Treatment of secondary cause of hypertension with catheter intervention in a case with complex coronary artery disease

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Conflicts of Interest

Speaker's name : Khin Maung Zan @ MOHD SAAD JALALUDDIN, INSTITUT JANTUNG NEGARA

- ☑ I do not have any potential conflict of interest

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Introduction

- 62 year old male
- Co-morbids: Hypertension
  Dyslipidaemia
  Chronic kidney disease stage 3
  History of CVA with right hemiparesis (ADL independent)

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- History of acute pulmonary oedema secondary to hypertensive emergency
- He was also treated for NSTEMI
- Echo showed EF 53%, concentric LVH and normal valves

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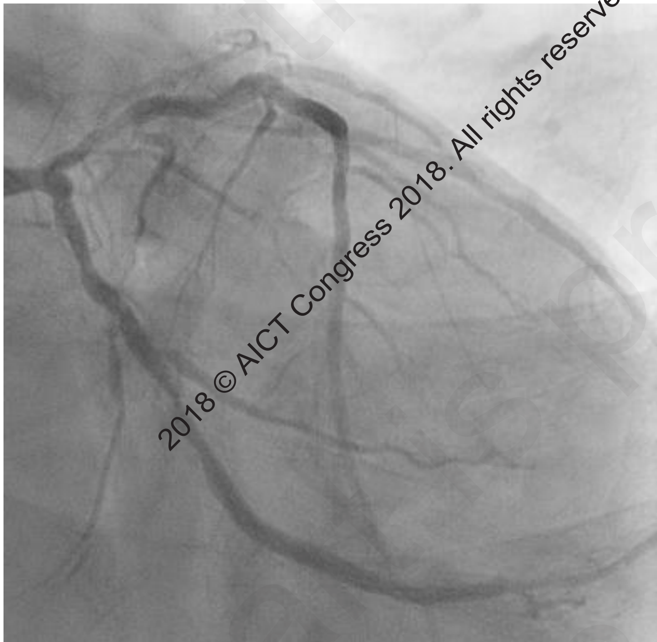
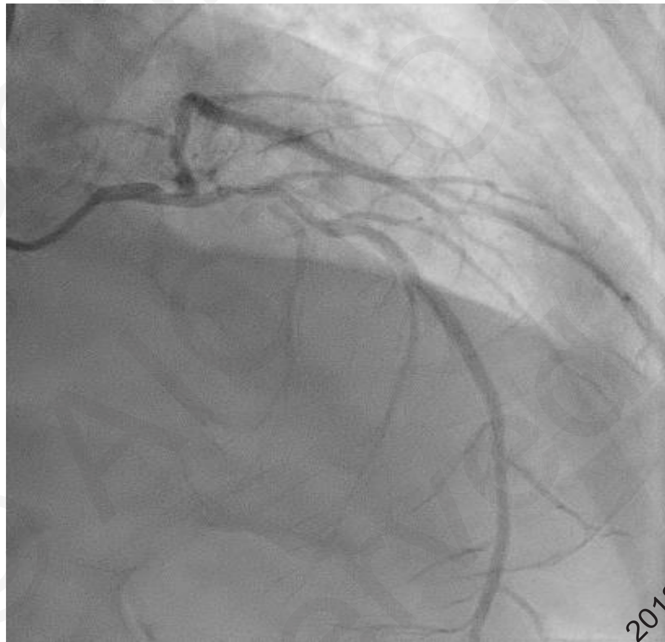
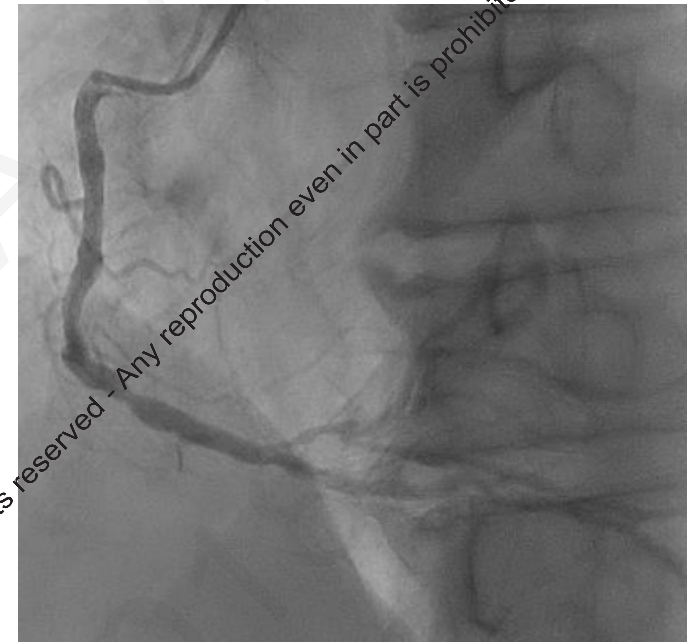
- Coronary angiogram showed 3 vessels and distal LM disease







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- Referred for CABG but declined due to resistant hypertension (SBP > 200 mmHg despite on 7 anti-hypertensive medications)

