



Interventional management of saphenous vein graft rupture and hemodynamic instability within 24 hours after CABG

Triantafyllou Konstantinos, Dempela Eleni (presenter), Lontou Aikaterini, Oikonomou
Dimitrios, Mpenia Dimitra, Kalogera Vasiliki, Papadopoulou Ilektra, Chaveles Ioannis,
Kratimenos Theodoros, Stalikas Dimitrios

*Evangelismos General Hospital of Athens,
GREECE.*

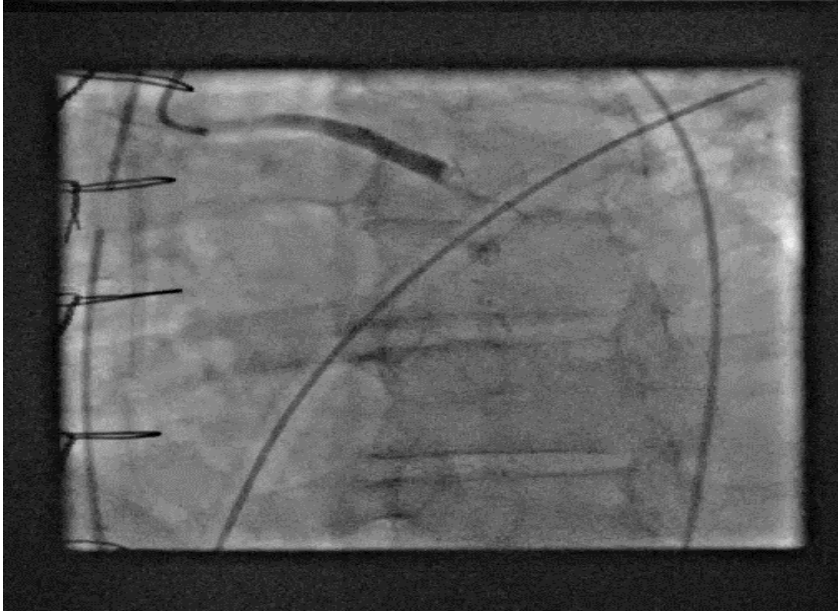
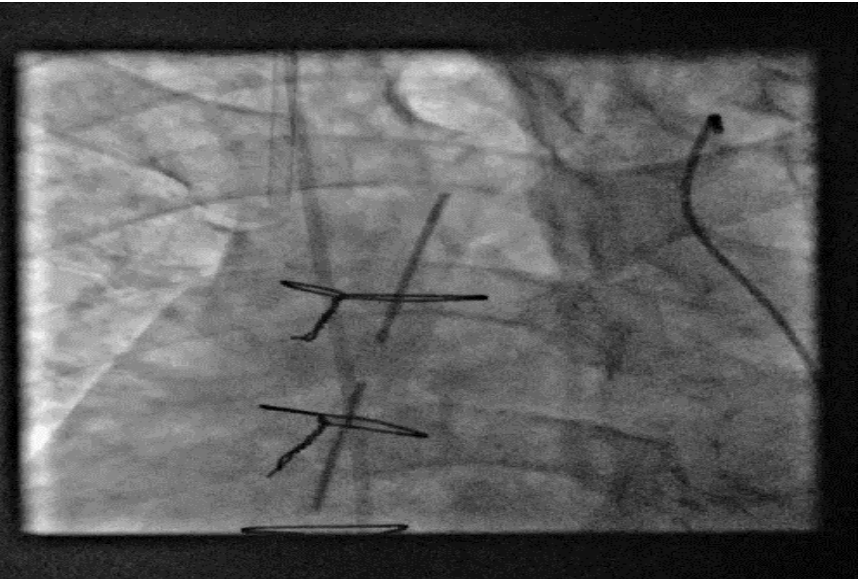
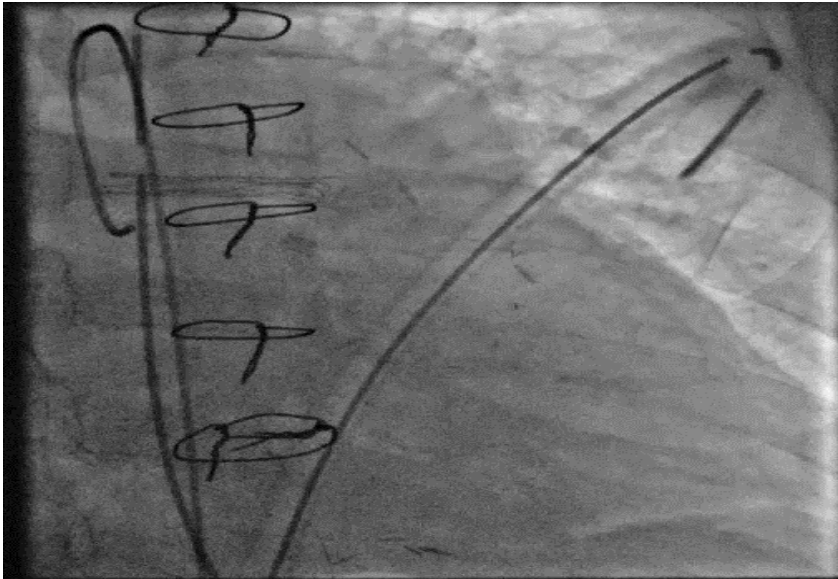
Speaker's name: Eleni Dempela

