Device embolisation during LAA occlusion : The « Twin shot» rescue procedure

Nicolas Amabile, MD, PhD[1], Romain de Blic , MD[2], Nicolas Mignot, MD[1]

1:Department of Cardiology, Institut Mutualiste Montsouris , Paris

2: Department of Vascular Surgery, Institut Mutualiste Montsouris , Paris

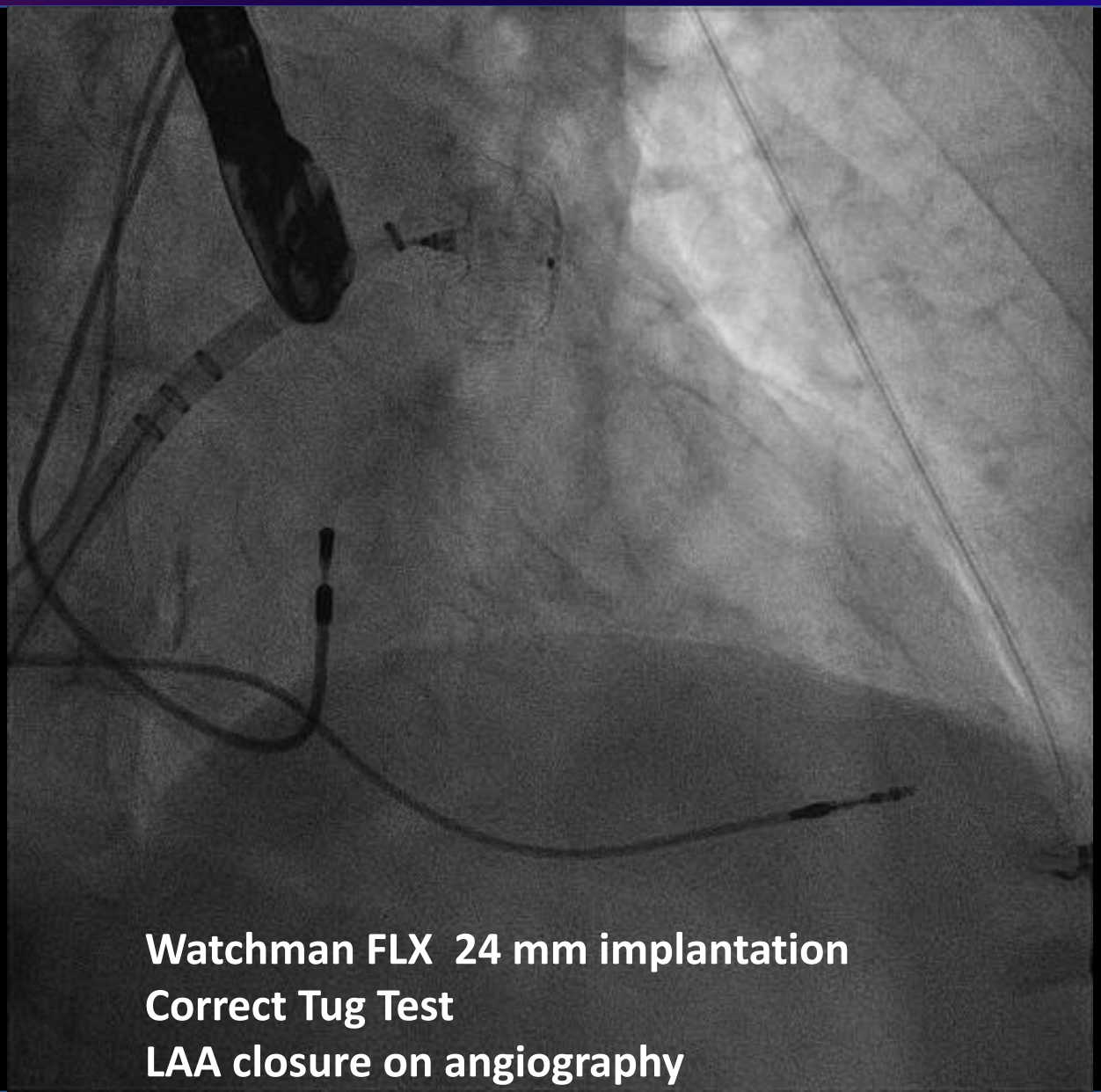
Case Presentation

- **A 86 y-o man is referred to our centre for left atrial appendage occlusion procedure**

- Medical history:
  - Permanent atrial fibrillation / CHADS-VASC2 score= 5
  - Previous ischemic stroke under apixaban treatment with subsequent haemorrhagic evolution 4 months before and formal contra-indication to oral anticoagulation
  - HTN, previous pace-maker
  - Severe PAD

