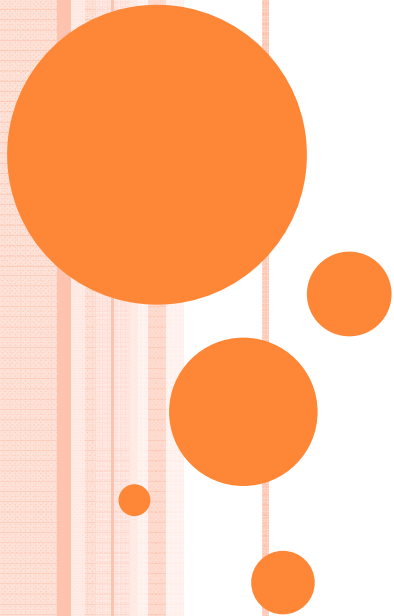


CORONARY ARTERY RUPTURE : SEALING WITH A HANDMADE MICROCOIL

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CORONARY ARTERY RUPTURE

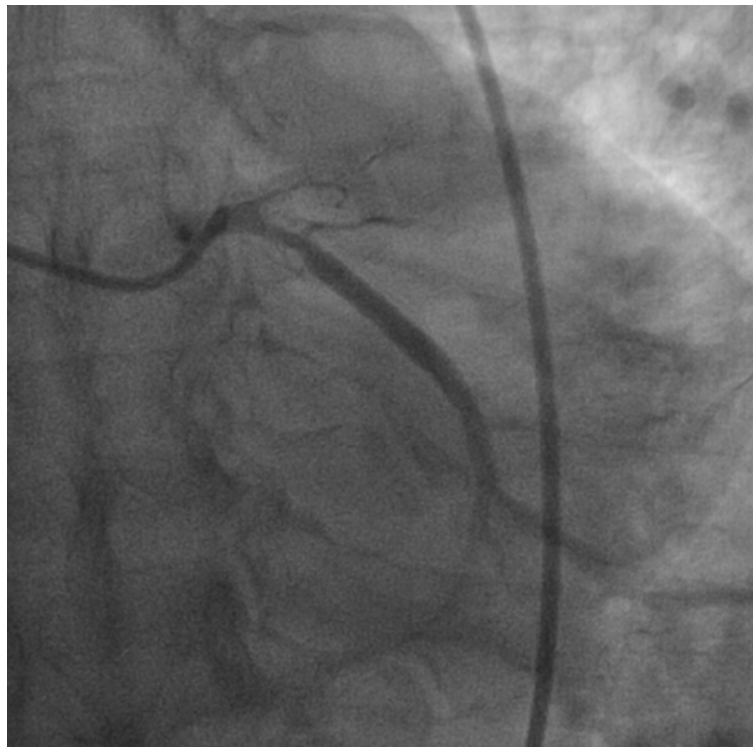
- Incidence 0.1-3%
- Classification by Ellis
 - Type I
 - Type II
 - Type III: extravasation through a frank perforation (> 1 mm)
 - Spilling into the cavity:
 - Tamponade
 - Ventricular chamber
 - Management
 - Long balloon inflation
 - Covered stent/Mesh stent
 - Material embolization