☒ **I do not have any potential conflict of interest**

- **Male 56 year-old patient that developed chest pain and cardiogenic shock 18 hours after CABG surgery.**
- **Coronary artery disease history:**
 - › ACS and PCI with implantation of 1 DES from LM to LAD 9 months ago.
 - › ACS a few days ago (in another institution). Coronary angiography was performed: critical in-stent restenosis.
 - › The patient was referred to the Cardiothoracic Team of our hospital and CABG was performed 18h before the incident: LIMA->LAD & sequential SVG -> D1 & OM3
- **Risk factors:** diabetes mellitus type II, hypertension, dyslipidemia.
- **Vital signs:** BP 70/40mmHg, HR- 120bpm, SatO₂:96% (INTERMACS 2)
- **ECG:** SR, Wellens sign (type II) – dynamic post-op changes
- **Fast bedside echocardiogram after clinical deterioration 18 hours post-CABG:** LVEF ~30%, with akinesis of apex, mid & apical anterior-septal and apical lateral wall. Hypokinesis of basal septal and basal & mid lateral wall.
- **Biomarkers:** WBC13.500/mm³, Ht post-CABG 30% (vs pre-CABG 42%, normal renal function and electrolytes and high sensitivity troponin mildly above normal levels.

Emergency Coronary Angiography (I)

