Complex Left Main Disease
managing patient and lesion for an optimal outcome

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Potential conflicts of interest

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☑ I have the following potential conflicts of interest to report:

Receipt of grants / research supports: Edwards Lifesciences, Medtronic

Receipt of honoraria or consultation fees: AstraZeneca, Boston Scientific
The patient

81 year old male Cattle farmer still working

- Symptoms
  - Class III dyspnoea
- Severe aortic stenosis
  - EF 67%
- Left main coronary artery disease
  - Hypertension
  - Dyslipidaemia
  - Ex smoker
- Abdominal aortic aneurysm
  - Laminated thrombus
  - Severe peripheral vascular disease

- Severe COPD FEV1 0.68 L
- Previous CVA 2011
  - Paroxysmal atrial fibrillation
  - On rivaroxaban
- Gastroesophageal reflux
- Osteoarthritis
- Benign prostatic hypertrophy
The angiogram

- **Left main**
  - distal
  - calcified
  - trifurcation
The angiogram

- Left main
  - distal
  - calcified
  - trifurcation
The angiogram
The echocardiograph
Clinical issues

• Discussion with heart team:
  – Cardiac surgery declined for AVR and CABG based on severe COPD and severe peripheral vascular disease
  – Euroscore II 6.3%
  – STS PROM score 4.0
  – Syntax I score 20
  – Syntax II → PCI

• TAVI or PCI or both?
• Role of revascularisation
  – revascularise pre or post TAVI?
• Role of balloon valvuloplasty
  – Pre PCI vs not at all?
• Is TAVI feasible?
  – What access?
• Staged PCI/TAVI or combined?
Clinical issues

- **Access**
  - Radial versus brachial versus subclavian
  - Cut down versus percutaneous
- **Role of the mechanical support**
  - Balloon pump
  - Impella
- **Stenting strategy**
  - Single vs multiple stent
  - Lesion preparation
    - Balloon vs rotational atherectomy
- **Anticoagulation and antiplatelet therapy**
  - Rivaroxaban
  - DAPT or triple therapy?
The Intervention

Overall treatment Strategy:
• Combined
  – Balloon Valvuloplasty
  – Revascularisation of LMCA
• Staged to TAVI
  – via alternate access : subclavian

Stage 1 Plan
– Brachial cut down 10 Fr sheath
– Balloon aortic valvuloplasty
– 23 mm Tyshak (Numed) balloon
– PCI provisional single stent strategy
– Rotational atherectomy
– Proximal Optimisation Technique
– kissing balloon if required
– Provisional TAP if required
– Role of IVUS - provisional

Stage 2 Plan
– Left subclavian cut down
– 26 mm THV
The intervention

- Brachial Access
- Balloon Aortic Valvuloplasty
The intervention

- 8 French EBU 4.0 guide
- BMW (Abbott)
  0.014” wire to LAD
The intervention

Corsair microcatheter (Asahi Intec)
Rota extra support wire (Boston Sci)
1.5 burr
The intervention

BMW (Abbott) wires to LAD and circumflex
3.5 x 15 semi compliant balloon at 14 atm
The intervention

Rinato wire (Asahi Intec) to Circumflex Stent
Resolute Onyx (Medtronic) 4.0 x 18 mm
QCA:
LM ~4.8 mm
LAD ~4.0 mm
Circumflex ~3.0 mm
Ramus ~2.5 mm
Proximal Optimisation Technique (POT) 4.0 x 8 NC balloon at 20ATM

The intervention
The intervention

- POT 5.0 x 6mm NC Balloon at 20ATM
Final result

- Simplify approach
- KISSS* (Keep It Simple, Swift and Safe)
  - after 4,
  - the procedure can be stopped.
- rivaroxaban & clopidogrel

Alternate Access TAVI

Subclavian cut down 26 mm Sapien S3.

Discharge day 3 post TAVI and well at 6 month follow up
Complexity in PCI Conclusion:
CHIP/ left main/ calcified/ trifurcation/ severe AS

• Complex left main intervention increasingly common in complex high risk indicated patients in the TAVI era
• Plan the patient and lesion preparation
• Provisional strategy
  – prepared for multi-stent if required
  – POT-KISSS