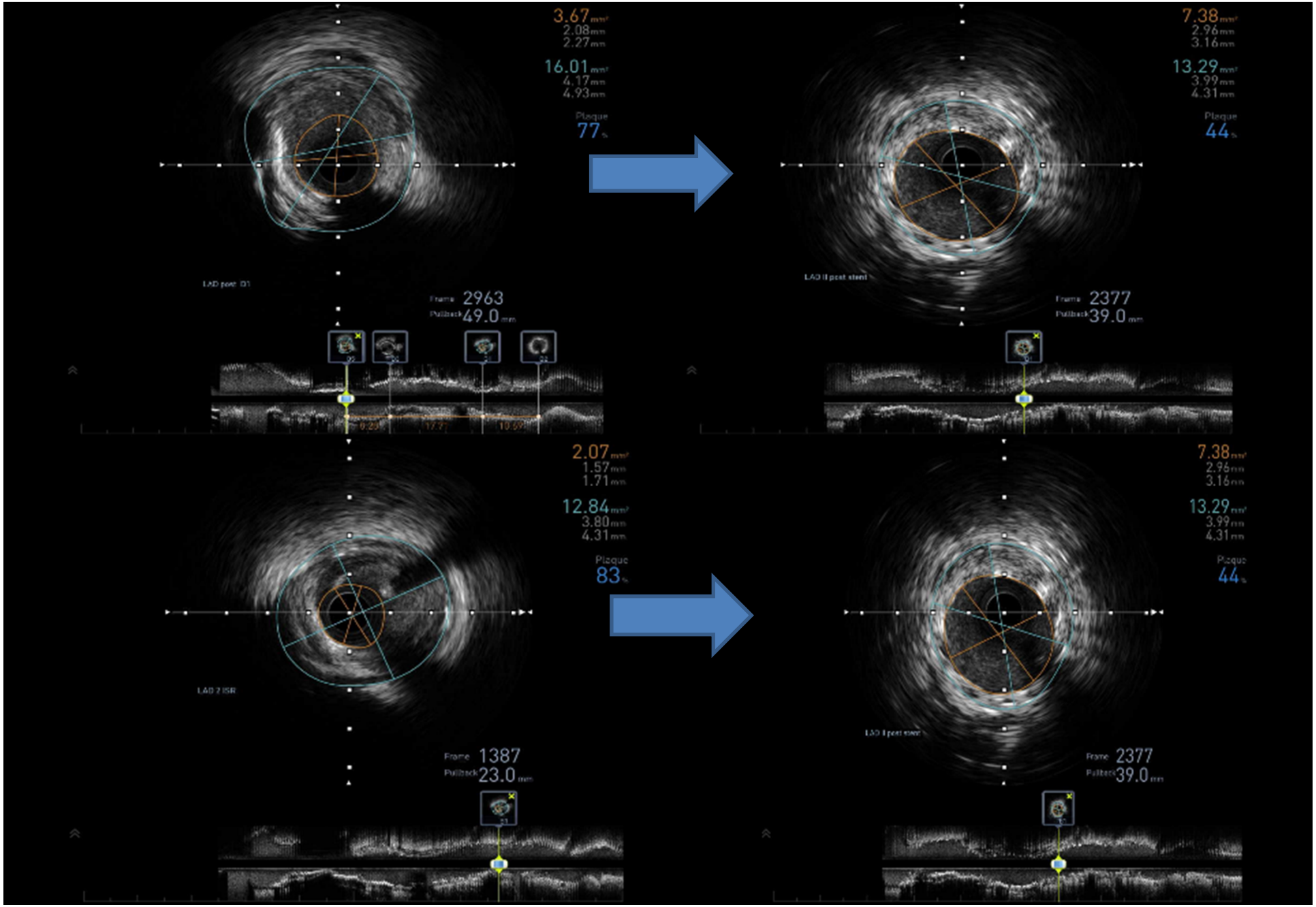
Transferred to the CCU for monitoring where:

- **Hemodynamically stable**
- **No other arrhythmia induced.**
- **Restored ECG**
- **Mildly elevated Troponin levels**
- **Scheduled Coronary Angiography with FFR for estimating LAD lesions + ISR 5 days after.**

