Complex Mitral Valve Repair

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Icahn School of Medicine at Mount Sinai has royalty agreements with Edwards Lifesciences and Medtronic:

- Physio II Mitral Annuloplasty Ring
- IMR ETlogix Mitral Annuloplasty Ring
- TriAd Tricuspid Annuloplasty Ring

National Co-PI: Medtronic CoreValve US Pivotal Trial
Case Presentation

**History of Present Illness:** is a 42 y.o. male with a history of Hypothyroidism, DVT/Pulmonary Embolism (2010 x2 in left lung; patient refutes DVT but is s/p IVC filter placement), multiple Spontaneous Pneumothorax (1995 x3 all in left lung; s/p pleurodesis), Atrial Fibrillation (s/p failed ablation/pulmonary vein isolation 2011: on coumadin & diltiazem) and severe Mitral Regurgitation s/p mitral valve repair at in September, 2011 from which he suffered no postoperative complications. However, his cardiologist did a routine follow up echo in April and discovered a myxomatous MV with severe MR (eccentric jet), along with a dilated LV (LVEDd 6.4cm, LVESd 4.2cm), mild LV septal hypokinesis and mild LV systolic dysfunction, EF 50%, severely dilated LA (6.5cm), mild TR and moderate pulmonary HTN, normal RV function.

denies SOB, dyspnea, cough, fatigue, chest pain, palpitations, orthopnea, PND or decreased exercise tolerance. He can carry his children up the flight of stairs at home without symptoms. He reports no history of lung disease/asthma/COPD, no chronic renal disease, no diabetes, no peripheral vascular disease, no history of seizures.
Transesophageal Echocardiogram
Asymptomatic and active 42 year old patient, s/p MV repair 2011, in chronic atrial fibrillation

Echo reported:
Severe MR
Mild TR, RVSP 49mmHg
LVEDD 6.4cm, LVESD 4.2cm, LA 6.5cm
LVEF 50%
Discussion

- Elective valve repair or active surveillance?
Discussion

- Elective valve repair or active surveillance?
- Surgical approach?
INDICATIONS: The patient is a very pleasant 39-year-old gentleman. He was referred to my attention by Dr. with severe mitral regurgitation, reduced ventricular function, and paroxysmal atrial fibrillation. A repair of the mitral valve was therefore indicated and pulmonary vein isolation was also suggested in hopes of curing the new onset paroxysmal atrial fibrillation.

Transesophageal echocardiogram confirmed reduced ventricular function and an EF approximately 35%. This is much less than we anticipated. The mitral valve shows bileaflet prolapse. However, the P2 segment was significantly worse than the anterior leaflet. The annulus was also dilated. The patient entered the room as well in atrial fibrillation.
Excellent exposure of the valve was seen. There was significant prolapse of the P2 segment. There were no ruptured cords. The annulus was dilated. The anterior leaflet also showed some degree of prolapse, however, this did not appear to need correction. The P2 segment was isolated on either side with a Ti-Cron stay suture. A 15 blade scalpel was now used to resect the leaflet down to the annulus, from which it was removed.

A sliding plasty was now performed at P1 and P3. The annulus was repaired with running 5-0 Prolene suture and then the edges of the P1 and P3 leaflets were secured with interrupted 5-0 Prolene figure-of-8 sutures. The valve was now tested by insufflating the left ventricular cavity with cold sterile saline and the valve was found to be competent. The annulus was now sized to a 36 mm Cosgrove annuloplasty band.
Re-Operation – Valve Analysis
Discussion

• Repair strategy?
Re-Operation
Complex Degenerative Valve Repair

• Do a careful valve analysis
• Focus on the surface of coaptation
• Stay positive and be patient
Thank You