So You Want to Call this an Other Case ?

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Slides adapted from AQO Presentation, October 2008, Orlando, FL

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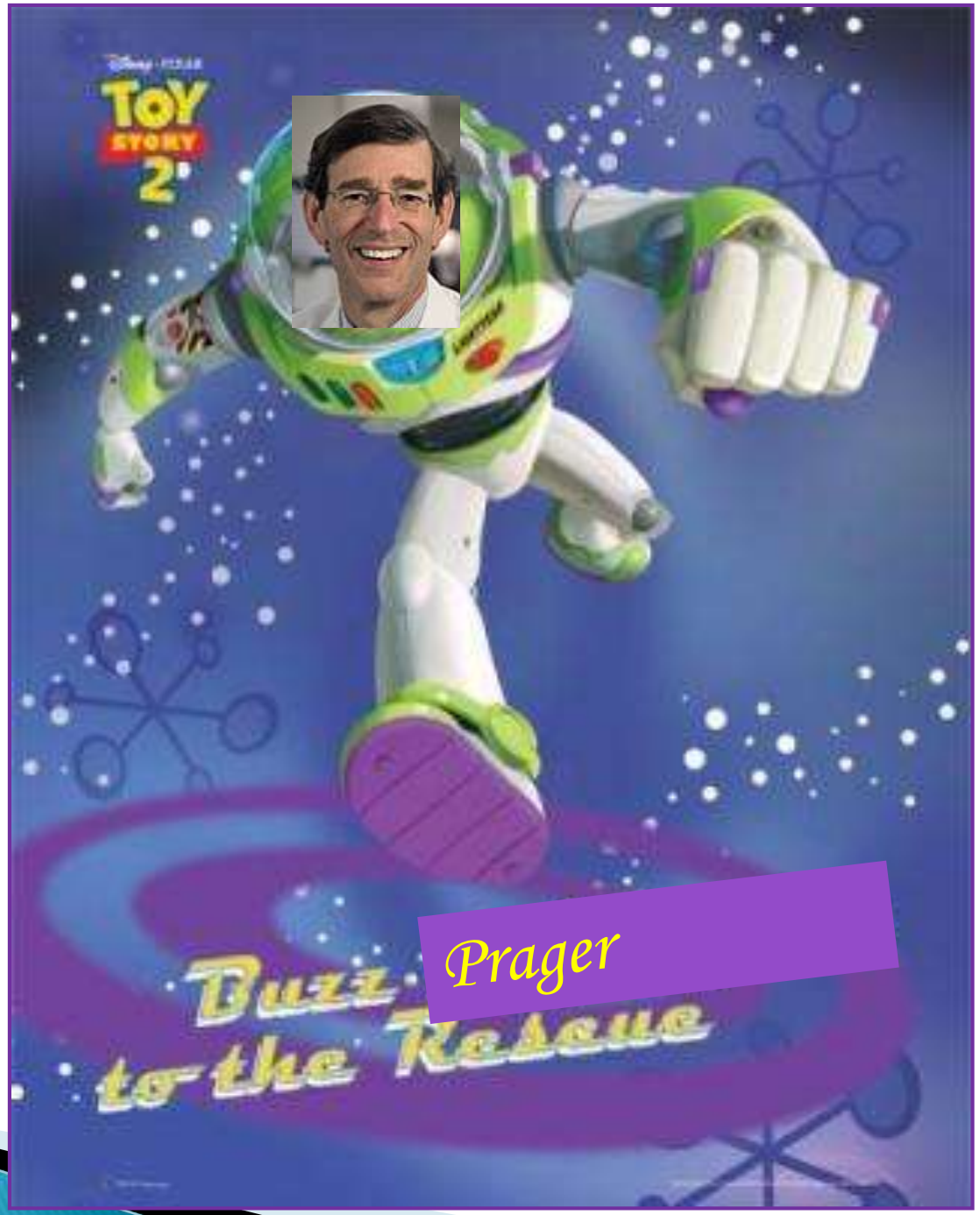
Other Cases Equal:

- No STS Benchmarks
- Case Eliminated from being one of 7 Isolated STS Risk Predicted Model Cases
  - No Calculated Risk Predictions
- A Big Decision – Is it really an Other Case?
  - Does the Other Procedure present a **Significant Risk** to the entire operation to make this change?
- Potential "Gaming" for Mortality Cases
- Important Factor in the Validity & Credibility of the STS & MSTCVS QC Databases!

Data Integrity


TOY STORY 2
Buzz to the Rescue
Prager

All it takes is Faith, Trust, and a Little Pixie Dust

1. CAB & Coronary Endarterectomy Case

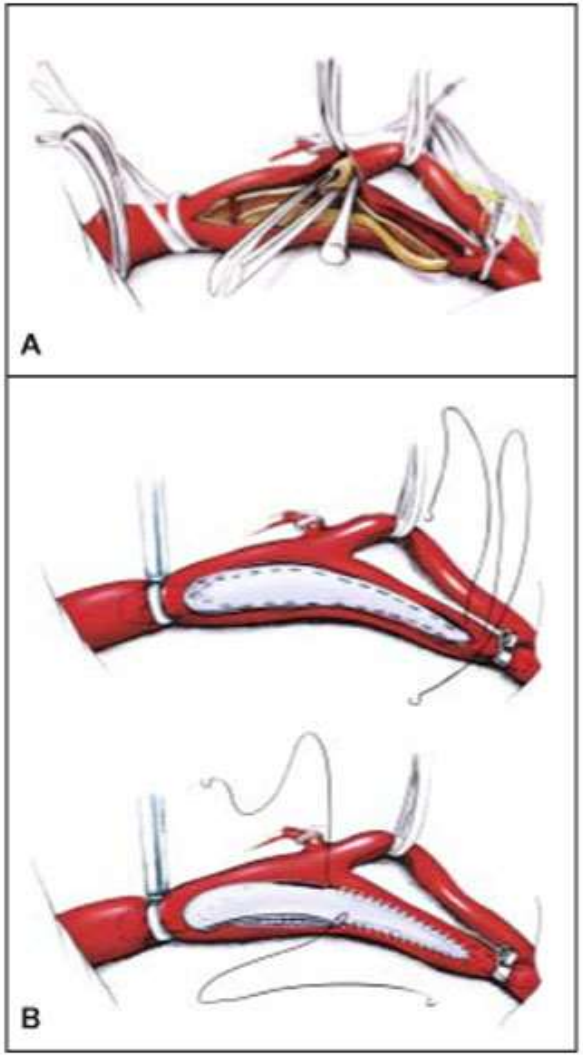
- Preoperative Diagnosis: Severe three vessel coronary artery disease

- Procedure: Coronary artery bypass grafting with saphenous veins to the posterior descending coronary artery, first obtuse marginal and left anterior descending artery; An endarterectomy of left anterior descending artery was performed.

Operative Note:

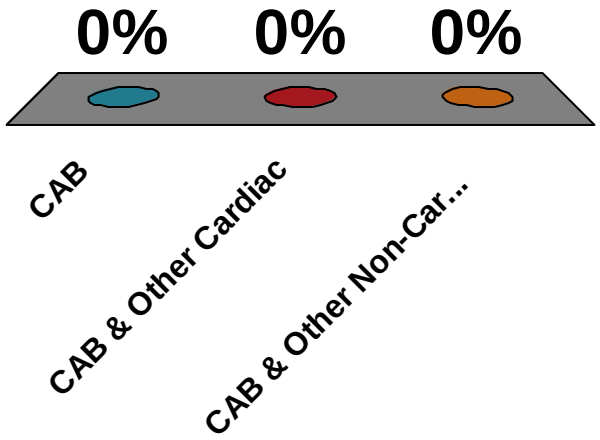
….plaque was noted along the entire length of the LAD. Arteriotomy was performed, with the aid of a dissector clamp the cleavage way between the adventitial and medial layers was achieved, then the lesion was dissected completely and extracted from the coronary artery, and the lesion was then dis-attached and tracked out gently. The vessel was reconstructed with a venous patch.

Coronary Artery Endarterectomy



Code This Case

A. CAB Case
B. CAB & Other Cardiac Case
C. CAB & Other Non-Cardiac Case



Answer:

A. CAB Only Case

2. CAB & Anomolous RCA Procedure

Anomolous Right Coronary Artery

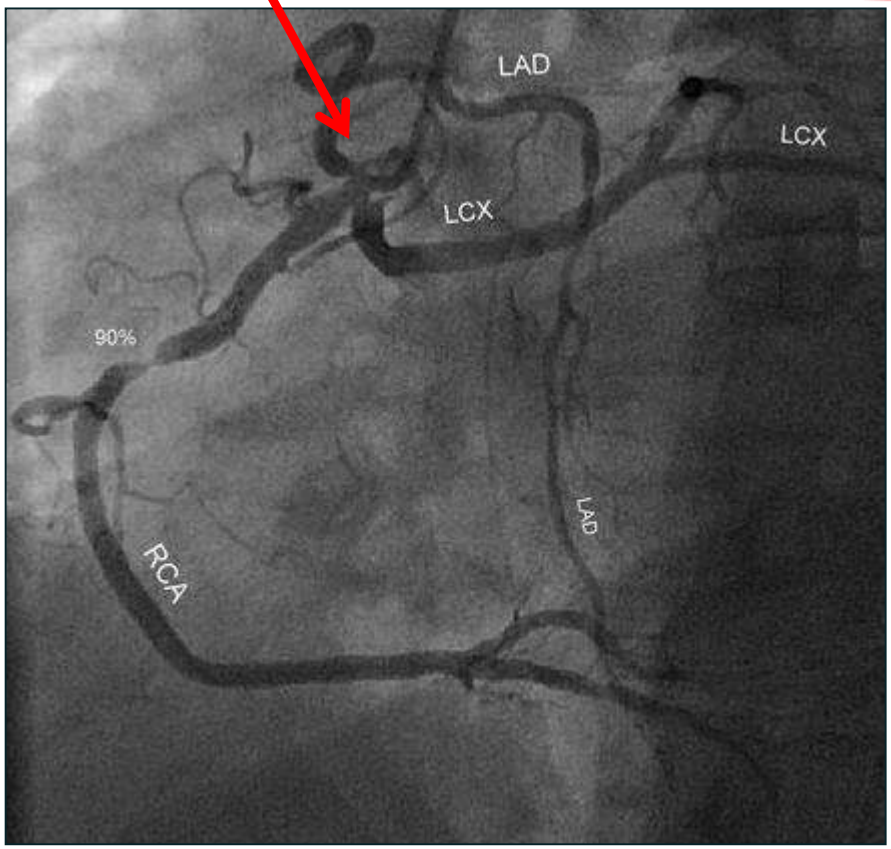
- Preoperative Diagnosis: Severe three vessel coronary artery disease; anomalous origin of the RCA

- Procedure: Coronary artery bypass grafting with right internal thoracic artery to RCA, ligation of native RCA with anomalous origin, reverse saphenous vein graft to OM^1 and reverse saphenous vein graft to OM^2

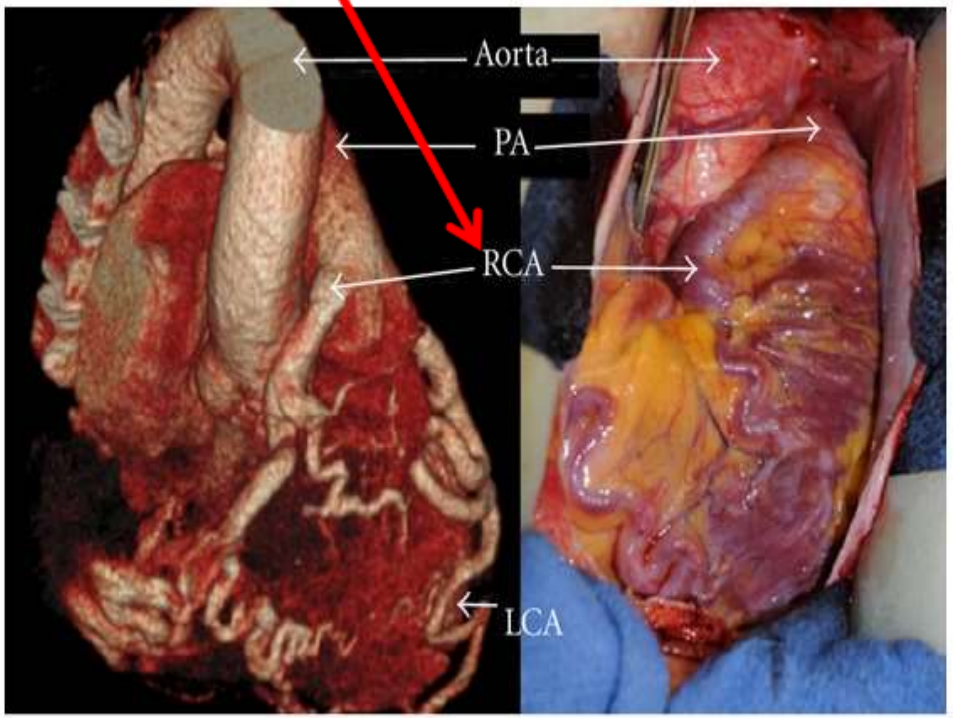
Operative Note:

…Based on clinical findings and ancillary tests that showed ischemia in an area supplied by anomalous coronary circulation, the decision was made to perform surgical revascularization with a right internal thoracic artery grafting to the RCA and ligation of proximal portion.

RCA off the LAD & LCX & Elsewhere Too ?!

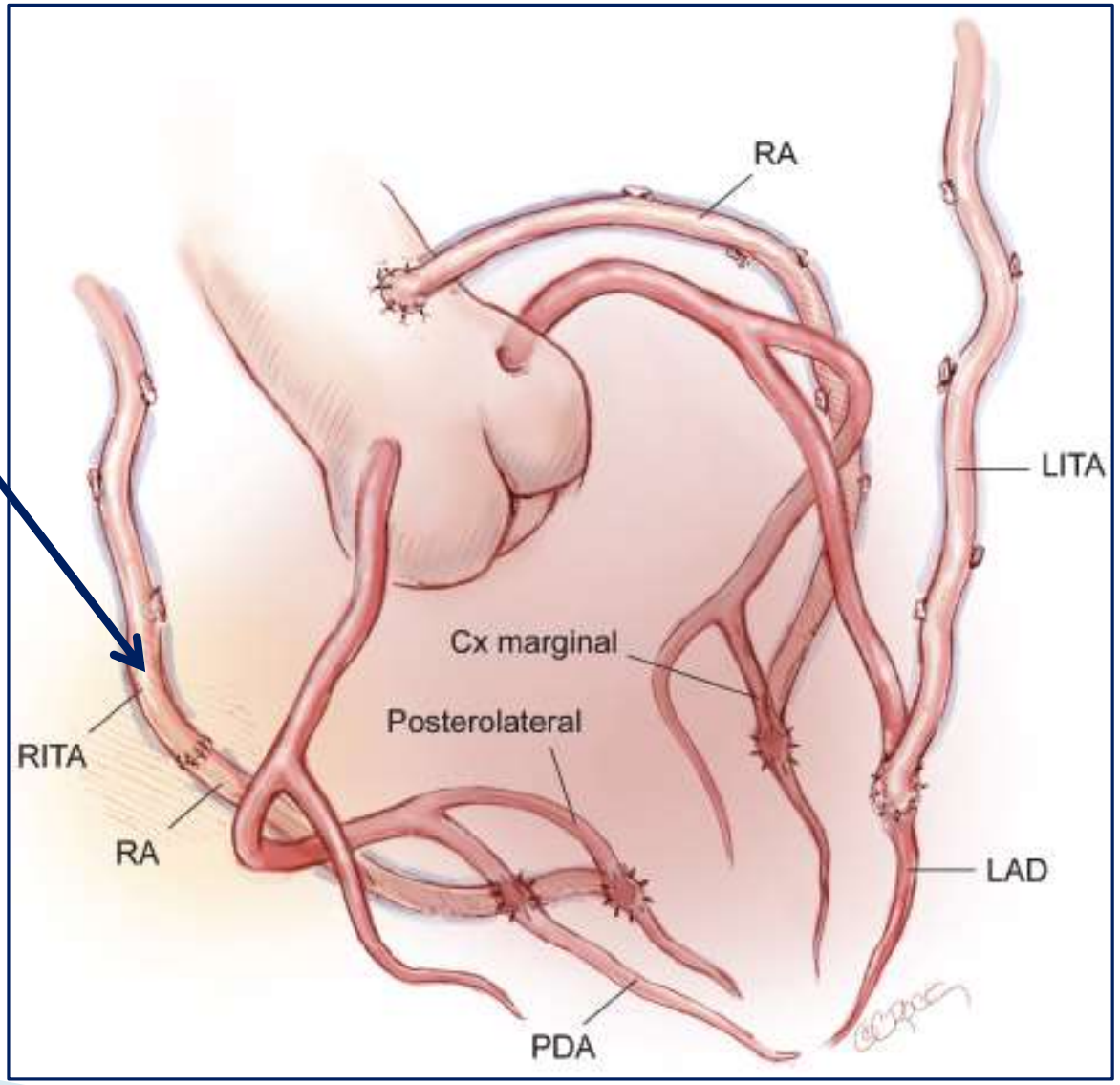


Invasivecardiology.com



(a) *Hindawi.com* (b)

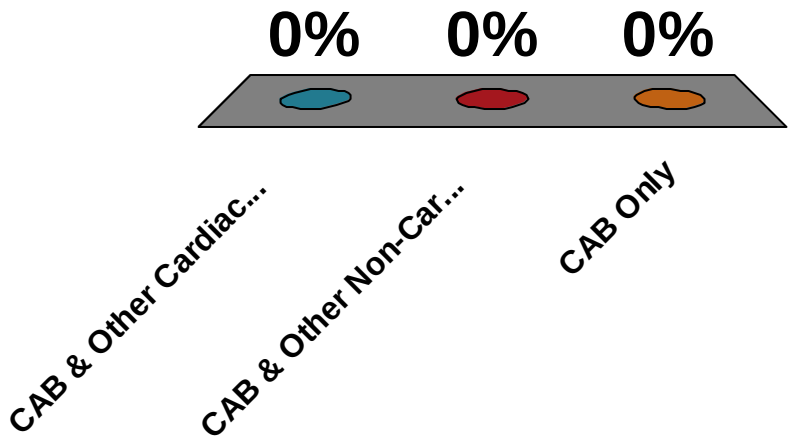
IMA/ITA Grafts



www.annalscts.com

Code This Case

A. CAB & Other Cardiac Case
B. CAB & Other Non-Cardiac Case
C. CAB Only



Answer:

C. CAB Only Case

3. AVR with Ca+Debridement

Calcific Aortic Valve

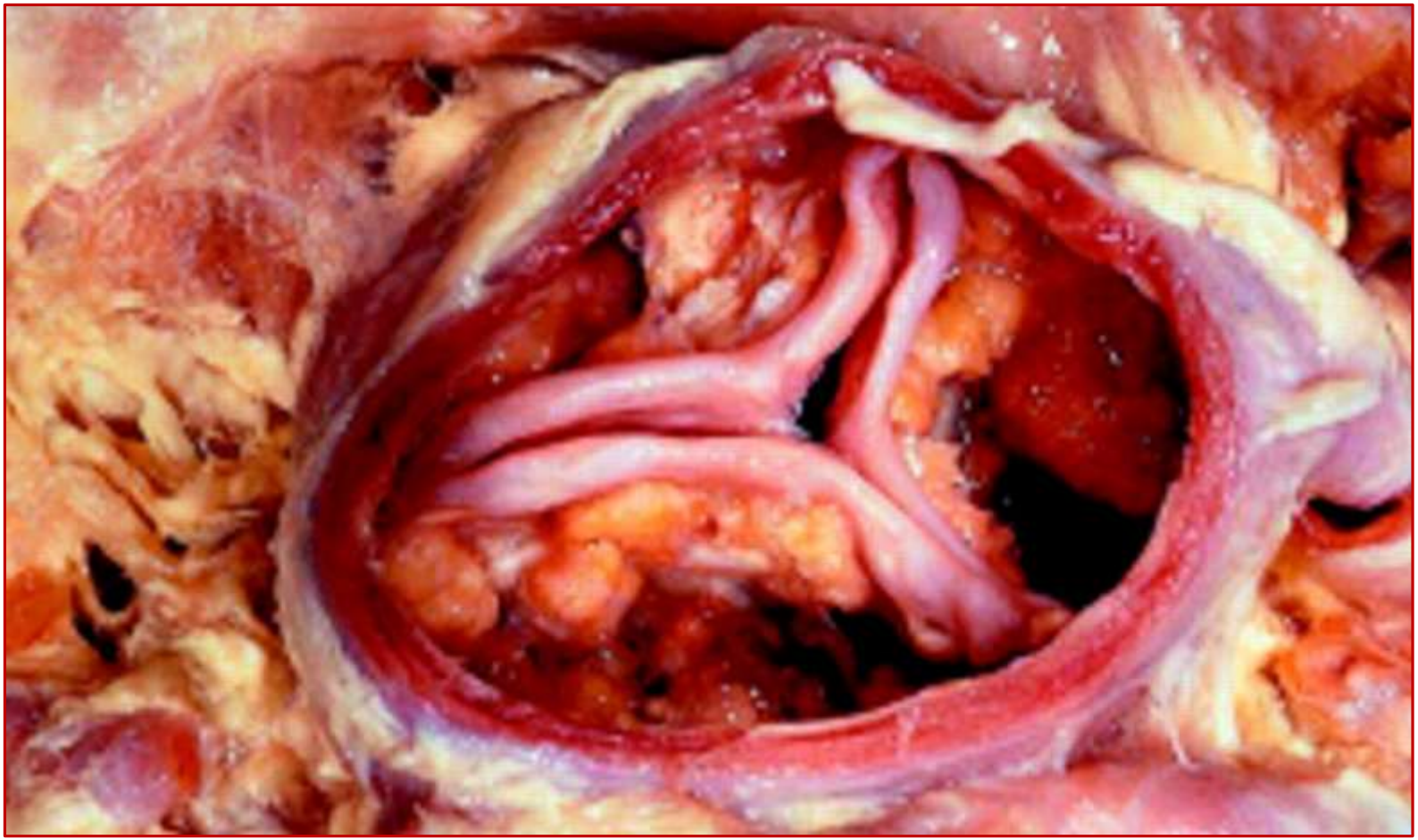
- Preop Diagnosis: Severe Aortic Stenosis

- Procedure: Aortic valve replacement with extensive debridement of calcium in the aortic wall and valve annulus.

