

# The Double Switch for ccTGA

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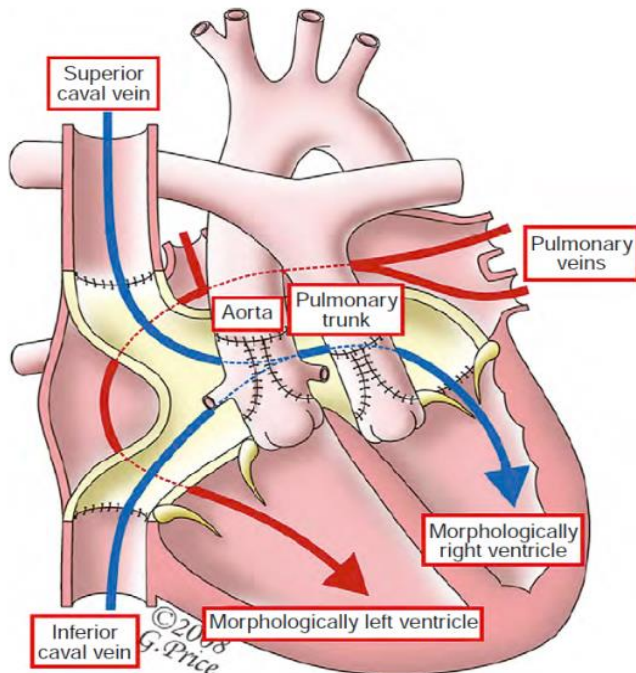
**STS/EACTS Latin America  
Cardiovascular Surgery Conference**

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**No Disclosures**

# Double Switch = Atrial Inversion & Arterial Switch



70% have VSD

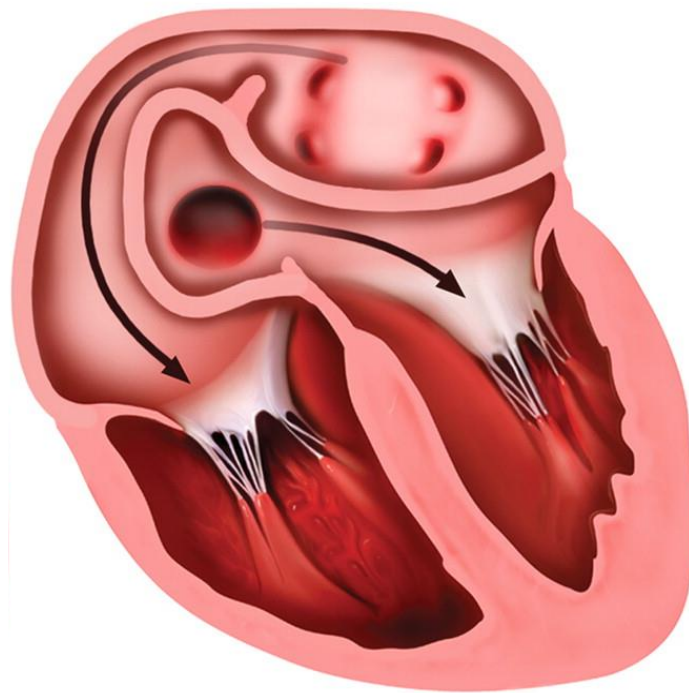
80% have had previous PA Band  
.....Redo-Sternotomy