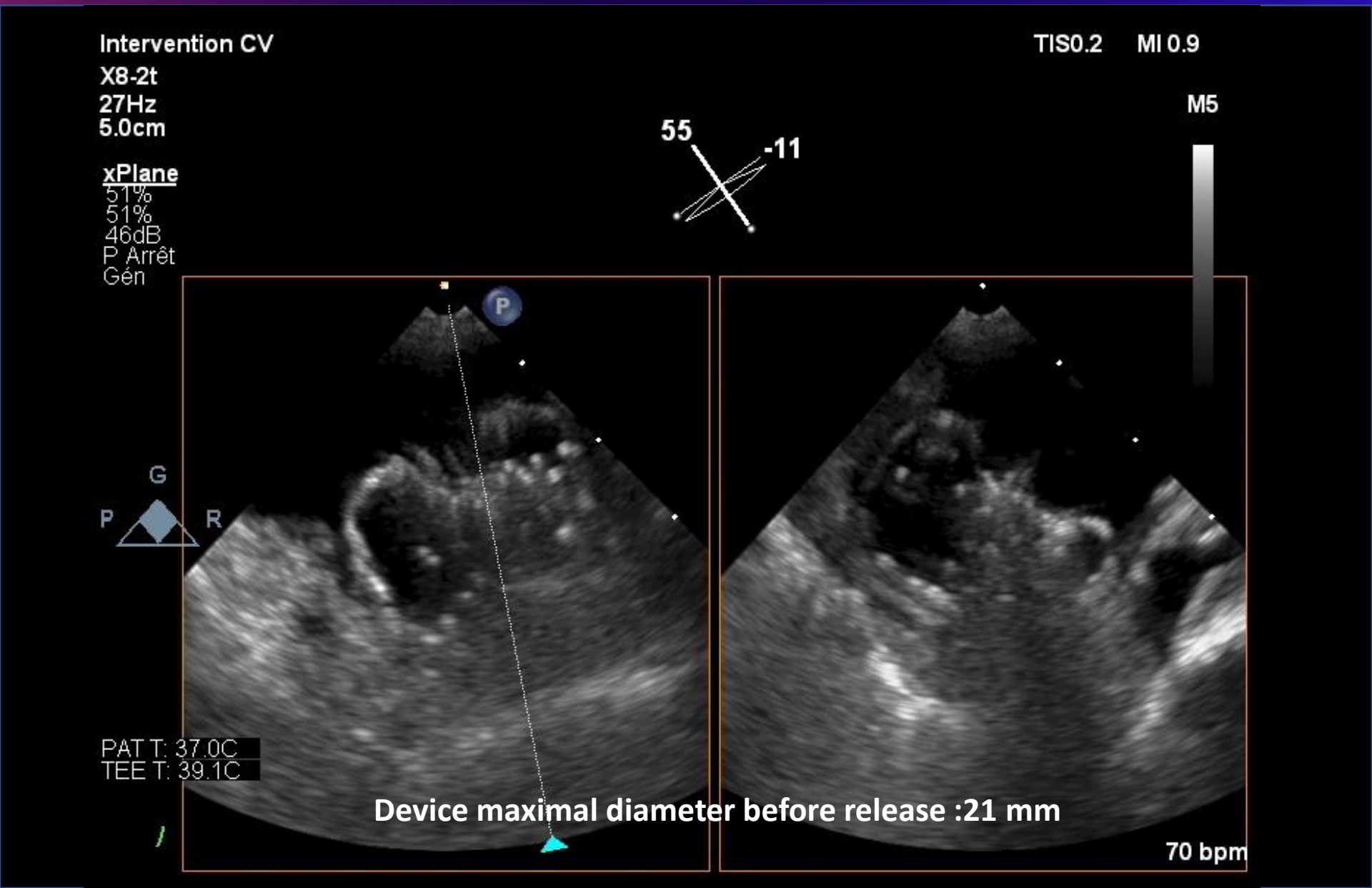
- Pre-LAAO CT scan :
  - Windsock LAA anatomy / no thrombus / landing zone diameter : 20 mm

Procedure



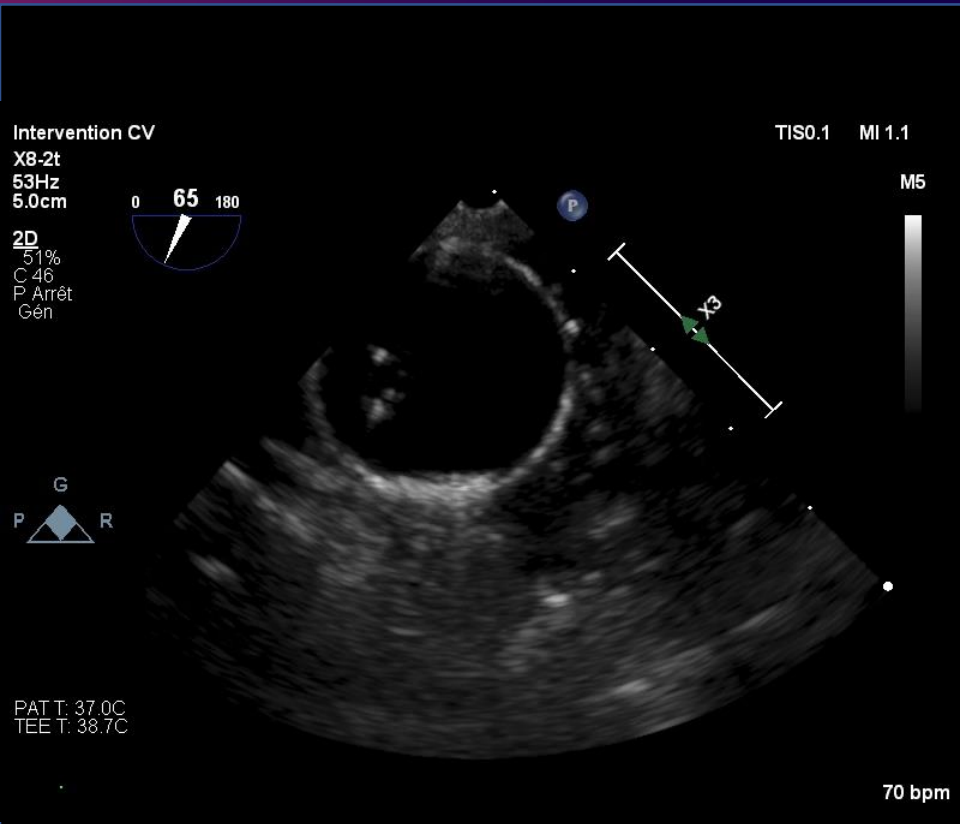
Watchman FLX 24 mm implantation
Correct Tug Test
LAA closure on angiography