Calcific Aortic Valve

- Operative Note: the aortic valve was heavily calcified along with significant calcium burden within the wall of the aortic root in multiple locations.
- An extensive debridement of calcium of both the aortic wall and the valve was undertaken.
- The noncoronary cusp was essentially not identifiable as valve tissue had been replaced with just two large blocks of calcium. The left and right cusps were fused to a degree. Once the valve tissue and calcium were debrided the aortic root was irrigated with copious iced saline to remove any debris, stitches were placed and the valve sized to a #21 mm Mosaic valve.

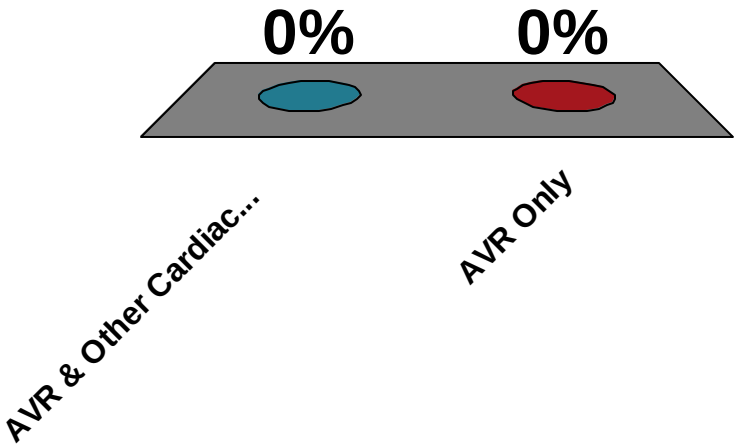
Calcific Aortic Stenosis



www.cristasanos.com.br

Code This Case

A. AVR & Other Cardiac Case
B. AVR Only Case



Answer:

B. AVR Only Case

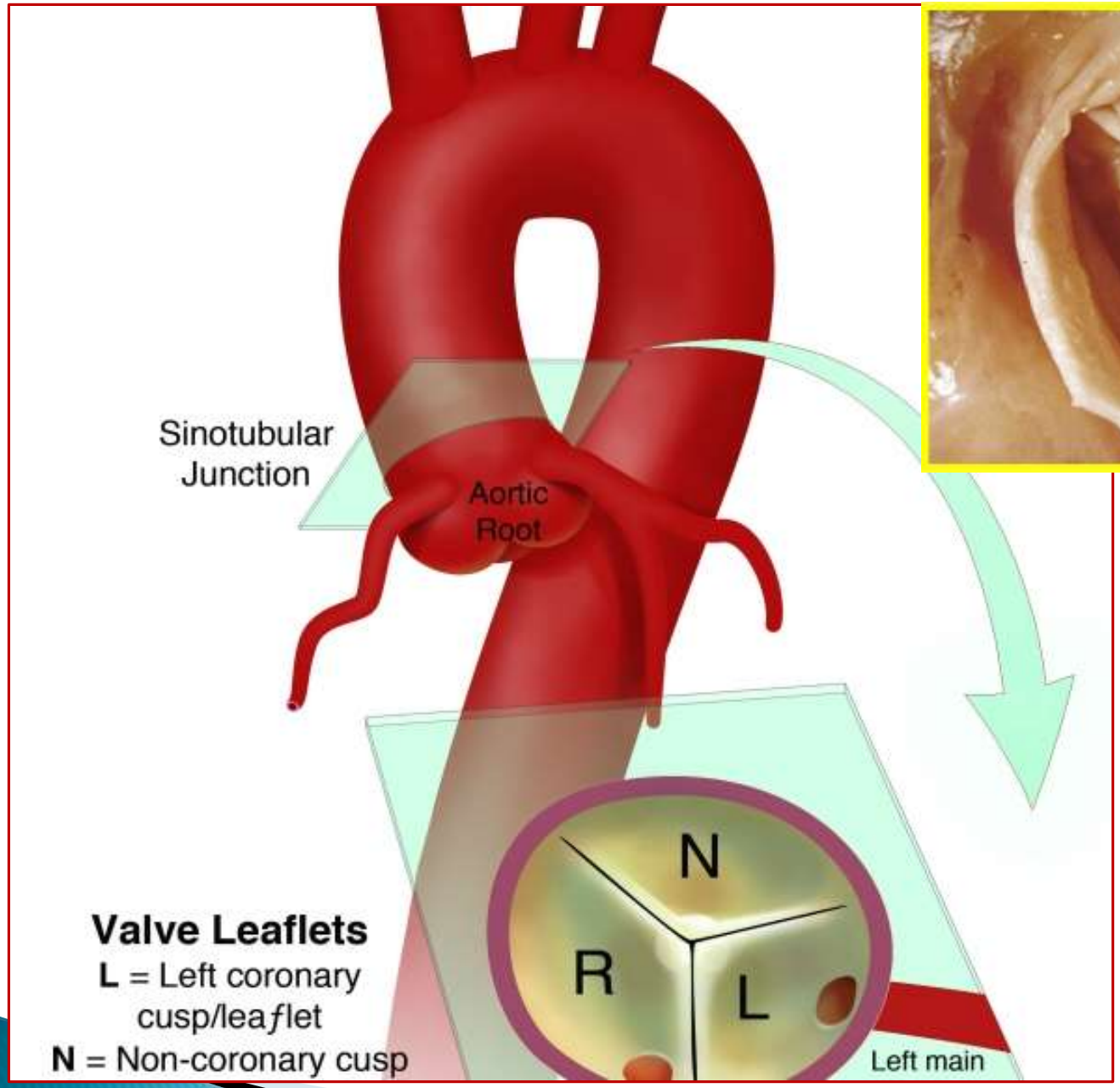
4. AVR, Nicks procedure, CAB & LAA Ligation

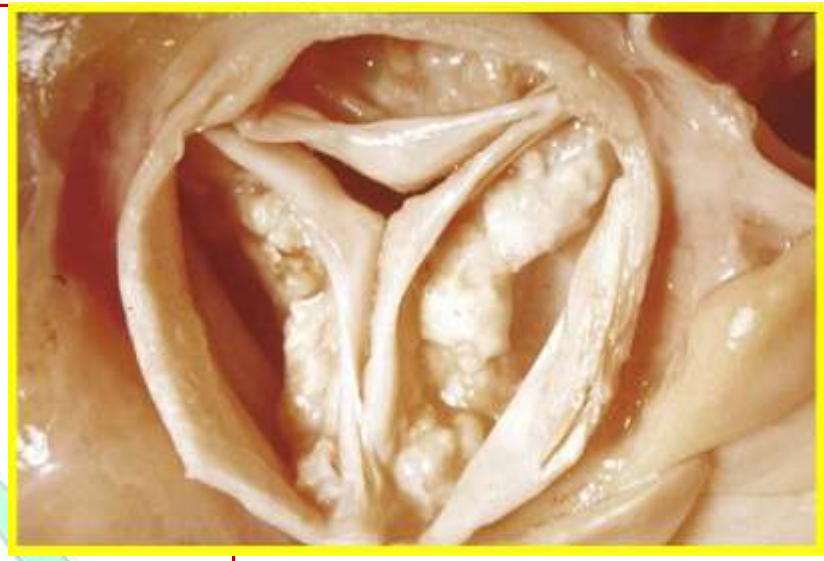
Aortic Valve & CAD Disease

- **Preoperative Diagnosis**: Left Main & double vessel coronary artery disease; moderate aortic stenosis

- **Procedure**: CAB X 3 with LIMA to LAD; SVG to OM[1] and PDA. Aortic valve replacement with #21 Trifecta bovine pericardial valve, and bovine pericardial patch aortic root enlargement (Nick's procedure) & LAA ligation.

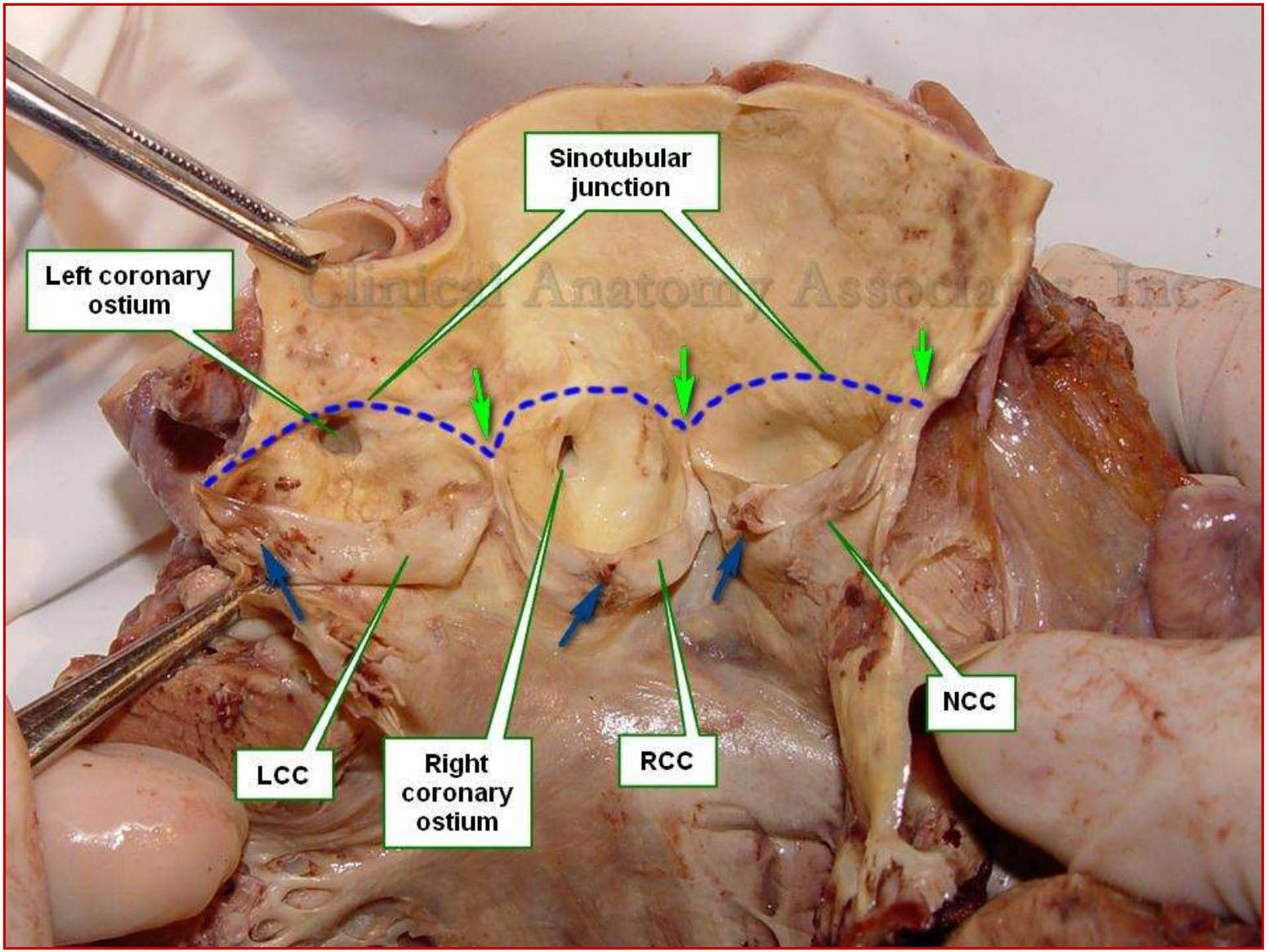
- Operative Note: Pt. with a hx. of 2-3 previous stents, one to RCA. EF is ~50% with an 80-85% LM stenosis & narrowing of her RCA metal jacket stent. AVG mean gradient is 40mmHg.
- The STJ was densely calcified and partially obstructing the aortic outflow region where the bioprosthetic struts would sit. This calcified atheratoma was removed using the Rongeurs and freer/elevator instrument. The aortic root and the STJ was therefore endarterectomized.
- The annulus was meticulously debrided and would only admit an #19 mm valve.



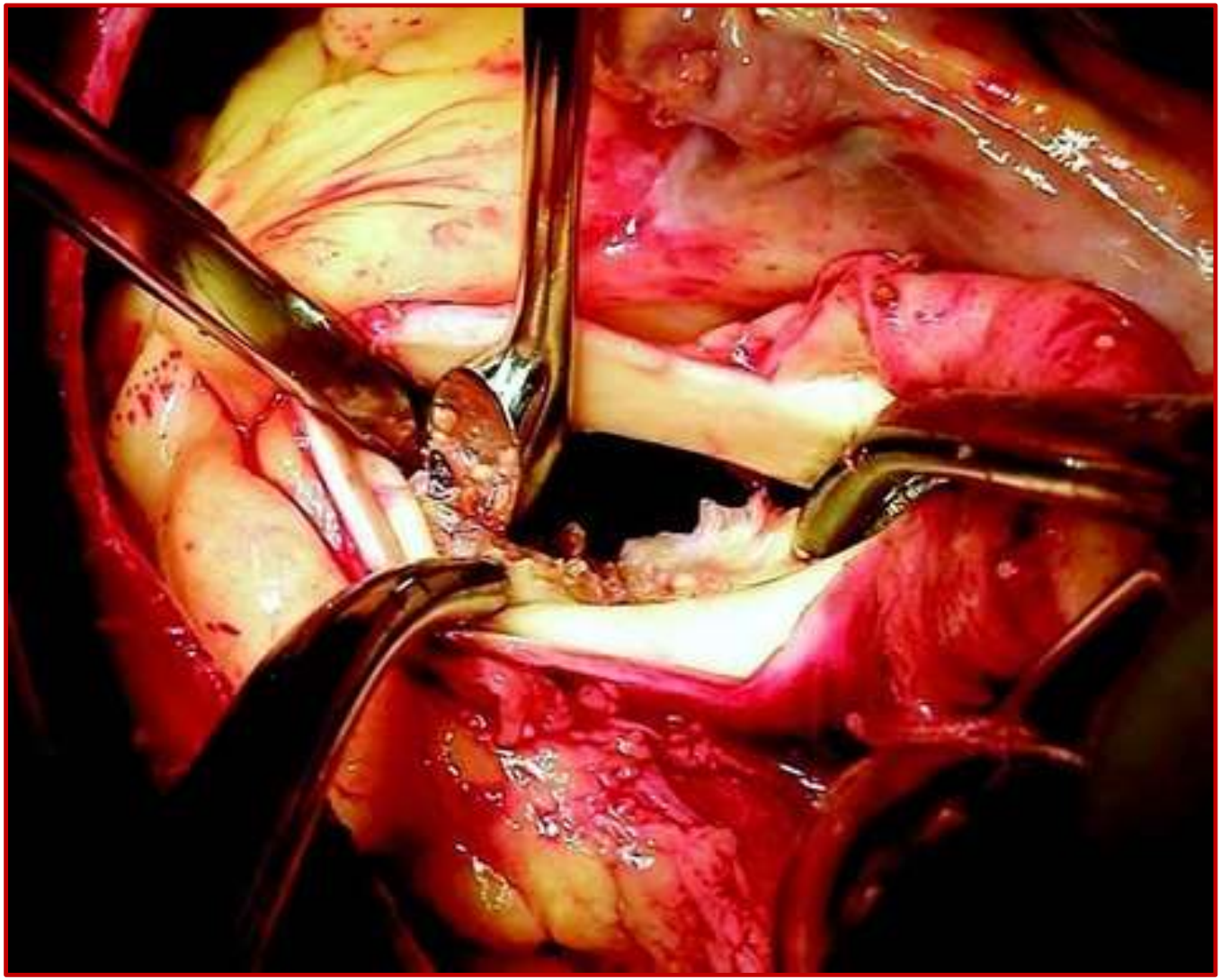


www.pic2fly.com

Scientificillustration.tumblr.com


Sinotubular junction
Left coronary ostium
LCC
Right coronary ostium
RCC
NCC

Debridement & Decalcification of Aortic Annulus



Op Note Continued:

- The annulus was divided over the central region of the mitral valve leaflet in the non-coronary cusp region and an elliptical bovine pericardial patch was sewn to enlarge the annular orifice. This increased dimensions to admit a #21mm valve.
- The valve was tied down in place with Coreknot suture fixation devices. The bovine pericardial patch was then used to enlarge the outflow tract of the ascending aorta, sewn to each side with running 4-0 prolene.