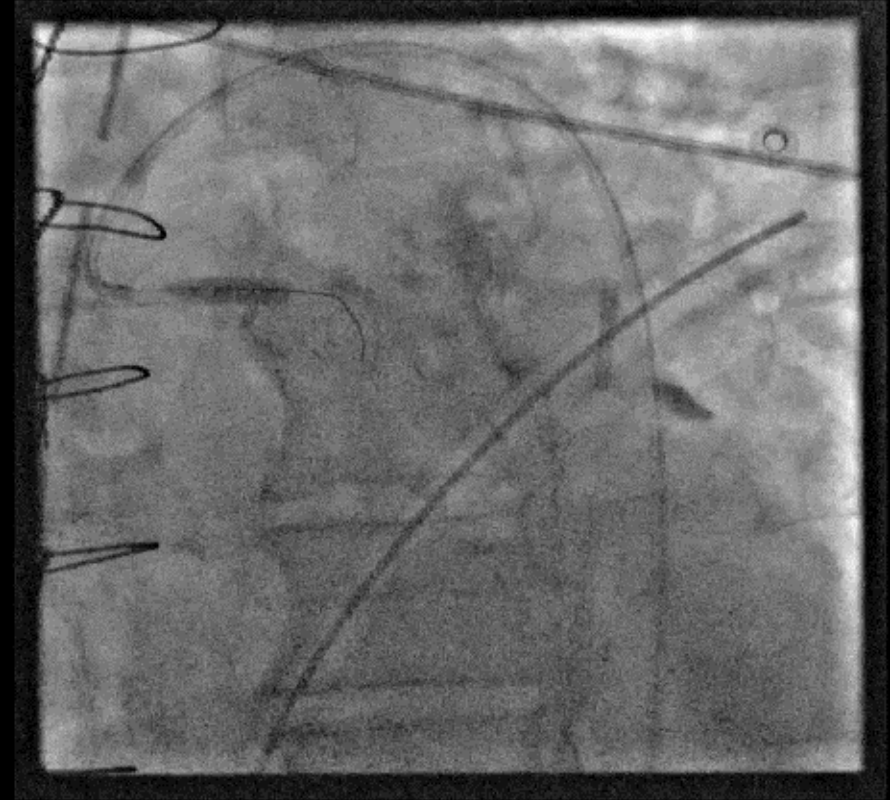
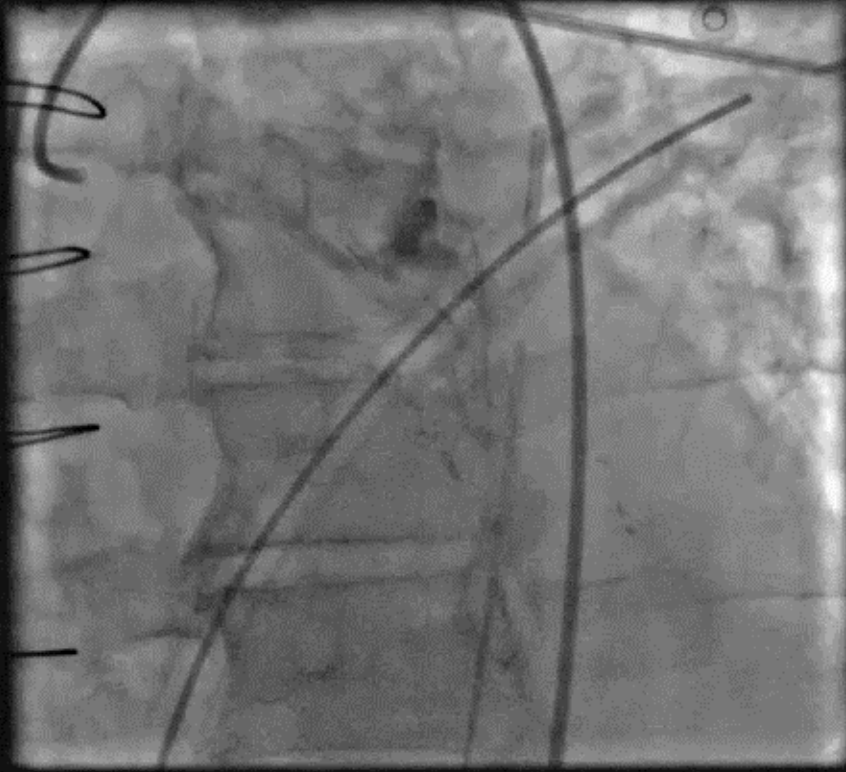
Right femoral approach, 6 Fr



Conclusion: Left main, 2 vessel and graft-disease with acute occlusion of the SVG. Rapid Heart Team assessment: *PCI to restore blood flow in the SVG.*

Emergency Coronary Angiography (II)

Right femoral approach, 6 Fr



Rapid decision about further strategy was necessary.

