**Case #3 - Aortic Valve**

Echo Machine: Phillips EPIQ 7C

TOE Probe: X7

Indication: Aortic Valve replacement

Heart Rhythm: Sinus

CVS Support: Nil pre-bypass

**LV:**

Size: Small cavity. Hypertrophic cardiomyopathy with asymmetrical septal hypertrophy.

Wall thickness: 2.05cm at thickest point.

Wall motion: Mild septal hypokinesia.

Systolic function: Visually good systolic function. LVOT Vmax 3.3m/s, peak PG 44mmHg at rest.

Diastolic function: Grade 3 diastolic dysfunction.

LVIDd: 3.79cm

LVIDs: 2.26cm

LVPWd: 1.8cm

LVEF %: Visually 65-70%, Teich - 71.9%, Biplane 67%.

MV E/A ratio: 1.3

MV E/e’ ratio: 22

**RV:**

Size: Normal RV size

Wall thickness: Normal

Systolic function: Visually normal RV systolic function.

Length: 7.6cm

Basal internal diameter: 3.8cm

Mid internal diameter: 2.9cm

RVAWd: 0.8cm

FAC: 51%

TAPSE: 1.8cm

**LA:**

Size: 4.05cm x 4.15cm. Mildly dilated.

LAA: Empty. Bi-directional blood flow on CFD. PWD velocity >50cm/s.

**RA:**

Size: Not dilated.

**AV:**

Structure: Tricuspid. Heavily calcified. Fusion of left and non-coronary cusps

Function: Restricted opening. Mild central AR. Severe AS (AVA 0.78cm2 by continuity equation)

LVOT: 2.2cm

Ao Ann: 2.2cm

SOV: 3.5cm

STJ: 2.9cm

AV VTI: 61.2cm

LVOT VTI: 12.6cm.

AV peak PG: 17mmHg.

**MV:**

Structure: Heavily calcified anterior mitral valve leaflet.

Function: Restricted anterior mitral valve leaflet. Systolic anterior motion of the mitral valve at rest causing dynamic LVOT obstruction with moderate posteriorly-directed MR greatest at A3/P3. C-Sept distance 1.35cm.

Annulus: 3.6cm

MR Vmax: 3.53m/s

MR VTI: 85.4cm

MR mean PG: 17.36mmHg

MR peak PG: 50mmHg.

MR VC: 0.6cm

**TV:**

Structure: Normal morphology

Function: Mild central TR

Annulus: 3.7cm

TR Vmax: 1.72m/s

RVSP: 12mmHg + RAP

**PV:**

Structure: Normal morphology

Function: Mild central PR

Annulus: 2.5cm

**IAS:** Normal appearance, no transeptal flow.

**IVS:** Hypertrophic. No VSD.

**Aorta:**

Asc. Ao.: 3.1cm

Ao. Arch: 2.6cm

Desc. Ao: 2.5cm

**PA:** Normal appearances

**Pericardium:** No pericardial effusion

**Pleura:** No pleural effusion.

**Pre-Cardiopulmonary Bypass Summary:**

1. Good biventricular systolic function.
2. Hypertrophic cardiomyopathy with asymmetrical septal hypertrophy causing dynamic LVOT obstruction and moderate MR due to SAM of the MV.
3. Severe AS and mild AR.
4. Mild TR and PR.
5. Dilated LA.

**Post-Cardiopulmonary Bypass:**

1. Well seated mechanical bileaflet AVR. No paravalvular leak. Peak PG 11mmHg.
2. Preserved LV systolic function.
3. Septal myectomy and decalcified anterior MV leaflet.
4. Mildly impaired RV systolic function.
5. Moderate TR. Vmax 2.54m/s, Max PG 26mmHg.