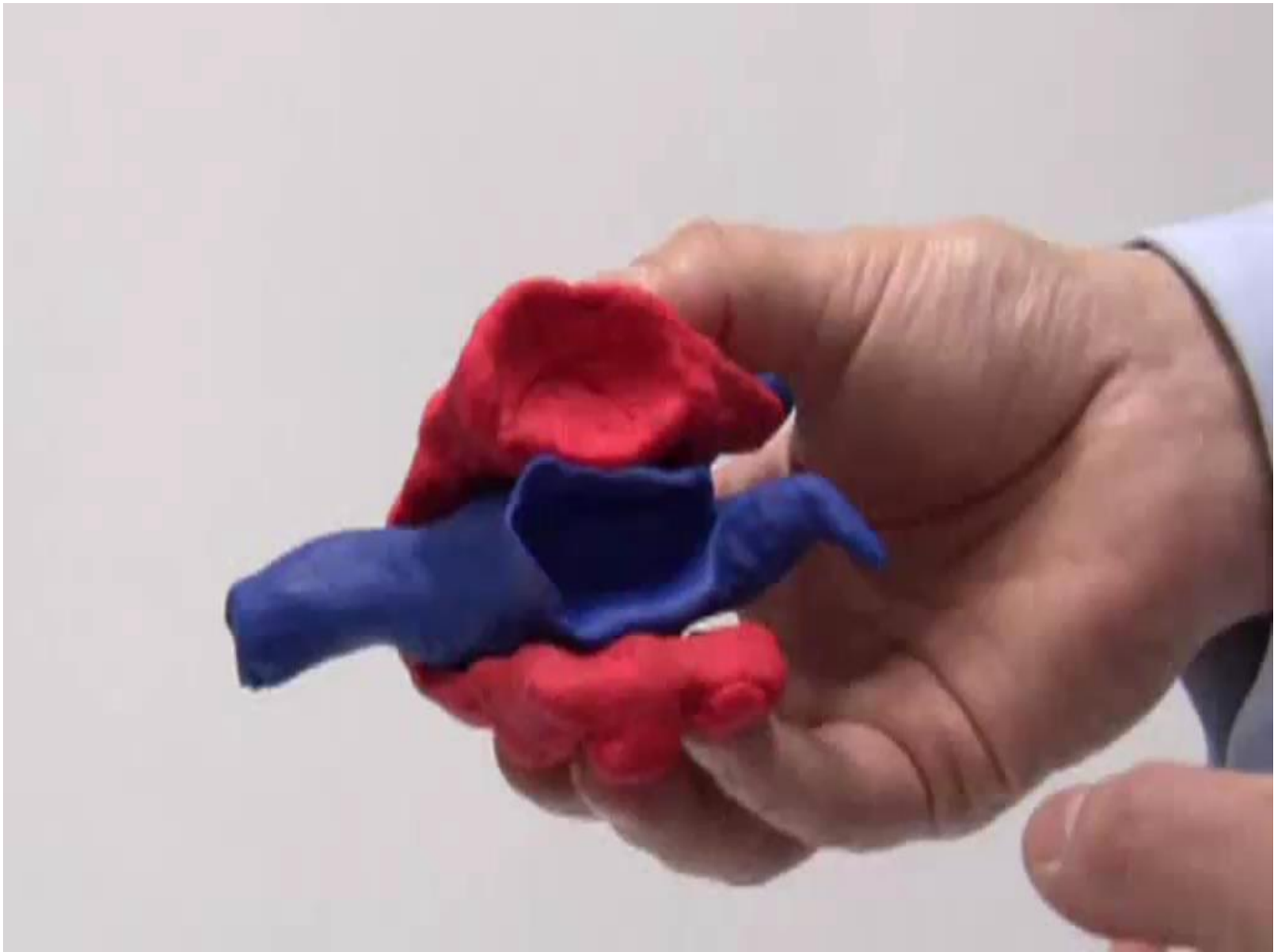
Dextrocardia and Mesocaria are  
common

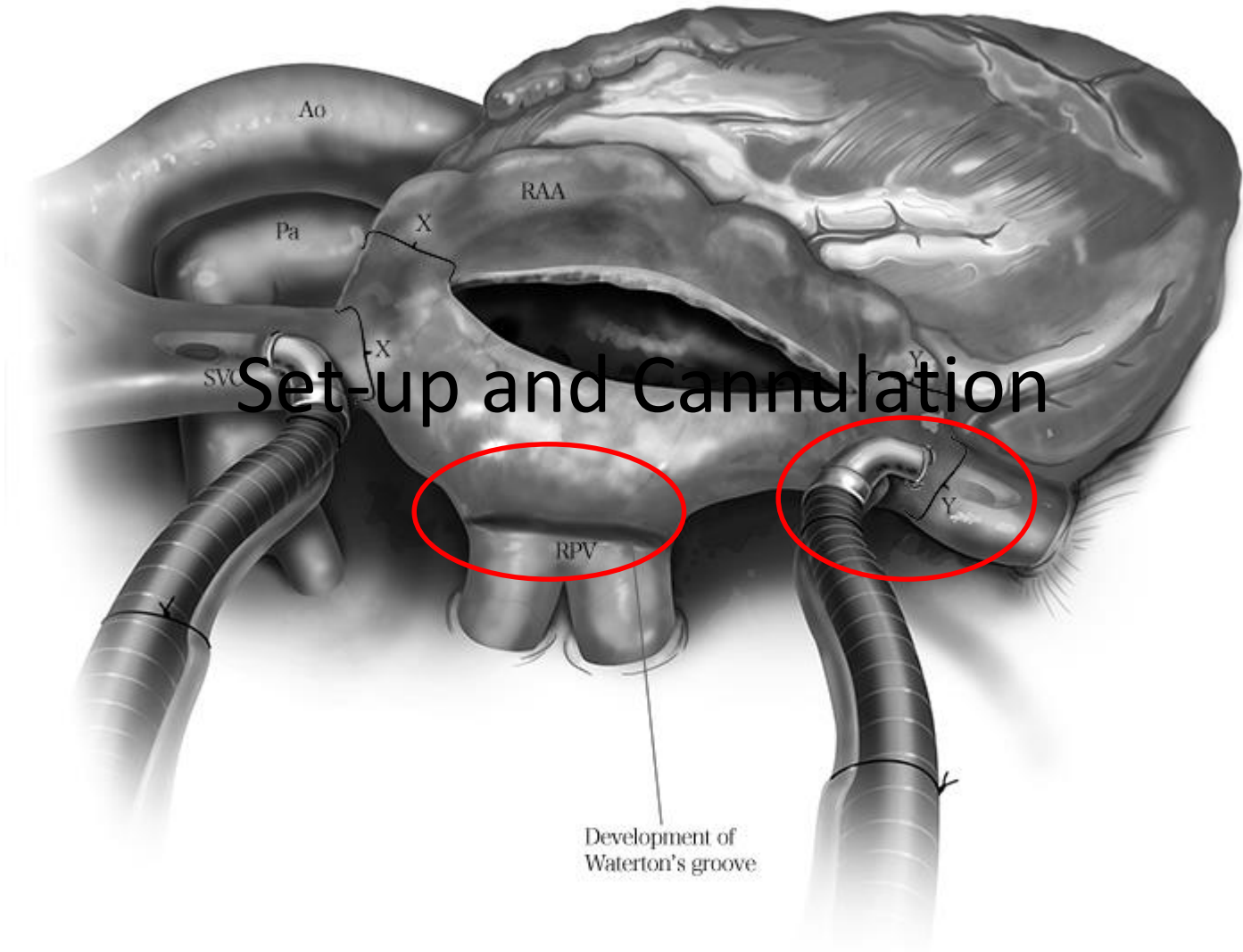
## Atrial Switch:

Senning or Mustard

Senning is most popular

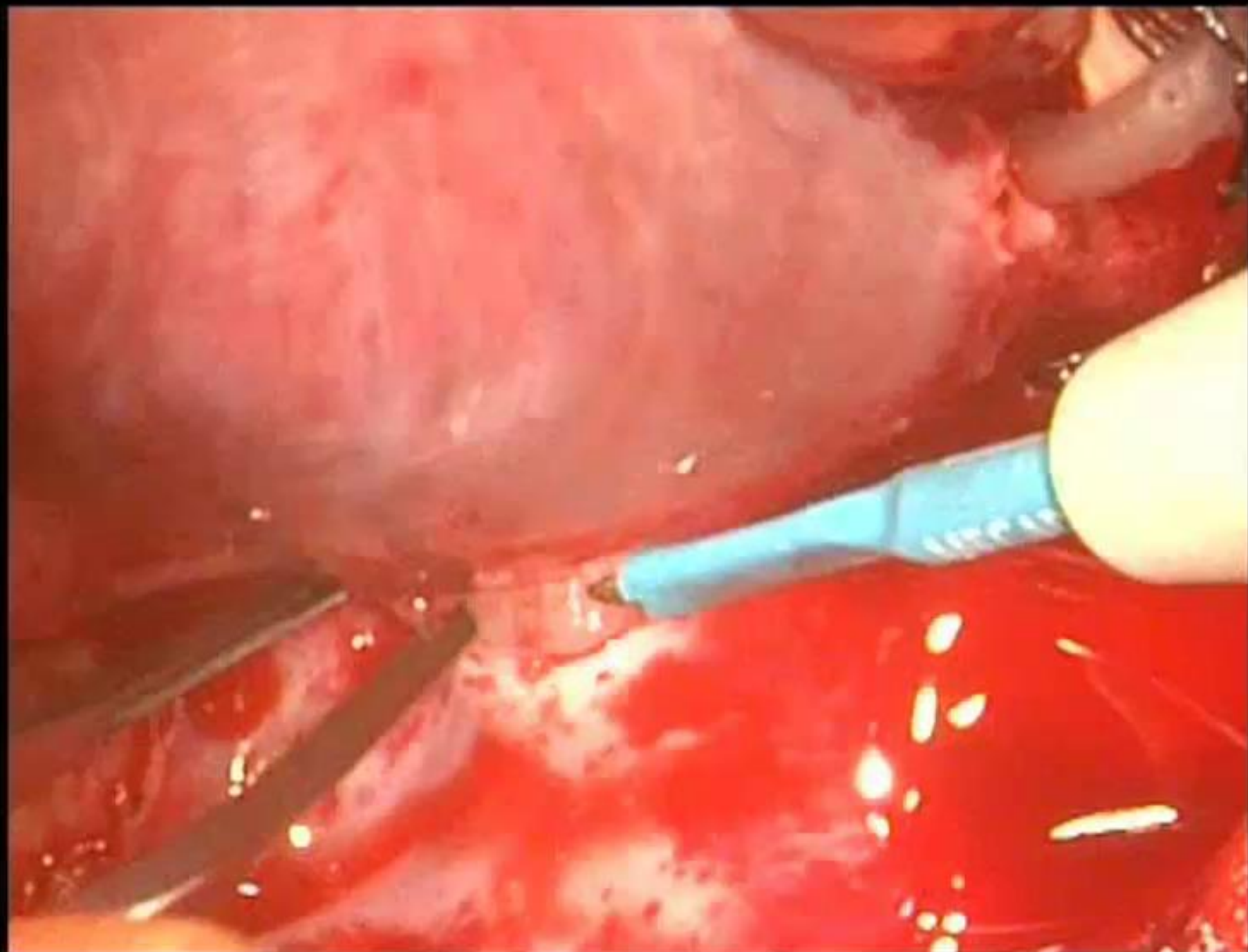


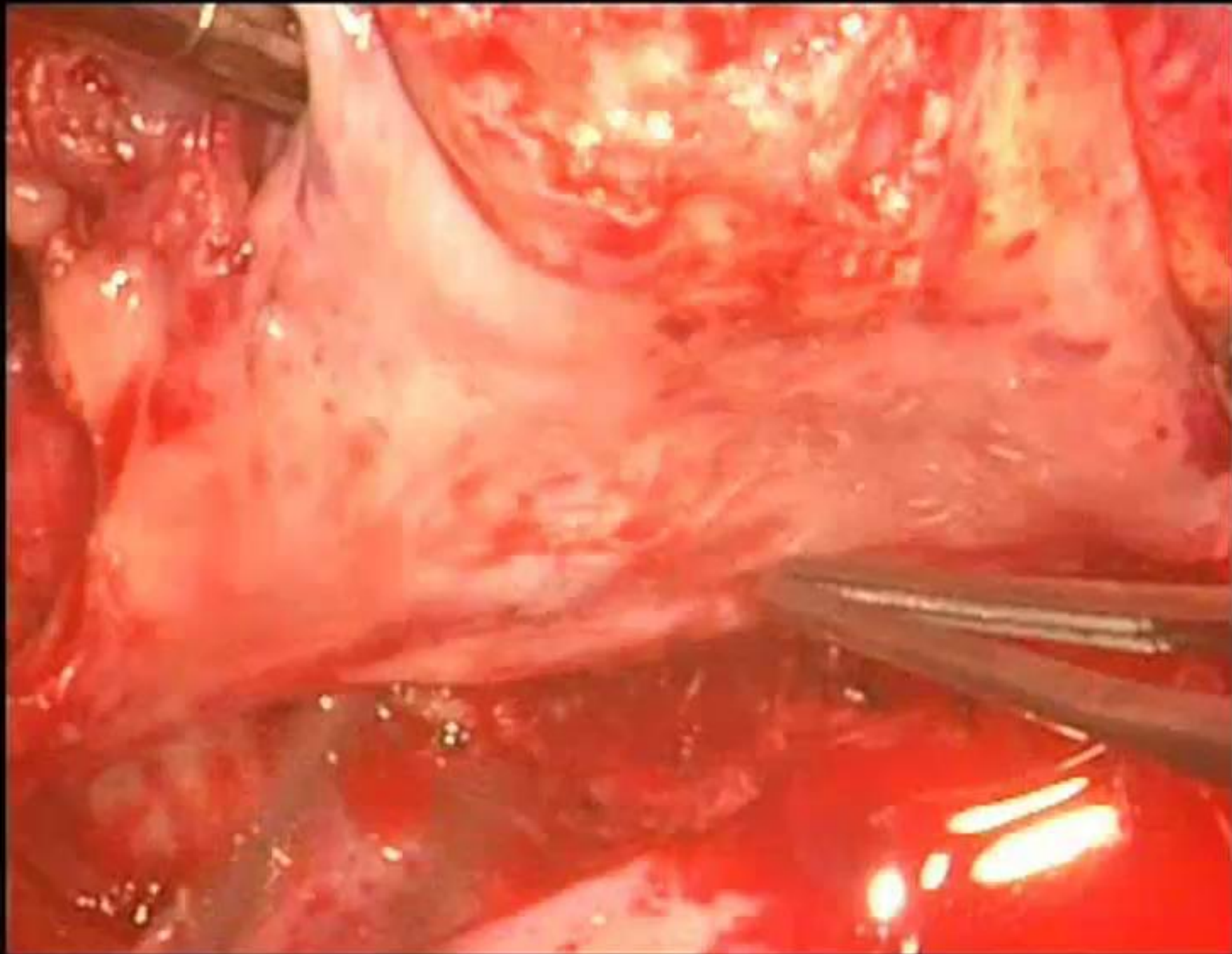