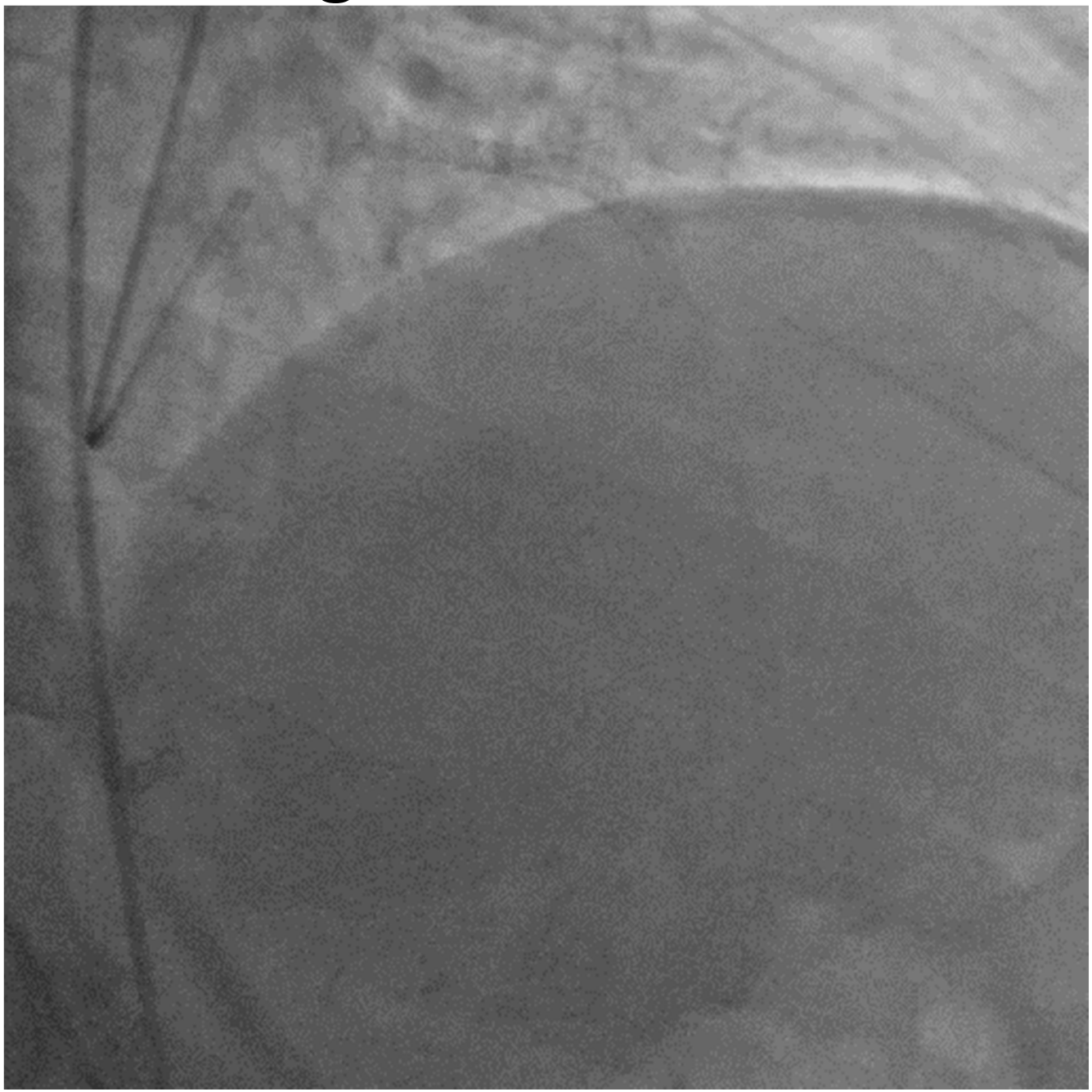
Coronary angiography - FFR



IVUS GUIDED PCI



IVUS guided PCI