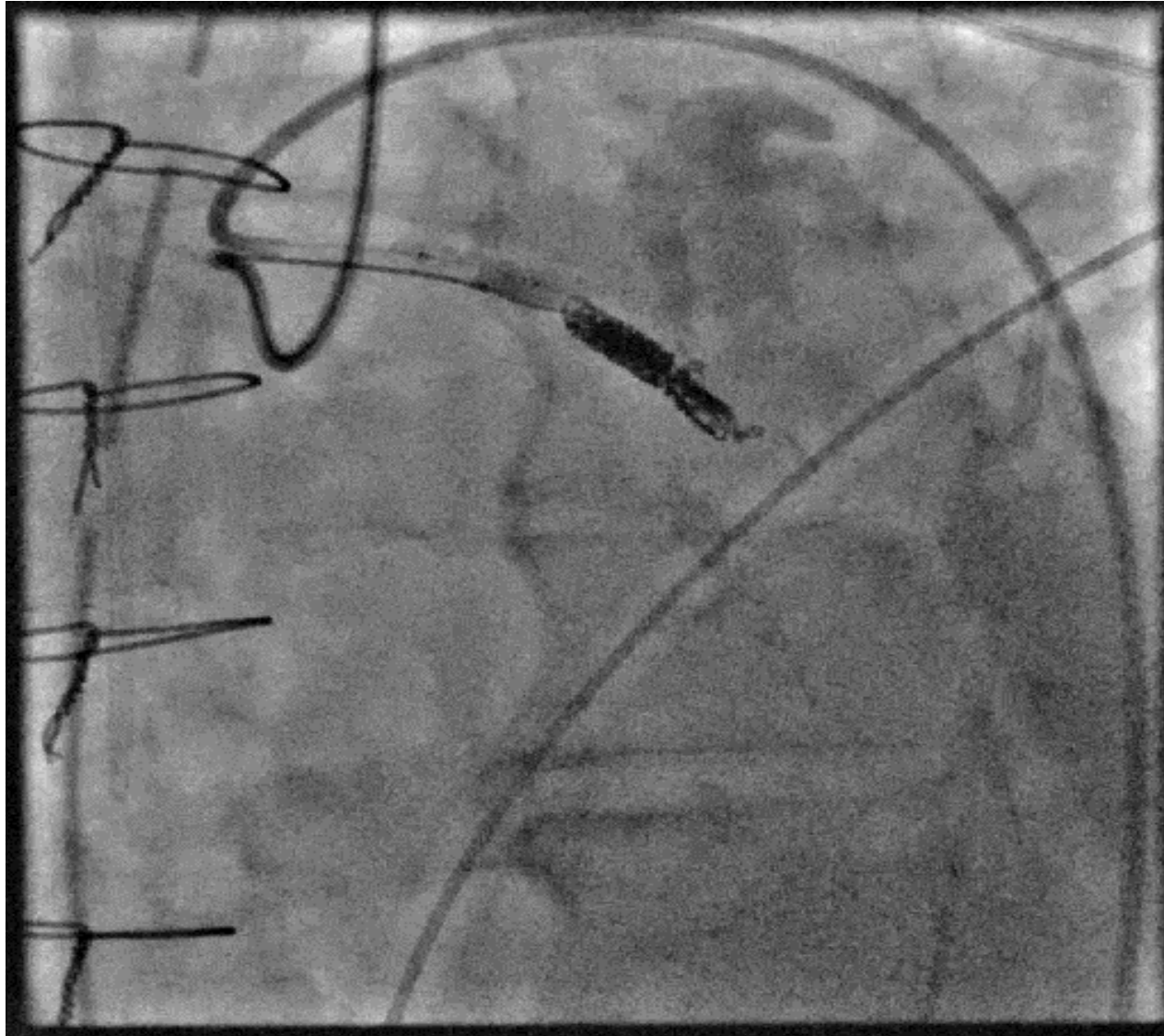
2 options:

1. Surgical: Emergency CABG revision to stop the bleeding.
2. Interventional : stop bleeding by inserting coils into the SVG (the actual technique should be improvised).

Saphenous vein graft rupture management (I)

Under IABP, with 2 guiding catheters and a “ping-pong” technique





Saphenous vein graft rupture management

Final result



- The patient was transferred to the Cardiothoracic Surgery Intensive Care Unit and was gradually weaned off the IABP.
- His anemia was corrected with 2 blood transfusions.
- He remained hemodynamically stable, his further in-hospital course was uneventful and was discharged a few days later.
- A follow-up was recommended, with the intention to complete revascularization with staged PCI to the left circumflex lesions.

- SVG rupture and extravasation is a rare complication of CABG surgery, while relative literature is rather limited.
- At the beginning of the procedure the SVG rupture was concealed, probably due to thrombus formation at the extravasation site while the patient was hypotensive.
- Attempted wiring, intravenous unfractionated heparin and increased cardiac output due to the IABP insertion probably contributed to unveil the underlying rupture of the saphenous vein graft, which was the reason for the clinical deterioration of the patient after CABG.
- This life-threatening complication was treated by using a ping-pong technique with 2 guiding catheters, an occlusive balloon and therapeutic embolization with coils, resulting in termination of the bleeding and therefore obviating the need for a high-risk immediate surgical revision.