CASE

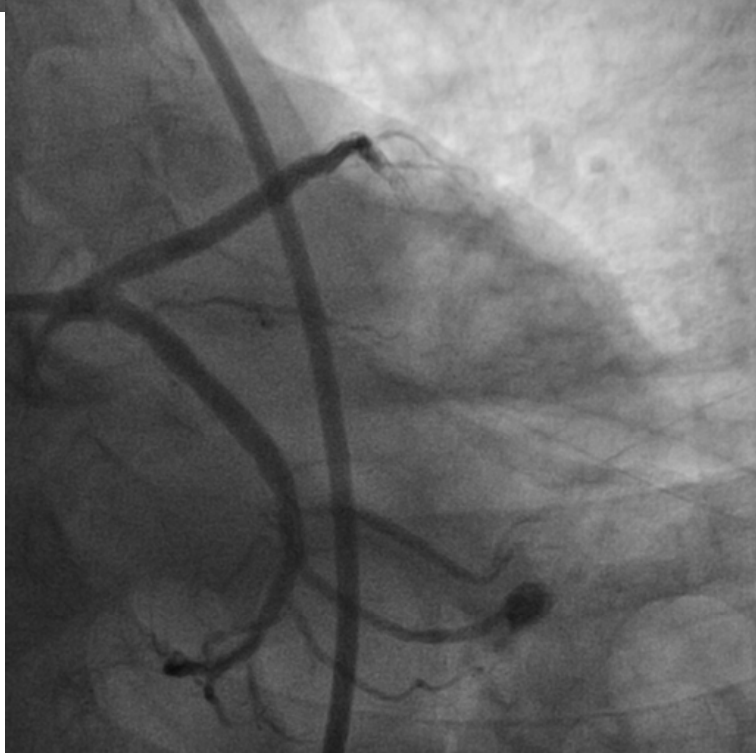
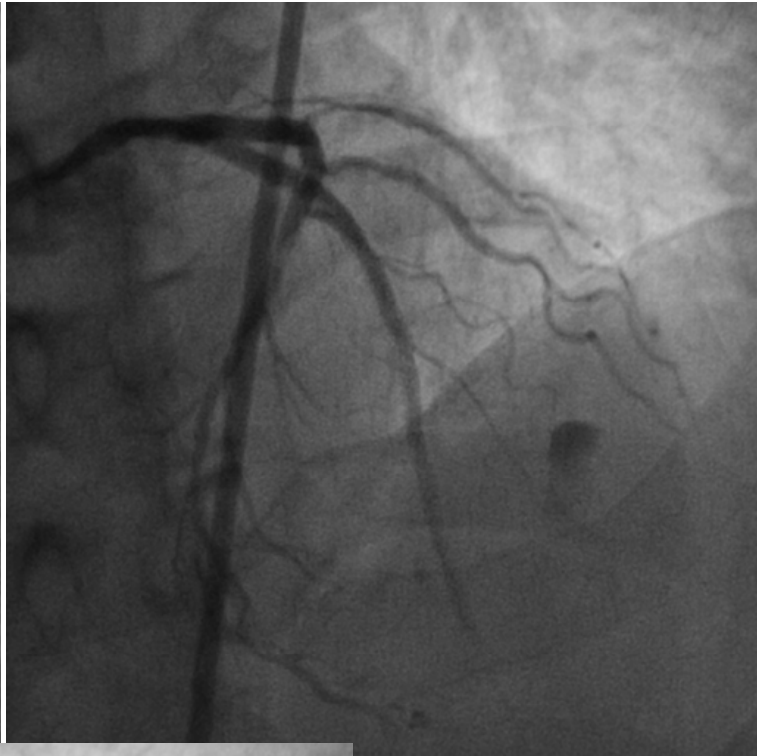
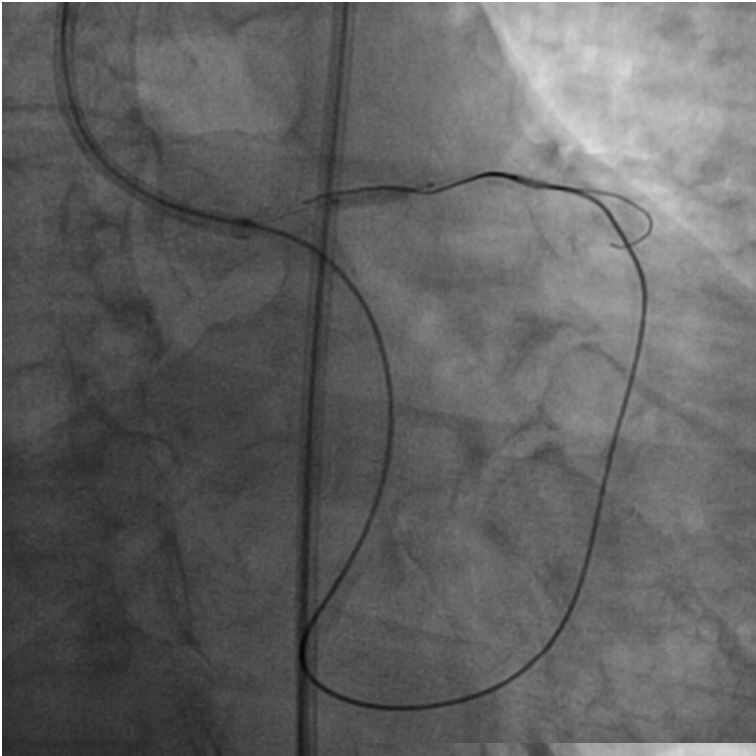
- 64 years old man, with CTO very proximal of the LAD and significant stenosis of the proximal LCX
- Left dominant, PDA was from the LCX
- He underwent 2 stage PCI. The first procedure was on early March 2012 and a 4 x 23 mm Drug Eluting Stent 4 x 23 mm inserted from the LM to proximal LCX