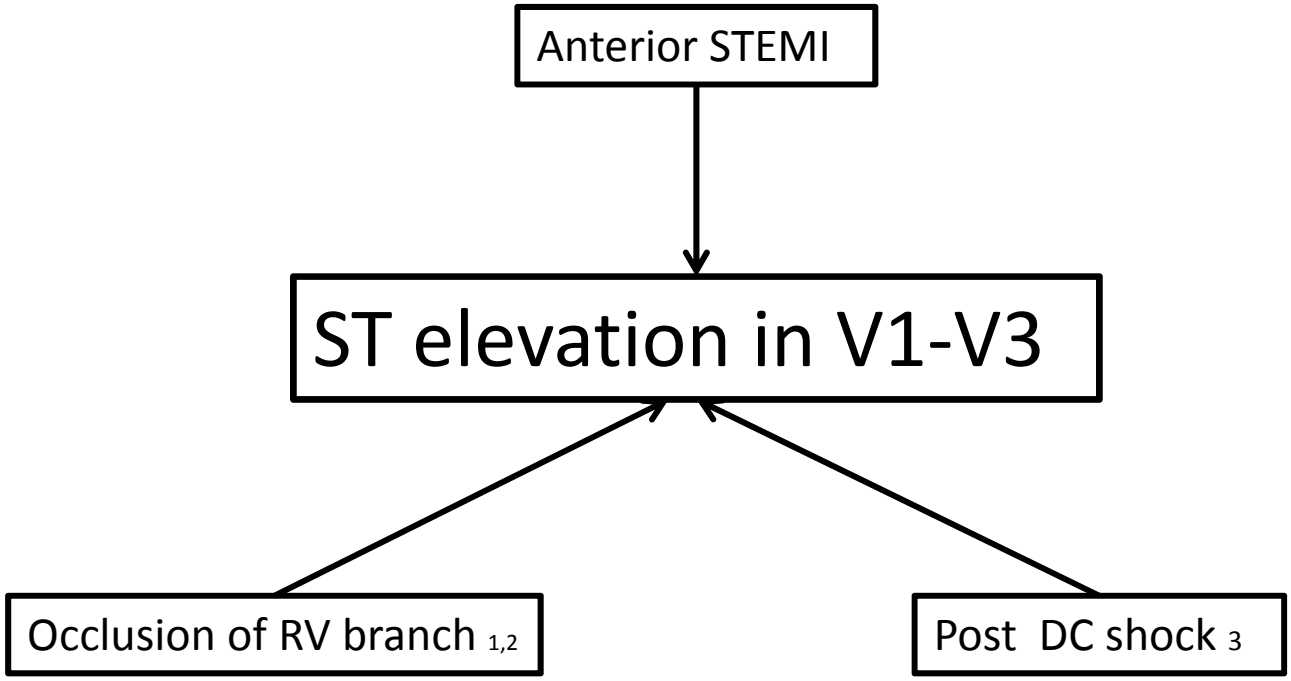
Total revascularization

Aborted Sudden Cardiac Death (VF)

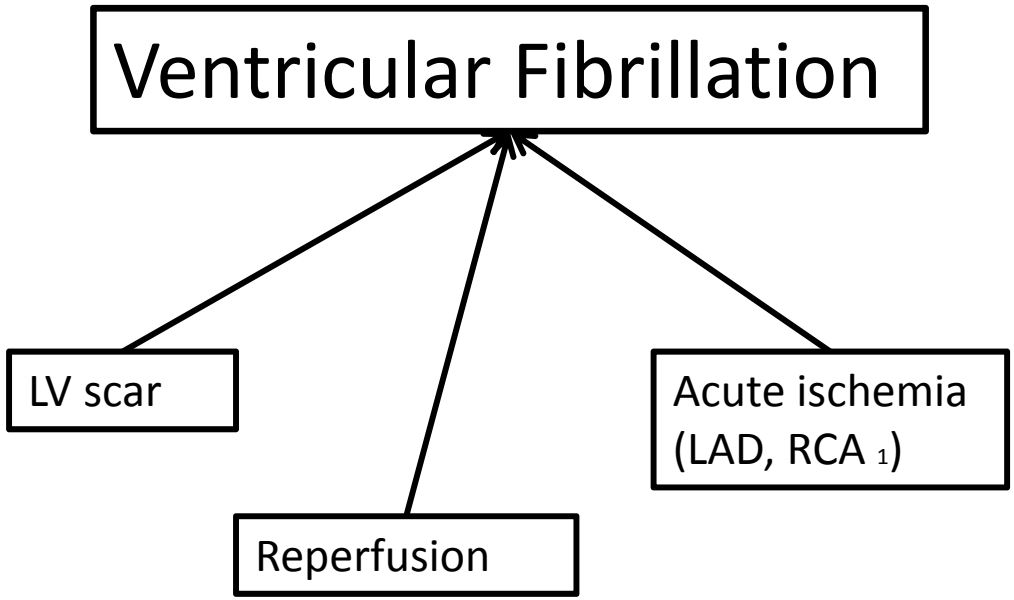
?