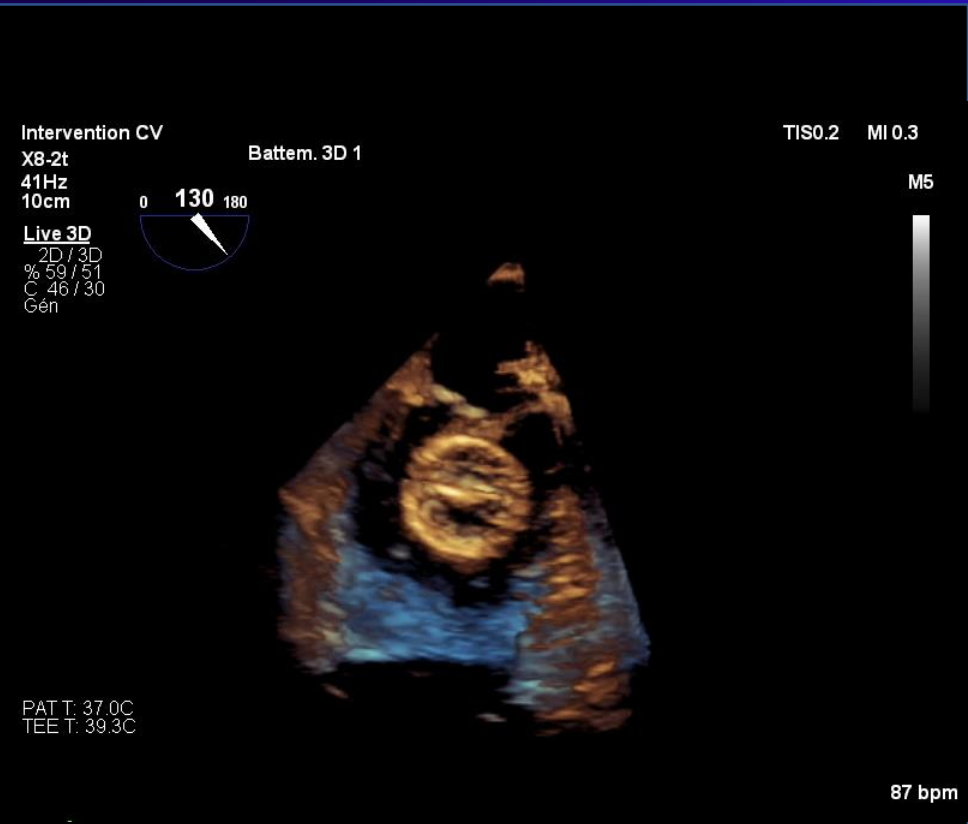
Procedure



Device maximal diameter before release :21 mm

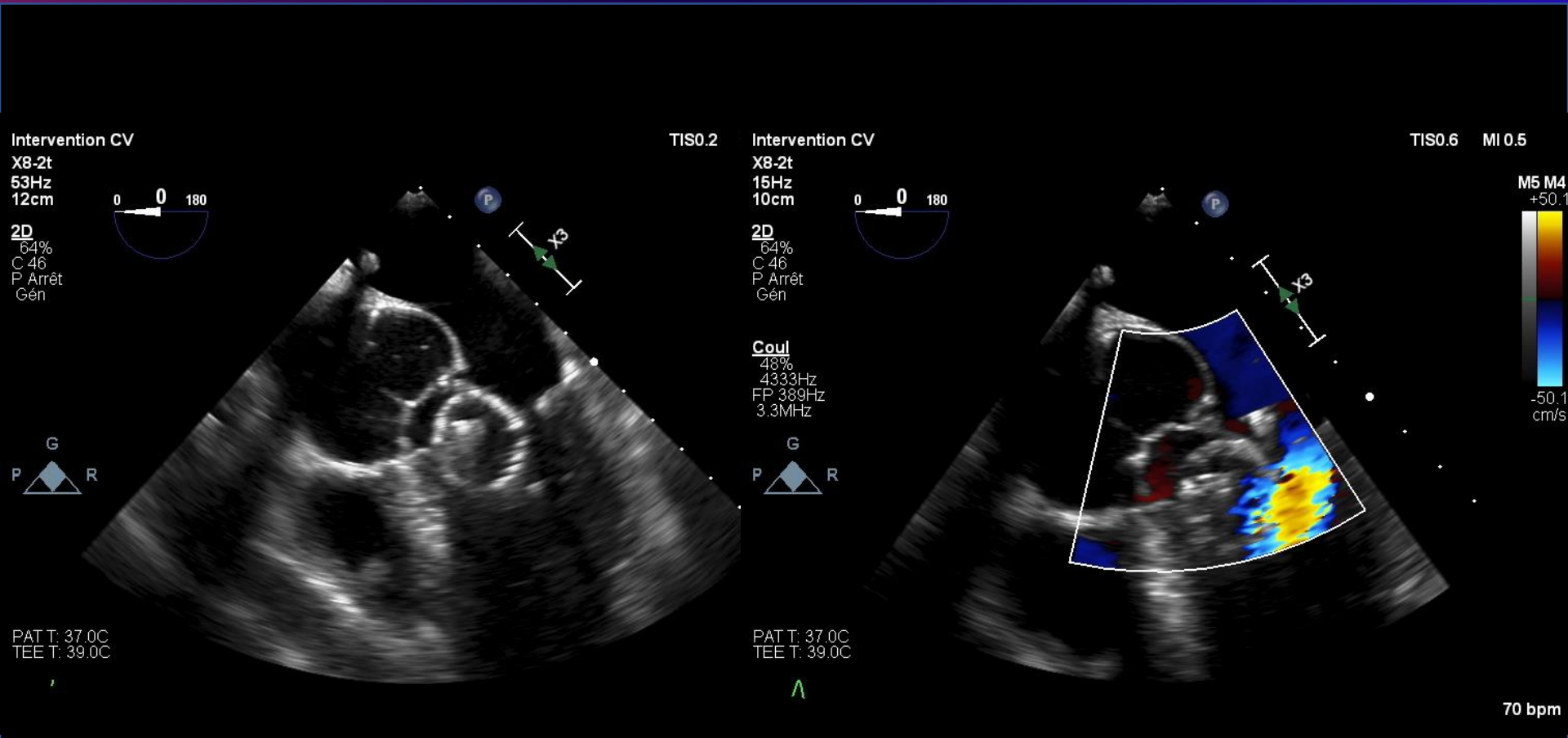
Device migration