LM-LCX:DES
4 x 18 mm



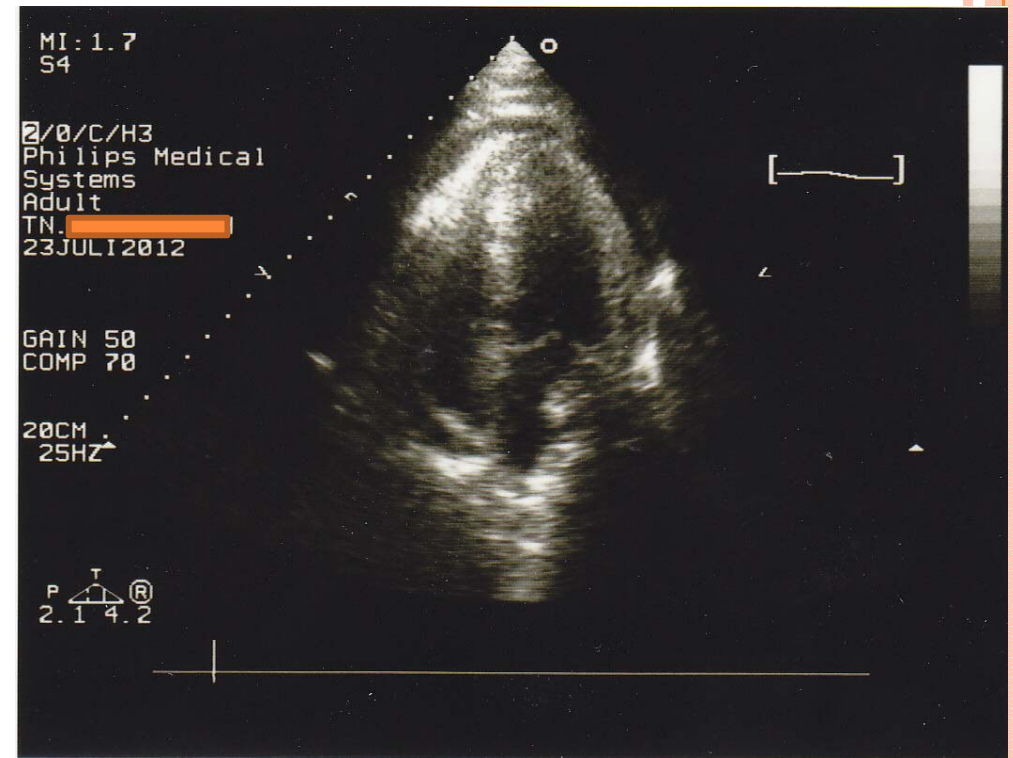
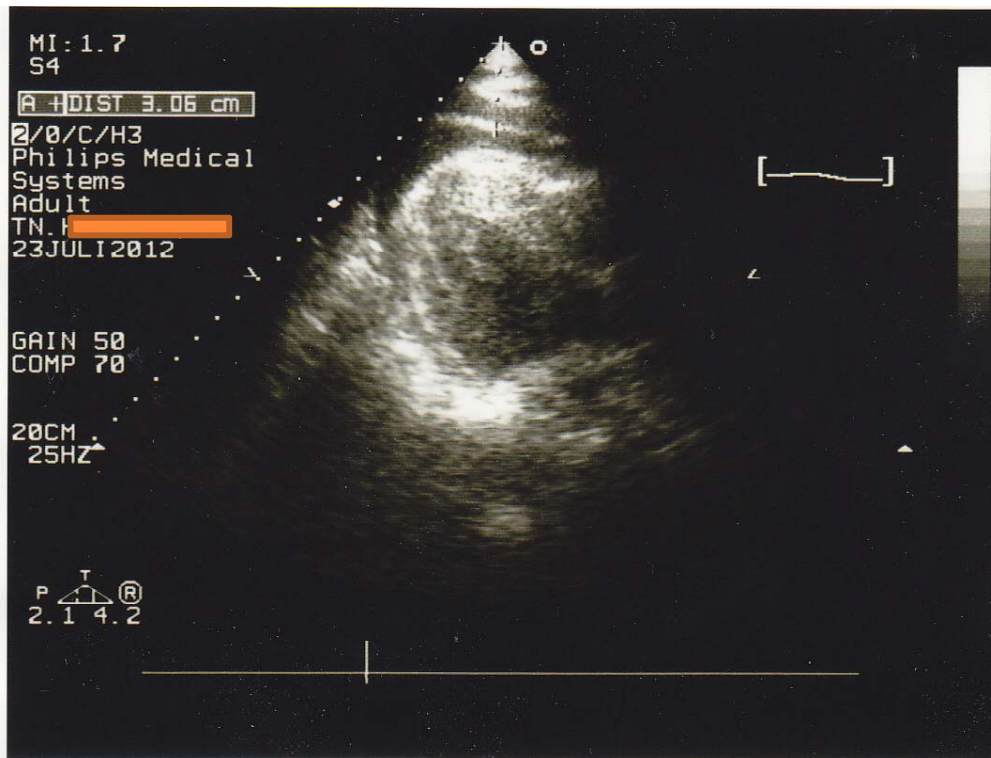
CASE CONT'D

- The second procedure was performed on July 23rd 2012
- Retrograde approach was performed. Single access from left groin.
- The CTO could be successfully crossed and 3 DES were deployed at the LAD