2.81 Aortic Annular Enlargement

Aortic Valve Procedure Performed: ☐ Yes, planned ☐ Yes, unplanned due to surgical complication VSAV (3390)
☐ Yes, unplanned due to unsuspected disease or anatomy ☐ No (If Yes ↓)

Procedure Performed: VSAVPr (3395)

☐ Replacement (If Yes ↓)

Transcatheter Valve Replacement: ☐ Yes ☐ No (If Yes ↓) VSTCV (3400)

Approach: ☐ Transapical ☐ Transaxillary ☐ Transfemoral ☐ Transaortic ☐ Subclavian ☐ Other
VSTCVR (3405)

☐ Repair / Reconstruction If Repair / Reconstruction ↓)

Primary Repair Type: (Select all that apply)

Commissural Annuloplasty VSAVRComA (3410)	☐ Yes ☐ No	Ring Annuloplasty VSAVRRingA (3435)	☐ Yes ☐ No
Leaflet plication VSAVRLPlic (3415)	☐ Yes ☐ No	Leaflet resection suture VSAVRLResect (3440)	☐ Yes ☐ No
Leaflet free edge reinforcement (PTFE) VSAVRPTFE (3420)	☐ Yes ☐ No	Leaflet pericardial patch VSAVRLPPatch (3445)	☐ Yes ☐ No
Leaflet commissural resuspension suture VSAVRComRS (3425)	☐ Yes ☐ No	Leaflet debridement VSAVRDeb (3450)	☐ Yes ☐ No
Division of fused leaflet raphe VSAVRRaphe (3430)	☐ Yes ☐ No	Repair of Periprosthetic Leak VSAVRPeriLeak (3455)	☐ Yes ☐ No

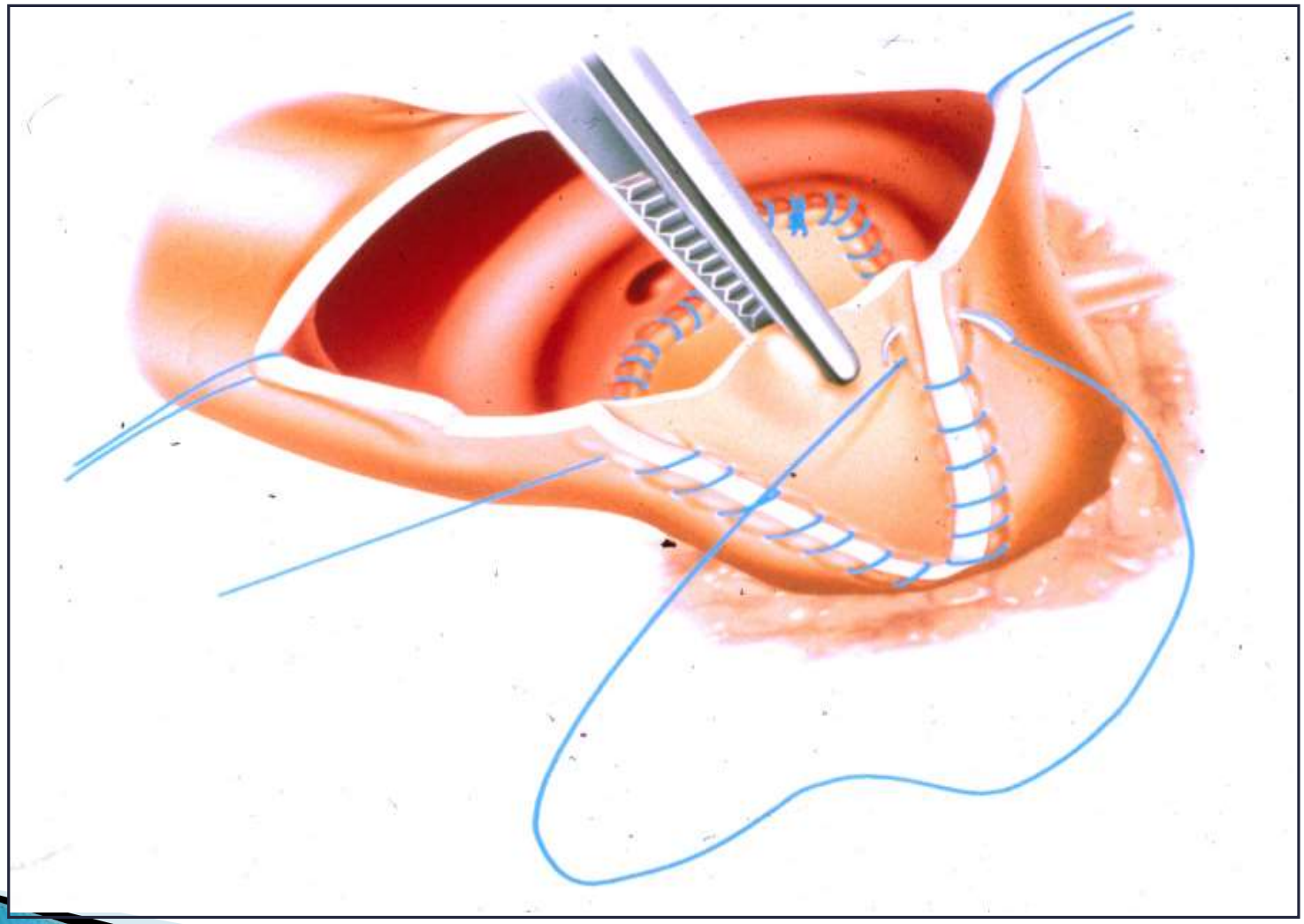
☐ Root Replacement with valved conduit (Bentall)
☐ Replacement AV and insertion aortic non-valved conduit in supra-coronary position
☐ Replacement AV and major root reconstruction/debridement with valved conduit
☐ Resuspension AV without replacement of ascending aorta
☐ Resuspension AV with replacement of ascending aorta
☐ Apico-aortic conduit (Aortic valve bypass)
☐ Autograft with pulmonary valve (Ross procedure)
☐ Homograft root replacement
☐ Valve sparing root reimplantation (David)
☐ Valve sparing root remodeling (Yacoub)
☐ Valve sparing root reconstruction (Florida Sleeve)

Aortic Annular Enlargement: AnlrEnl (3460) ☐ Yes ☐ No

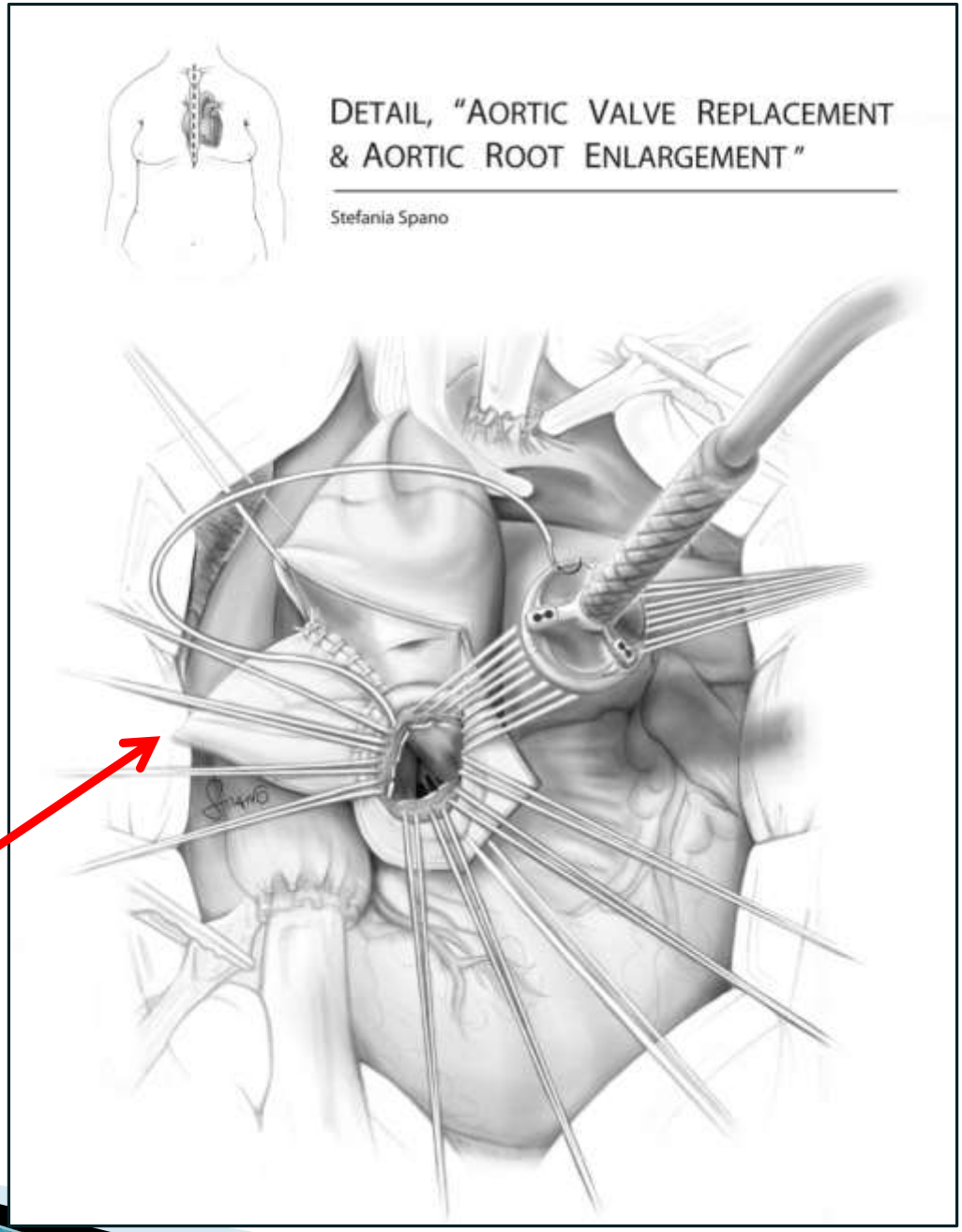
Implant: AorticImplant (3470) ☐ Yes ☐ No (If Yes ↓)

Implant Type: ☐ Mechanical Valve ☐ Bioprosthetic Valve ☐ Homograft ☐ Autograft (Ross)
AorticImplantTy

Aortic Annular Enlargement



ctsnet.org



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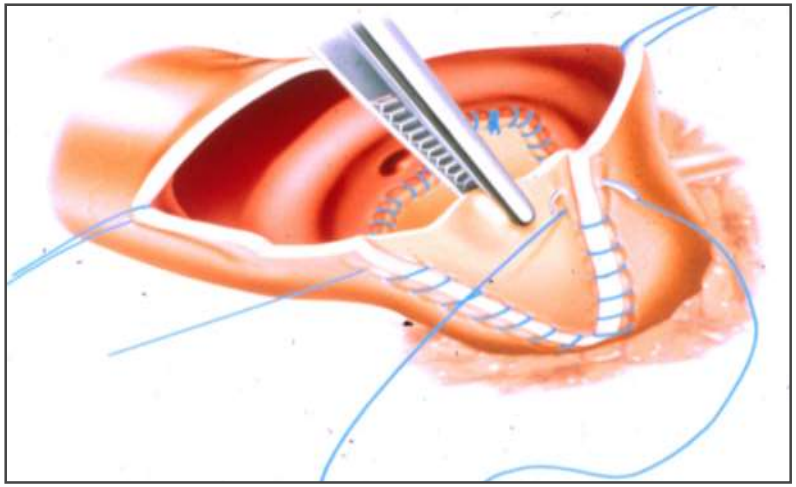
Aortic Annular Enlargement

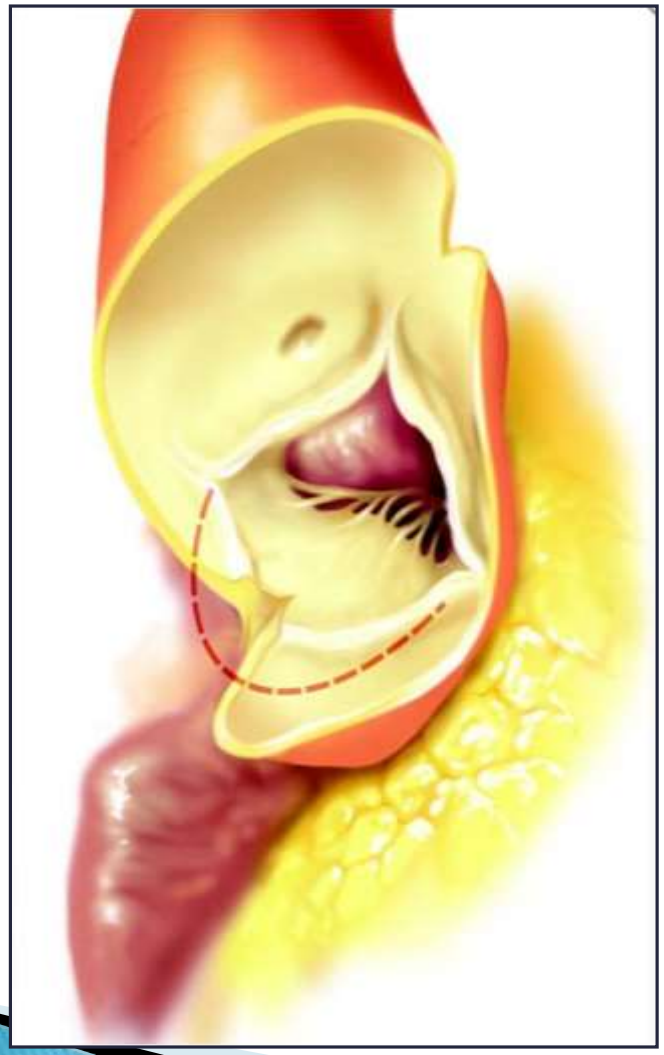
- **Purposes:**
- Enlarges the aortic annulus orifice for optimal artificial valve positioning.
- Avoids: Patient – Prosthetic Valve Mismatch
- Most Common Techniques:
  - Nicks
  - Manouguian



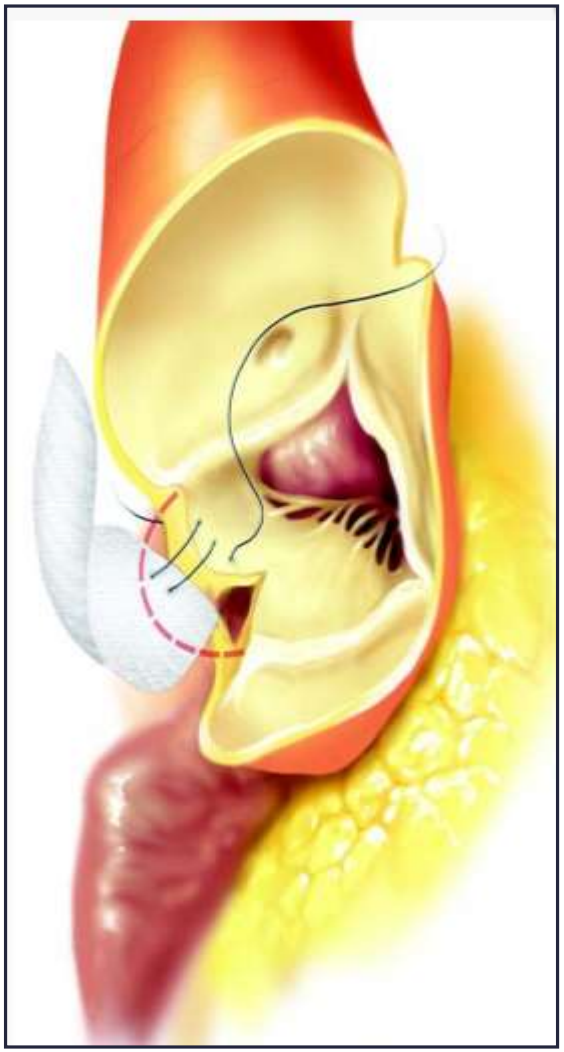
Aortic Annular Enlargement

Nicks Procedure

(Red curve is the "neo-annulus")



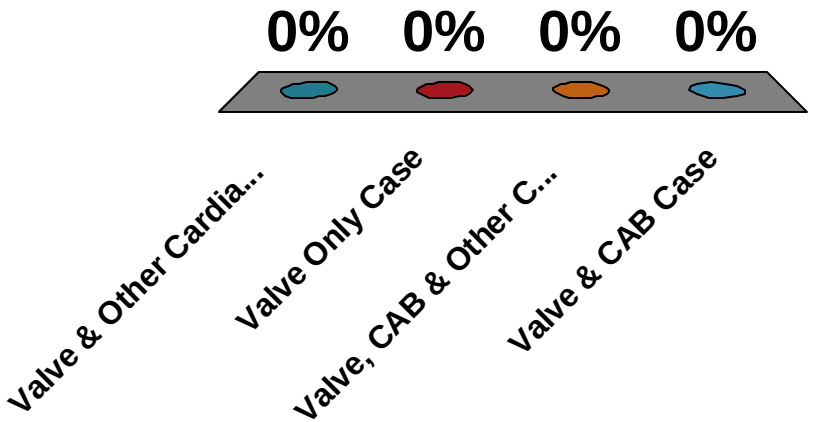
Manouguian Procedure



Posterior Annular Enlargement Techniques

Code This Case: Does Annular Root Enlargement Remove Case from the Isolated Category?

A. AVR & Other Cardiac Case
B. AVR Only Case
C. AVR, CAB & Other Cardiac Case
D. AVR & CAB Case



Answer

D. AVR & CAB Case

5. CAB & Lung Biopsy Case

Coronary Artery Disease & Lung Nodule

- Preoperative Diagnosis: Double vessel coronary artery disease

- Procedure: Coronary artery bypass X 2, left internal mammary artery to the left anterior descending artery, saphenous vein to posterior descending artery-right coronary artery junction anastomosis; Left upper lobe biopsy; Right endoscopic saphenous vein harvest

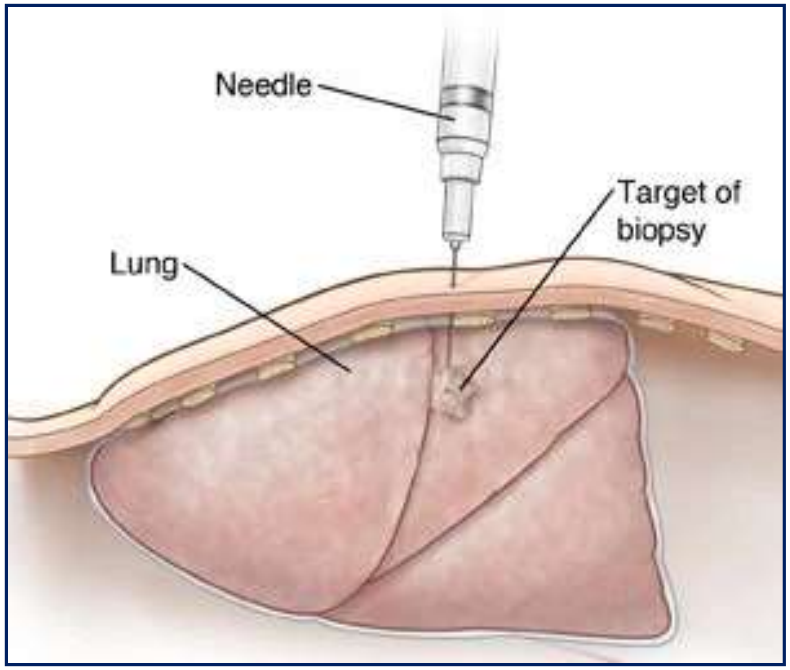
Coronary Artery Disease & Lung Nodule

- Operative Report:

  During the course of the left internal mammary artery to left anterior descending anastomosis, the lung was visualized and the pleural surface of the left lung had an abnormal nodular appearance and a wedge biopsy (*was*) taken for this reason.

