

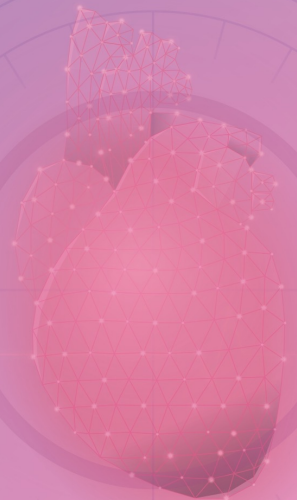


# Minimally Invasive Isolated P2 prolapse Surgical Repair with Leaflet Resection

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# DISCLOSURES

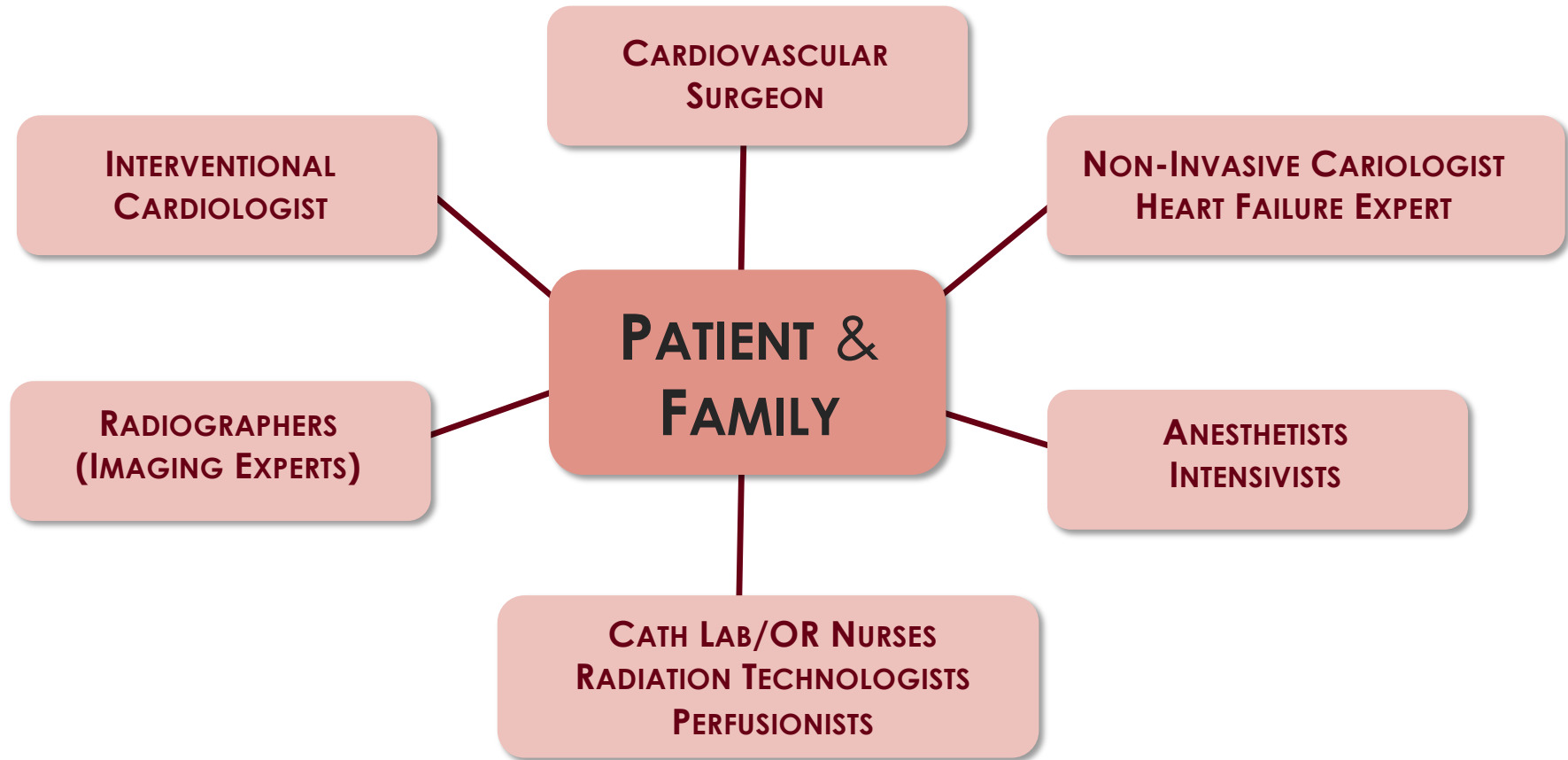
Consultant with:

- Medtronic
- Abbott
- Corcym
- Johnson and Johnson

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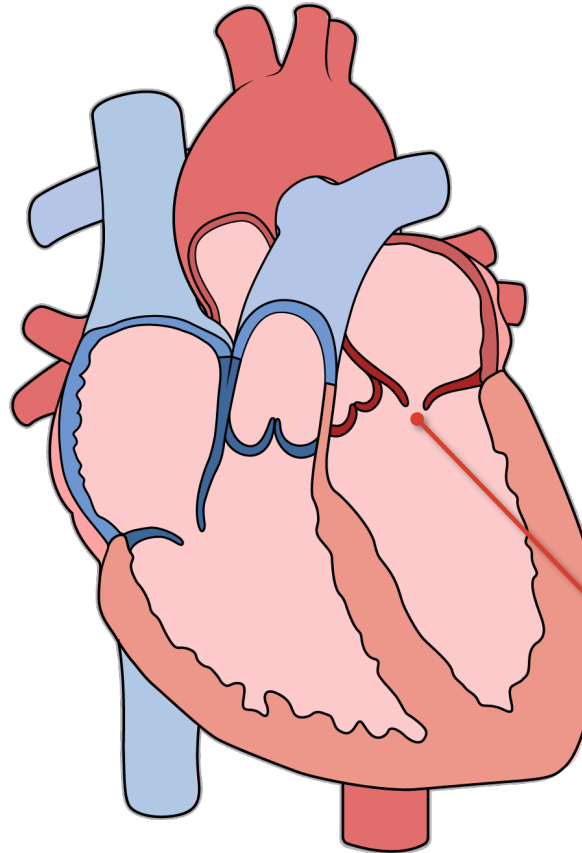


# HEART team approach



# ❖ Indications for MINIMALLY INVASIVE MITRAL VALVE surgery

- ❑ **All Age categories**
  - ✓ Older Patient Age > 70
  - ✓ Younger patients desiring quicker return to functional life
- ❑ **High risk for sternotomy**
  - ✓ Diabetes
  - ✓ Steroid dependent
  - ✓ Immunosuppressive drugs
  - ✓ Morbid obesity
  - ✓ History of Radiation exposure
- ❑ **For concomitant CAD:**
  - Minimally Invasive MVR + PCI, if:
    - ✓ Single or double Vessel CAD
    - ✓ Not involving LAD
    - ✓ Vessel suitable for PCI (Low Syntax score <22)