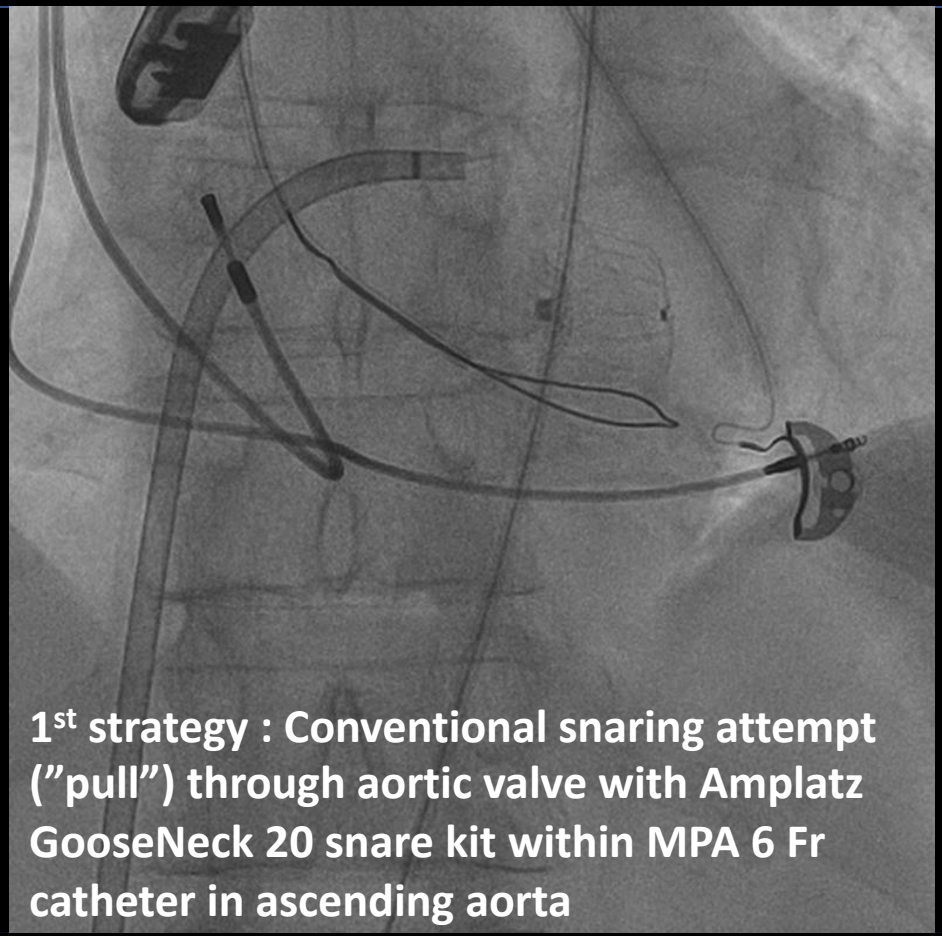
- **WM device migration out of LAA and embolization towards left ventricle (LV) through mitral valve, shortly after implantation (<30 s).**