- Suspected renal artery stenosis due to presence of abdominal bruit

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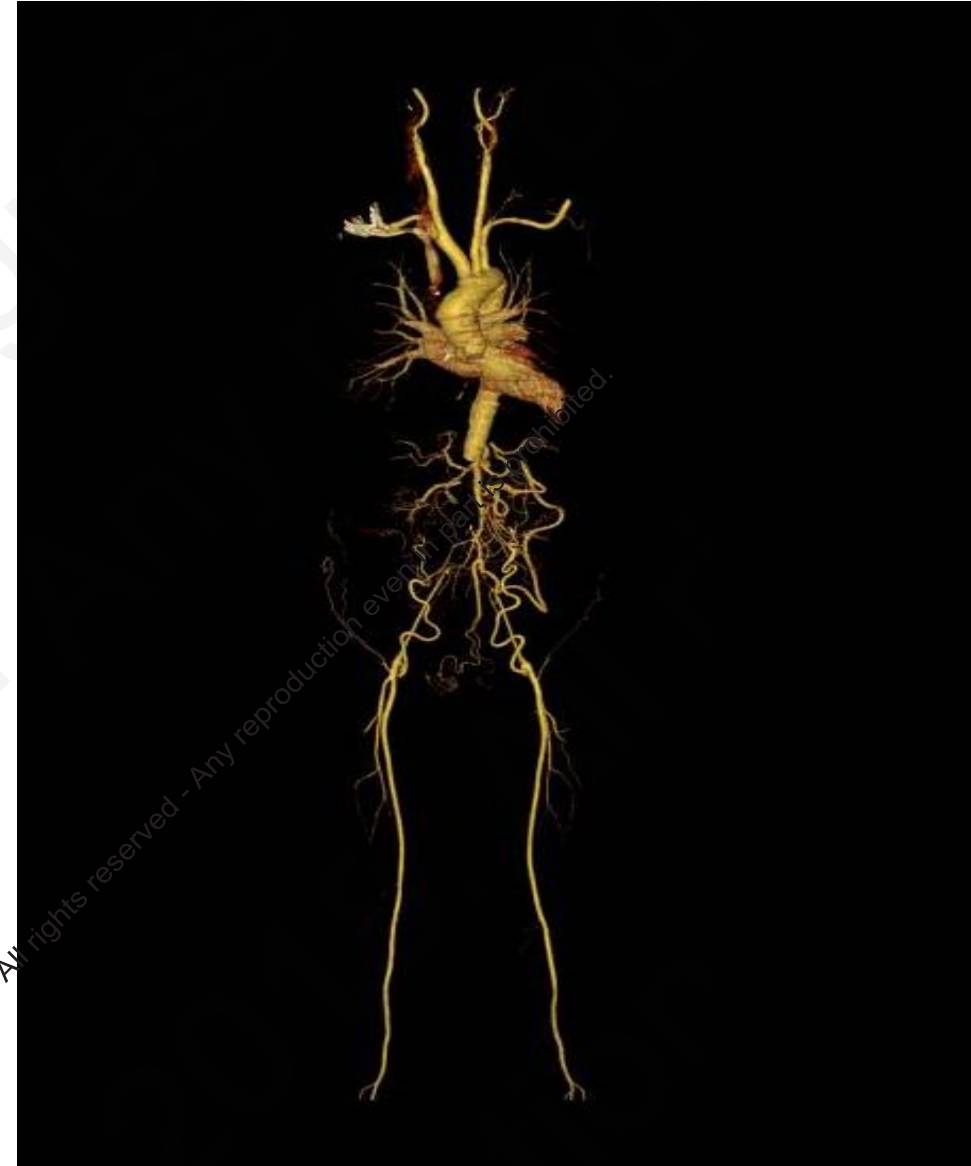
- CTA - complete total occlusion of abdominal aorta below superior mesenteric artery with collaterals to both external iliac arteries

- Refused by vascular surgeon for bilateral aorto-iliac bypass



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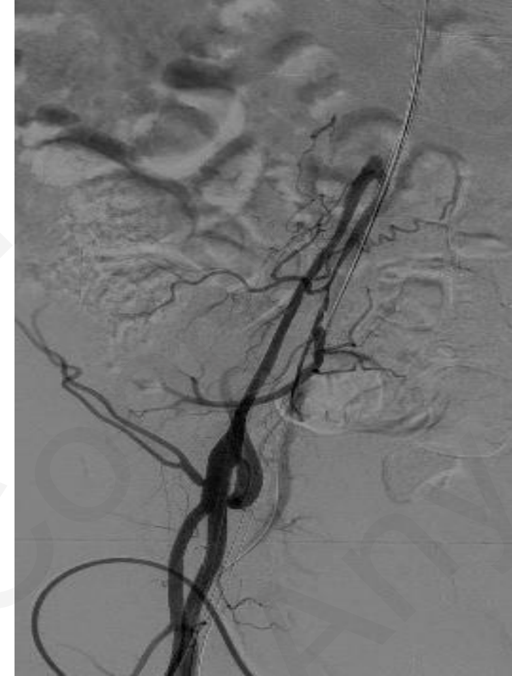
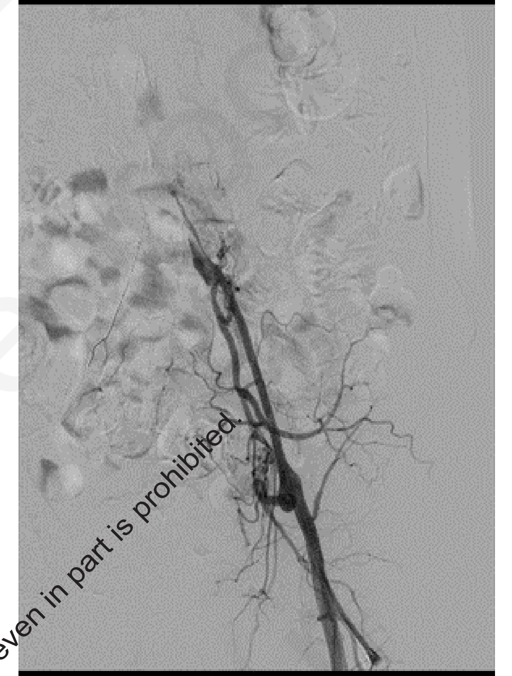
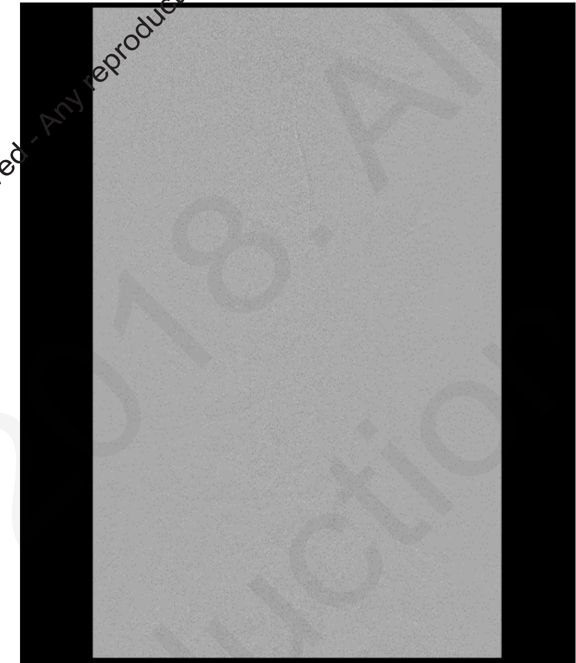
PTA Aorto-Iliac

- Proceeded with PTA hoping that this might help to bring down his blood pressure

- 3 arterial access:
  - -left brachial artery 6F sheath
  - -right femoral artery 6F sheath
  - -left femoral artery 6F sheath