# Set-up and Cannulation

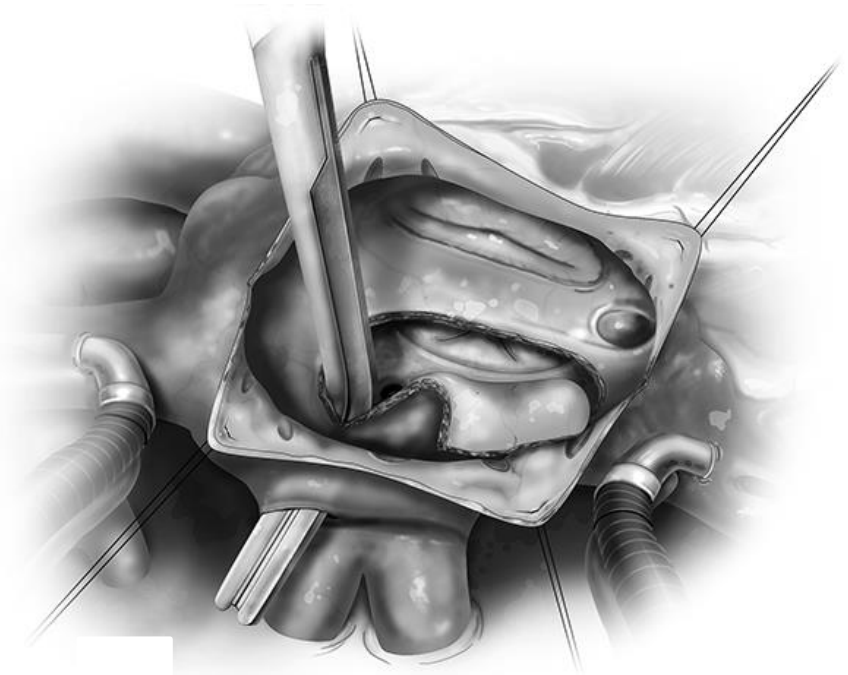
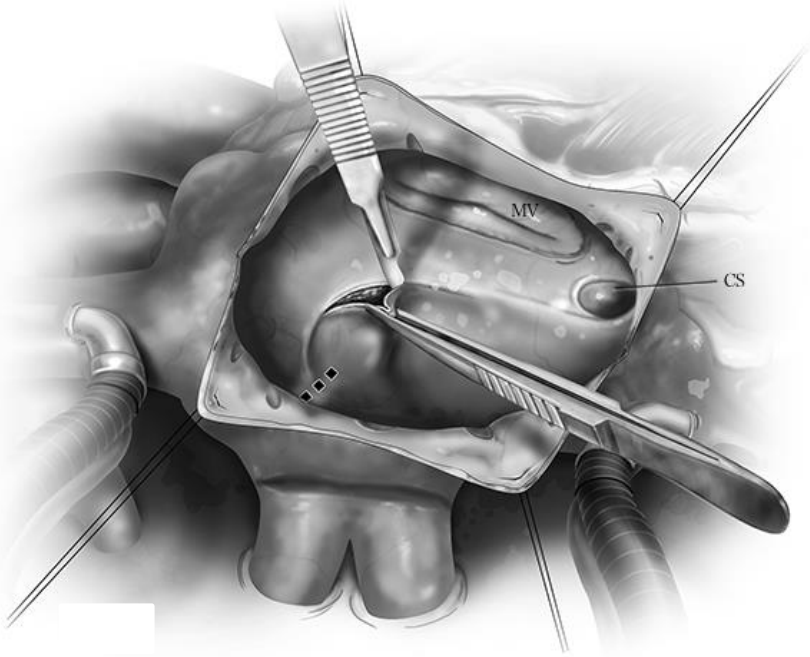
Development of  
Waterton's groove