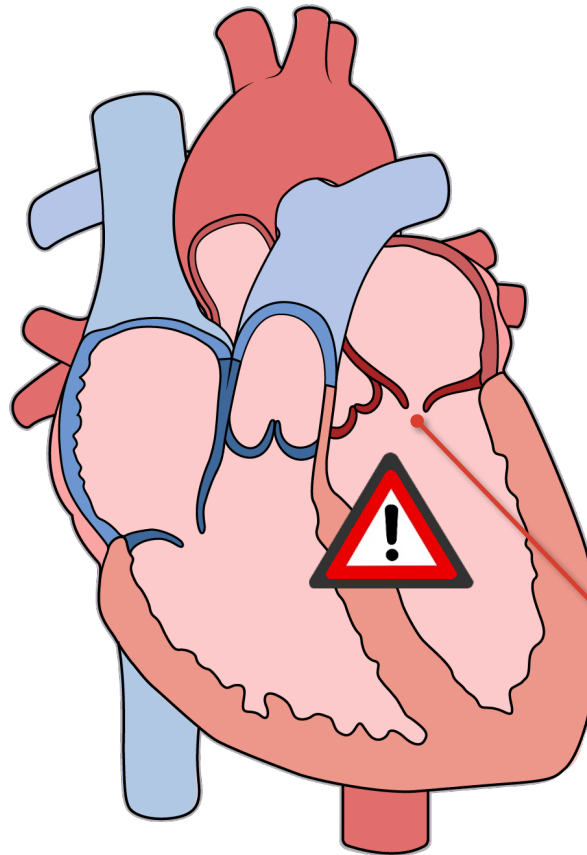


- ❑ **Bileaflet and/or anterior leaflet disease**
- ❑ **Reoperation** for mitral valve surgery
- ❑ **Concomitant disease:**
  - ✓ CAD → Minimally Invasive MVR + PCI
  - ✓ Tricuspid valve disease
  - ✓ Atrial fibrillation

# ❖ CONTRA-indications for MINIMALLY INVASIVE MITRAL VALVE surgery

## ABSOLUTE

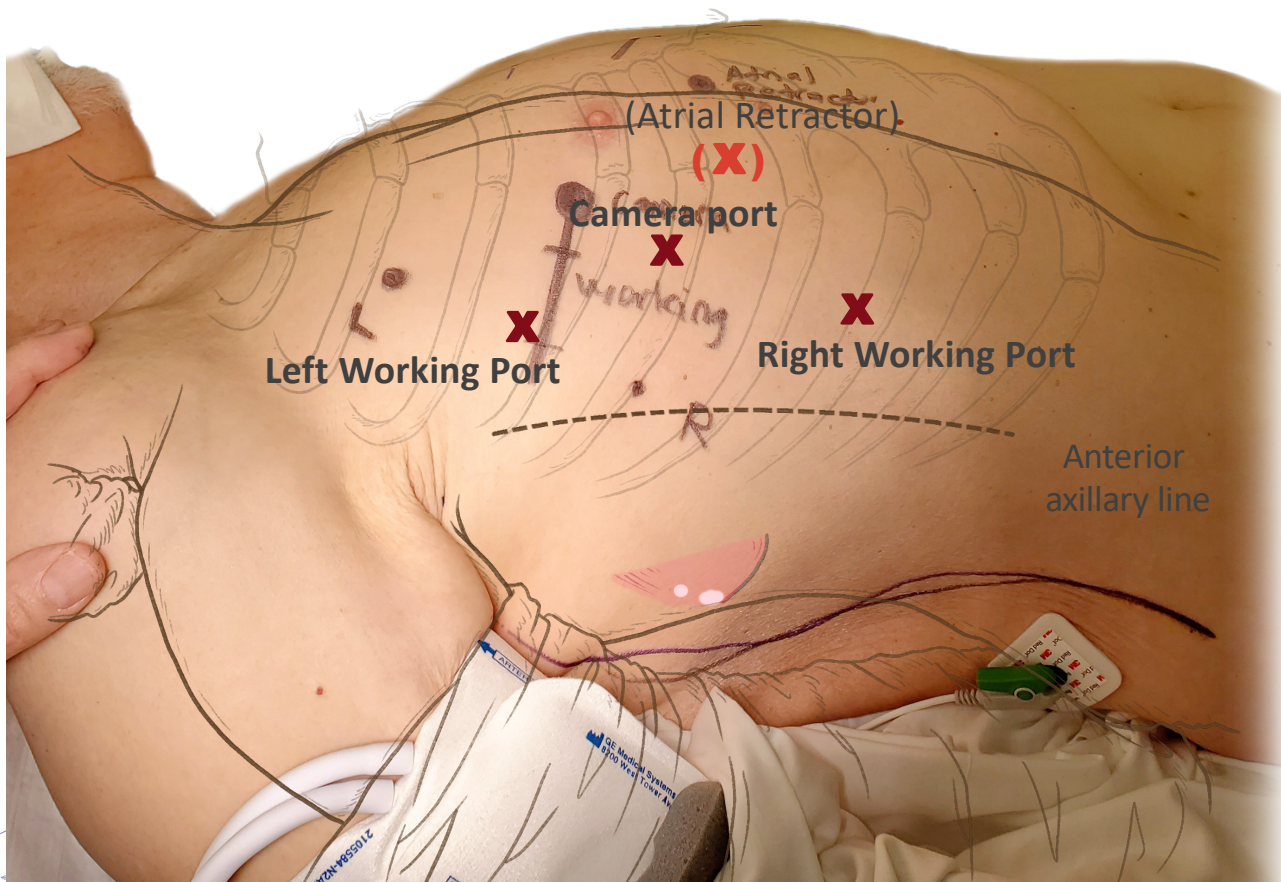
- Emergency** cases
- Unstable** patients
- Prior Right Chest Surgery**