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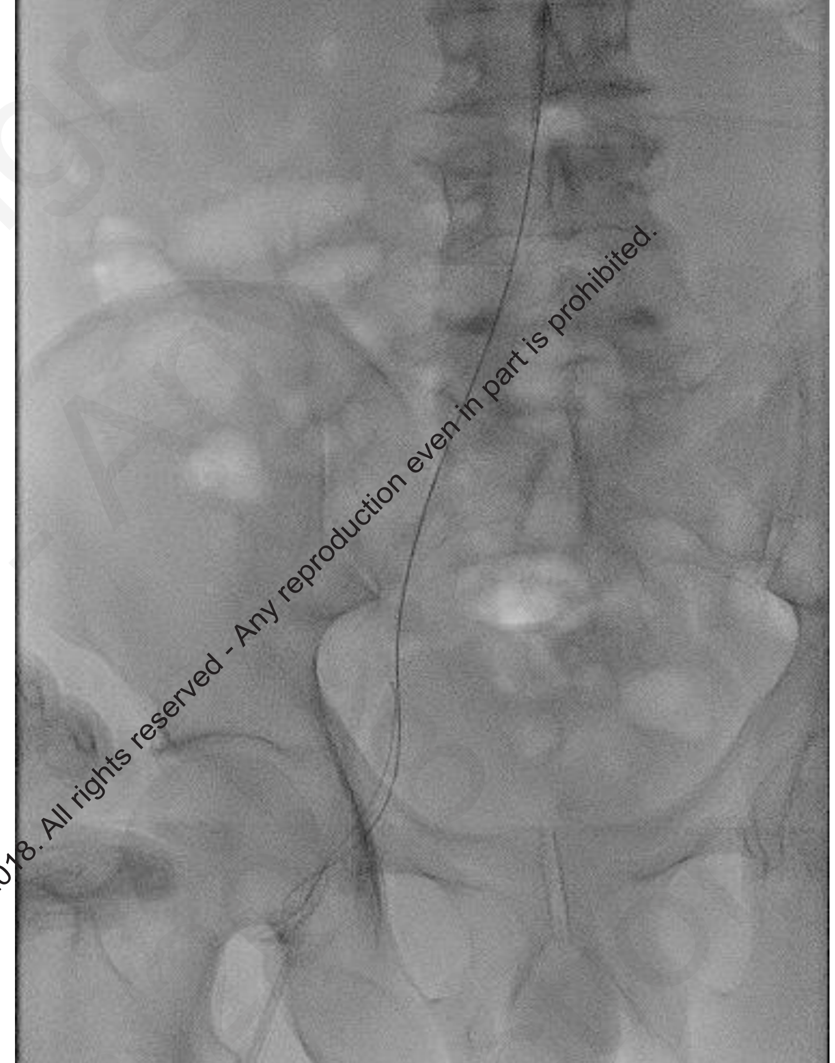
- Attempted to cross with antegrade approach – Terumo stiff wire with JR 3.5 6F support

- false lumen



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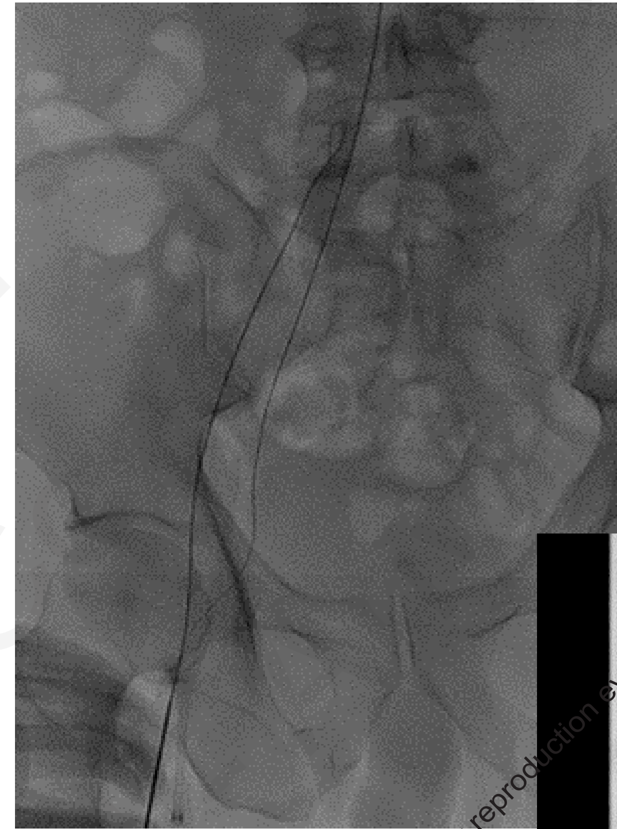
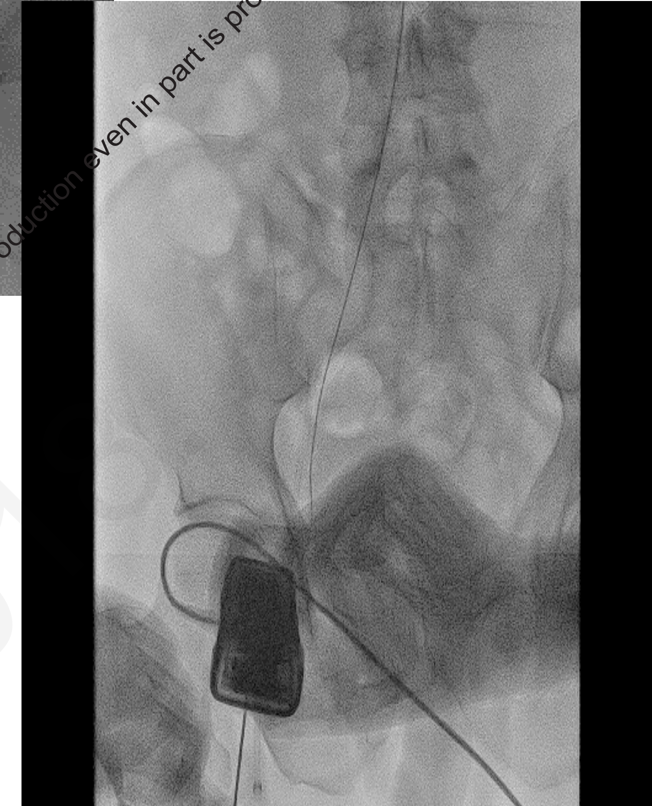
PTA Aorto-Iliac (cont.)