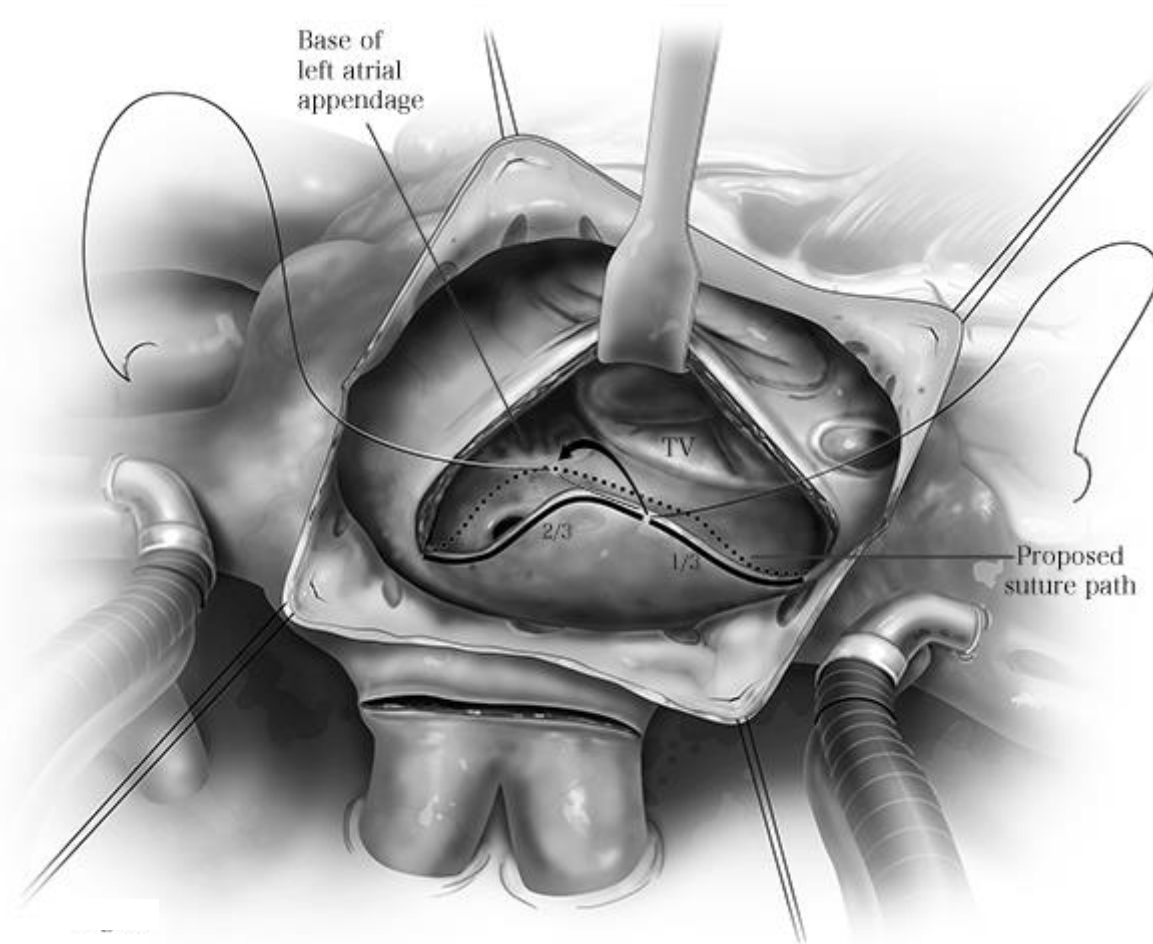


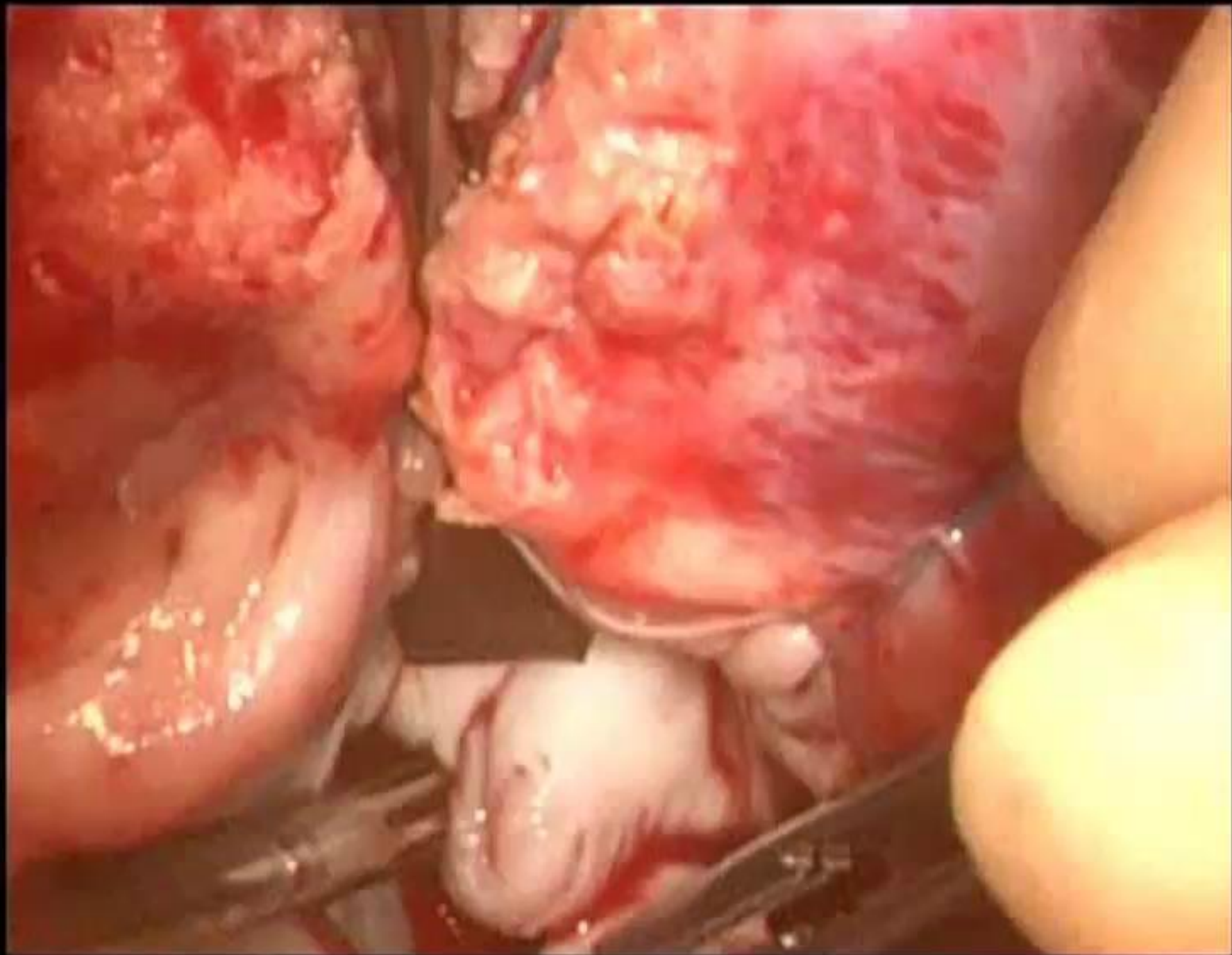