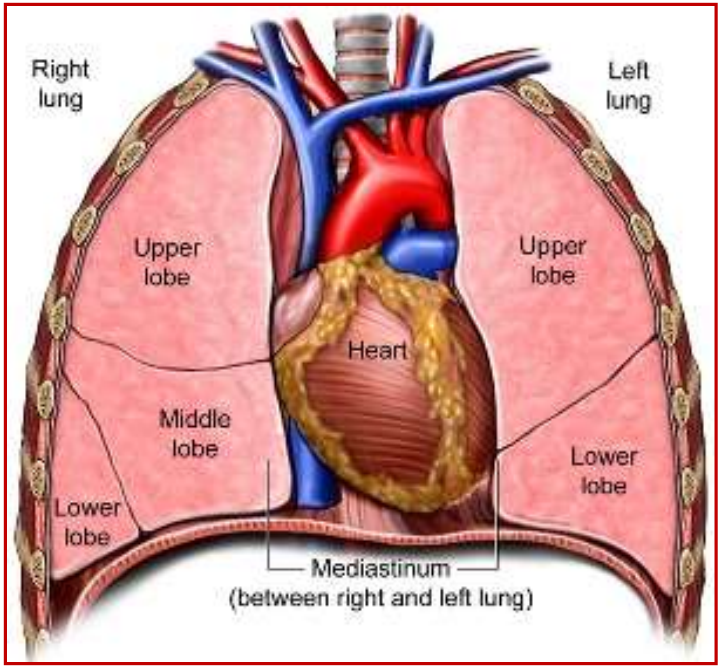
Lung Biopsy Approaches

Medical



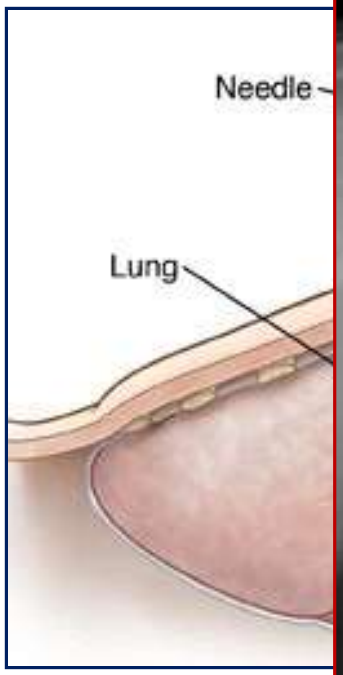
americanmedicalcoding.com

Surgical

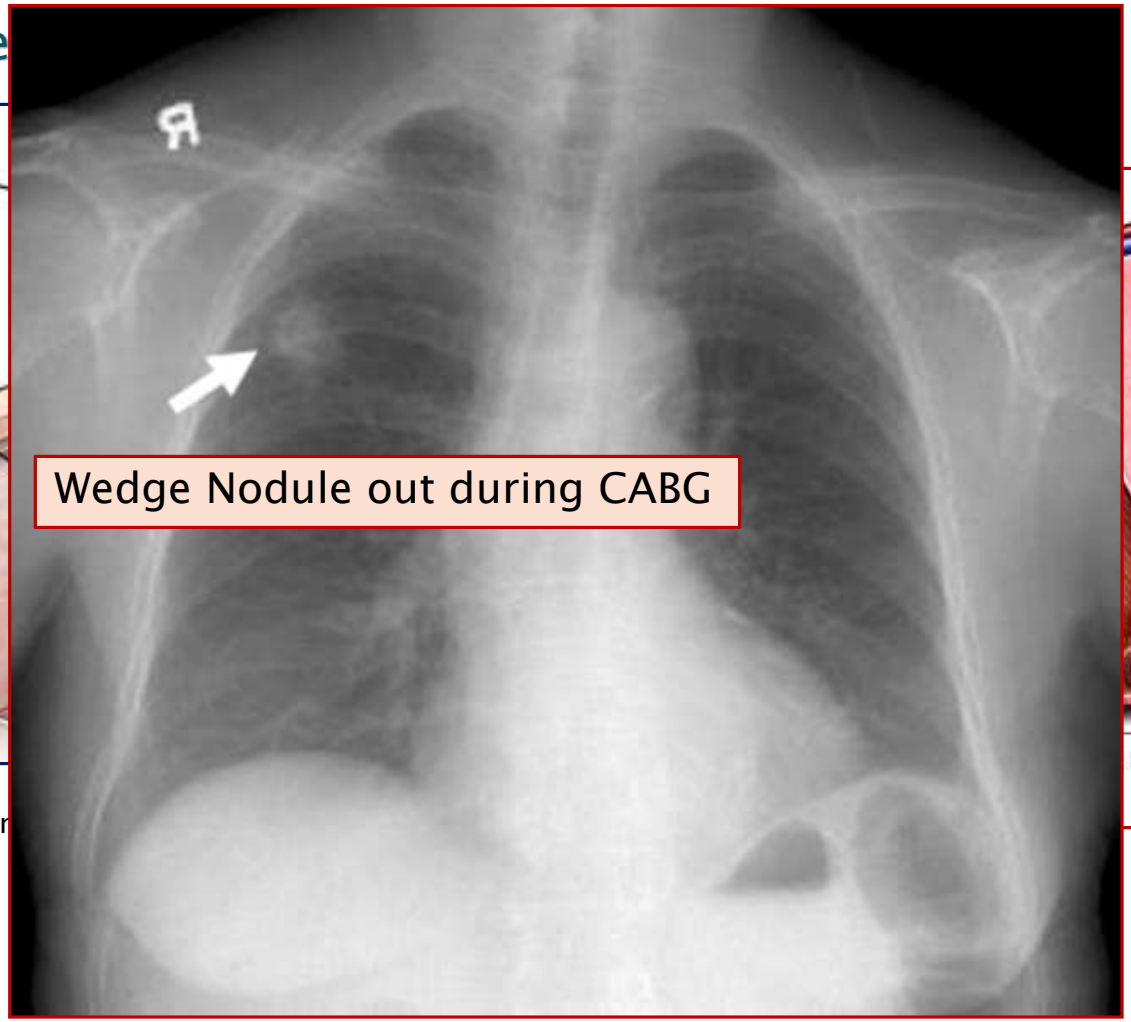


www.cvtsa.com

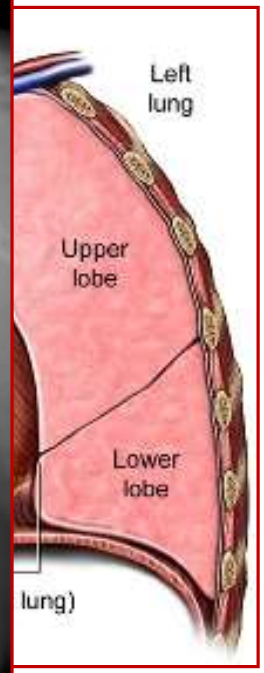
Lung Biopsy Approaches



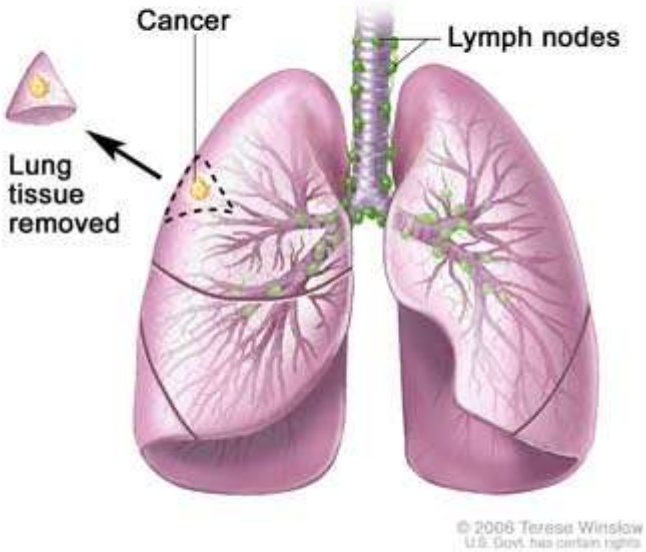
americanr



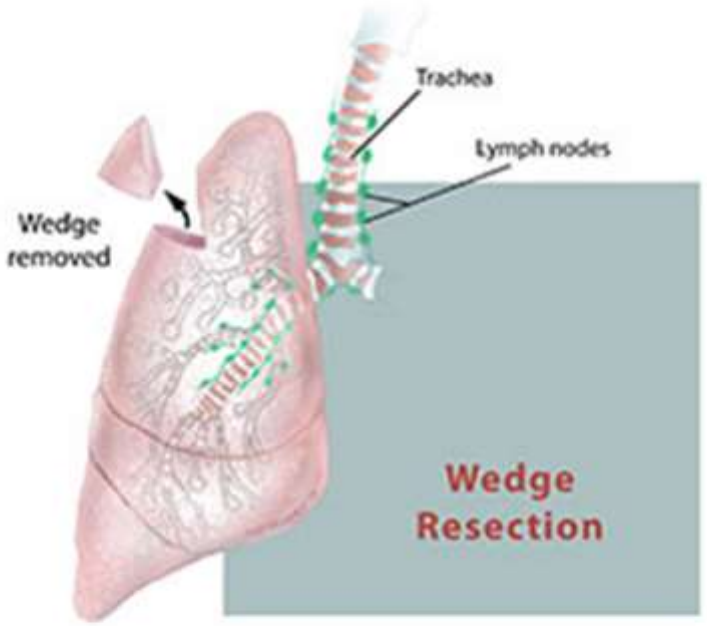
Wedge Nodule out during CABG



Wedge Resection

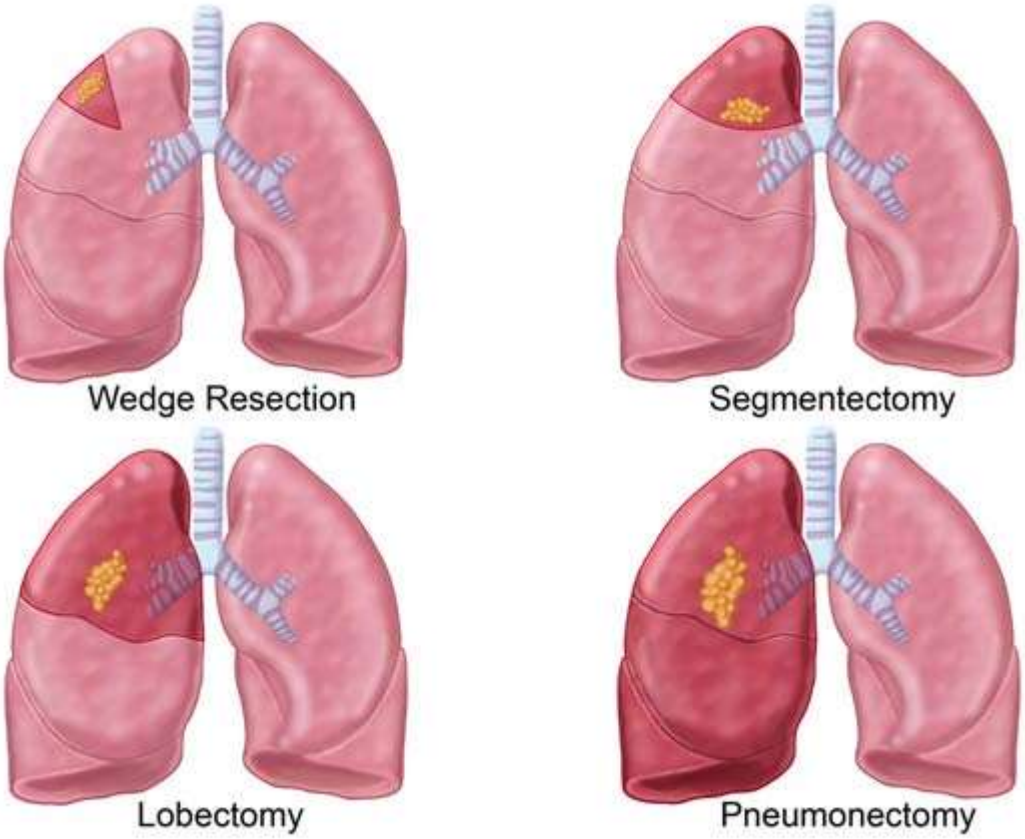


www.healthbase.com



www.med.nyu.edu

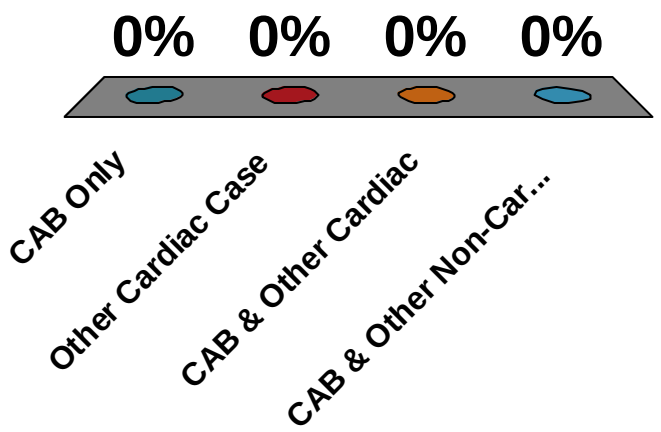
For Your General Thoracic Info !



www.valleyhealthcancercenter.com

Code This Case

A. CAB Only
B. Other Cardiac Case
C. CAB & Other Cardiac
D. CAB & Other Non-Cardiac Thoracic



Answer

A. CAB Only Case

Do You Know the 7 Dwarfs?

Did you Get all 7 Dwarfs?

Happy

Sleepy

Doc

Grumpy

Dopey

Bashful

Sneezy

6. CAB & Removal of Myxoma Case

Coronary Artery Disease & RA Myxoma

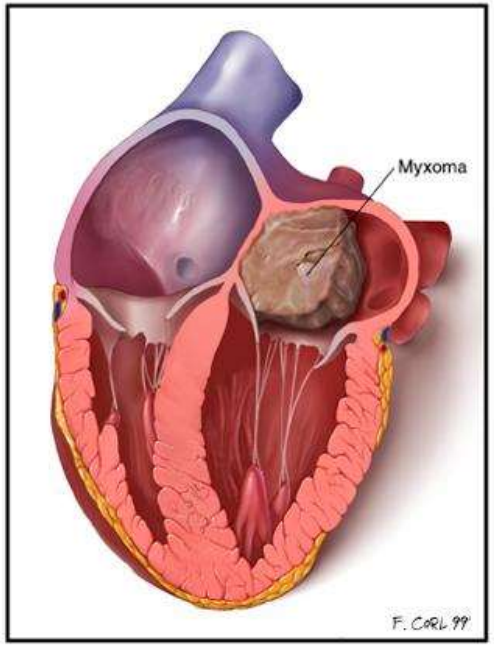
- Preoperative Diagnosis: severe triple vessel coronary artery disease; presence of a right atrial mass

- Procedure: CAB X 4 and removal of right atrial myxoma

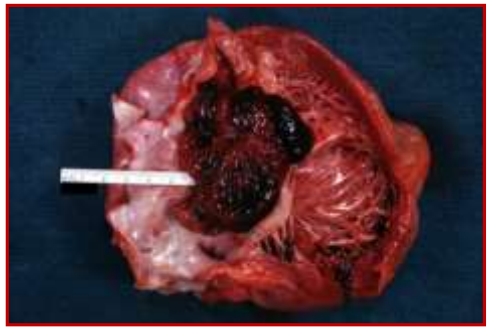
Operative Report:

….We opened the atrium with an oblique incision. The tumor was so large that it projected from the atrium. It was attached by a stalk to the posterior wall of the right atrium, near the IVC end. We excised the tumor and the base of the right atrial wall. We then closed this meticulously. Attention was then directed to the left anterior descending artery for graft placement…..

Myxomas



www.wiki.org



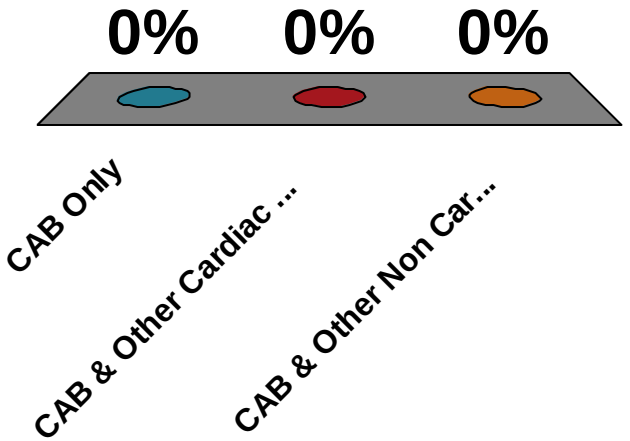
Left Myoxmas

www.tube.7-s.com

Right Myxomas

Code This Case

A. CAB Only
B. CAB & Other Cardiac Other
C. CAB & Other Non Cardiac Thoracic Procedure



Answer

B. CAB & Other Cardiac Other Case

7. CAB & Epicardial Pacing Lead Insertion

- Preoperative Diagnosis: Severe Coronary Artery Disease and severe left ventricular dysfunction

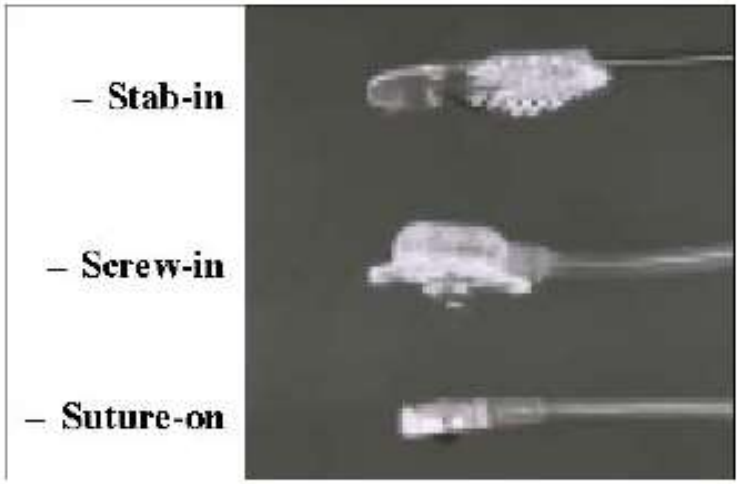
- Procedure: CAB X 3 with LIMA, SVG to OM1. OM2, Insertion of left ventricular pacing leads X 2

Operative Note:

Following completion of the CAB grafts, a temporary ventricular pacing wire was secured to the inferior wall of the ventricle and 2 permanent LV leads were placed, one on the high lateral wall and one on the posterior wall. The high lateral wall lead was a Medtronic 5071, serial # 52 LAQ071000V, R-wave measuring greater than 20 and a threshold of 0.7. The other lead, on the posterior wall, was Medtronic model #5071-53. The leads were capped, brought out through the second intercostal space laterally into a subcutaneous tunnel, which had been created from the sternotomy incision into the anterior chest wall above the pectoralis muscle. The leads were capped and left in the subcutaneous pocket.

Epicardial leads

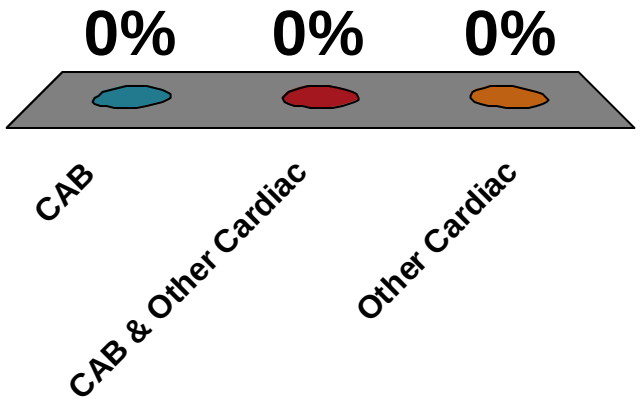
Myocardial (Epicardial) Lead — A pacing lead with an electrode designed to be attached to the outside of the heart.



MYOCARDIAL LEAD

Code This Case

A. CAB
B. CAB & Other Cardiac
C. Other Cardiac Case



Answer

A. CAB Only Case

8. Redo CAB & Repair of RV Tear

Repair Ventricular Laceration

- **Preoperative Diagnosis**: Coronary artery disease, s/p CAB X2 in 2006

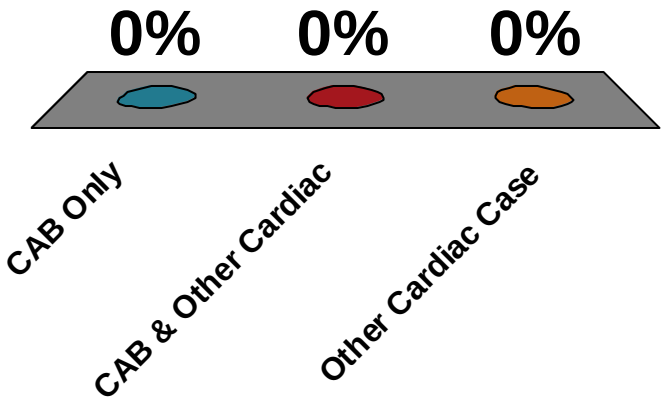
- **Procedure**: Redo Sternotomy with lysis of adhesions, coronary artery bypass grafting x 2 with reverse saphenous vein graft to LAD, & RCA; repair laceration of right ventricle

Operative Note:

…The sternum was divided without event but upon dissection of the right ventricle off the sternum, a small hole was placed in the ventricle. Due to the dense adhesions, it was elected to place the patient on femoral bypass to control this. The right ventricle tear was easily controlled with a single finger pressure and there was no hemodynamic instability during this time…. The right ventricular tear was repaired with a single 3-0 pledgeted Prolene suture.