CASE CONT'D

- BP dropped to 60/45 mmHg, diaphoresis
- Tachycardia



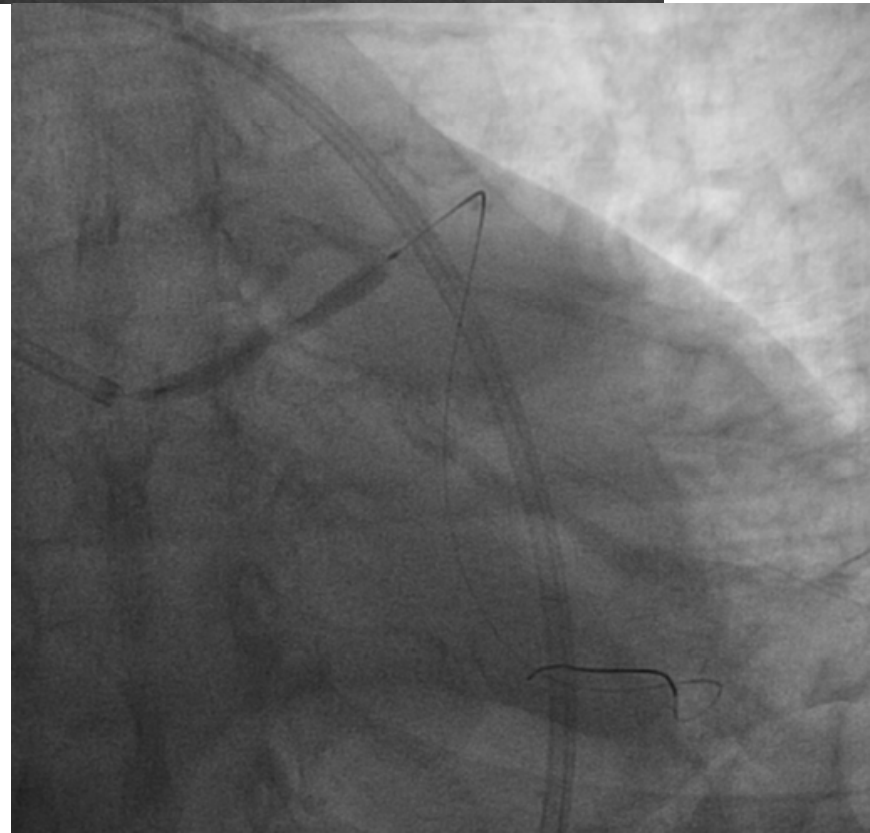
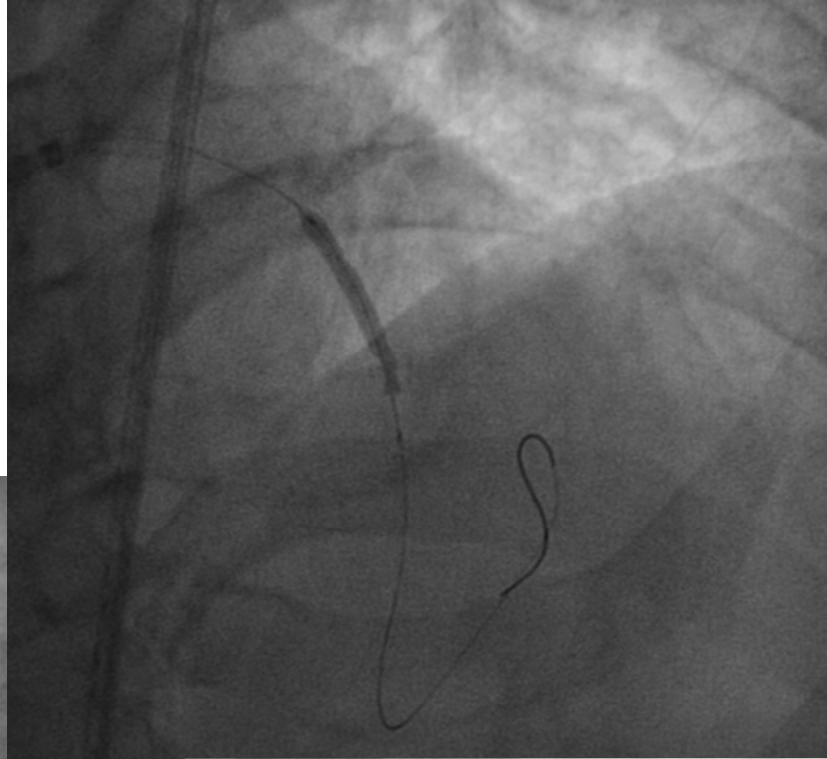
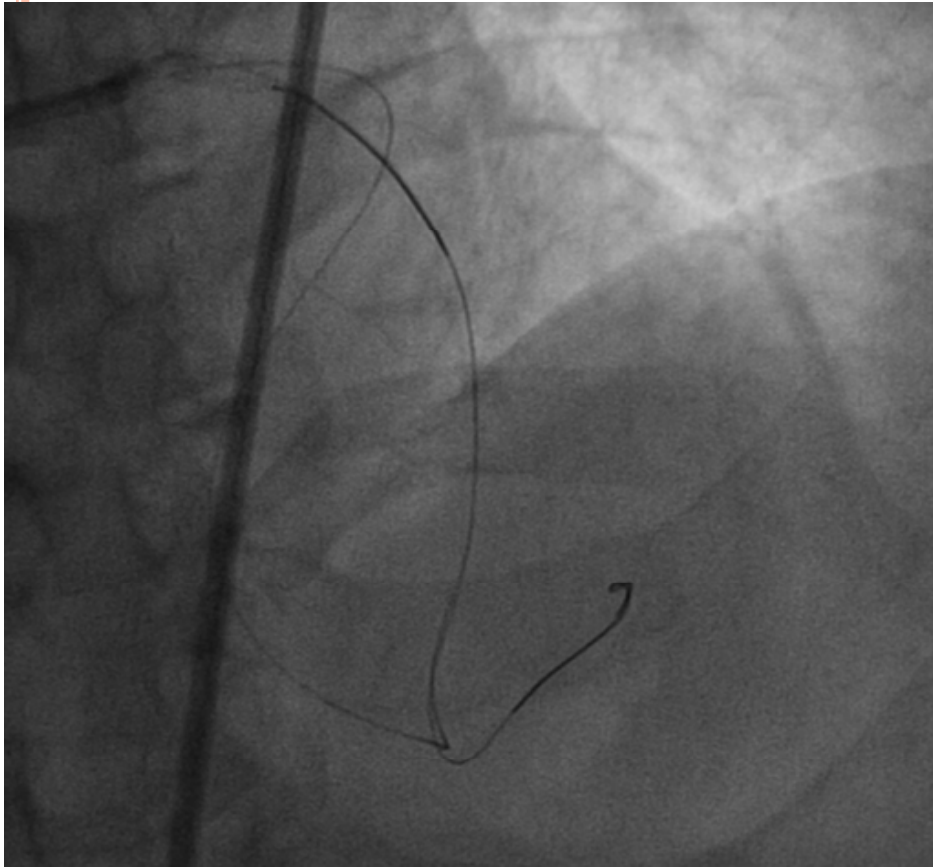
CASE

- Pericardiocentesis using echo-guided (400 cc)
- Auto transfusion around 1000 cc