ICD for the secondary prevention of sudden cardiac death and ventricular tachycardia

Recommendations	Class[a]	Level[b]	Ref.[c]
ICD implantation is recommended in patients with documented VF or haemodynamically not tolerated VT in the absence of reversible causes or within 48 h after myocardial infarction who are receiving chronic optimal medical therapy and have a reasonable expectation of survival with a good functional status >1 year.	I	A	151–154



1. Arzola LC, Esteban MT, Niebla JG. Transient ST-segment elevation in precordial leads by acute marginal branch occlusion during stent implantation. J Electrocardiol. 2016;49:202-205.
2. van der Bolt CL, Vermeersch PH, Plokker HW. Isolated acute occlusion of a large right ventricular branch of the right coronary artery following coronary balloon angioplasty. The only true 'model' to study ECG changes in acute, isolated right ventricular infarction. Eur Heart J. 1996;17:247-250.
3. Shan P, Lin J, Xu W, Huang W. ST-segment elevation after direct current shock mimicking acute myocardial infarction: a case report and review of the literature. The American Journal of Emergency Medicine. 2014;32:1438.e1431-1438.e1433.



1. Franco JJ, Brown M, Bashir R, O'Murchu B. Acute Anterior ST-Elevation Myocardial Infarction and Electrical Storm Secondary to Nondominant Right Coronary Artery Occlusion. Texas Heart Institute Journal. 2014;41:335-337.

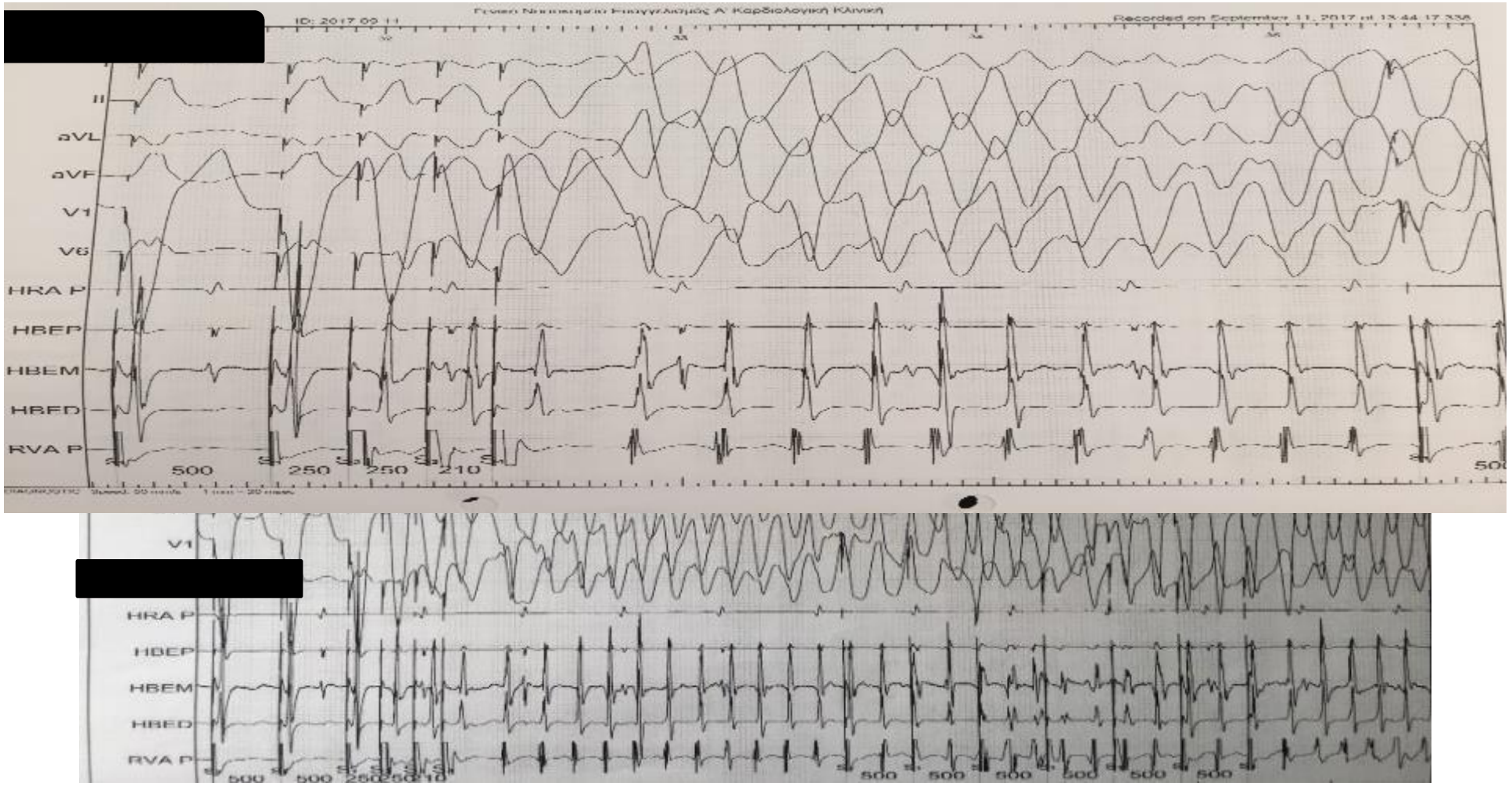
Prevention and management of sudden cardiac death associated with acute coronary syndromes: in-hospital phase. Pacing/implantable cardioverter defibrillator