Device migration

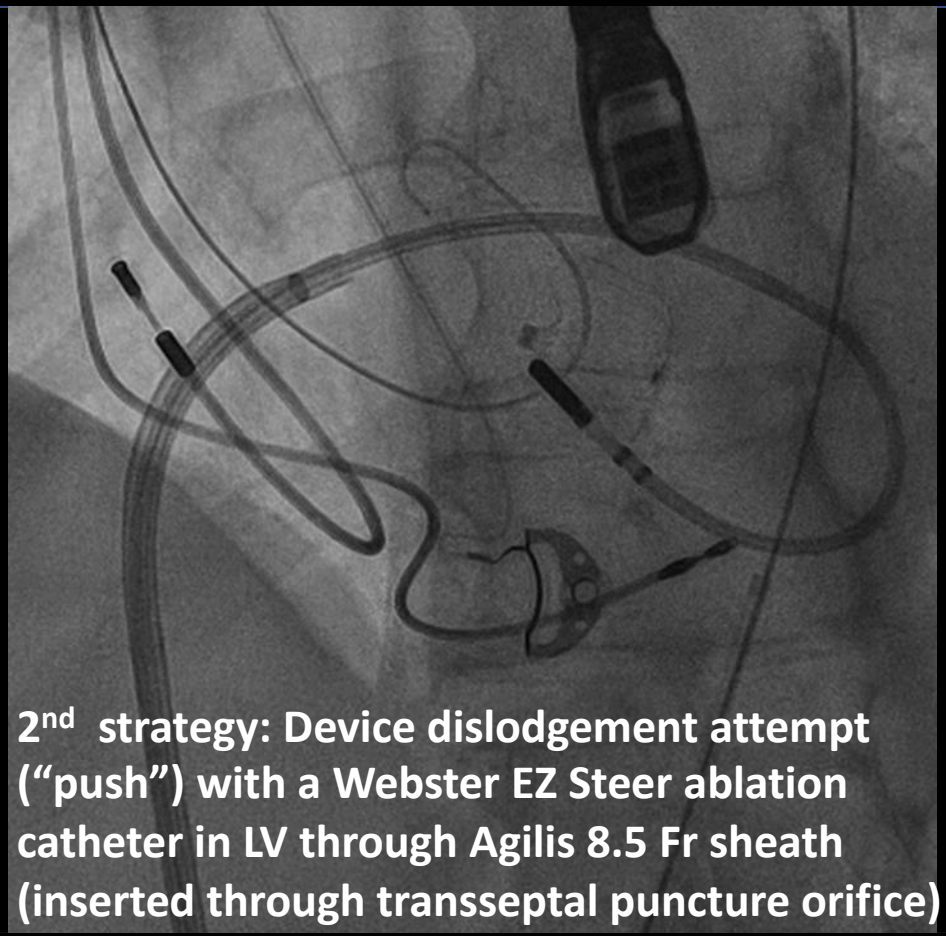


- **Device immobilization within the LV outflow tract (LVOT)**

Initial device retrieval attempts

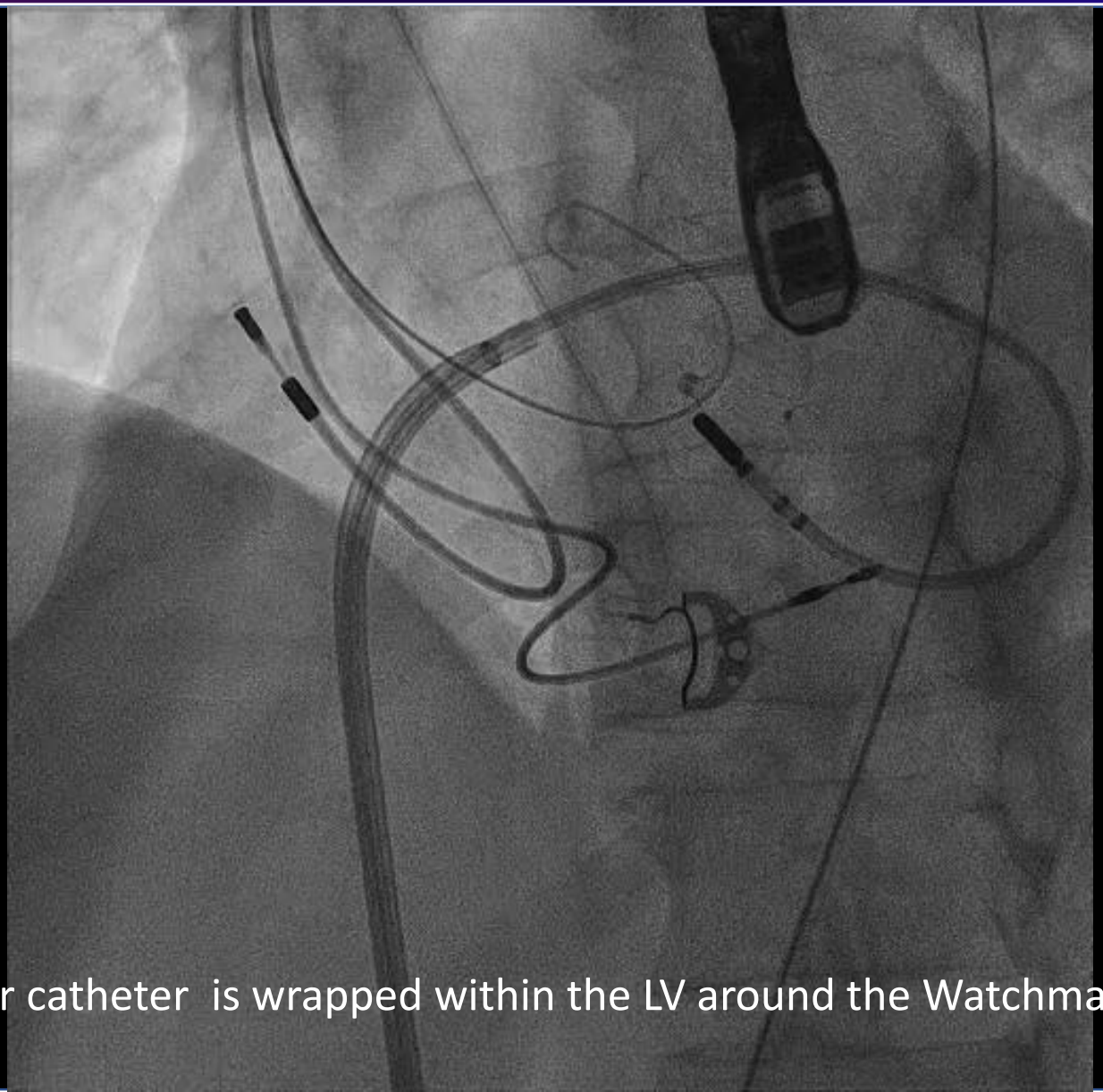


1st strategy : Conventional snaring attempt (”pull”) through aortic valve with Amplatz GooseNeck 20 snare kit within MPA 6 Fr catheter in ascending aorta



2nd strategy: Device dislodgement attempt (“push”) with a Webster EZ Steer ablation catheter in LV through Agilis 8.5 Fr sheath (inserted through transseptal puncture orifice)