## RELATIVE:

- Severely **depressed** LV function
- Highly **calcified** mitral annulus
- Severe **pulmonary hypertension**
- Moderate or severe **aortic insufficiency**
- Endocarditis**
  
- Calcified Aorta**
  - ✓ Consider Hypothermic Ventricular Fibrillation
- Severe **PAD**
  - ✓ Consider Axillary artery Cannulation

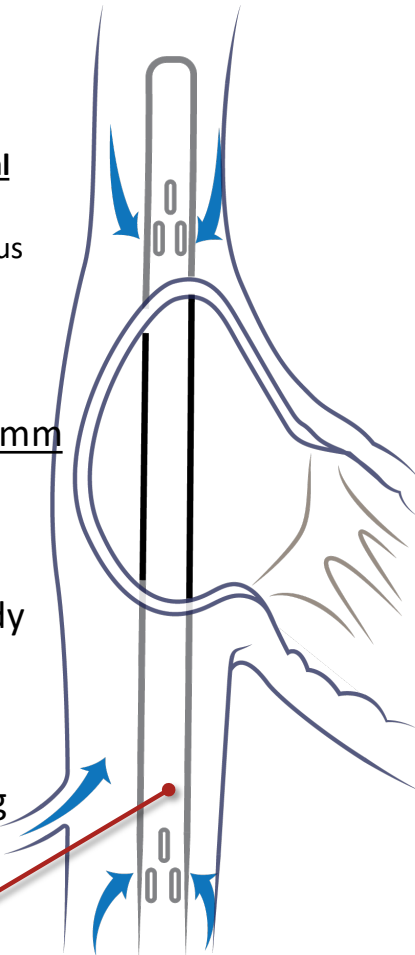
## ❖ Positioning/Port Placement



- **Supine with Roll under Right side**
  - ❑ Right shoulder deflected posteriorly
- **Port placement:**
  - ❑ **Camera port:** 4<sup>th</sup> ICS
  - ❑ **Working ports:**
    - Left: 3<sup>rd</sup> ICS
    - Right: 6<sup>th</sup> ICS
  - ❑ Port for Atrial Retractor

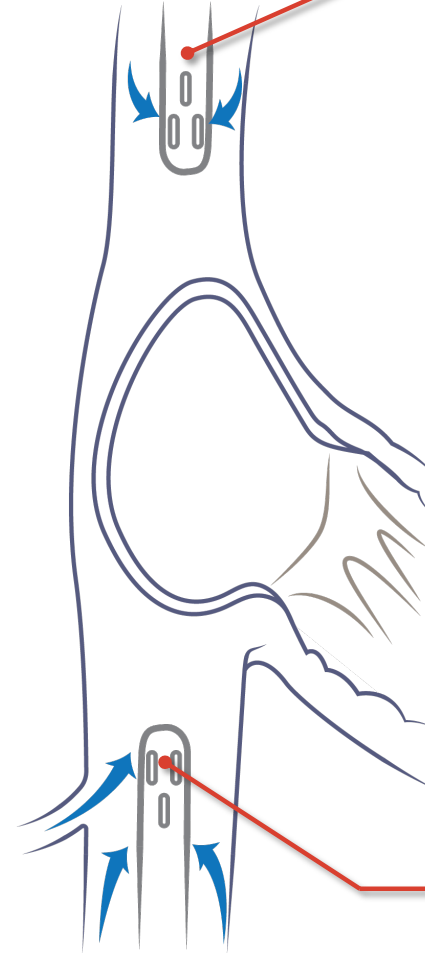
# ❖ Cannulation Technique

- ❑ **Venous drainage:**
  - ✓ Single multistage **21-25 fr femoral venous cannula**
  - CPB with vacuum assisted venous return
- ❑ **Arterial cannulation:**
  - 2 cm **femoral** cutdown
  - **18-20 fr arterial** vs. **8 or 10 mm Dacron Graft** cannula
- ❑ If femoral artery & vein suitable and acceptable body habitus:
  - Consider **percutaneous** cannulation under ultrasound guidance using **Perclose** devices