ICD implantation or temporary use of a WCD may be considered <40 days after myocardial infarction in selected patients (incomplete revascularization,[d] pre-existing LVEF dysfunction, occurrence of arrhythmias >48 h after the onset of ACS, polymorphic VT or VF).	IIb	C

Risk stratification for sudden cardiac death early (within 10 days) after myocardial infarction

Recommendations	Class[a]	Level[b]	Ref.[c]
PVS may be considered early after myocardial infarction in patients with reduced LVEF (≤40%) to assess the risk of sudden death.	IIb	B	280–282

EPS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II
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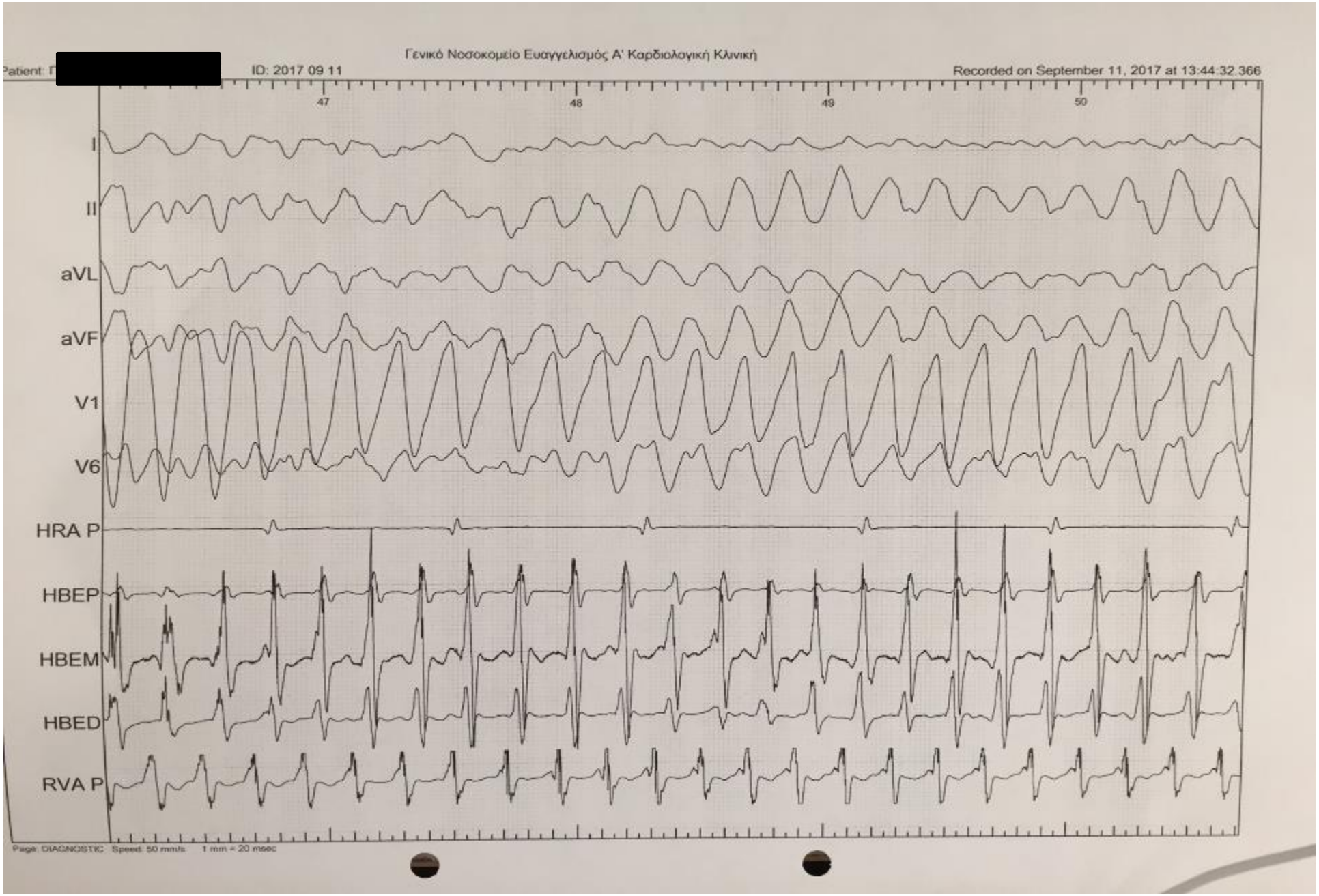