- Changed to retrograde approach via right femoral access and crossed

    - Command 0.014 wire

    - Subintimal Arterial Flossing with Antegrade-Retrograde Intervention (SAFARI) technique





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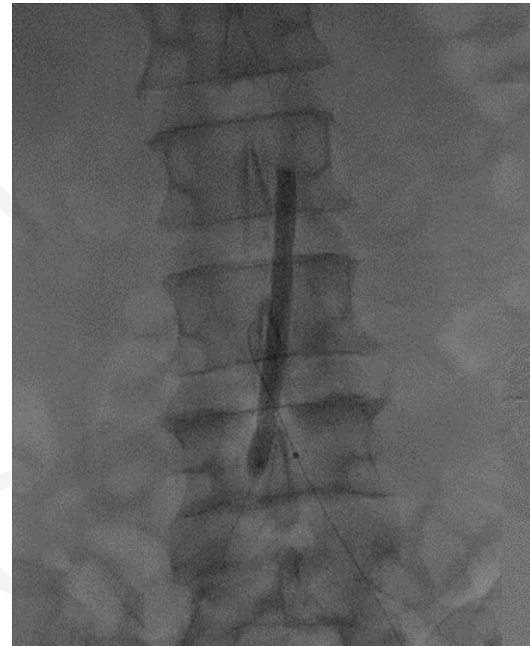
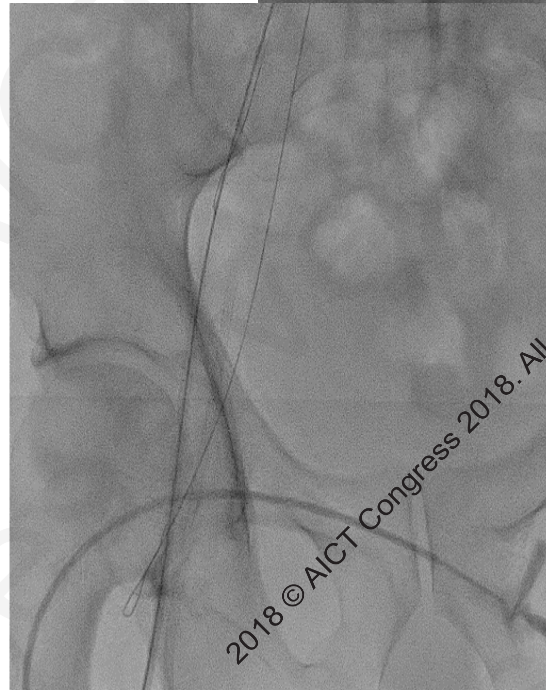
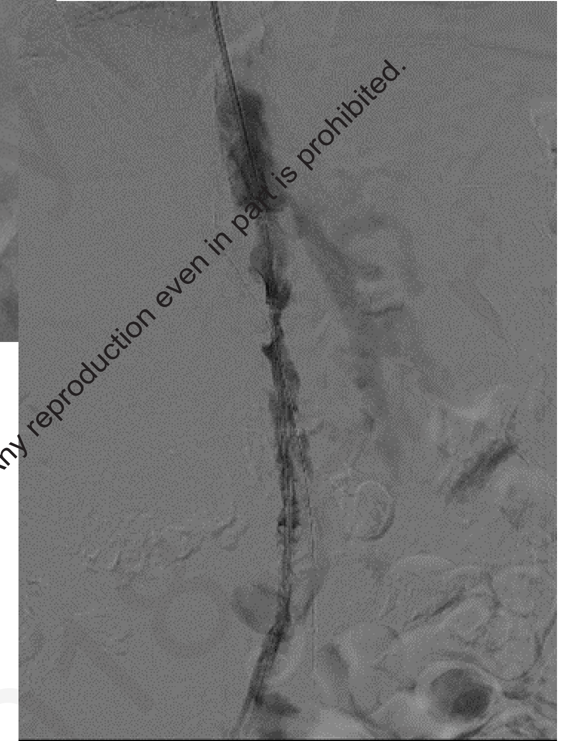
- Predilated with 4.0/60mm then 5.0/20mm then 7.0/60mm balloons
- Wire externalized to right femoral artery

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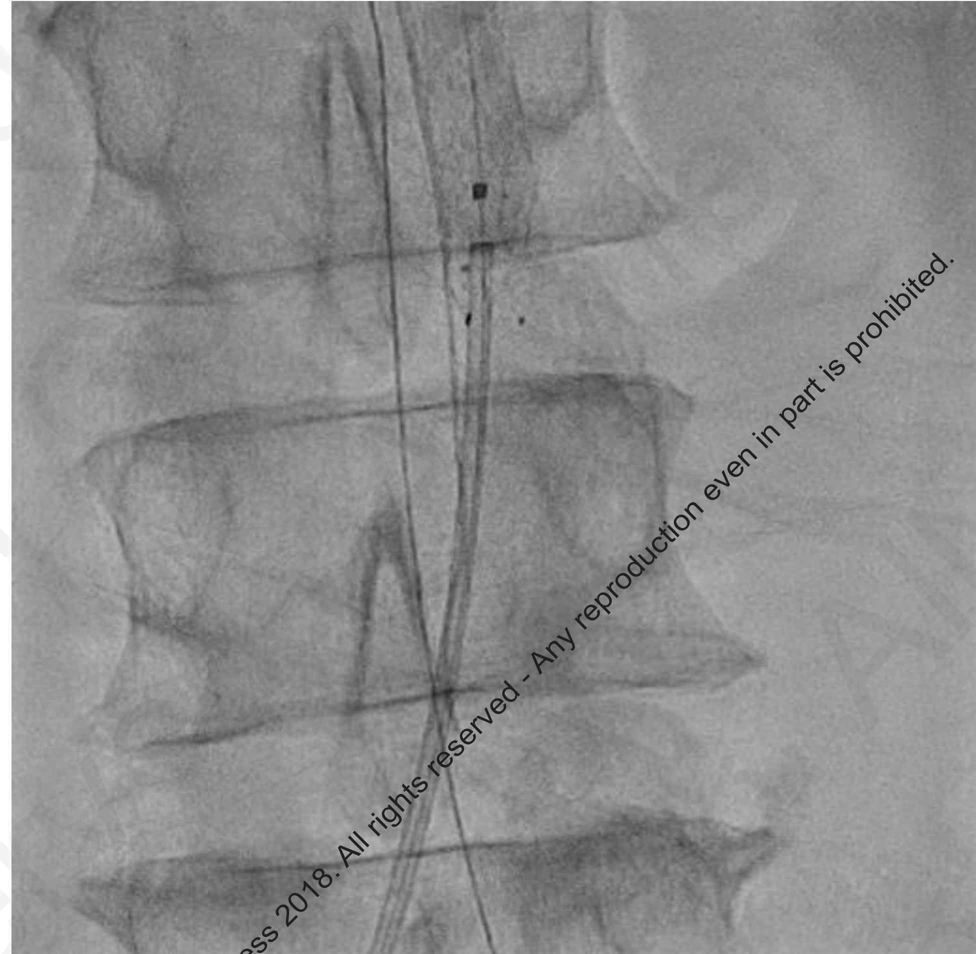
- Stented with DES 7.0/60, 7.0/150mm and 7.0/60mm
- Postdilated with 7.0/60mm balloon