# Initial Incisions





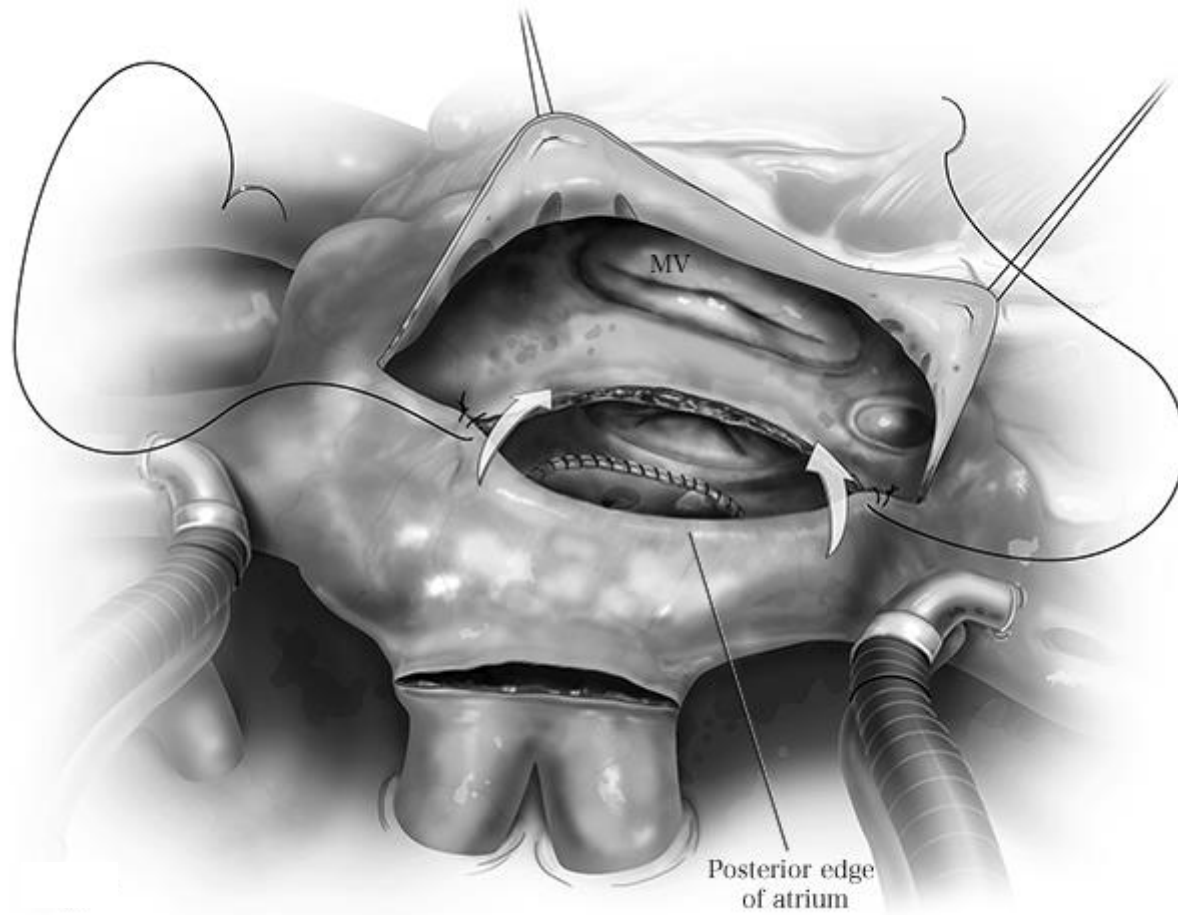
# First Layer