## **Mitral/Tricuspid Valve:**

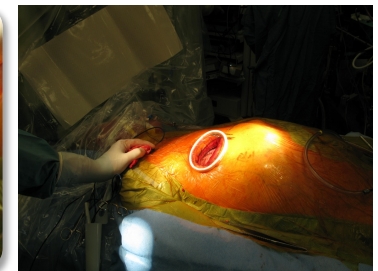
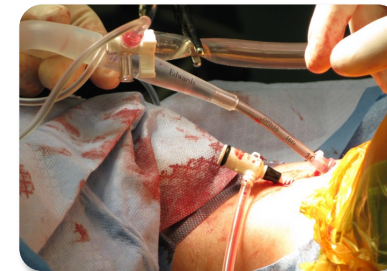
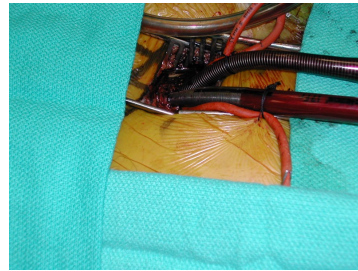
- ❑ **Venous drainage:**
  - ✓ **21-25 fr femoral venous cannula**
  - ✓ **17 fr Right IJ perc cannula**
    - SVC cannula necessary as **Atrial Retractor** can impede drainage
  - CPB with vacuum assisted venous return
- ❑ **Myocardial Protection:**
  - ❑ Transthoracic aortic clamp vs. endo-aortic balloon clamp
  - ❑ Antegrade cardioplegia
  - ❑ Hypothermic Ventricular Fibrillation



# SURGICAL APPROACH

## ❖ Operative planning:

- ❑ Double or Single Lumen ETT
- ❑ Monitor lower limb perfusion
- ❑ Make use of *specialty instruments*

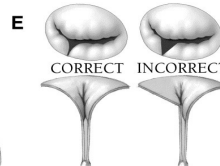
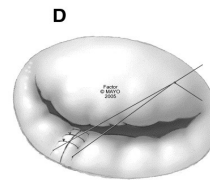
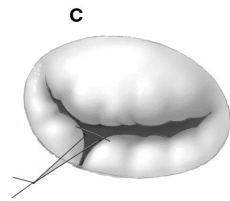
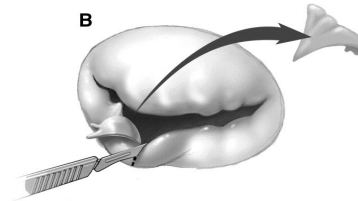
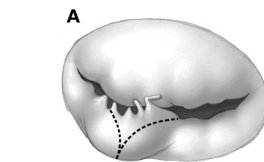


## ➤ RIJ perc cannula insertion

## ➤ Opening left atrium → Left Atrial Retractor



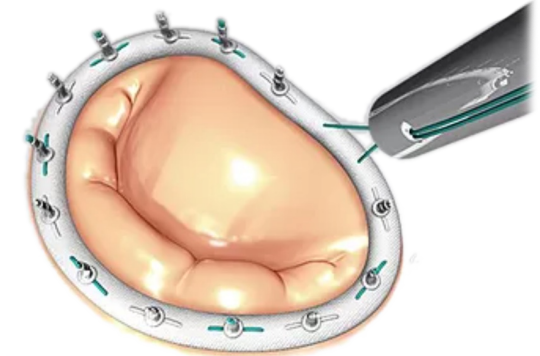
## ➤ Valve Repair → P2 Triangular resection