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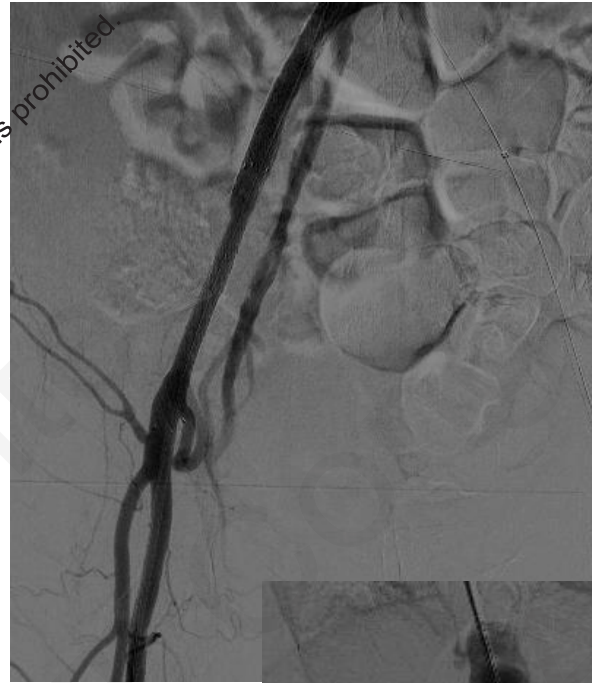
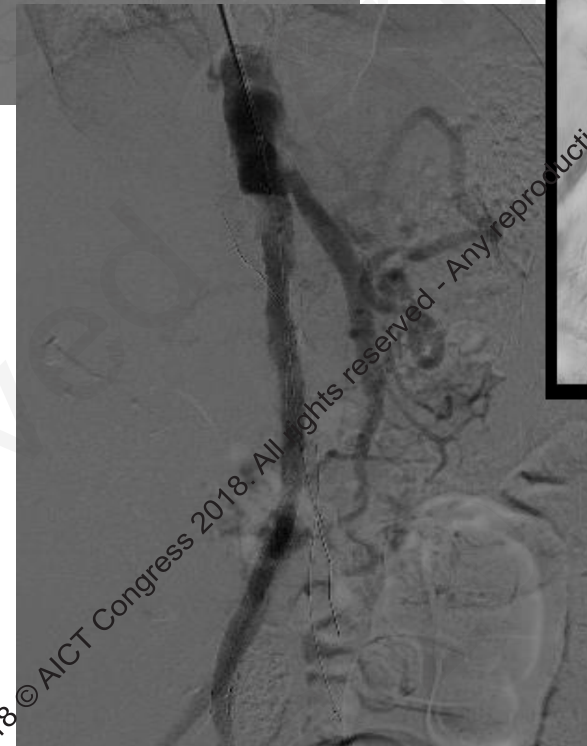
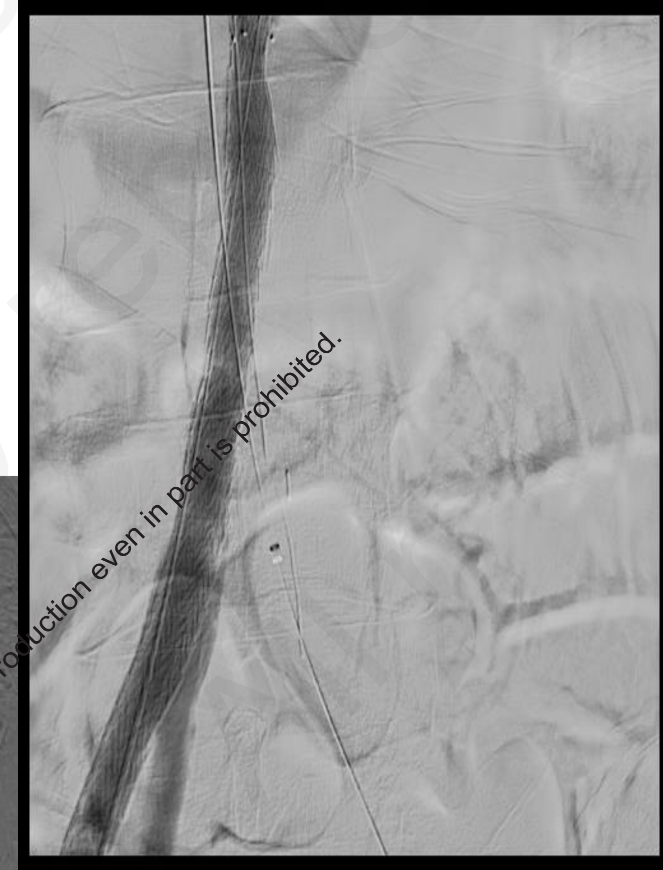
PTA Aorto-Iliac (cont.)

- Good flow in right femoral artery
- BP 150/90 mmHg right after the procedure
- Developed contrast induced nephropathy but improved without dialysis







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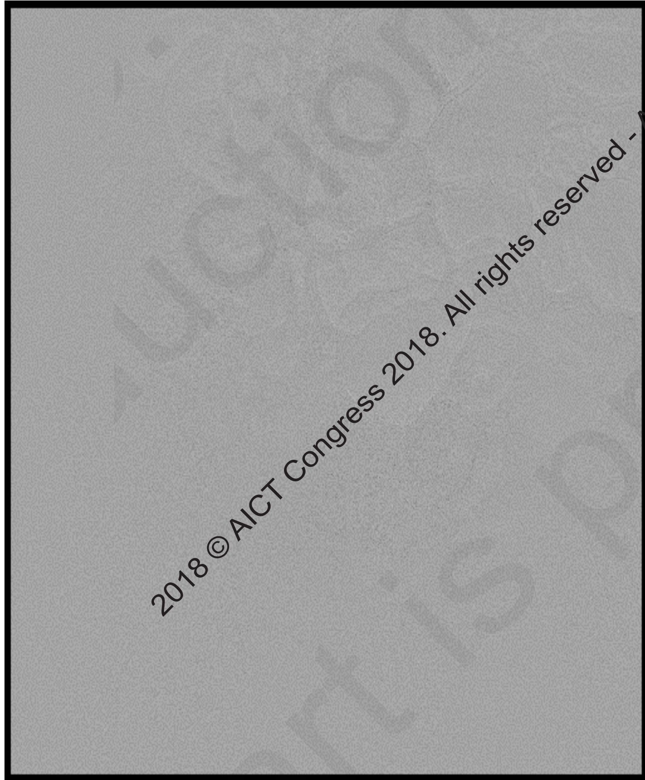