RETROSPECTIVE

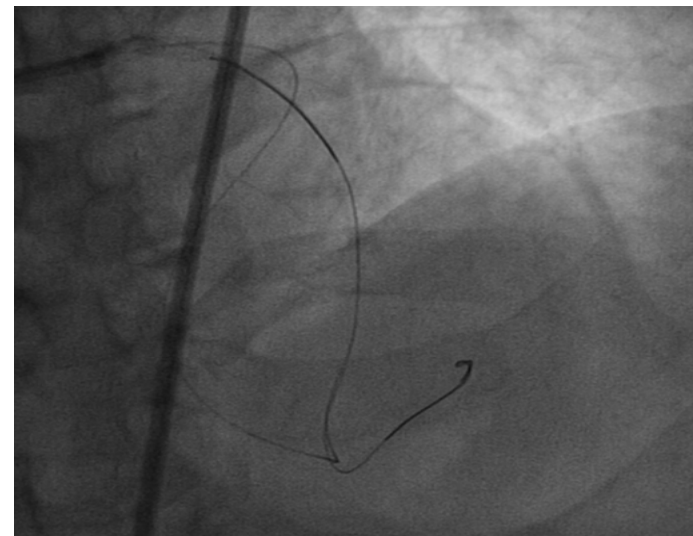
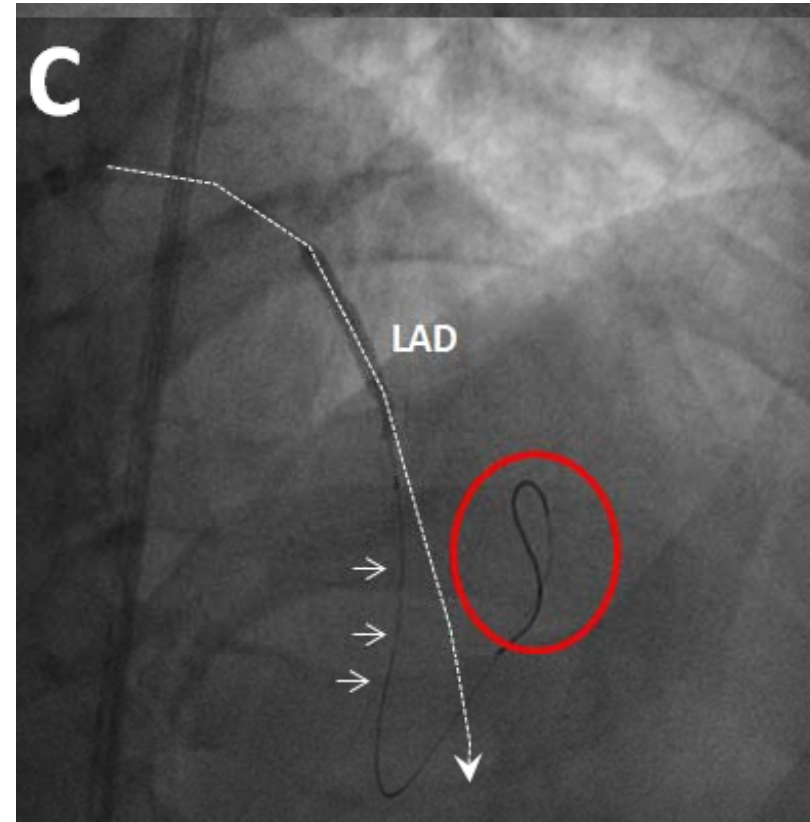
Distal guidewire migration
could cause perforation?



WHAT WAS HAPPENING AND WHAT SHOULD WE DO

- Wire can cause perforation even from the proximal part of septal branch
- There were dual supplied (from LAD and from PDA-LCX)

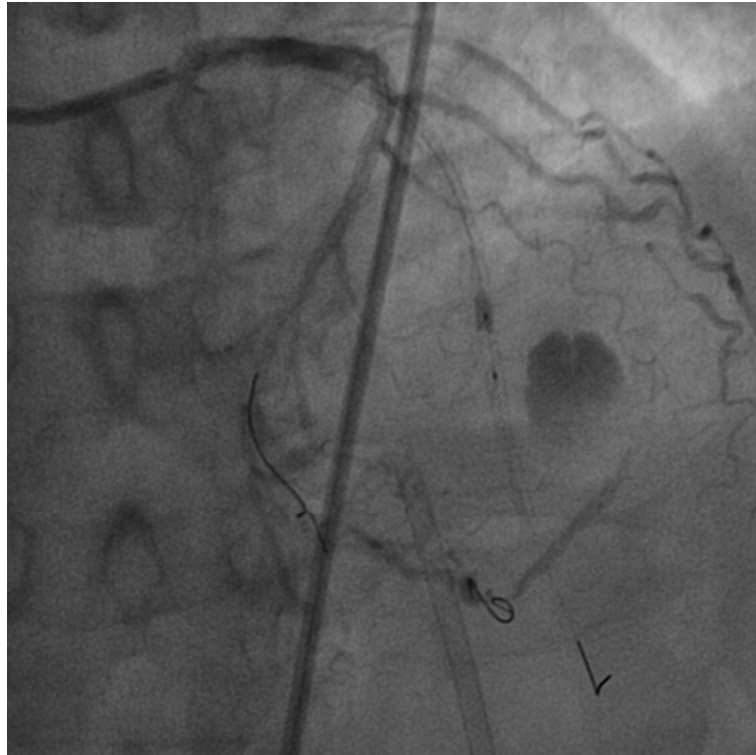
Closure of the perforation can be achieved by embolization of some material in the exit points from both of dual supplied arteries



WHAT SHOULD WE DO NEXT ?

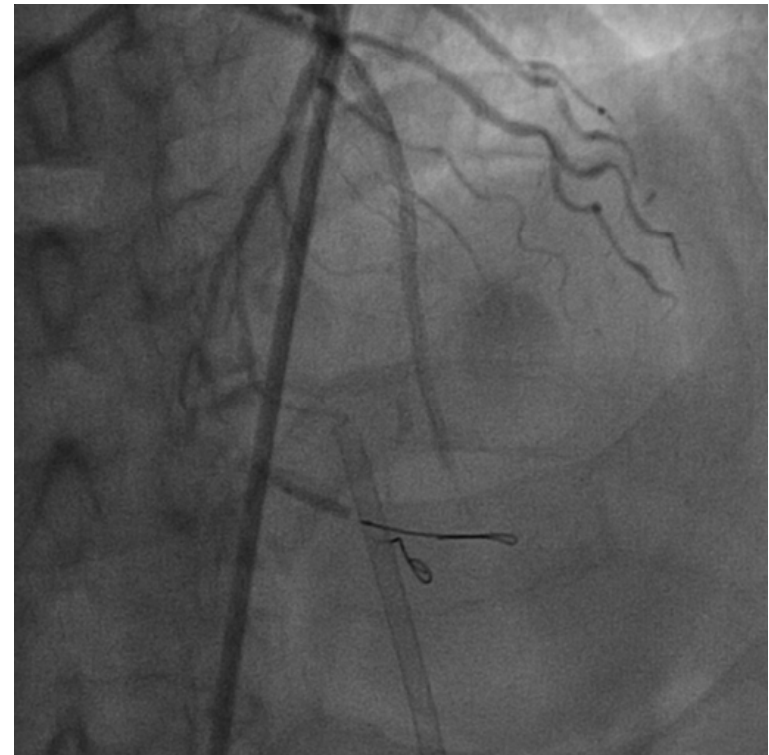
- Ballon Inflation at LAD, LCx or both
- Deploy cover stent
 - Where to deploy ?
- Deploy micro-coil : distal LCx + septal branch?
- Surgery including CABG