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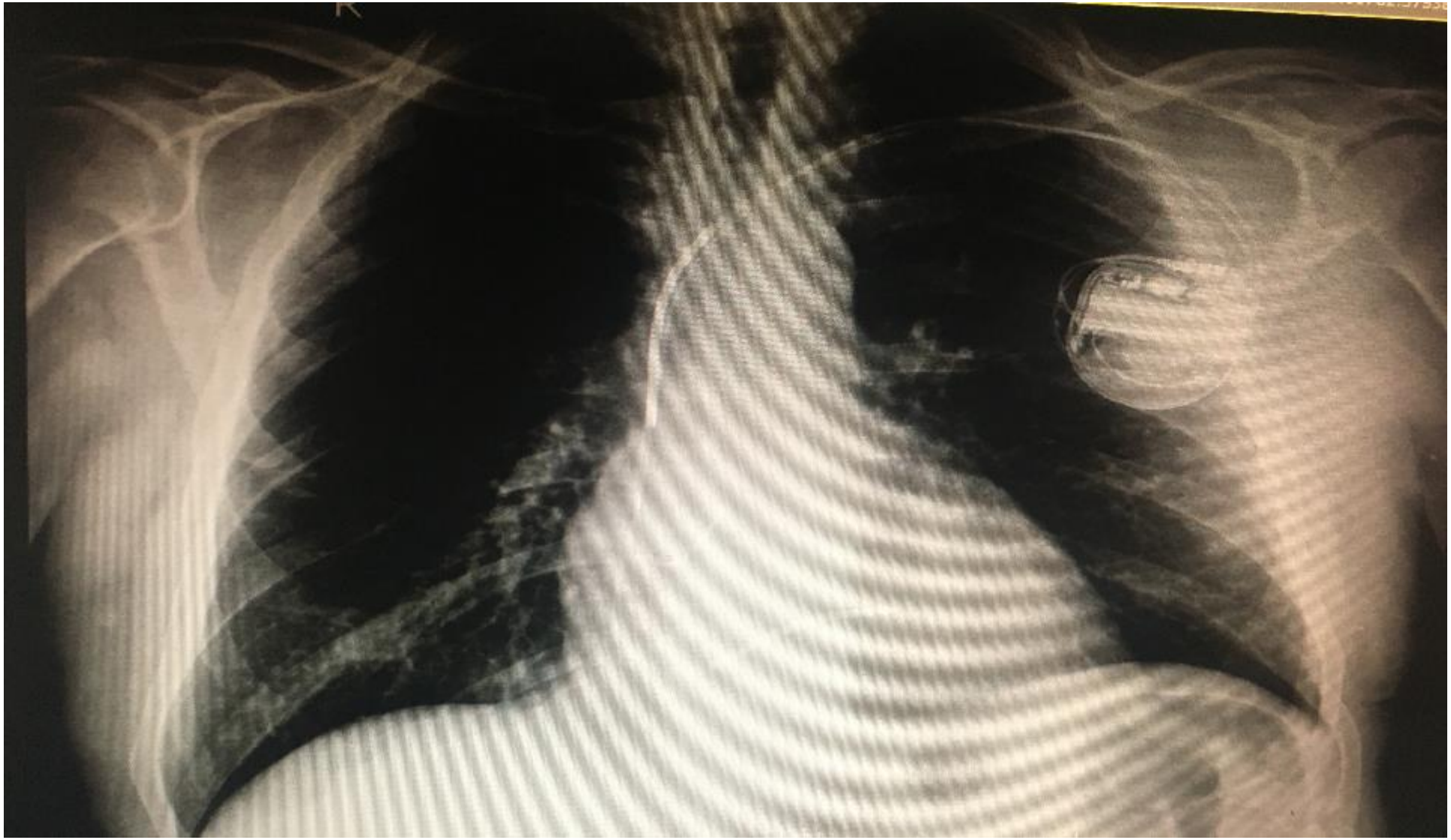
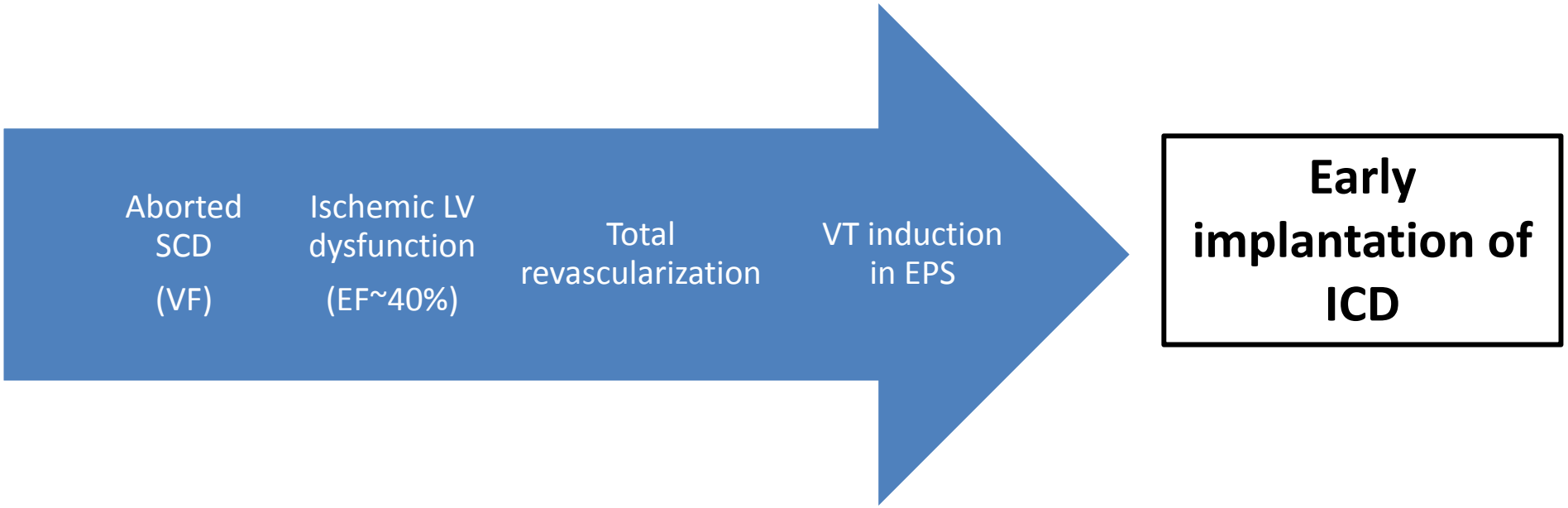
RVA P

- **Aborted Sudden Cardiac Death + V-stim positive for monomorphic and polymorphic VT induction**
- **ICD-DR implanted**




Aborted SCD (VF)
Ischemic LV dysfunction (EF~40%)
Total revascularization
VT induction in EPS
Early implantation of ICD

ICD or NO ICD?