“Twin shot” approach

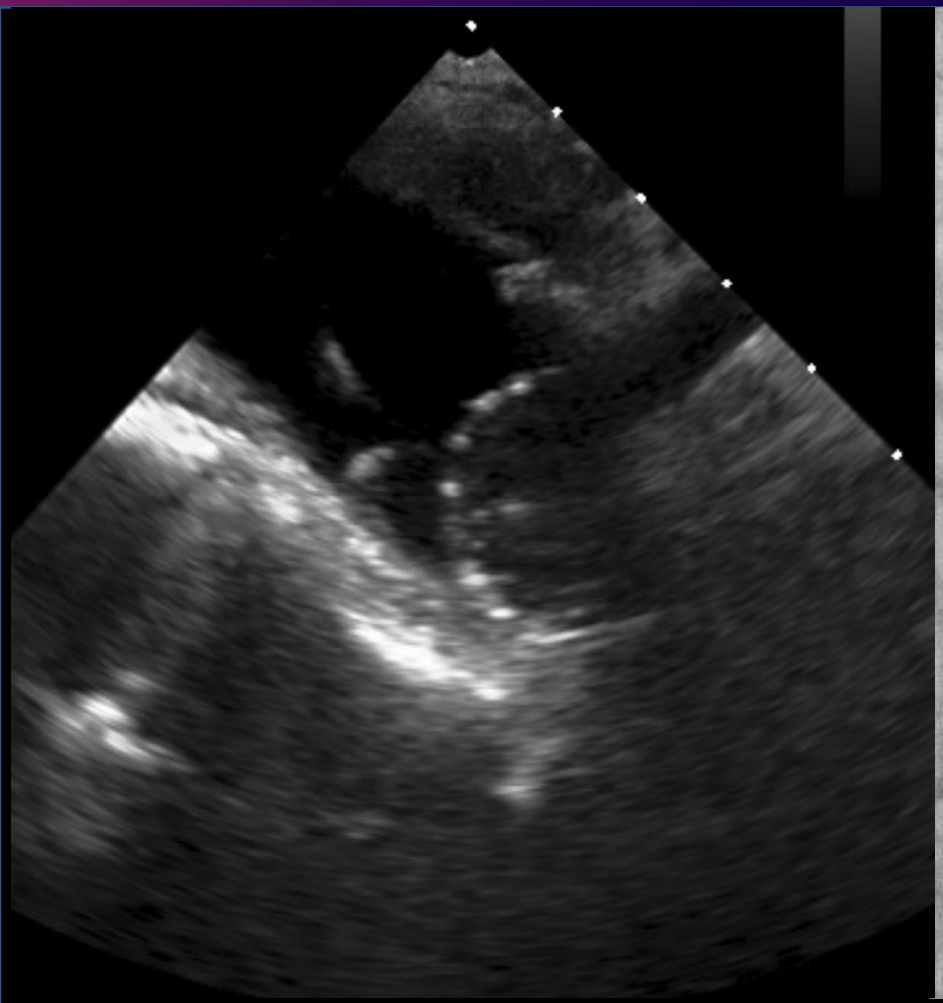


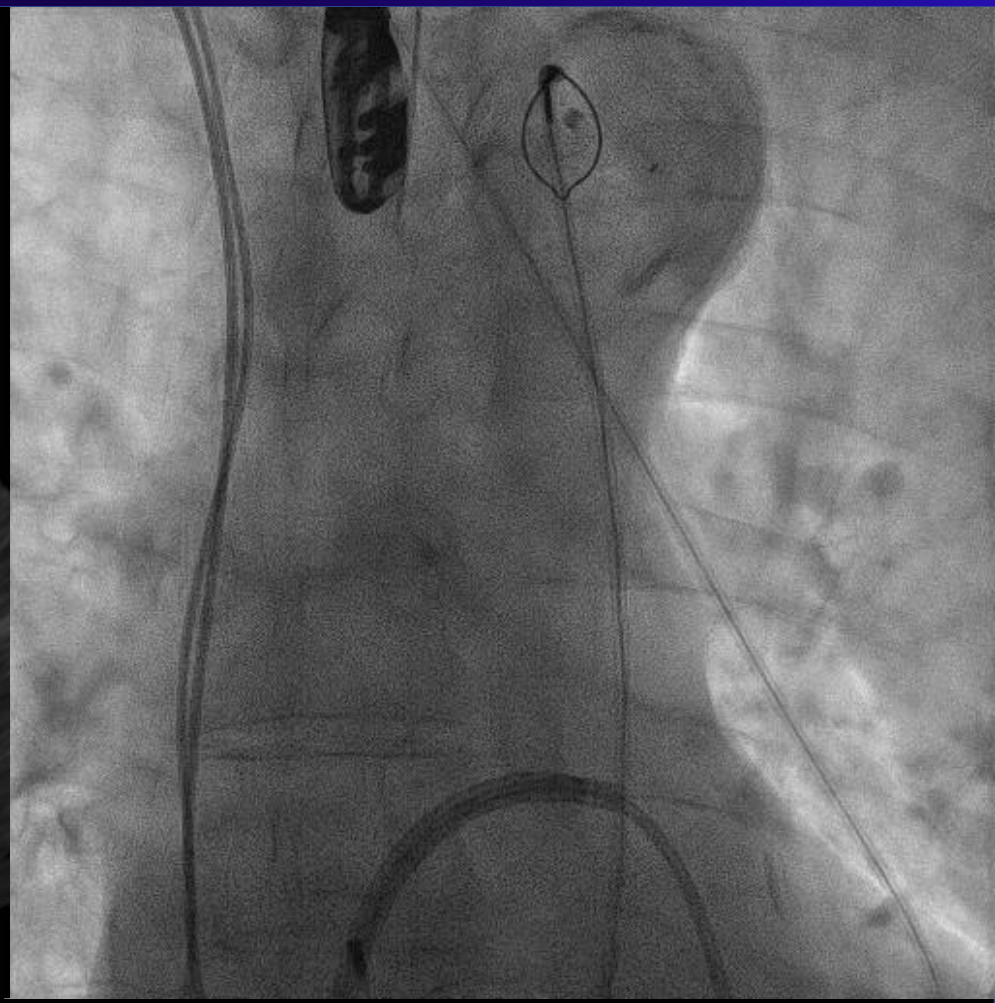
1. The EZ steer catheter is wrapped within the LV around the Watchman prosthesis.