Code This Case

A. CAB Only
B. CAB & Other Cardiac
C. Other Cardiac Case



Answer

A. CAB Only Case

9. MV Repair & PFO Closure Case

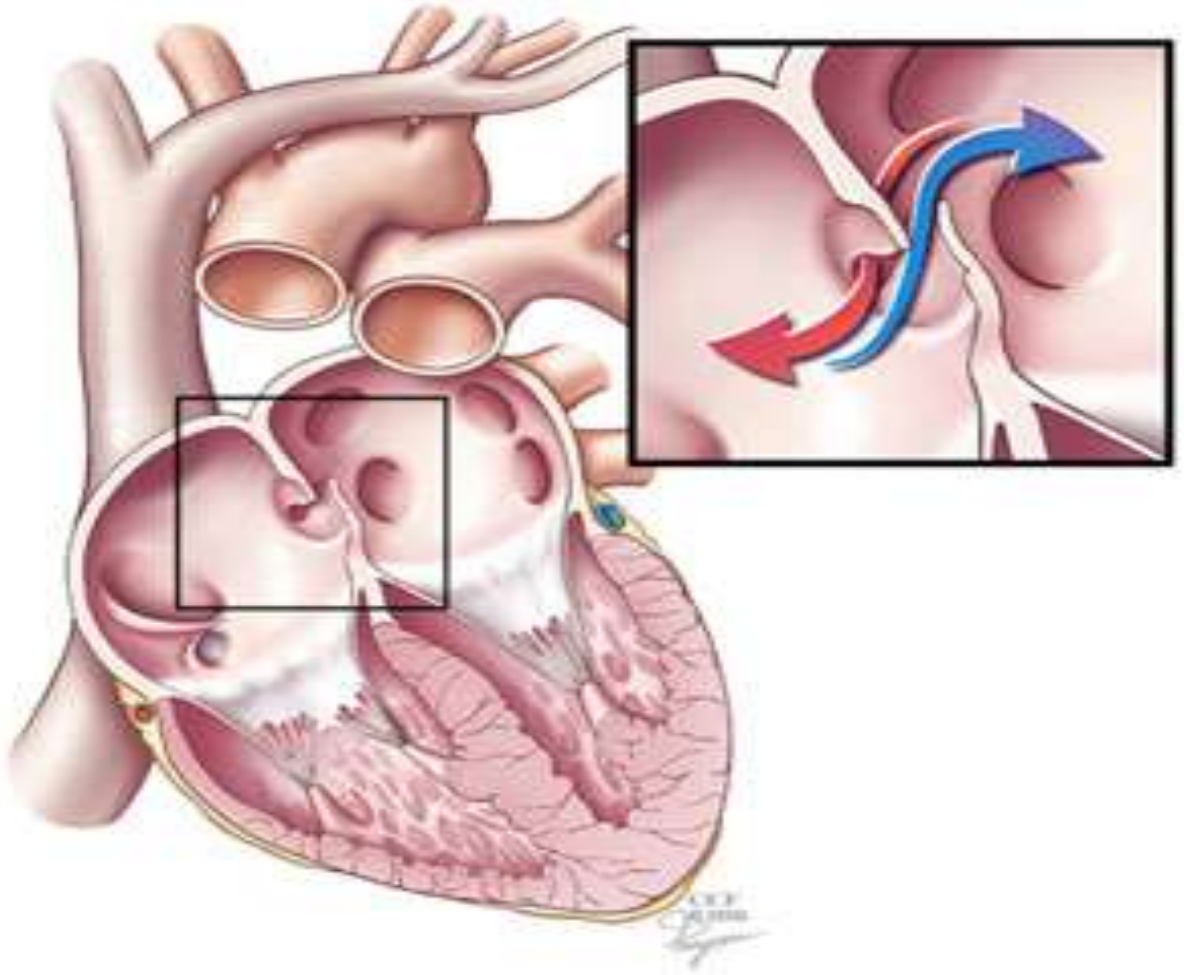
- Preoperative Diagnosis: Severe Mitral valve insufficiency; patent foramen ovale

- Procedure: Mitral Valve Repair; closure of patent foramen ovale

Operative Note:

….Both atria were grossly enlarged and there was a patent foramen ovale at the superior limbus of the fossa ovalis. Our trans-septal approach addressed this problem. There was a large flail P2 segment of the posterior leaflet of the mitral valve and this was excised, and a 28mm annuloplasty ring was placed. Closure of the trans-septal approach was then performed using a 4-0 Prolene.

Patent Foramen Ovale

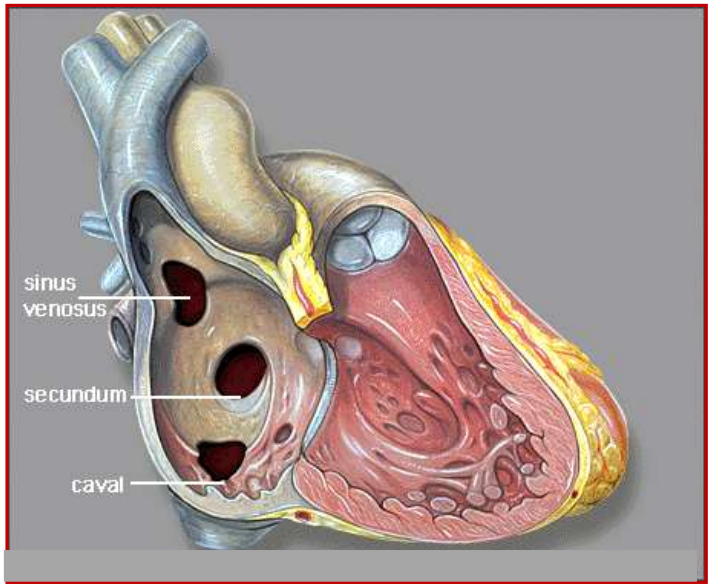


www.clevelandclinic.org

PFO & ASD Differences

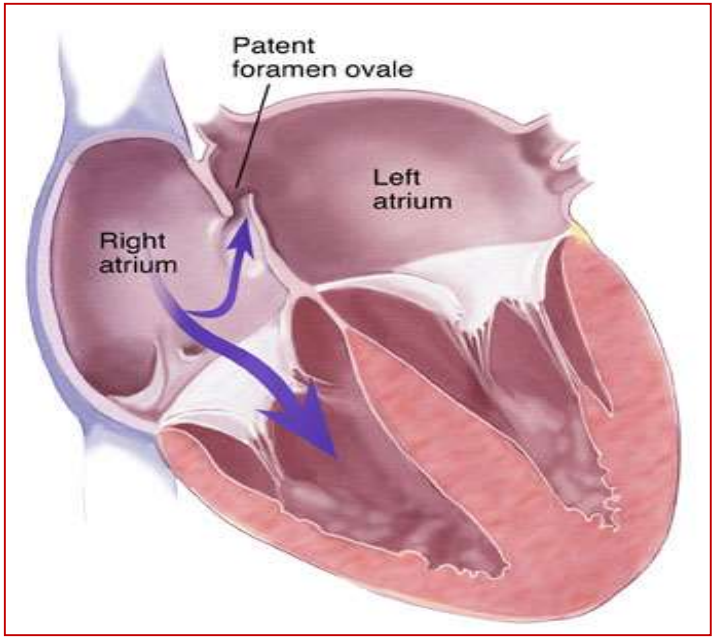
- Patent Foramen Ovale
- Atrial Septal Defect
  - Secundum Type
  - Sinus Venous Type

A **Sinus Venosus ASD** is a defect in the septum and involves the venous inflow of either the superior vena cava or the inferior vena cava; can involve the right upper pulmonary vein.



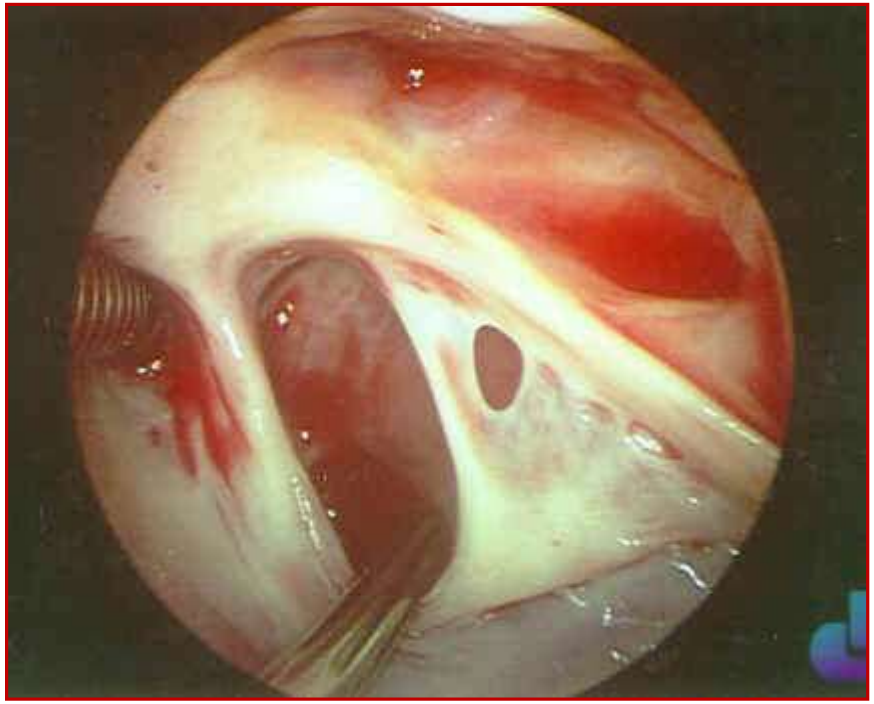
The **Secundum Atrial Septal Defect** usually arises from an enlarged foramen ovale, inadequate growth of the septum secundum, or excessive absorption of the septum ** most common [70%]

A **Patent Foramen Ovale (PFO)** is a small opening that does not close normally at birth leaving a hole between the left and right atrium.

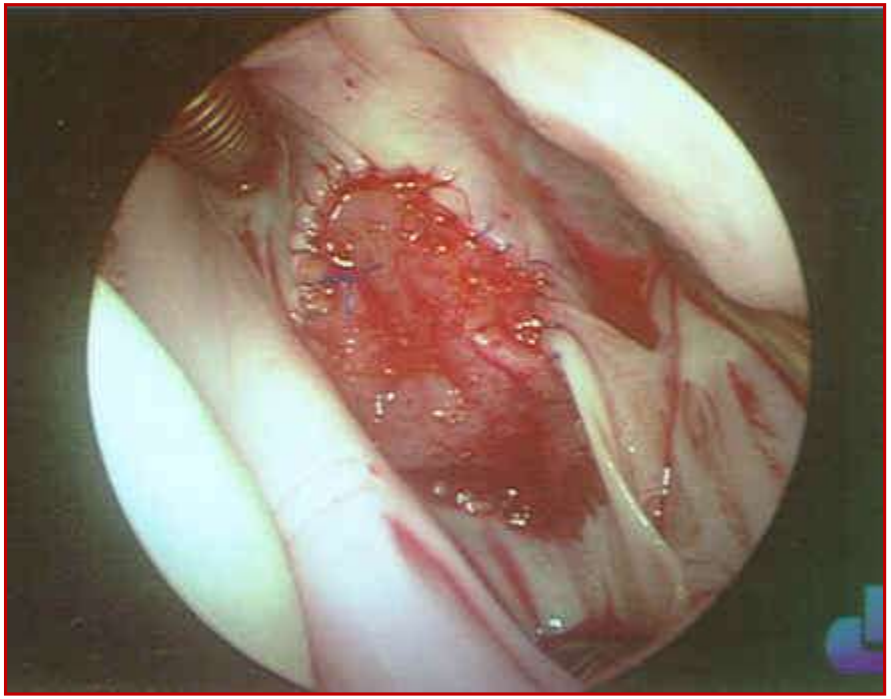


www.marmur.com www.clevelandclinic.org

Atrial Septal Defect Repair



Secundum ASD



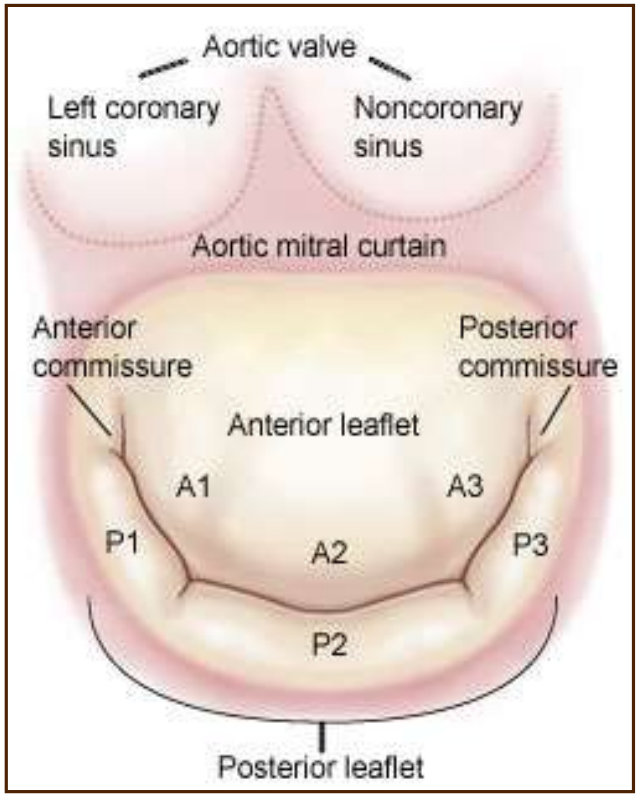
ASD Repair with Patch

www.cardioaccess.com/atria-septal-defect

Operative Note continued:

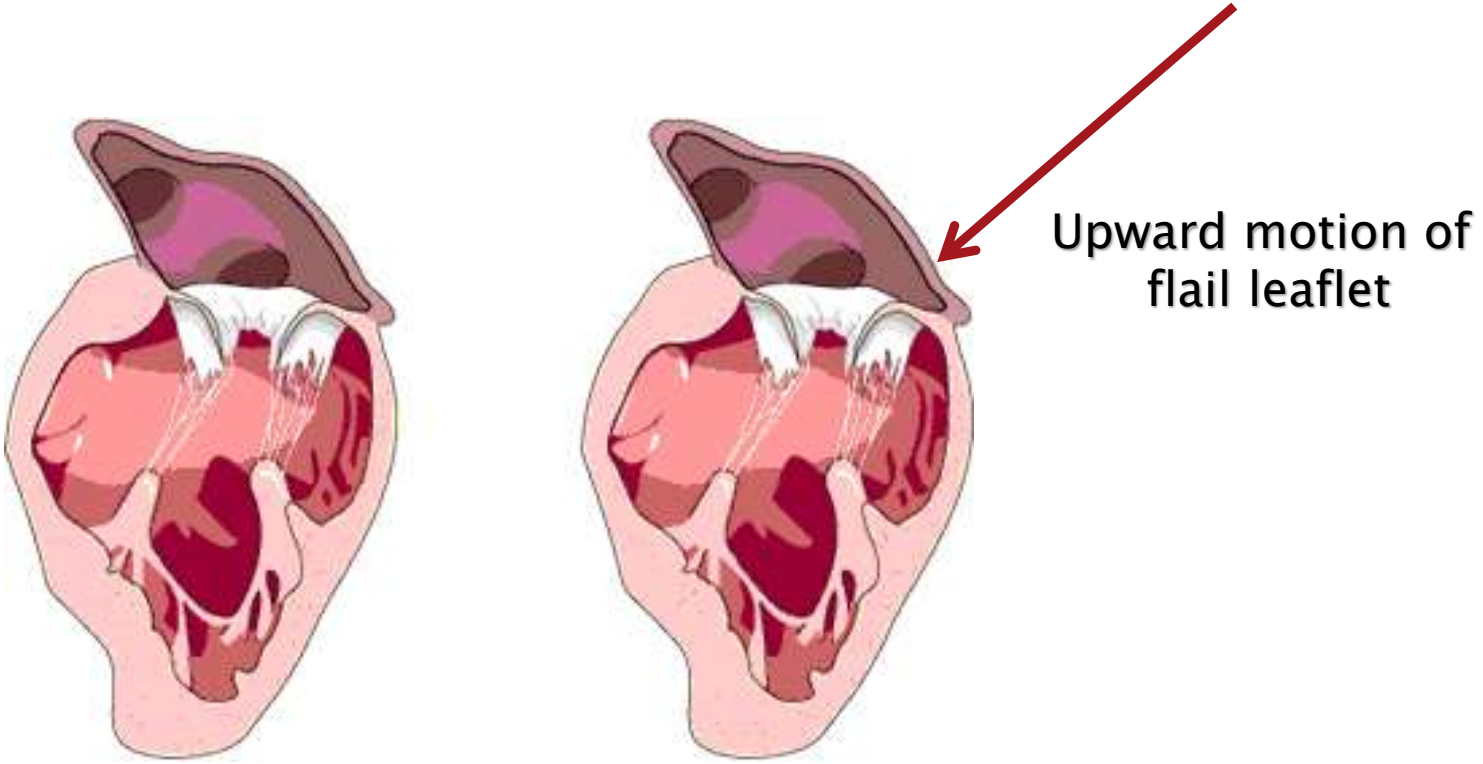
……There was a large flail P2 segment of the posterior leaflet of the mitral valve and this was excised, and a 28mm annuloplasty ring was placed. Closure of the trans-septal approach was then performed using a 4-0 Prolene.