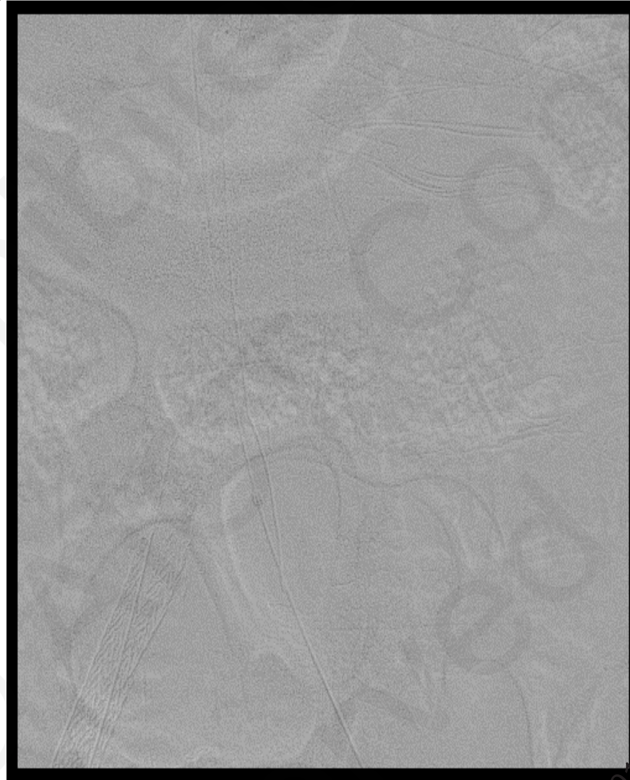

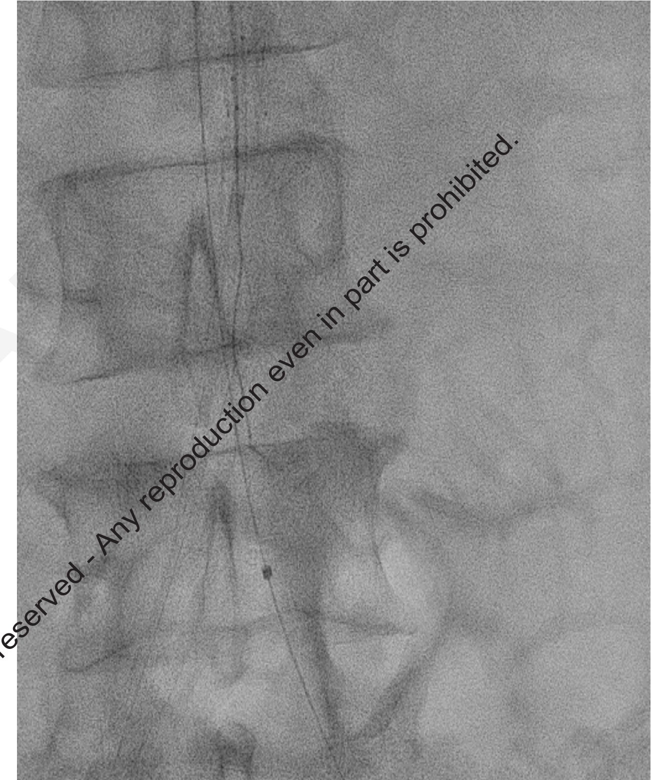

- Failed to cross into left common iliac artery

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- Developed NSTEMI in the ward
- ECG showed anterior ischaemia with raised cardiac enyzmes
- Repeat echocardiography - EF dropped from 53% to 38%
- Discussed with patient and agreed for high risk PCI to LM/LAD/LCX and medical therapy to PL branch of RCA.

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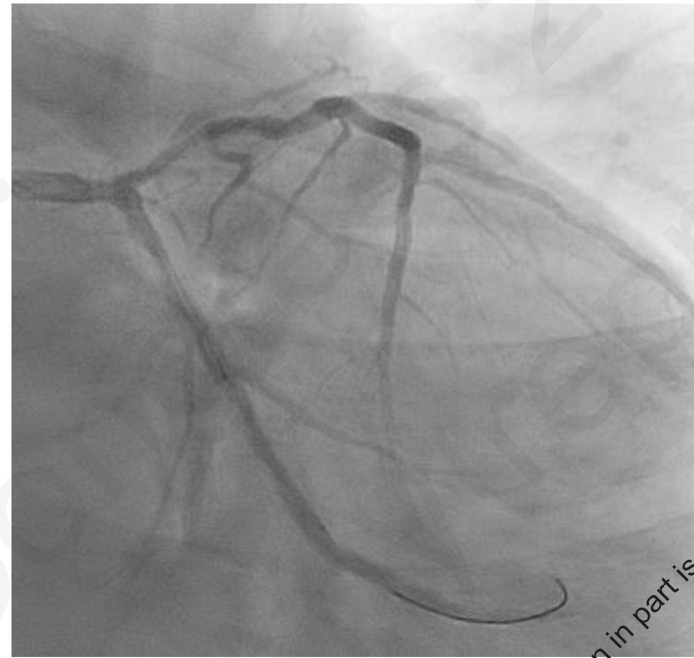
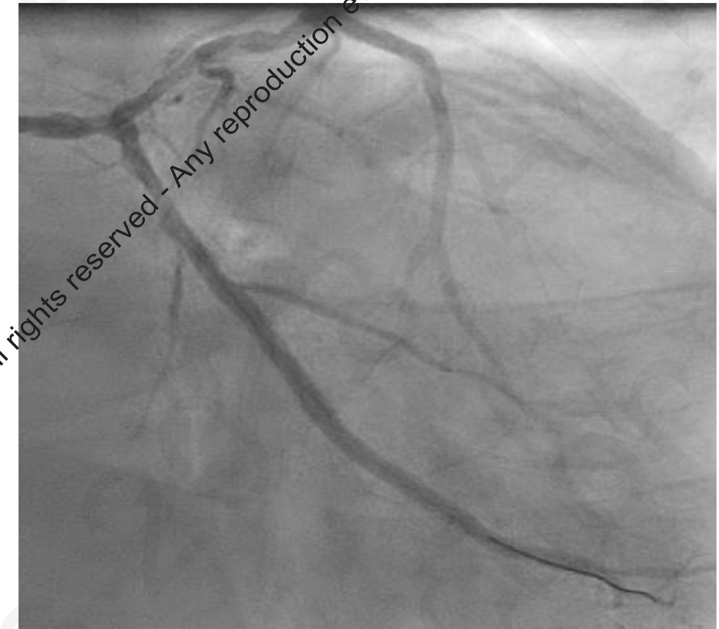
PCI to LCx