“Twin shot” approach

2. Th ed th
3. Th WM ou

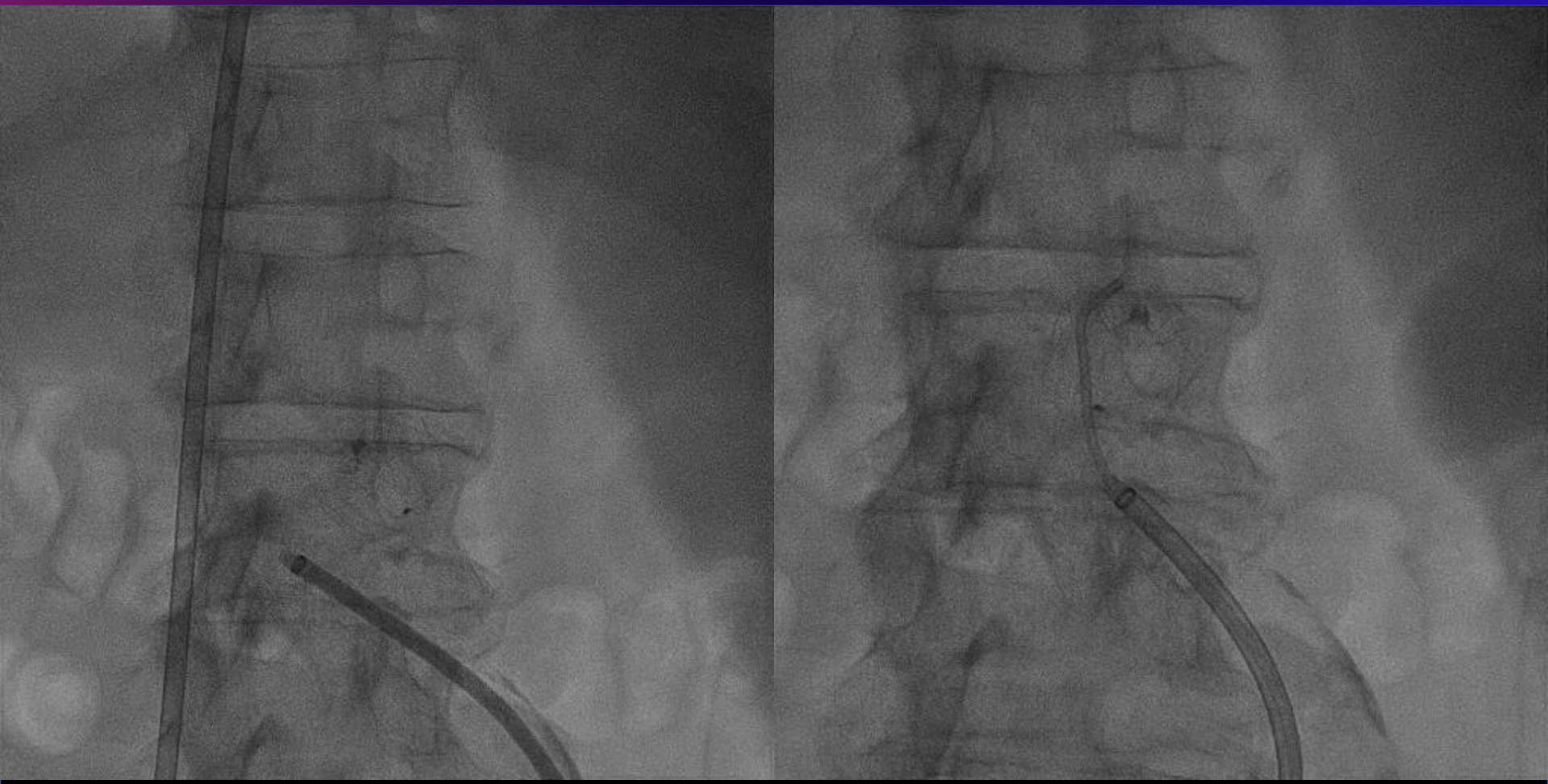
Nice shot, but the nightmare is going on…