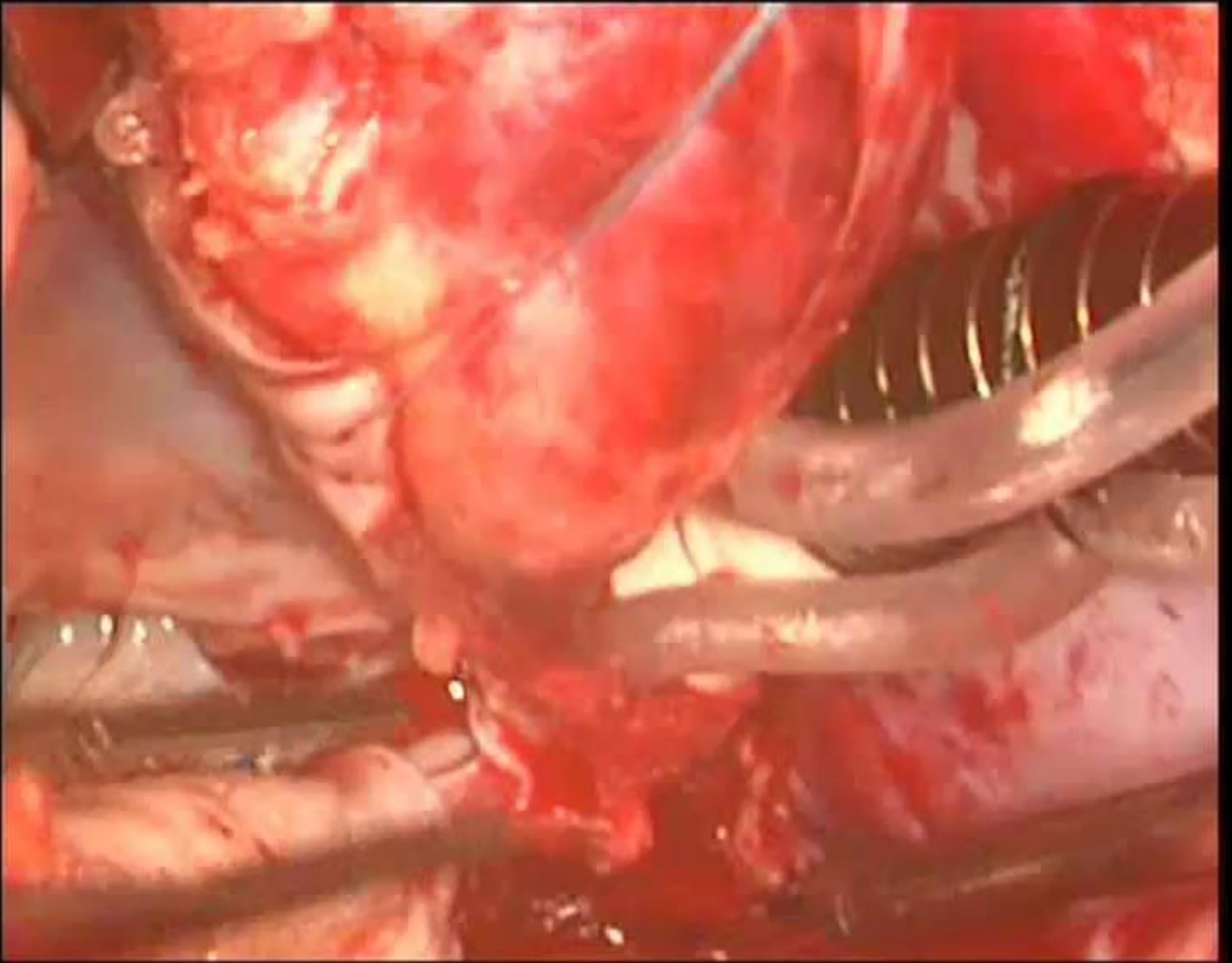




# Second Layer

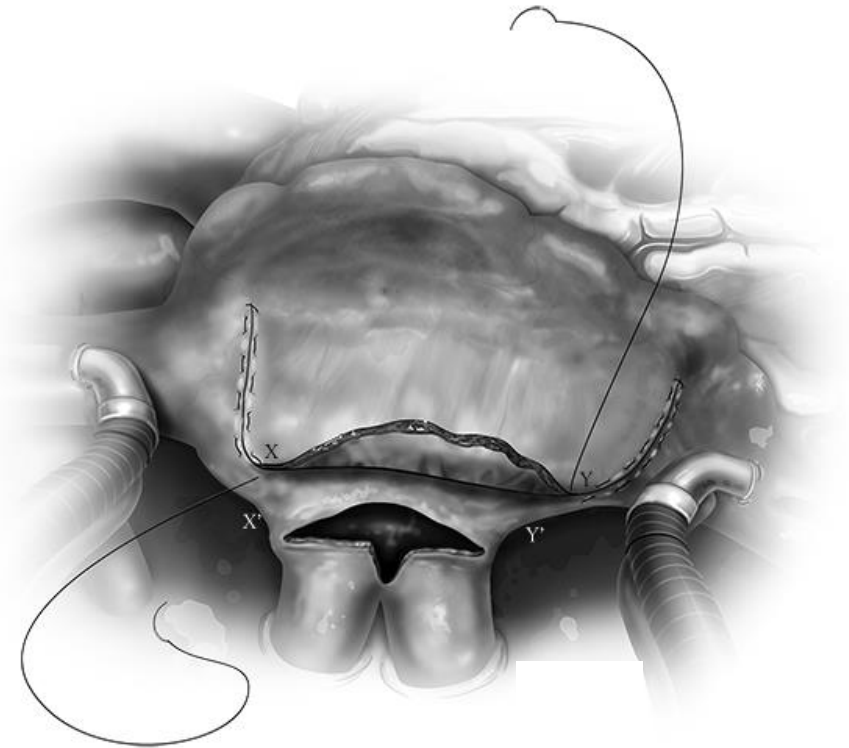
