Options for my “no option” Patients
Treating Heart Conditions Via a Tiny Catheter

Nirat Beohar, MD
Associate Professor of Medicine
Director Cardiac Catheterization Laboratory, Medical
Director Structural Heart Disease

Columbia University Division of Cardiology at Mt. Sinai
Medical Center
Miami, Florida
Accomplishing What was previously not possible

◆ **Treating Coronary Artery Blockages**
  - Unprotected Left Main Coronary Arteries
  - Completely blocked up arteries

◆ **Treating Structural problems with the Heart**
  - Heart Valve problems
  - Preventing Strokes
  - Thickened heart muscle causing problems

◆ **Treating blockages of arteries outside the heart**
Case # 2: 75 year old male with severe intractable angina, failed SVG to LCX, LIMA to distal LAD, SVG to RCA
Severe Angulation, high risk of wire disruption or perforation with Rotational atherectomy, advantage taken of spring like Orbital atherectomy tip
Final Result
Eighty year old male with severe intractable angina despite optimal medical therapy, not a surgical candidate
Revascularizing Chronic Total Occlusions
Final Result
Aortic Stenosis

Normal

Degenerative calcific

Bicuspid

Rheumatic
Predictors of Mortality after AVR


Multivariate analysis: 11 variables independent predictors of the outcome

- Long cardio-pulmonary bypass time
- Female gender
- Small BSA
- Prior CVA
- Atrial Fibrillation
- A.V.R
- NYHA Class III or IV
- Concomitant CABG
- Emergency AVR
- LVEF<0.3 and prior MI
- Elevated creatinine
- Age>80

10
Patient LB

- 88 year old female, Severe symptomatic Aortic stenosis
- Presented at OSH with Syncope
- Functional Class IV
- h/o Congestive heart failure
- Diabetes Mellitus
- Hypertension
- MI x 2
- Prior PCI
CoreValve Placement
CoreValve after deployment
Transcatheter Aortic-Valve Replacement for Inoperable Severe Aortic Stenosis

(Death/irreversible morbidity risk ≥ 50% at 1 year)

Time-to-Event Analyses of Key End Points during 2 Years of Follow-up.

A

Hazard ratio, 0.56 (95% CI, 0.43–0.73)
P<0.001

Death from Any Cause (%)

0 10 20 30 40 50 60 70 80 90 100

Months since Randomization

No. at Risk

TAVR 179
Standard therapy 179

B

Hazard ratio, 0.44 (95% CI, 0.32–0.60)
P<0.001

Death from Cardiac Causes (%)

0 10 20 30 40 50 60 70 80 90 100

Months since Randomization

No. at Risk

TAVR 179
Standard therapy 179

C

Hazard ratio, 0.41 (95% CI, 0.30–0.58)
P<0.001

Rehospitalization (%)

0 10 20 30 40 50 60 70 80 90 100

Months since Randomization

No. at Risk

TAVR 179
Standard therapy 179

D

Hazard ratio, 0.64 (95% CI, 0.49–0.84)
P<0.001

Death or Stroke (%)

0 10 20 30 40 50 60 70 80 90 100

Months since Randomization

No. at Risk

TAVR 179
Standard therapy 179

TAVR for Bio-Prosthetic Failure: Valve-in-Valve

Dvir D et al. Circulation 2012;126:2335-2344
Conclusions: Clinical Implications in the Elderly

• With continued improvement in device technology, decrease in sheath size, fully percutaneous access and increasing operator experience, TAVR is ready to replace surgical aortic valve replacement in the Elderly especially those with co-morbidities.
MitraClip® Therapy
Filling a Treatment Gap

• Medical therapy is limited to symptom management
• MV surgery has been the only option that reliably reduces MR
• A significant gap exists between medical and surgical options
• MitraClip® therapy is a first-in-class, percutaneous option to reduce MR*

*Reference Source: Instructions For Use
See important safety information referenced within
The Alfieri Technique of Mitral Repair

Middle scallops of the anterior and posterior leaflets sutured to create a double orifice, edge-to-edge, or bow-tie repair.

Mitral Valve Repair
Percutaneous MitraClipR System
Case Example

• Eighty six year old man
• Prior heart attack
• Severely short of breath
• Severely leaky mitral valve on echocardiogram
• Underwent Mitra-clip treatment
Severely mitral valve regurgitation: A2-P2
Making sure that the Mitra-clip sits in the regurgitant jet
After Mitra-Clip placed
Follow up

• Patient did well
• Able to move about and function without shortness of breath
Preventing Strokes Coming from the Heart

- 76 year old lady, with atrial fibrillation
- Prior stroke due to blood clot from the heart due to rhythm problem
- Unable to take blood thinner due to bleeding issues
- Referred for closing the atrial appendage
The “Lariat” Procedure
Magnetic Wires in Place
Lassoo over the Left Atrial Appendage
Left Atrial Appendage Closed
Patient: JA

- 25-year-old female with lupus presented with 2 days of severe chest pain.
- Her history included lupus vasculitis and antiphospholipid syndrome treated with warfarin.
- Cardiopulmonary examination was normal; her hemoglobin level was 7 g/dl and international normalized ratio was 3.6, with a normal electrocardiogram.
- A computed tomography angiogram of the chest revealed a large anterior mediastinal hematoma with active extravasation of contrast media from the medial portion of the left internal mammary artery (LIMA)
CT Chest
Management Plan

• CT surgery consulted
• Reluctant to operate given vasculitis, high INR
Selective angiogram of LIMA
Coil embolization
Thickened Heart Muscle called Hypertrophic Cardiomyopathy causing Shortness of Breath

- 84 year old female, functional class IV with marked dyspnea on minimal effort increasing over the preceding 4 years
Baseline Echocardiogram

2D Echo

Doppler: Mean Gradient 53 mHg
Baseline Coronary angiogram
Localization and characterization of septal branch
Intense Echo localization with alcohol injection in basal septum
Conclusions

• Many Cardiac and Vascular problems can be addressed in the Catheterization Laboratory
• In many cases these conditions previously required surgery
• In many other cases surgery was not possible and there was no solution
• Quick recovery, early return to work with high quality of life possible
Thank You For Your Attention