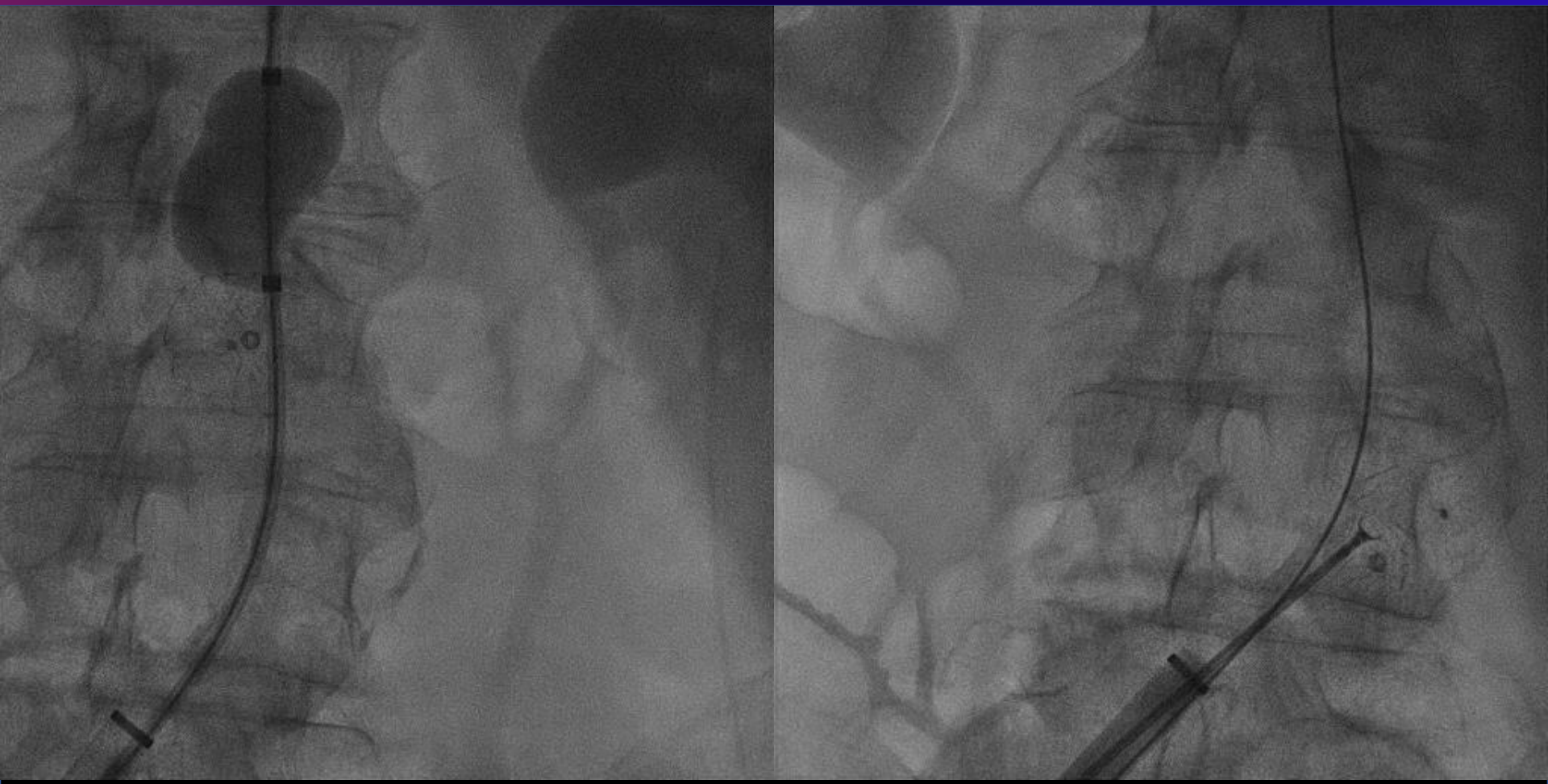
- Device embolization in the aortic arch then in the supra-renal abdominal aorta (which is a heavily calcified, kinked and stenosed vessel)
- Vascular surgery team is called for support

Nice shot, but the nightmare is going on…



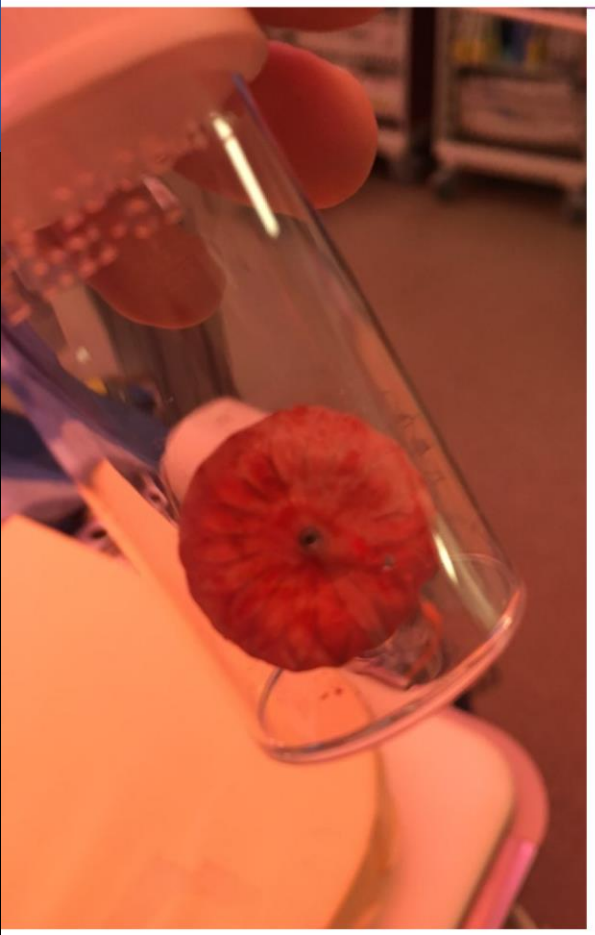
- Device embolization in the aortic arch then in the supra-renal abdominal aorta (which is a heavily calcified, kinked and stenosed vessel)
- Vascular surgery team is called for support

Nice shot, but the nightmare is going on…



- Insertion of a 20 Fr sheath in femoral artery
- Attempts to retrieve embolized WM back in the sheath initially by 20 mm ultra-compliant balloon pullbacks and subsequently with a forceps

TAKE HOME MESSAGES



- Be prepared to the unpredictable and always perform LAAO procedures in hybrid room with surgical support.
- Device embolization probably related to inadequate compression and/or shallow position : respect the abacus.
- The new watchman flex device could not be (easily) snared due to its design. The “twin shot” strategy represent an option in case the prosthesis is blocked in the LVOT to avoid emergent cardiac surgery.