Mitral Valve Posterior Leaflet Prolapse

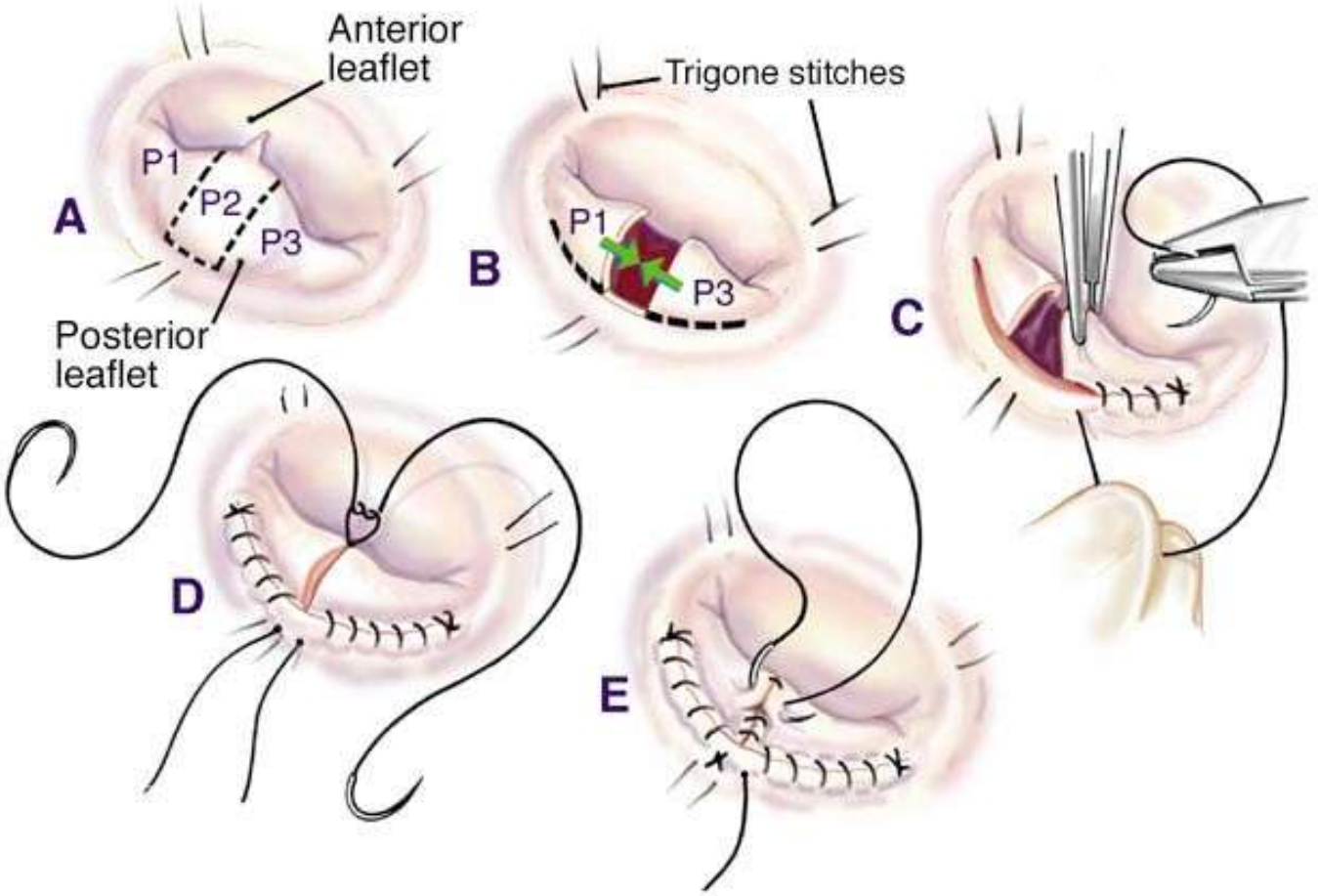


Normal Mitral Valve Anatomy

Mitral Valve Prolapse – Animated Diagrams

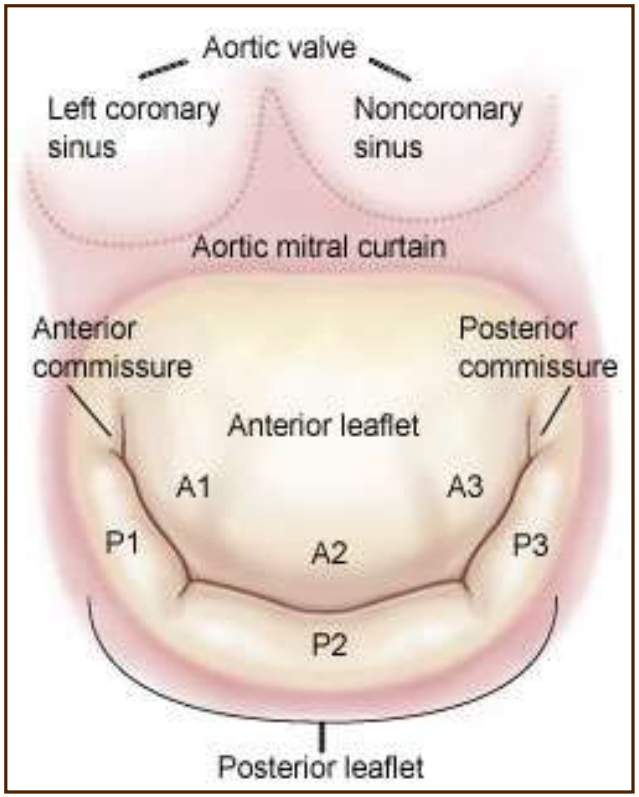


Mitral Valve Repair

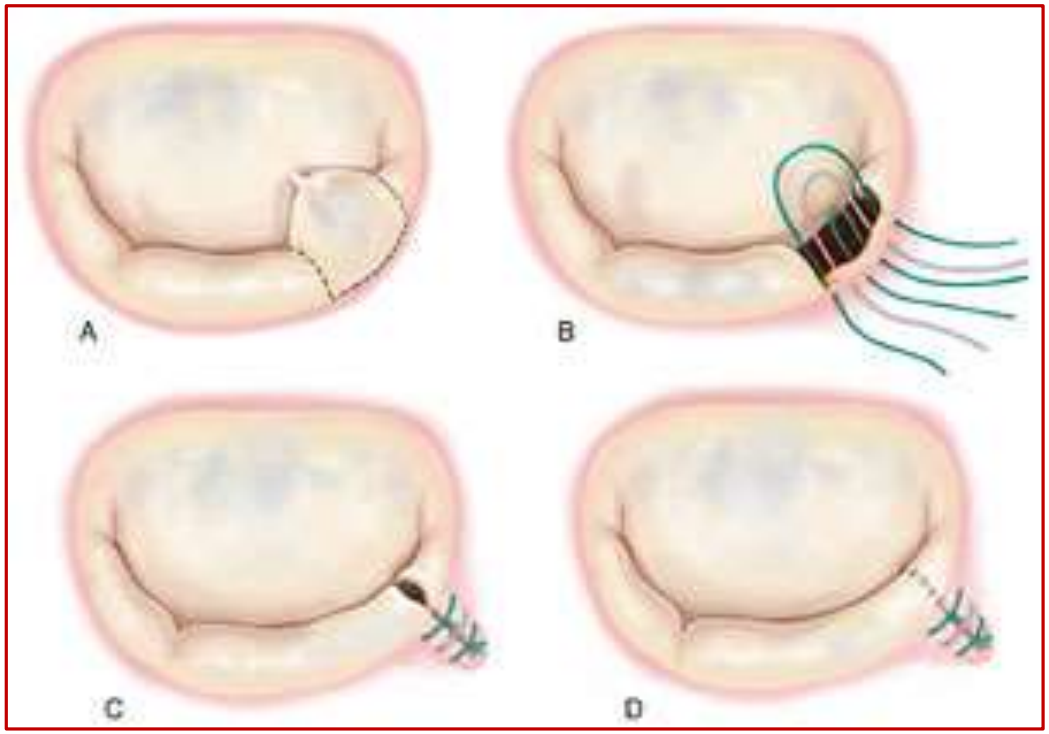


www.ctsnet.org

Mitral Valve Posterior Leaflet Prolapse



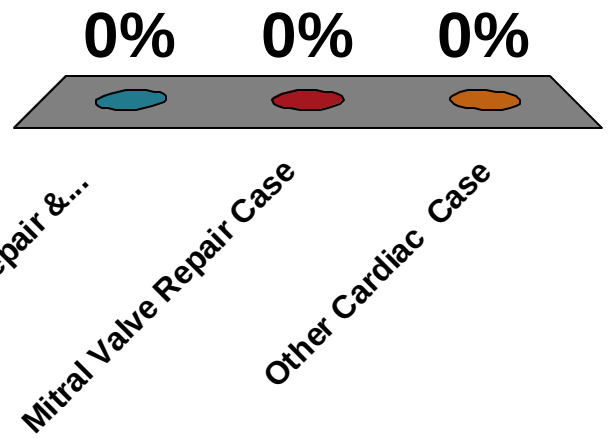
Normal Mitral Valve Anatomy



Posterior leaflet quadrangular resection, annular plication.
A, quadrangular resection of P3 is performed;
B,C compression sutures are placed and then tied;
D, the leaflet edges are re-approximated.

Code This Case (OR Procedure: MV Rpr & PFO)

A. Mitral Valve Repair & Other Cardiac Case
B. Mitral Valve Repair Case
C. Other Cardiac Case



Section M. STS 2.81 Data Collection Form: Other Cardiac Procedure

M. Other Cardiac Procedure (If Other Cardiac Procedure = Yes ↓)

In Isolated Category

These procedures do not impact isolated category

AFib Epicardial lesions (complete M.1) ☐ Yes ☐ No
OCarAFibEpLes (4070)

ASD repair- PFO type ☐ Yes ☐ No
OCarASDPFO (4075)

Atrial Appendage procedure: ☐ RAA ☐ LAA ☐ Both ☐ No
OCarAAProc (4080)

Arrhythmia Device: OCarACD (4085)
☐ Pacemaker ☐ Pacemaker with CRT
☐ ICD ☐ ICD with CRT ☐ Implantable Recorder ☐ None

Lead Insertion ☐ Yes ☐ No
OCarLeadInsert (4090)

Myocardial Stem Cell Therapy ☐ Yes ☐ No
OCarStemCell (4095)

TMR ☐ Yes ☐ No
OCarLasr (4100)

These procedures move the case out of isolated category

AFib Intracardiac lesions (complete M.1) ☐ Yes ☐ No
OCarAFibIntraLes (4105)

ASD Repair- secundum or sinus venosus ☐ Yes ☐ No
OCarASDSec (4110)

Lead Extraction ☐ Yes, planned
OCarACDLE (4120) ☐ Yes, unplanned due to surgical complication
☐ Yes, unplanned due to unsuspected disease or anatomy
☐ No

LV Aneurysm Repair: ☐ Yes ☐ No
OCarLVA (4125)

Pulmonary Thromboembolectomy: ☐ Yes, Acute ☐ Yes, Chronic ☐ No
OCPulThromDis (4130)

Subaortic Stenosis Resection ☐ Yes ☐ No
(If Yes ↓) OCarSubaStenRes (4135)
Type : ☐ Muscle ☐ Ring ☐ Membrane ☐ Web ☐ Not Reported
OCarSubaStenResTy (4140)

Surgical Ventricular Restoration: ☐ Yes ☐ No
OCarSVR (4145)

Tumor: ☐ Myxoma ☐ Fibroelastoma ☐ Hypernephroma ☐ Sarcoma
☐ Other ☐ No
OCTumor (4150)

Cardiac Transplant: ☐ Yes ☐ No
OCarCrTx (4152)

Cardiac Trauma: ☐ Yes ☐ No
OCarTrma (4153)

VSD Repair: ☐ Yes-congenital ☐ Yes-acquired ☐ No
OCarVSD (4155)

Other Cardiac Procedure: ☐ Yes ☐ No
OCarOthr (4160)

Out of Isolated Category

M.1. Complete for Epicardial and Intracardiac Atrial Fibrillation Procedures (If Other Cardiac Procedure, AFib = Yes ↓)
Lesion location: ☐ Primarily epicardial ☐ Primarily Intracardiac OCarAFibLesLoc (4191)
Lesions Documented: OCarLesDoc (4195) ☐ Yes ☐ No (If Yes ↓)
Method of Lesion Creation: (Select all that apply↓)

Answer

B. Mitral Valve Repair Only Case

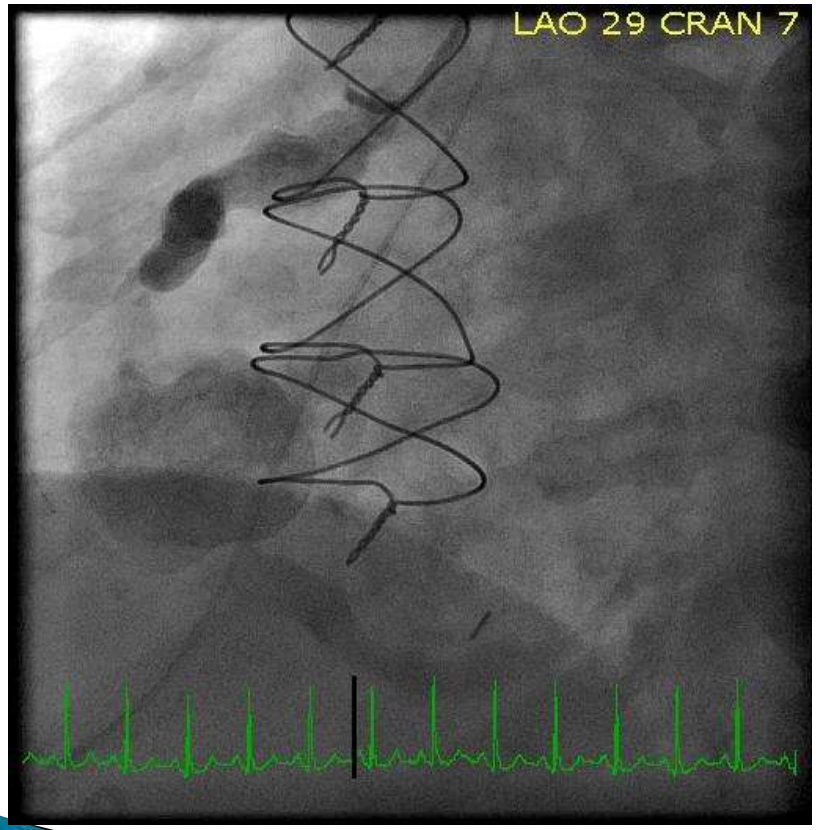
10. Redo CAB & Repair SVG Aneurysm

- **Pre-Operative Diagnosis**: Coronary artery disease, unstable angina, ruptured saphenous vein graft aneurysm

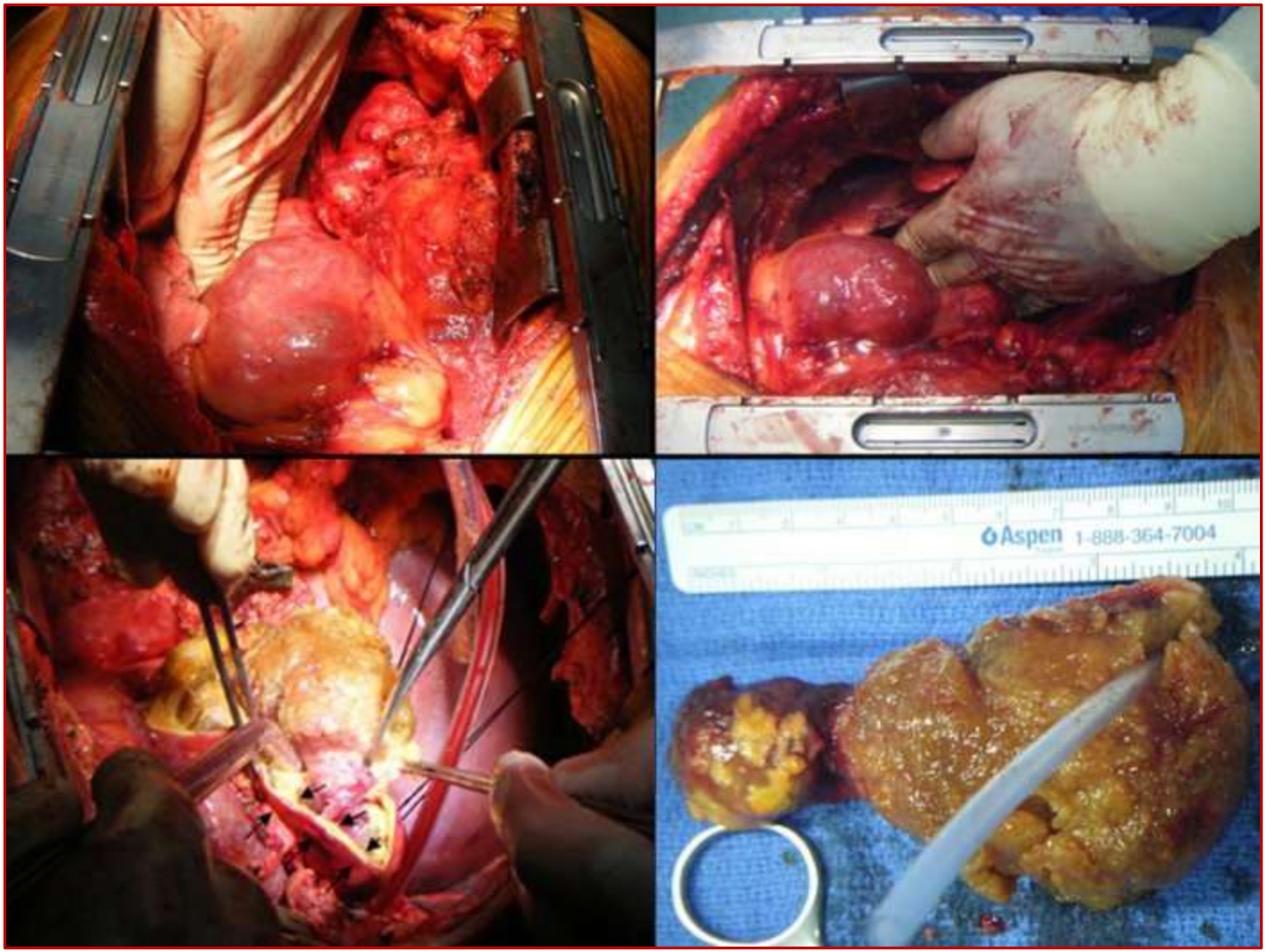
- **Procedure:** Resection of ruptured vein graft aneurysm and coronary artery bypass grafting

- Operative Report:
  .....Large SVG aneurysm approximately 6 cm in size adherent to the right atrial border and ruptured with active bleeding. A large amount of clot was found anterior and lateral to the right side of the heart. Following initiation of cardiopulmonary bypass proximal and distal control of the vein graft aneurysm was obtained. Following cardioplegic arrest the vein graft aneurysm was resected at its proximal and distal anastomosis and excised in total from the right atrial border of the heart. The proximal and distal anastomosis was oversewn with 4-0 Prolene in a running closure. Delayed sternal closure technique was used.

Saphenous Vein Graft Aneurysm



Giant Saphenous Vein Graft Aneursym



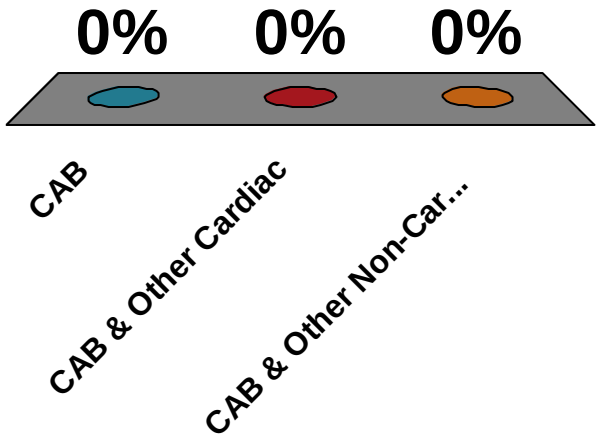
www.revespcardiol.org

Saphenous Vein Graft Aneurysms

- Rare Occurrences
- Chest pain can occur, many asymptomatic
- Concern for Rupture leads to Treatment
  - Rupture has associated high mortality rates.
- Risk of complication increases with aneursym size
  - Once identified, aneurysms continue to grow at variable rates.
- Symptomatic patients = high mortality rates.
  - 28% death rate within 90 days of initial symptoms.
    - J.P.Jorgensen & E.H. Yang et al, Medscape, Nov. 2014.
- In Hospital/30 day Mortality rate ~ 14%
    - Ramirez et al, Circulation: Management of SVG aneurysms, University of Ottawa: 2012
- No method to predict a safe size for surveillance

Code This Case (CAB & Rpr. SVG Aneursym)

A. CAB
B. CAB & Other Cardiac
C. CAB & Other Non-Cardiac



Answer

B. CAB & Other Cardiac

11. CAB & MAZE Operation

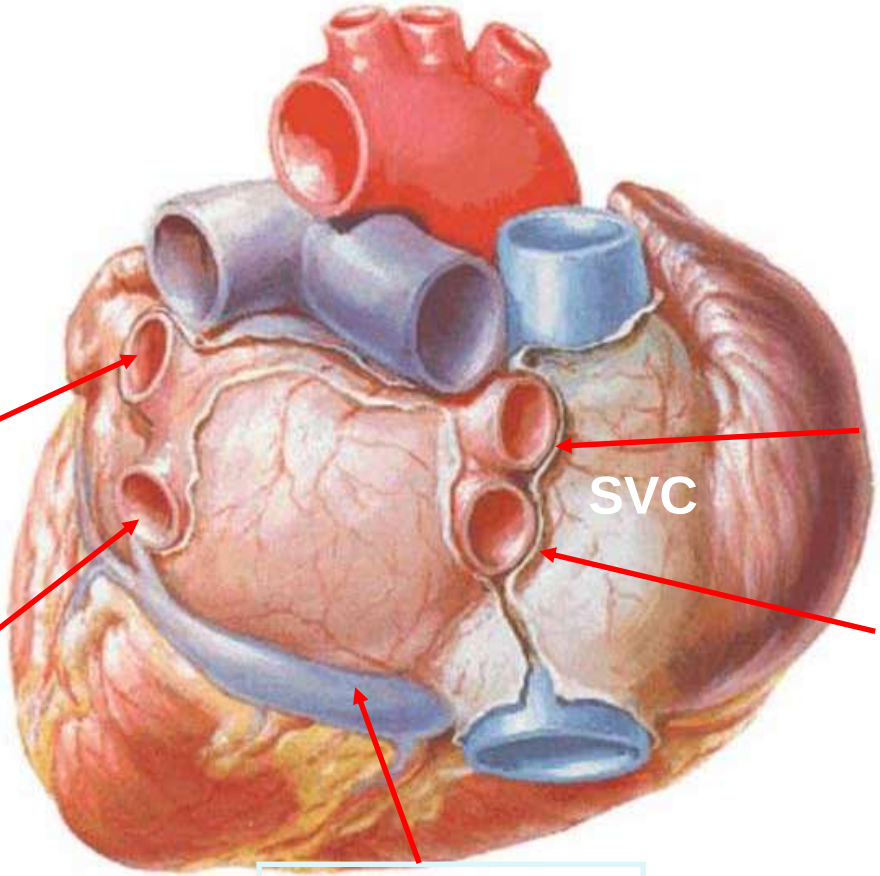
CAB & MAZE Operation

- Preoperative Diagnosis: Aortic Stenosis, coronary artery disease, atrial fibrillation

- Procedure: Aortic Valve replacement # 25 CE valve, CAB X 1, Modified MAZE including pulmonary vein isolation, LAA ligation, connecting lesions to right sided lesions.