Balloon inflation at only LAD

Balloon inflation at distal LCx

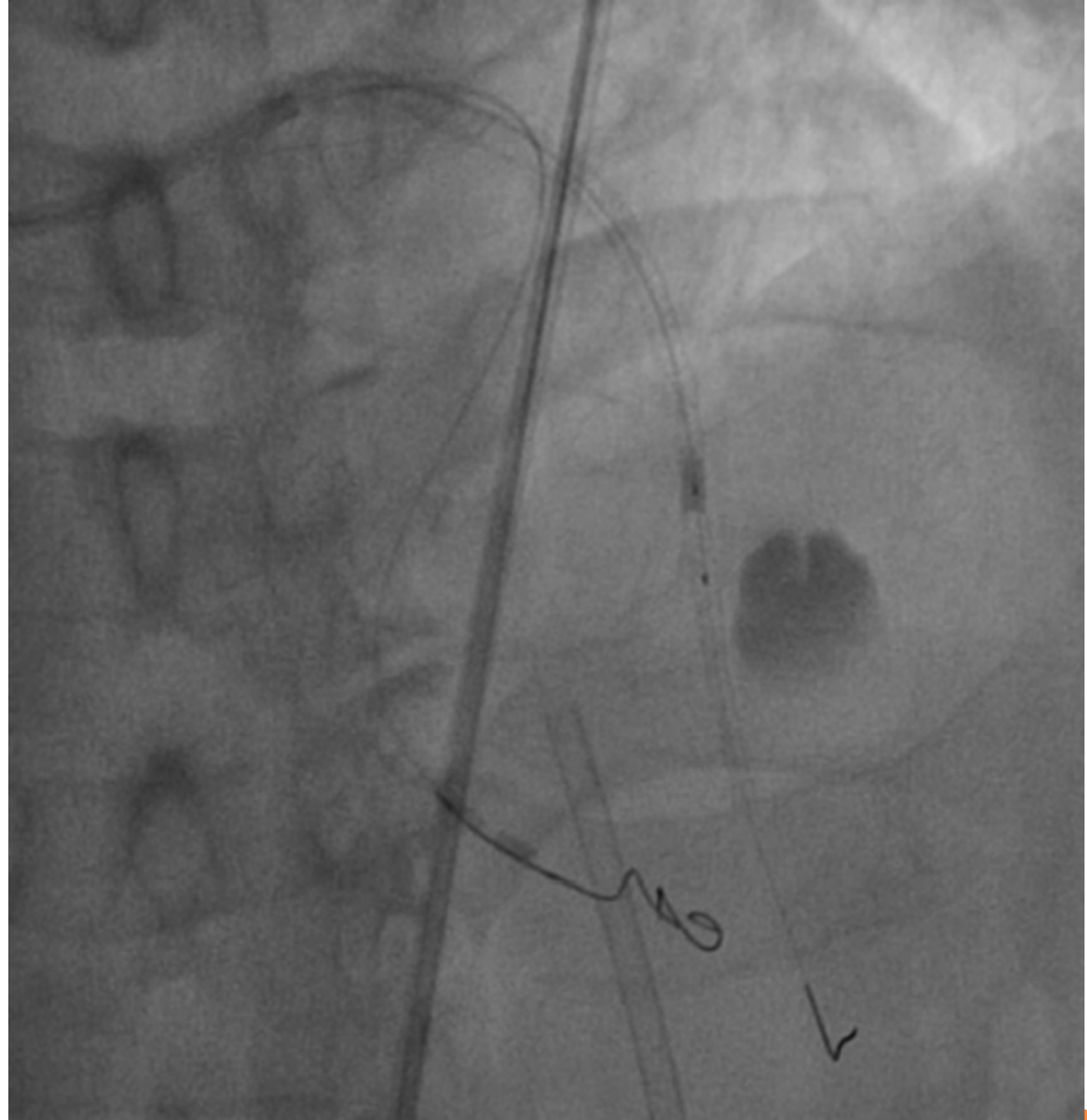


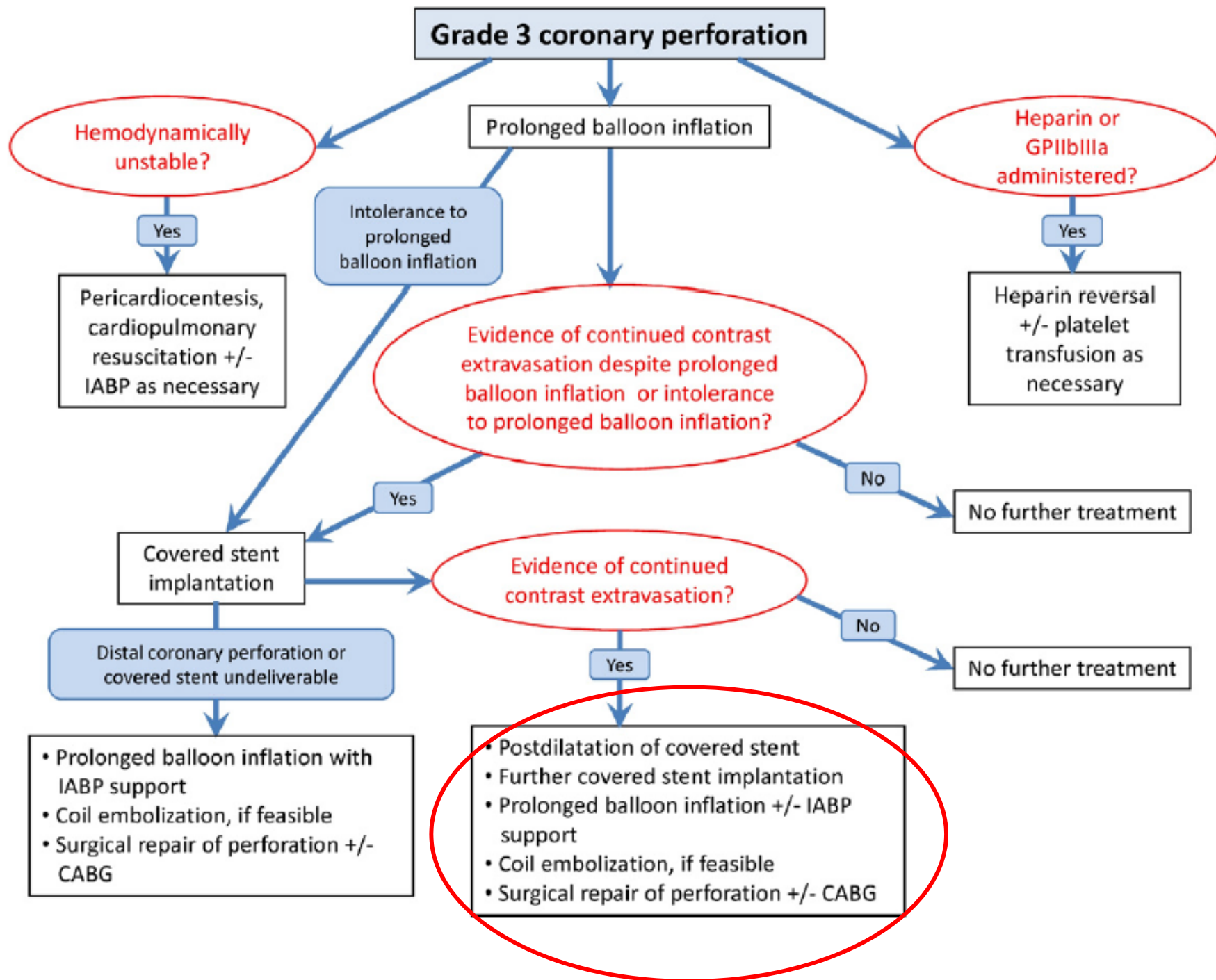
Balloon inflation at
both of LAD and OM



Still have major
leakage !!