- RRA approach 6F sheath, EBU 3.5 6F
- Runthrough floppy wire to LCx
- Predilated with 2.5/15mm balloon
- Stented with DES 3.0/18mm
- Postdilated with NC balloon 3.0/12mm





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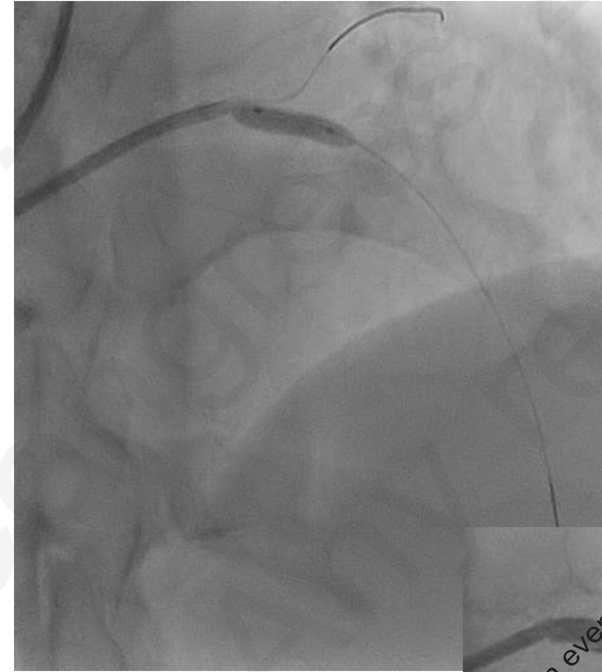
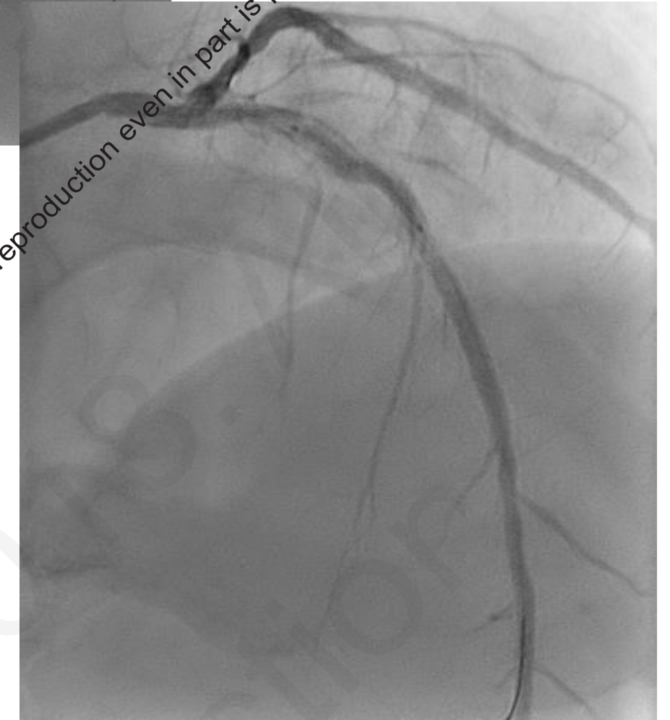
PCI to LM - LAD

- Provisional single stent technique
- Predilated with NC 3.0/12mm then NSE cutting balloon 3.5/13mm
- Unable to deliver long DES 3.5/46mm due to calcified and tortuous proximal LAD
- Decided to use 2 shorter stents instead, DES 3.5/18mm and 3.5/26mm





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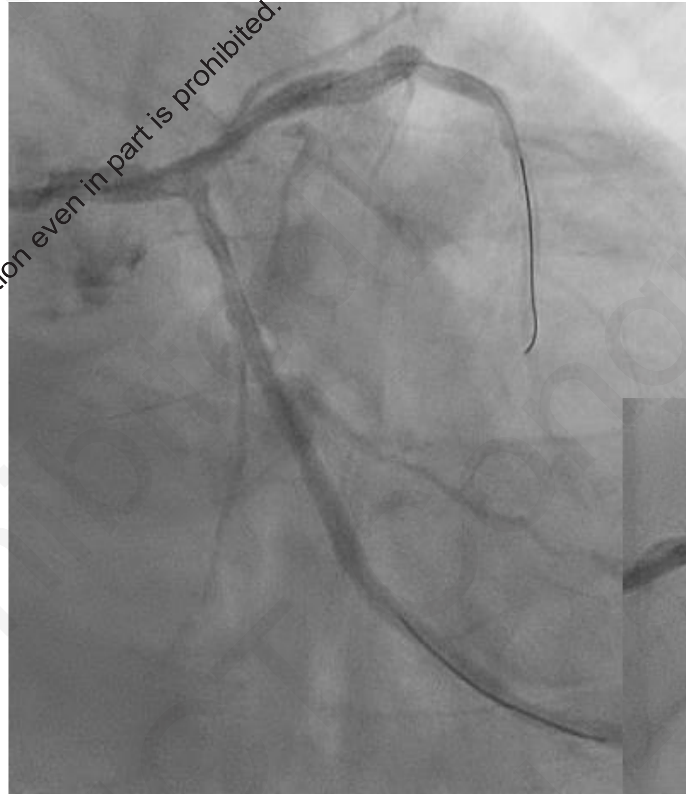
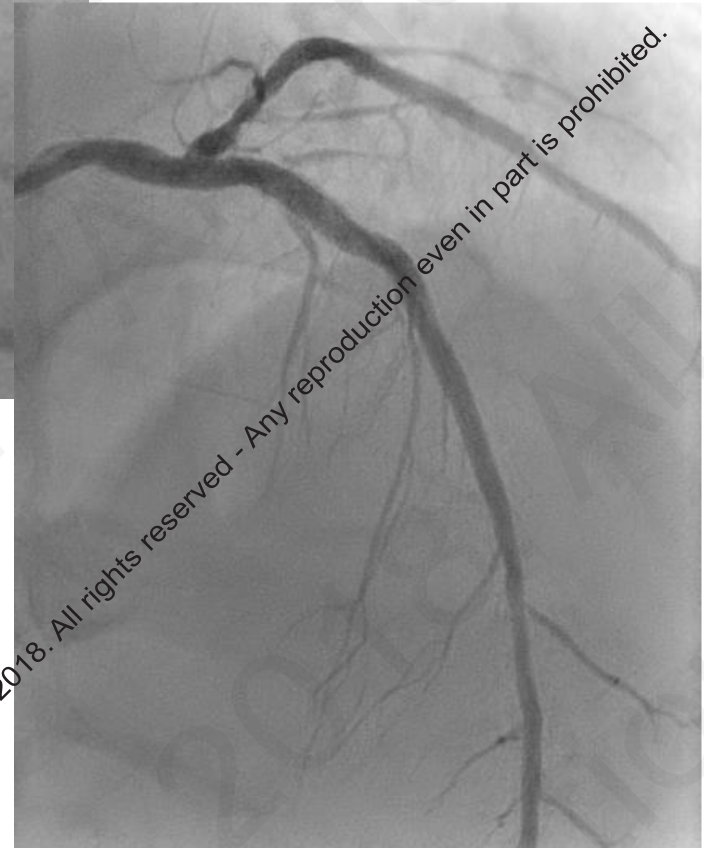
PCI to LM - LAD