Pulmonary Veins Anatomy

All Pulmonary Veins (R. & L.) on the Left Side of the Heart !



Left Superior Pulmonary Vein

Left Inferior Pulmonary Vein

Right Superior Pulmonary Vein

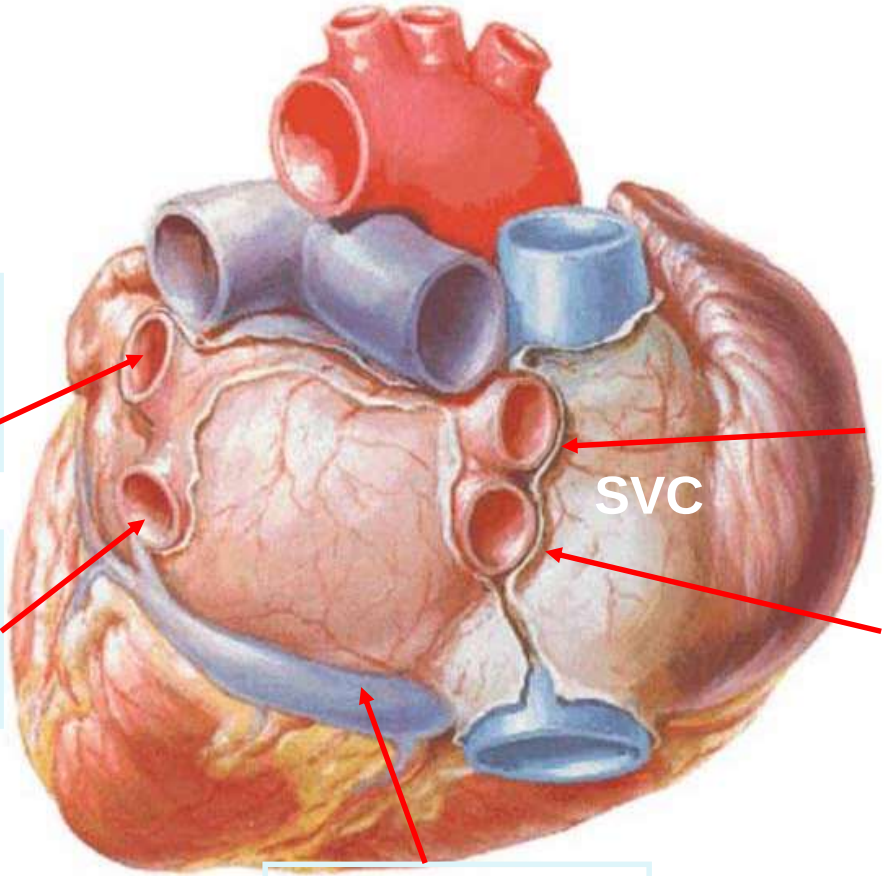
Right Inferior Pulmonary Vein

Coronary sinus

J. Edgerton MD
The Heart Hospital
Dallas, TX

Pulmonary Veins Anatomy

All Pulmonary Veins (R. & L.) on the Left Side of the Heart !



Left Superior Pulmonary Vein

Left Inferior Pulmonary Vein

Right Superior Pulmonary Vein

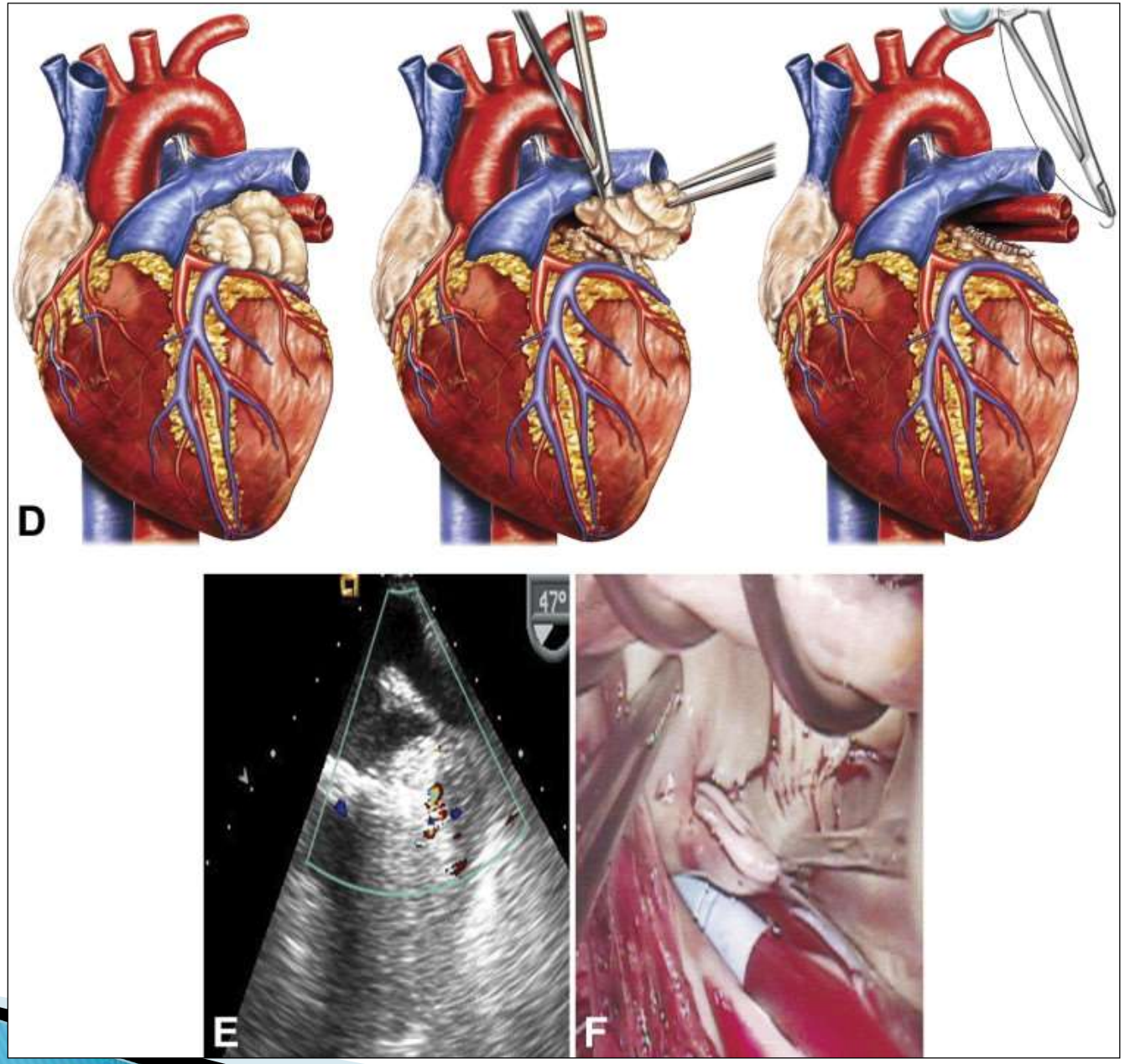
Right Inferior Pulmonary Vein

Coronary sinus

J. Edgerton MD
The Heart Hospital
Dallas, TX

Ablation Device

LAA Ligation



Annalsthoracicsurgery.org

- Operative Note: Following placement of the patient on pump, the pulmonary veins were isolated and ablated on both sides X 3. The ligament of Marshall was divided. The LAA was oversewn. Connecting lesions between the left and right were made and right sided lesions from the IVC to the SVC were done in a modified maze fashion.
- On completion of this, the aorta was cross clamped. A left vent was placed in the R. superior pulmonary vein and a single bypass was performed with a SVG to the diagonal.
- Following this, the aorta was opened, and the aortic valve was (*found to be*) trileaflet.
- The valve was excised and the annulus debrided. A #25 CE valve was placed with the valve seated and secured.

Surgeon #1 Help for MAZE Case !

www.everydaylifeglobal.com

www.plasticsurgerychannel.com

Yes, We'll Fill Out That Form!

www.Indiahospitaltour.com

Michigans Surgeons……..!

I guess we can do a form ?

I don't do Paperwork!

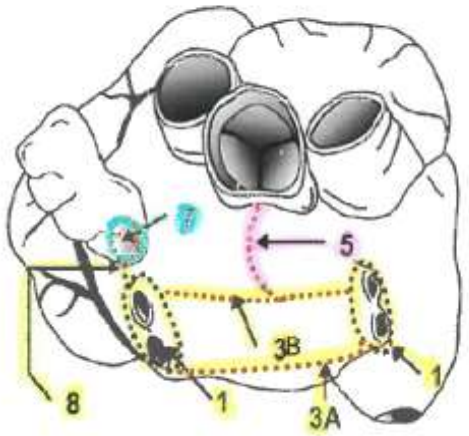
We Can Help You!

Color Coded MAZE STS DCF

Key: Yellow = Epicardial Lesion
Pink = Intracardiac Lesion
Blue = Surgical Excision

If No Surgeon Help!

STS DCF 2.81
Pg: 18



Yellow = Epicardial Lesion
Pink = Intracardiac Lesion
Blue = Surgical Lesion

Michigan Cardiac Surgery Data Managers
Color Coded: February 2015

Lesions: (check all that apply ☑)

- ☐ 1 Pulmonary Vein Isolation — AFibLes1 (4250)
- ☐ 2 Box Lesion — AFibLes2 (4255)
- ☐ 3a Inferior Pulmonary Vein Connecting Lesion *(Floor Line)* — AFibLes3a (4260)
- ☐ 3b Superior Pulmonary Vein Connecting Lesion *(Roof Line)* — AFibLes3b (4265)
- ☐ 4 Posterior Mitral Annular Line — AFibLes4 (4270)
- ☐ 5 Pulmonary Vein Connecting Lesion to Anterior Mitral Annulus — AFibLes5 (4275)
- ☐ 6 Mitral Valve Cryo Lesion — AFibLes6 (4280)
- ☐ 7 LAA Ligation/Removal — AFibLes7 (4285)
- ☐ 8 Pulmonary Vein to LAA — AFibLes8 (4290)
- ☐ 9 Interatrial Line to Tricuspid Annulus ("T" lesion) — AFibLes9 (4295)
- ☐ 10 Tricuspid Cryo Lesion, Medial — AFibLes10 (4300)
- ☐ 11 Interatrial Line — AFibLes11 (4305)
- ☐ 12 Tricuspid Annular Line to RAA — AFibLes12 (4310)
- ☐ 13 Tricuspid Cryo Lesion — AFibLes13 (4315)
- ☐ 14 RAA Ligation/Removal — AFibLes14 (4320)
- ☐ 15a RAA Lateral Wall (Short) — AFibLes15a (4325)
- ☐ 15b RAA Lateral Wall to "T" Lesion — AFibLes15b (4330)
- ☐ 16 Other — AFibLes16 (4335)

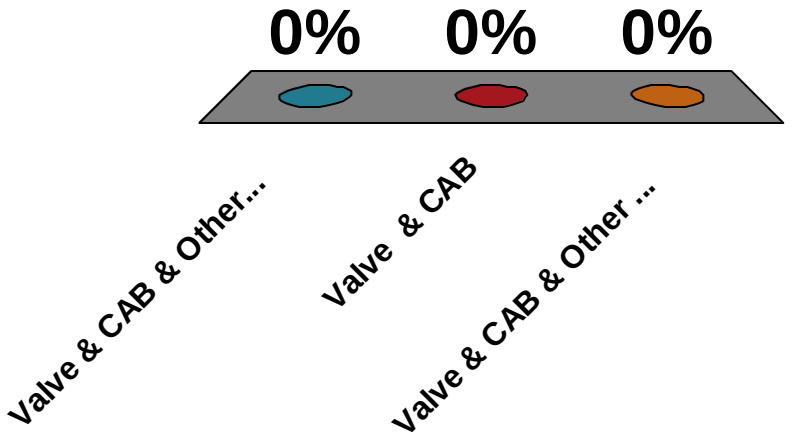
CAB & MAZE Operation

- Preoperative Diagnosis: Aortic Stenosis, coronary artery disease, atrial fibrillation

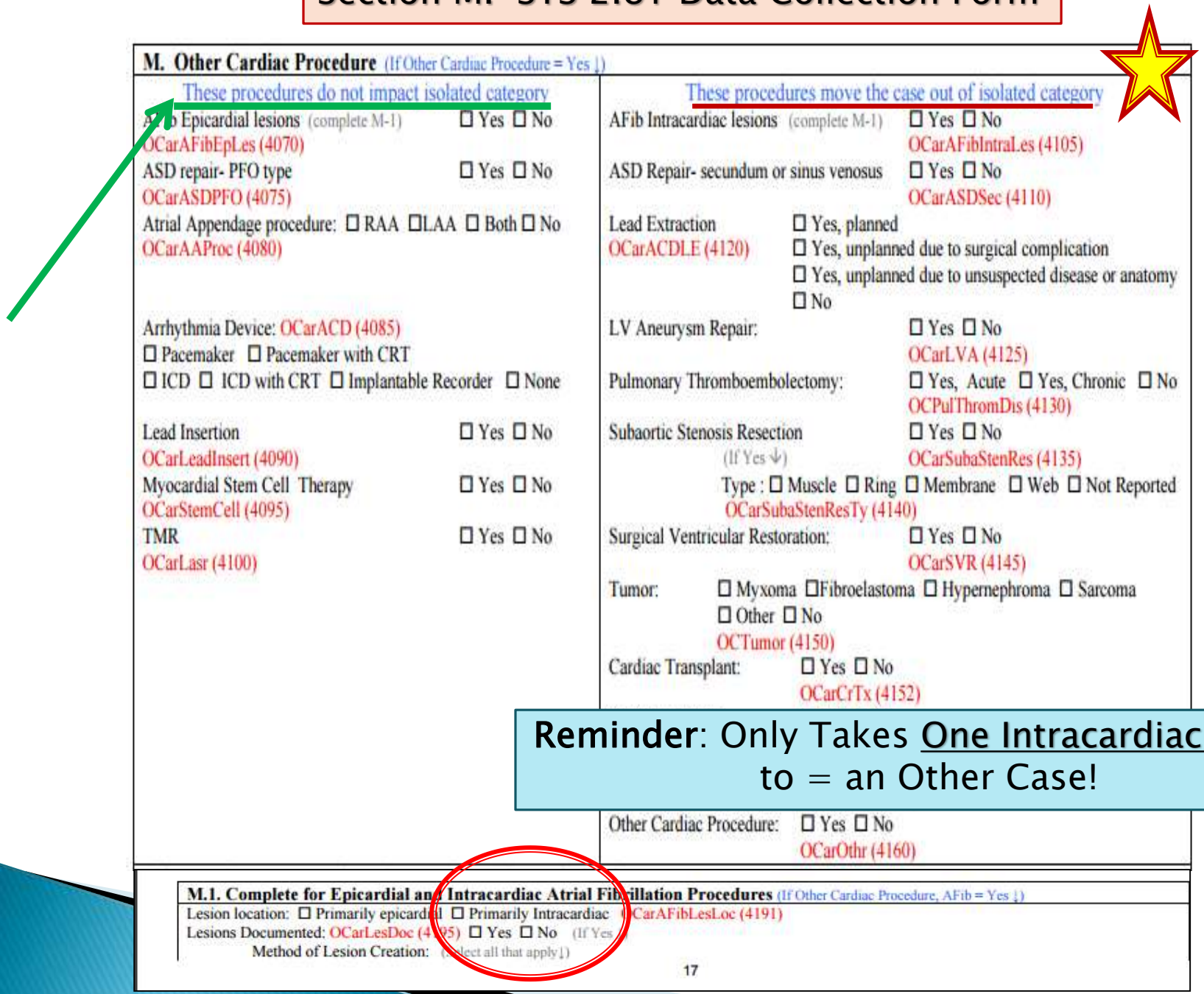
- Procedure: Aortic Valve replacement # 25 CE valve, CAB X 1, Modified MAZE including pulmonary vein isolation, LAA ligation, connecting lesions to right sided lesions.

Code This Case

A. AVR & CAB & Other Cardiac
B. AVR & CAB
C. AVR & CAB & Other Cardiac Atrial Fibrillation Procedure



Section M. STS 2.81 Data Collection Form



M. Other Cardiac Procedure (If Other Cardiac Procedure = Yes ↓)

These procedures do not impact isolated category

AFib Epicardial lesions (complete M-1) ☐ Yes ☐ No
OCarAFibEpLes (4070)

ASD repair- PFO type ☐ Yes ☐ No
OCarASDPFO (4075)

Atrial Appendage procedure: ☐ RAA ☐ LAA ☐ Both ☐ No
OCarAAProc (4080)

Arrhythmia Device: OCarACD (4085)
☐ Pacemaker ☐ Pacemaker with CRT
☐ ICD ☐ ICD with CRT ☐ Implantable Recorder ☐ None

Lead Insertion ☐ Yes ☐ No
OCarLeadInsert (4090)

Myocardial Stem Cell Therapy ☐ Yes ☐ No
OCarStemCell (4095)

TMR ☐ Yes ☐ No
OCarLasr (4100)

These procedures move the case out of isolated category

AFib Intracardiac lesions (complete M-1) ☐ Yes ☐ No
OCarAFibIntraLes (4105)

ASD Repair- secundum or sinus venosus ☐ Yes ☐ No
OCarASDSec (4110)

Lead Extraction ☐ Yes, planned
OCarACDLE (4120) ☐ Yes, unplanned due to surgical complication
☐ Yes, unplanned due to unsuspected disease or anatomy
☐ No

LV Aneurysm Repair: ☐ Yes ☐ No
OCarLVA (4125)

Pulmonary Thromboembolectomy: ☐ Yes, Acute ☐ Yes, Chronic ☐ No
OCPulThromDis (4130)

Subaortic Stenosis Resection ☐ Yes ☐ No
(If Yes ↓) OCarSubaStenRes (4135)
Type : ☐ Muscle ☐ Ring ☐ Membrane ☐ Web ☐ Not Reported
OCarSubaStenResTy (4140)

Surgical Ventricular Restoration: ☐ Yes ☐ No
OCarSVR (4145)

Tumor: ☐ Myxoma ☐ Fibroelastoma ☐ Hypernephroma ☐ Sarcoma
☐ Other ☐ No
OCTumor (4150)

Cardiac Transplant: ☐ Yes ☐ No
OCarCrTx (4152)

Other Cardiac Procedure: ☐ Yes ☐ No
OCarOthr (4160)

M.1. Complete for Epicardial and Intracardiac Atrial Fibrillation Procedures (If Other Cardiac Procedure, AFib = Yes ↓)
Lesion location: ☐ Primarily epicardial ☐ Primarily Intracardiac OCarAFibLesLoc (4191)
Lesions Documented: OCarLesDoc (4095) ☐ Yes ☐ No (If Yes ↓)
Method of Lesion Creation: (Select all that apply ↓)

17

Reminder: Only Takes <u>One Intracardiac</u> Lesion to = an Other Case!

Answer

B. Valve & CAB Case

12. Redo AVR, MVR & CAB X 1

Redo AVR, MVR & CAB X1

- Preoperative Diagnosis: Severe prosthetic valve aortic stenosis (#19mm valve). Previous (2009) CABG LIMA to LAD, SVG to PDA with worsening dyspnea. Cardiac cath: nonobstructive coronary artery disease. Open LIMA to LAD graft. 55% EF on recent Echocardiogram. Plan for redo AVR and aortic root enlargement electively.

- Procedure: Redo aortic valve replacement with #21 mm valve, and mitral valve replacement with # 25 valve & CAB X 1 with SVG to LIMA.

Redo AVR, MVR & CAB X1

- Operative Note:

70 yr. female with previous #19mm prosthetic aortic valve. Development of increasing LVH and symptoms requiring redo AVR.

Redo median sternotomy was made. The LIMA was densely adherent to the upper portion of the sternum just millimeters away from the midline. The artery was injured as adhesions were being taken down. Surprisingly, it was not completely mobilized from the chest from the first procedure. Cannulation and bypass was begun & the mammary was dissected out. The mammary was repaired and an end to end anastomosis of the mammary artery to a reverse saphenous vein was performed. The 19mm aortic valve was densely adherent to the aortic wall and was carefully teased and dissected away from the LV outflow tract. Upon removing the valve it was apparent it had become adherent to the mitral valve and the mitral valve was injured.