## → Chitwood Knot Pusher

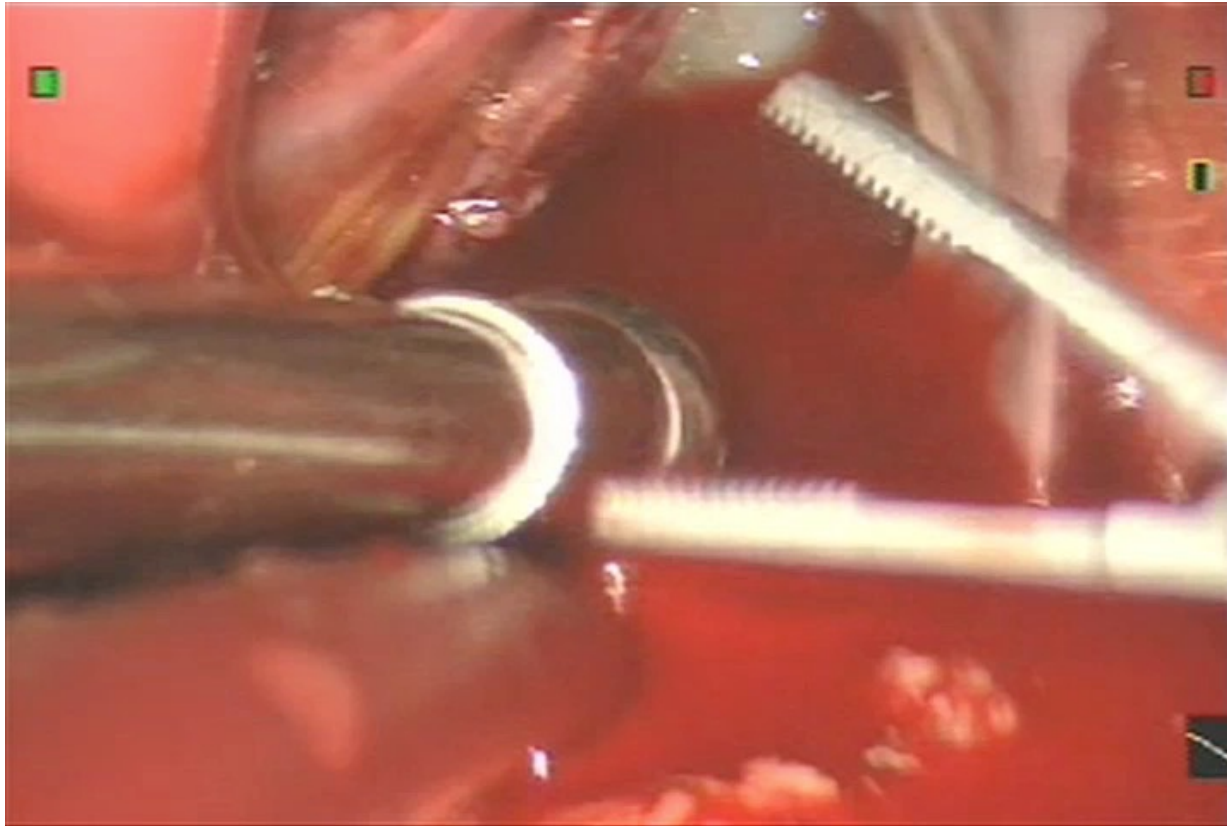


## ➤ Annuloplasty → Cor-Knot

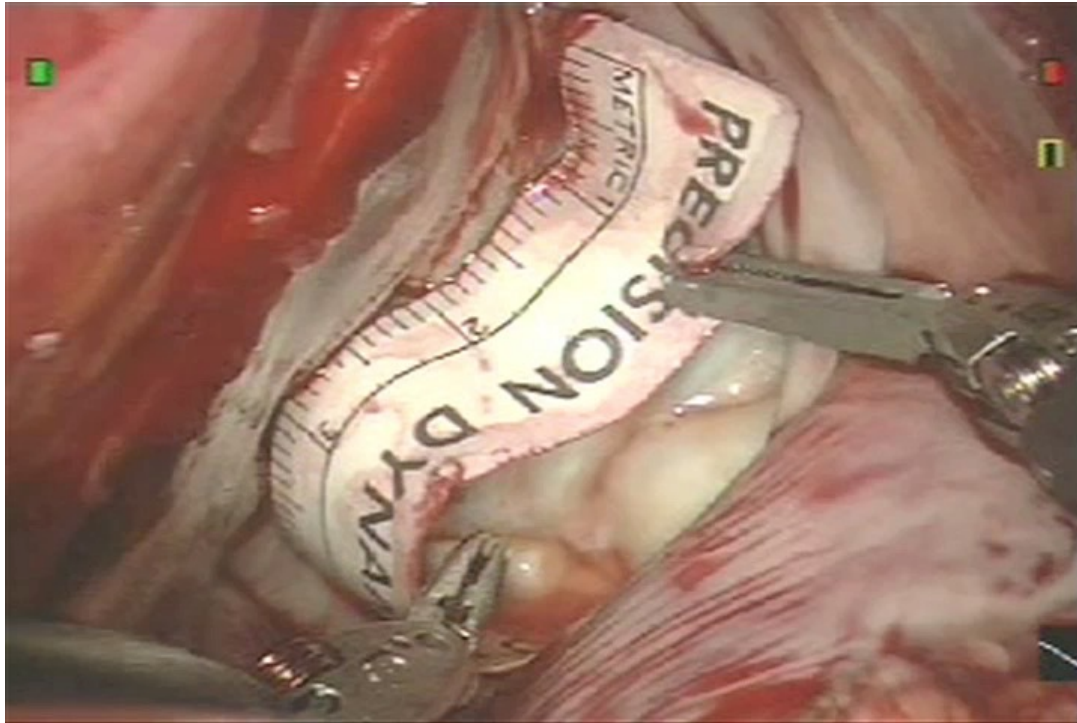




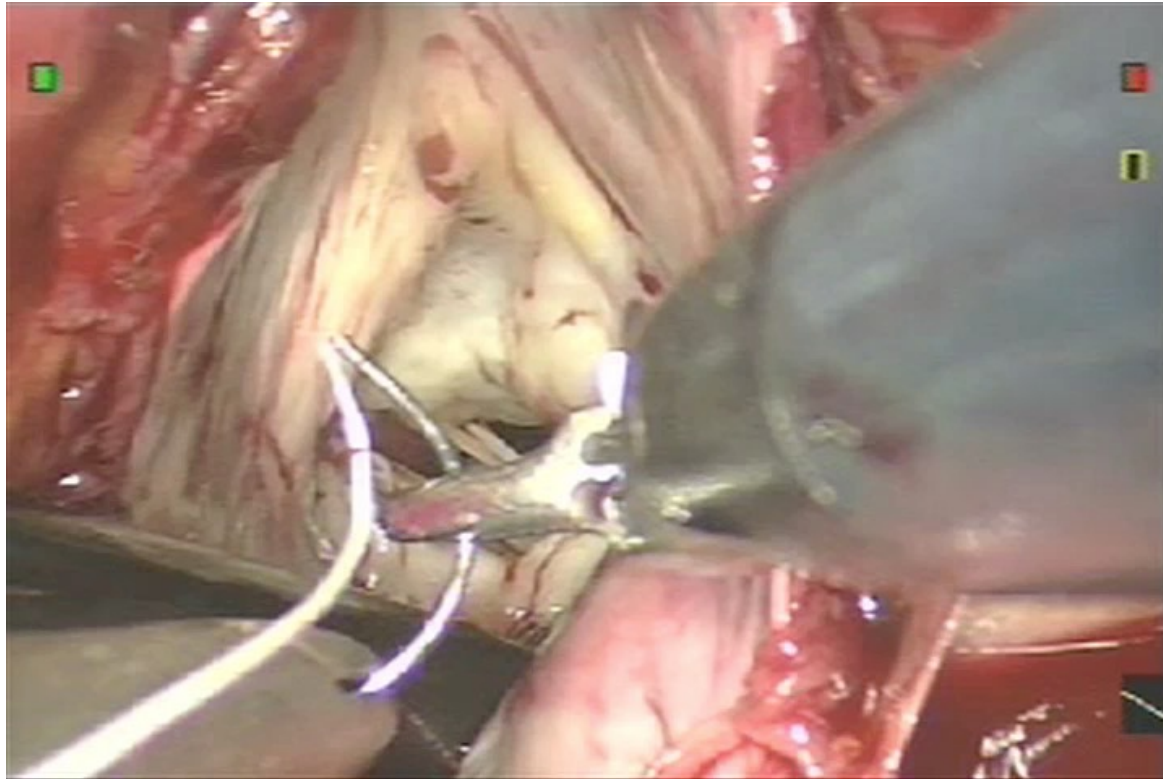
# Mitral Valve Inspection



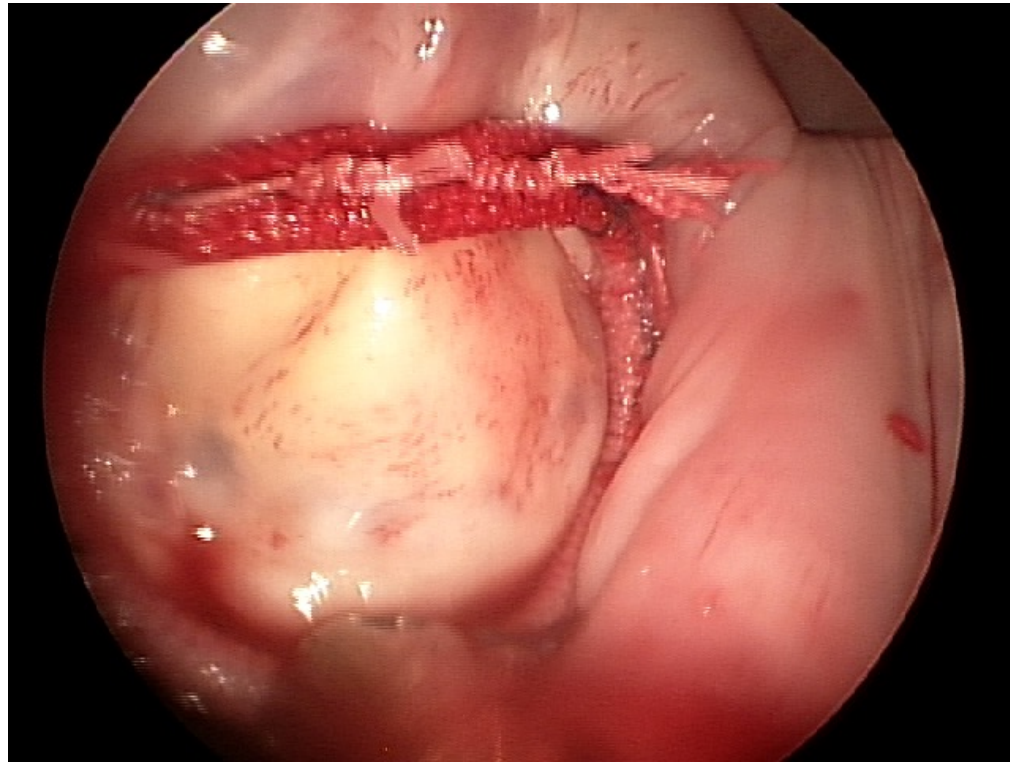
# Leaflet Resection



# Leaflet Reconstruction



# Annuloplasty



# CONCLUSION

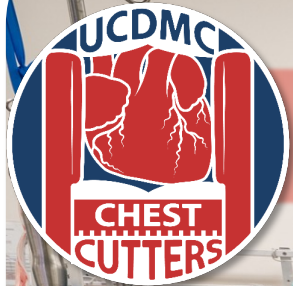
- ❖ Minimally Invasive/Robotic Valve Surgery contributes to Cardiac Care by **complementing** rather than **competing** with conventional approaches
  - ✓ Minimally invasive Cardiac Surgery requires a **dedicated team** approach → results in a stronger Heart team
  - ✓ Results as good as traditional approach
- ❖ Should be considered as **another Tool in the Box** for the Heart team
  - ✓ Requires appropriate **PATIENT SELECTION**



## ❖ Multiple Benefits:

- Less invasive approach allows for treatment of *higher risk* patients
- Preserves chest cavity stability
- Smaller incisions → reduced pain
- Reduced blood loss
- Earlier discharge from hospital
- Earlier return to routine activities

- ❖ Technique continues to evolve with technological advances
- ❖ Long term results and **randomized controlled trials** are important to advance this technology further



THANK YOU



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