Hemodynamic
deterioration



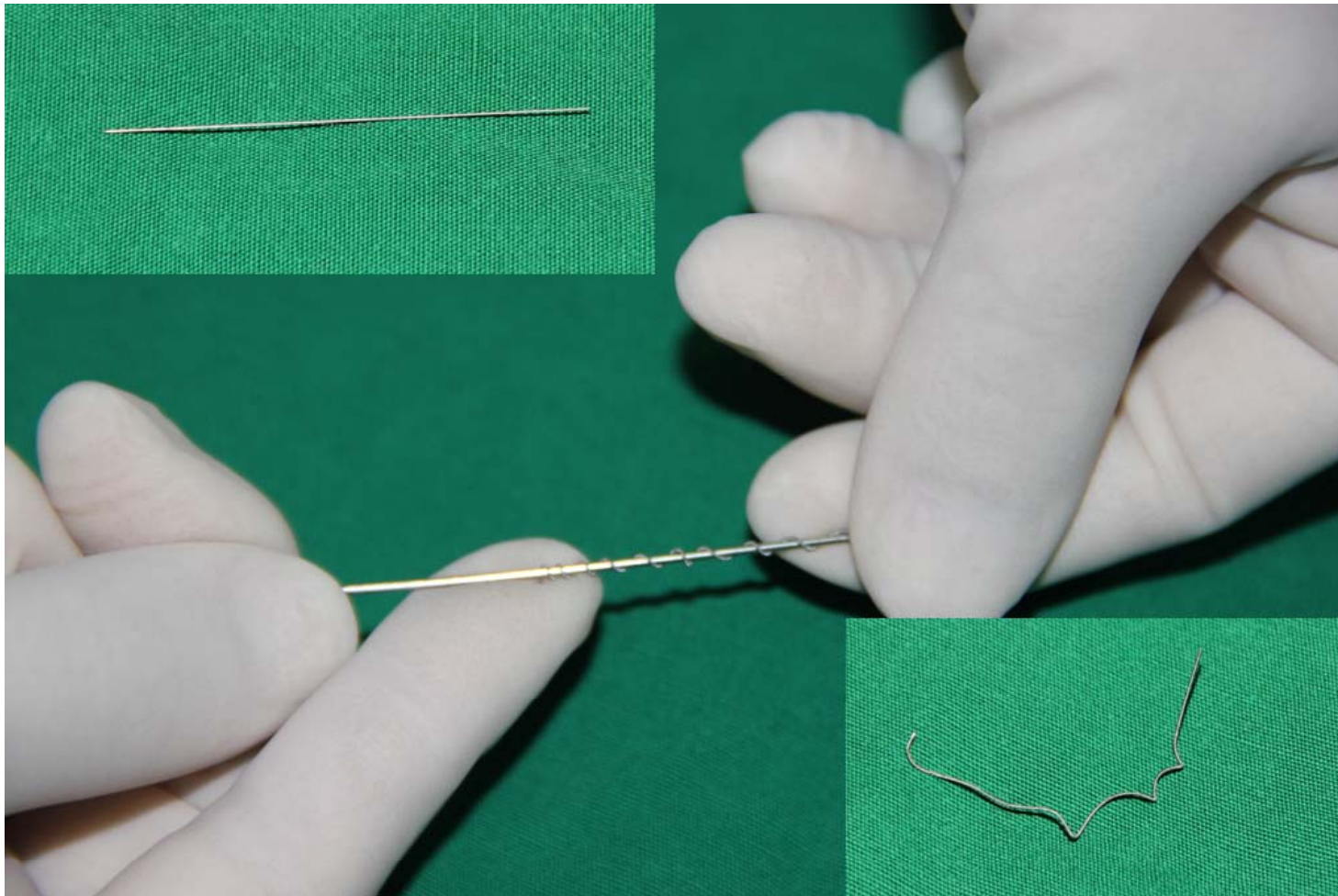


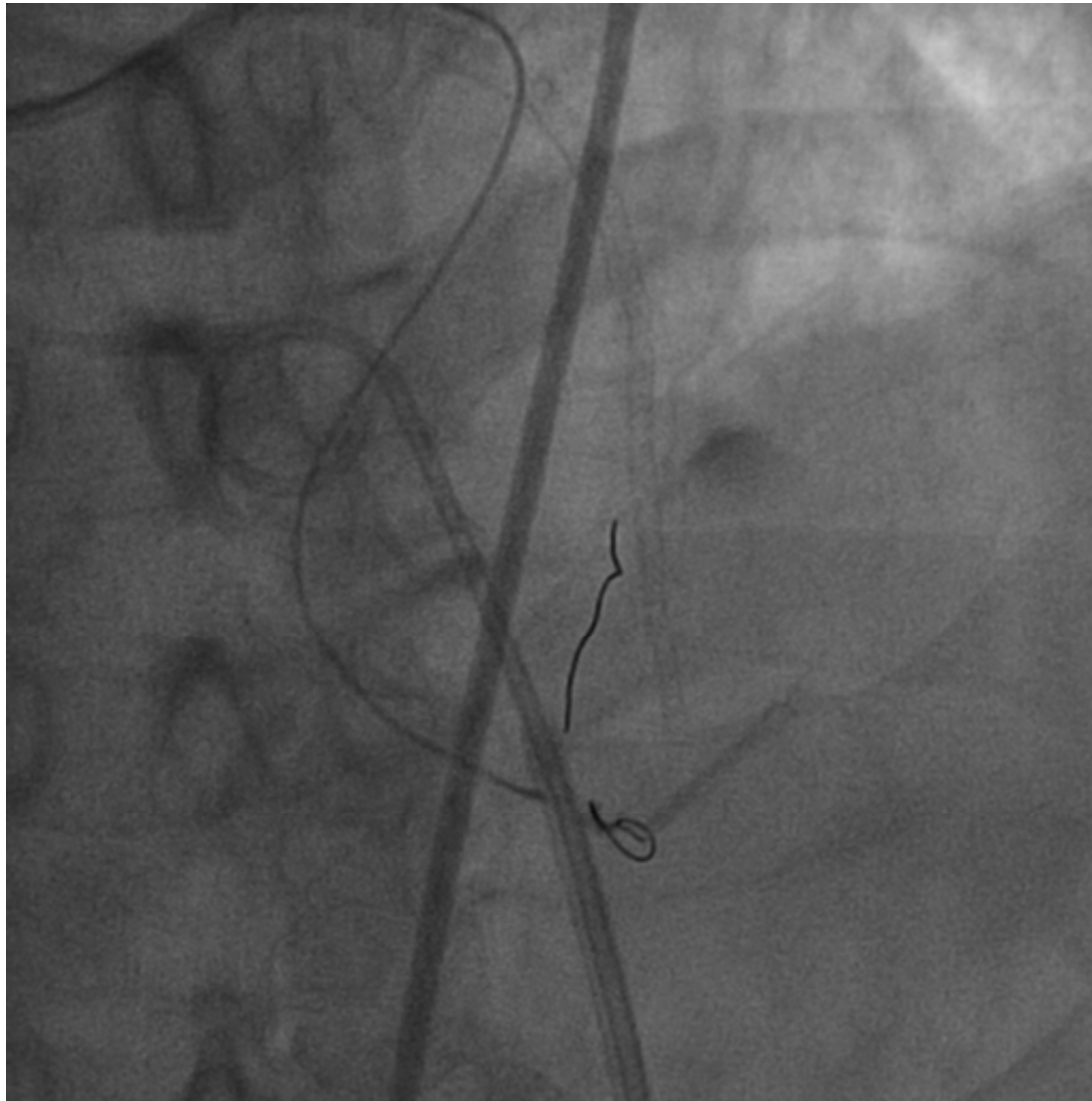
WHAT SHOULD WE DO NEXT

- We did not have ready micro-coil and covered stent on site
- Surgical → need to prepare team



PREPARING HANDMADE MICROCOIL





2 hand-made microcoils



After the Cook's microcoil available 4 hrs later → put another 2 coils



An other Cook's micro-coil



Follow up

- Discharged after 3 days
- F-up 1 week after : showing minimal pericardial effusion
- Treatment : Methylprednisolone 3x16 mg
- F-up 2 week later : no pericardial effusion



CONCLUSION

- CAP can occur due to wire. This complication can cause tamponade lead to catastrophic event when managed properly
- Pericardiocentesis should be performed promptly and echo-guided maybe easier
- In performing CTO retrograde approach, bleeding from the perforation can be supplied by dual arteries and it should be taken into consideration
- Perforation in small vessel can be managed using embolization from several material eg. coiling, subcutaneous fat, autologous blood clot, etc
- Distal tip of coronary spring wire could be a choice for emergency hand-made coil when the commercial coils are not readily available