Redo AVR, MVR & CAB X1

- Operative Note continued:

I felt the mitral valve was injured beyond repair. There was also injury to the intraventricular septum *(and)* a VSD resulted. This was closed with pledgeted sutures. Aortotomy was extended down through the posterior wall, the aorta, and then the aortic annulus onto the LA. The remaining portion of the anterior leaflet of the mitral valve was excised. Pledgeted 2-0 braided sutures were placed on the ventricular side. Sutures were passed through the 25mm valve ring and the valve was lowered down and seated nicely. Warm retrograde reperfusate was given as the aortotomy was closed and the cross clamp removed. Proximal anastomosis was performed and hemostasis was surprisingly secure with reasonable myocardial function.

Redo AVR, MVR & CAB X1

- Operative Note continued:
- However, in minutes and upon loading the heart, there was a large gush of bright red blood from the posterior wall, and this was presumably from a ventriculoatrial discontinuity. The situation was not amenable to repair. The patient was weaned from bypass, but the heart function deteriorated and she was allowed to expire.

Types of LV Rupture after MV Replacement

Type	Location of tear	Mechanism
I	Atrioventricular groove	Placing an annular suture that was partially within the posterior LV wall or from excessive force applied when tying down the annular ring
		Excessive debridement in heavily calcified mitral valve annulus
		Improper inspection of the LV posterior wall after mitral valve replacement, by lifting the heart from the pericardial cavity, erroneously using the atrioventricular groove as a fulcrum
II	Base of the papillary muscles	Excessive resection of the posterior papillary muscle, resulting in local hemorrhage and rupture
III	Posterior left ventricular wall located between type I and type II lesions	The valve struts of high profile or large prosthetic valves penetrate into the posterior myocardium (often associated with a small left ventricular cavity)

4 of 4

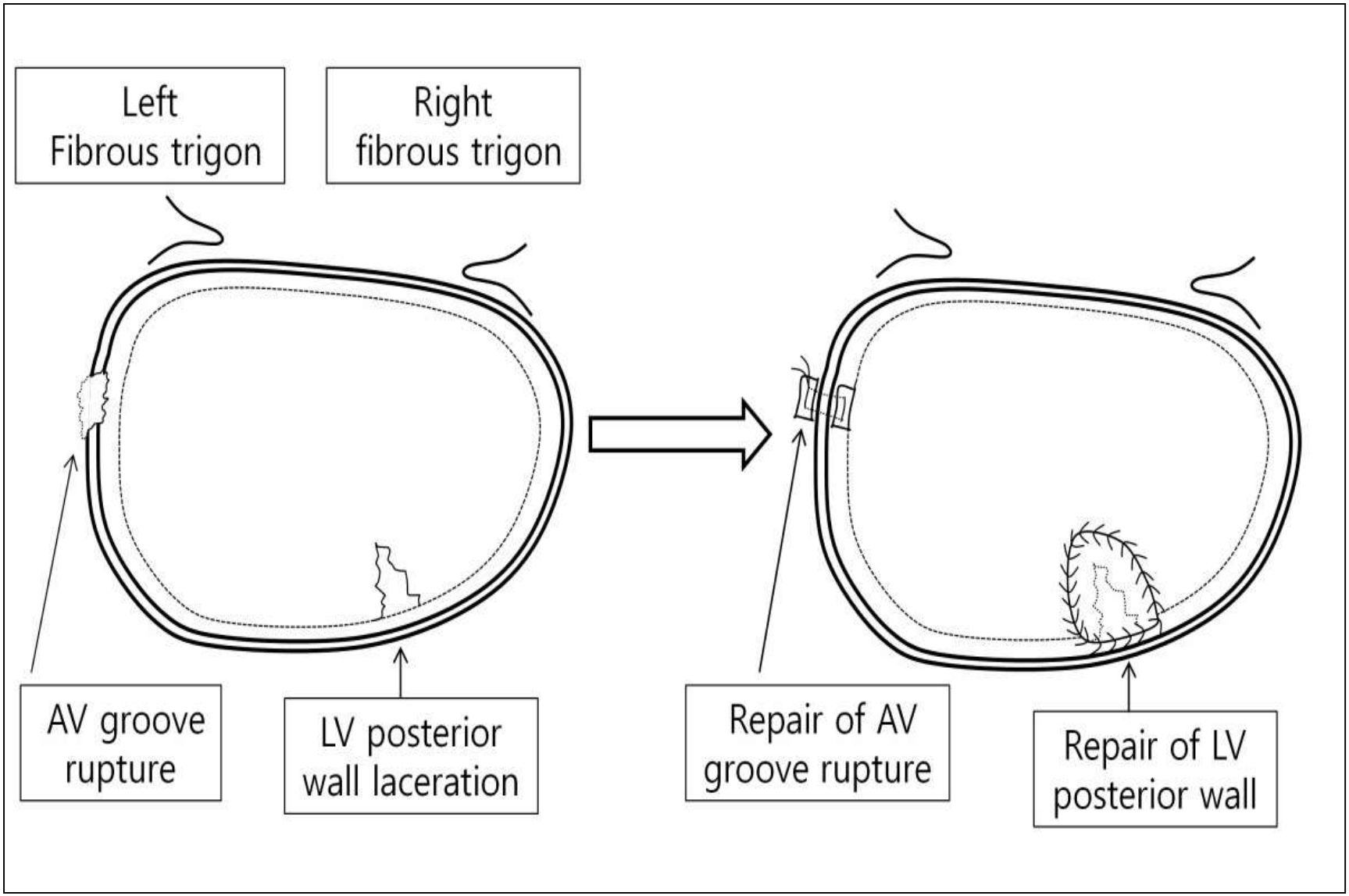
Table 1. Types of Left Ventricular (LV) Rupture After Mitral Valve Replacement8

- Calcium Debridement
- Excessive Resection of Posterior Papillary Muscle
- Prosthetic Valve Mis-Match

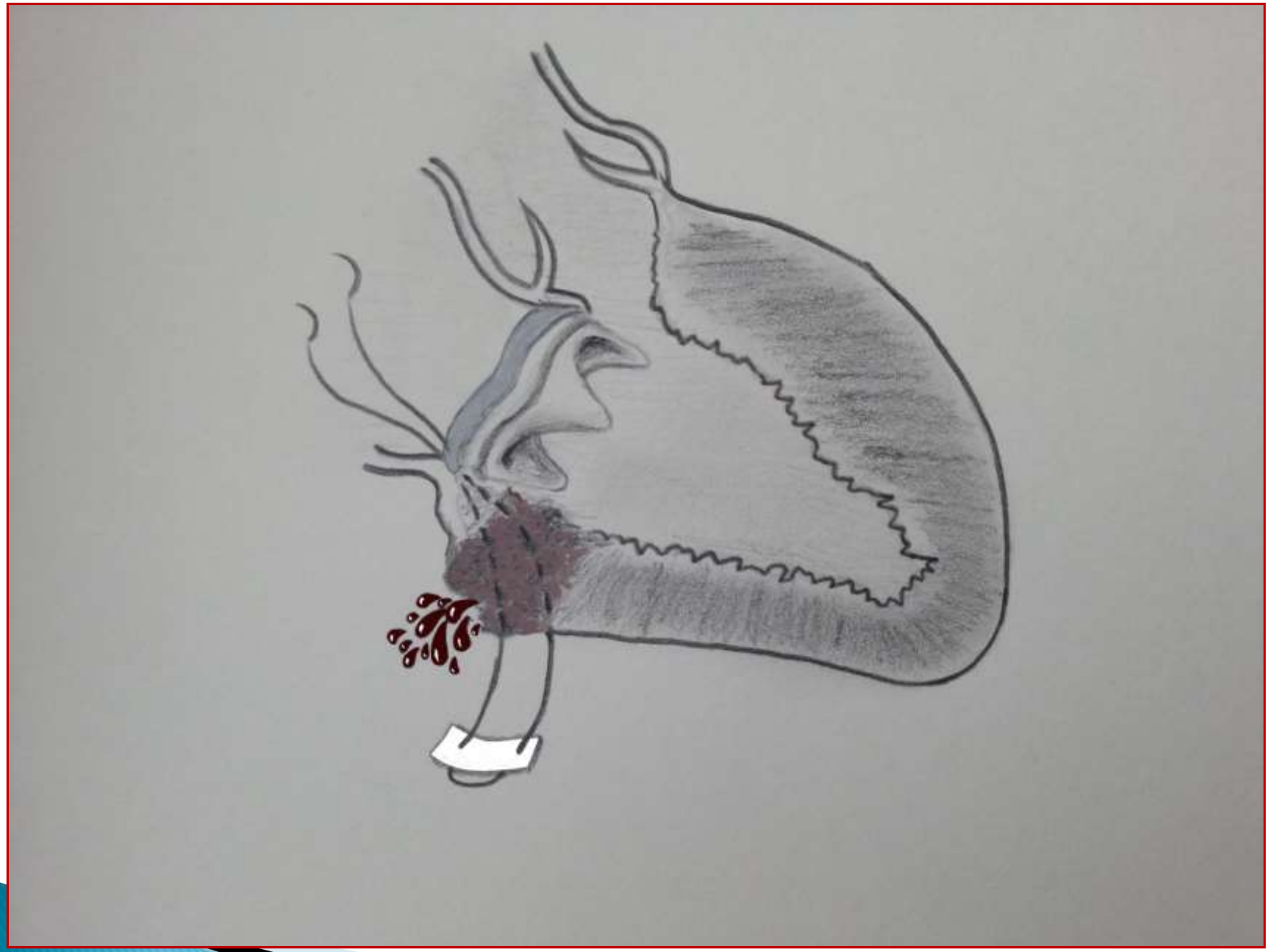
SOURCE
Atrioventricular Disruption After Mitral Valve Replacement: The Role of Intraoperative Transesophageal Echocardiography
Anesthesia & Analgesia. 119(5):1074-1077, November 2014.

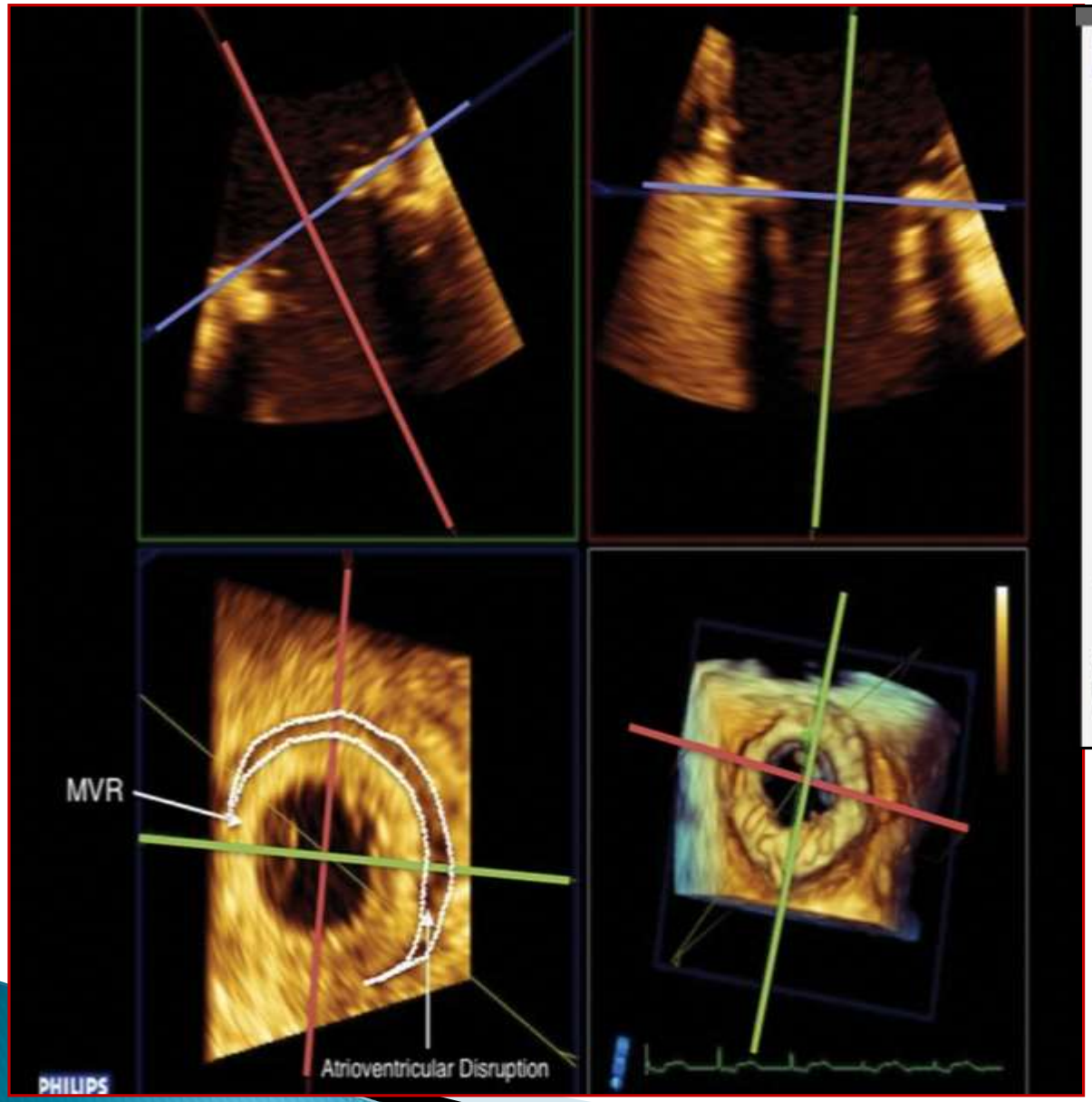
View Images in Gallery

Anesthesia & Analgesia: November 2014 - Volume 119 - Issue 5 - p 1074-1077



Cardiothoracicsurgery.biomedical.com/articles/10.81186





3 of 4

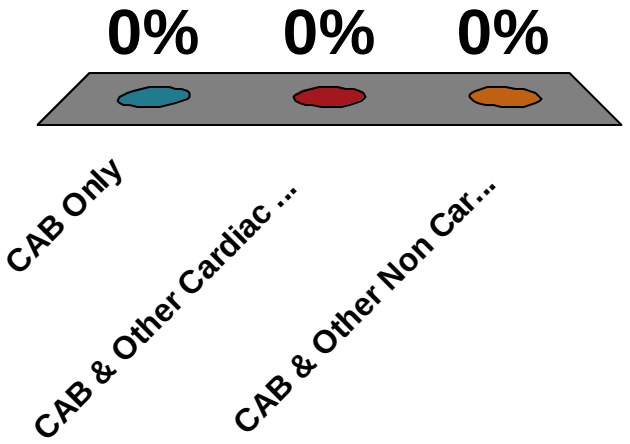
Figure 3. Multiplanar analysis of a 3D data set, with 3 orthogonal planes (red, green, blue). Two cut planes (green, red) demonstrate the prosthetic mitral valve in long-axis. In the en face view (blue plane), the gap between the mitral valve and the left ventricle (white dashed line) can be measured. MVR = prosthetic mitral valve.

SOURCE
Atrioventricular Disruption After Mitral Valve Replacement: The Role of Intraoperative Transesophageal Echocardiography
Anesthesia & Analgesia. 119(5):1074-1077, November 2014.

Anesthesia & Analgesia: November 2014 - Volume 119 - Issue 5 - p 1074-1077

Code This Case (Redo MVR, AVR, CAB X1)

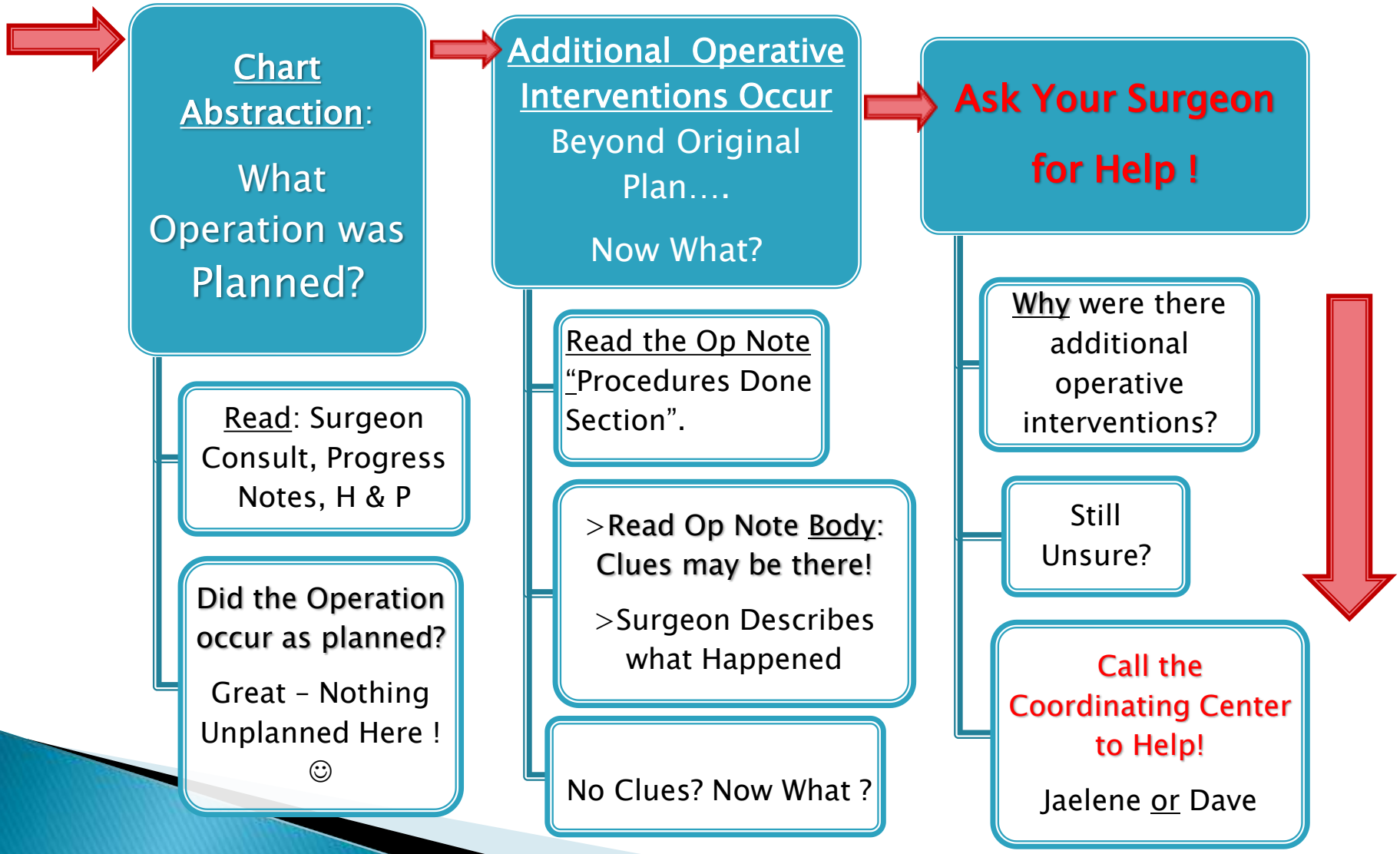
A. AVR, MVR, CAB & Other Cardiac Other
B. AVR & CAB Only
C. AVR Only



Unplanned Cardiac OR Events: How do they Impact the Final Procedure Type?

- This Case:
- Redo CAB – Unplanned ?
  - Injured LIMA from previous operation.
- *Unplanned MVR ?*
  - Injured with dissection of the old aortic valve.
- Operations: Unplanned due to surgical complication or unsuspected disease or anatomy?
- If a Surgical Complication – Case remains an Isolated case !!
- Steps to Determine Unplanned Type
  - Next Slide a Suggested "Algorithm"

Unplanned Operation ?
Help to Determine Unplanned Type



Unplanned Cardiac OR Events? This Case Operative Note:

- **OPERATIVE NOTE:**

- **Preoperative Diagnosis**:
  - Prosthetic aortic stenosis

- **PROCEDURE:**
  1. Reduced Anatomy
  2. Coronary artery bypass grafting X 1 with saphenous vein to left internal mammary artery.
  3. Redo aortic valve replacement and mitral valve replacement with 21-mm and 25-mm mitral valves.

Answer

B. AVR Only

Qwentions Anywon?