- Postdilated with NC 4.0/8mm balloon
- TIMI III flow
- IVUS showed stents well apposed

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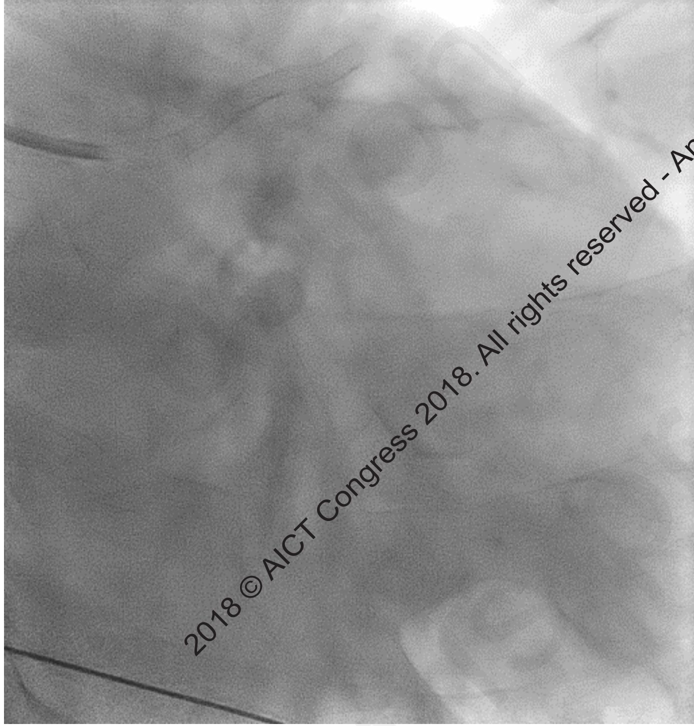

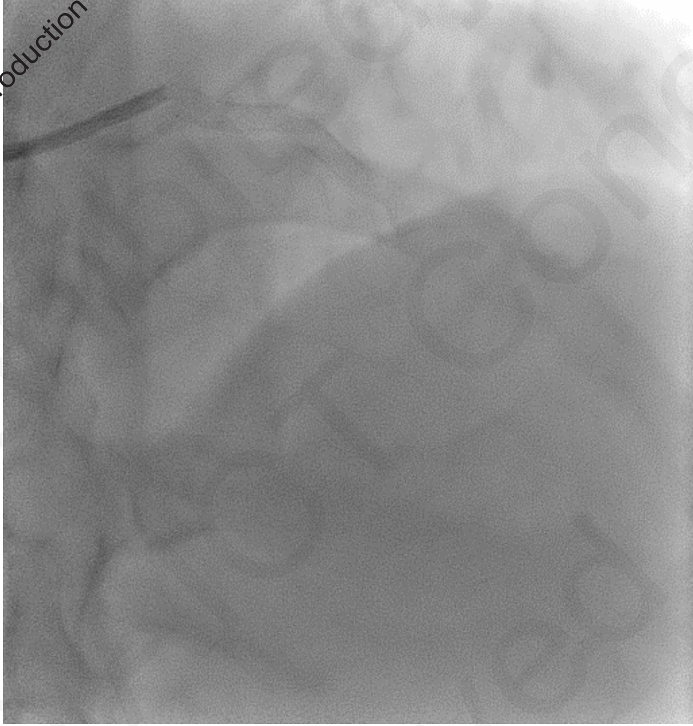

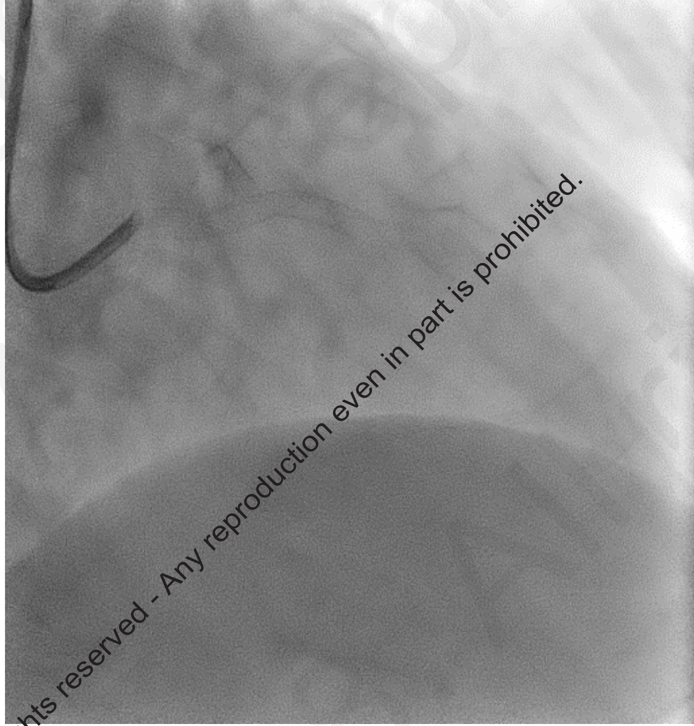

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Outcome

- BP was better controlled and antihypertensive medications were reduced from 7 to 4.
- He was angina free and discharged well after 3 days post angioplasty

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Learning Points (1)

- Successful treatment of resistant hypertension through catheter intervention
- Peripheral intervention was important in order to bring down the blood pressure prior to coronary intervention

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Learning Points (2)

- Correctly identifying the clinical features was crucial to direct for relevant investigations and revascularization

- Blood pressure control was essential to reduce the risk of haemorrhagic stroke during angioplasty

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Thank you

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