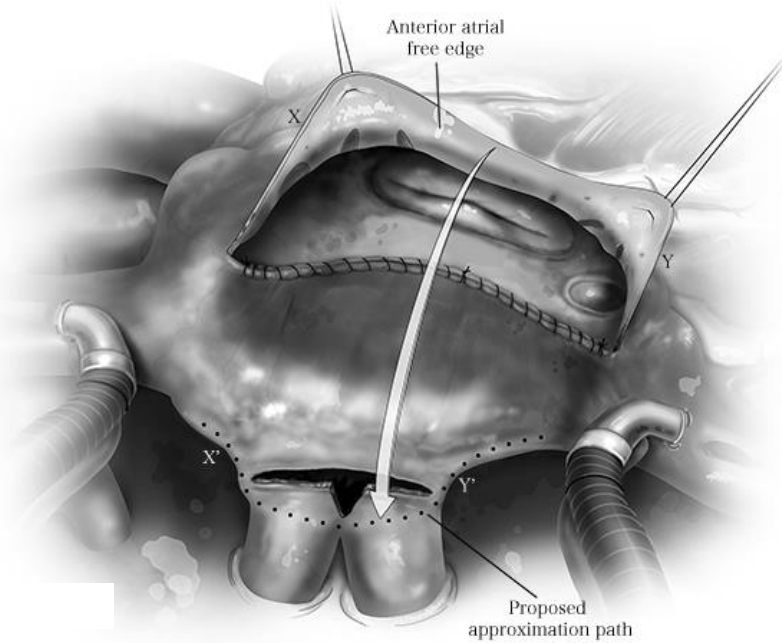
## The Systemic Venous Pathway



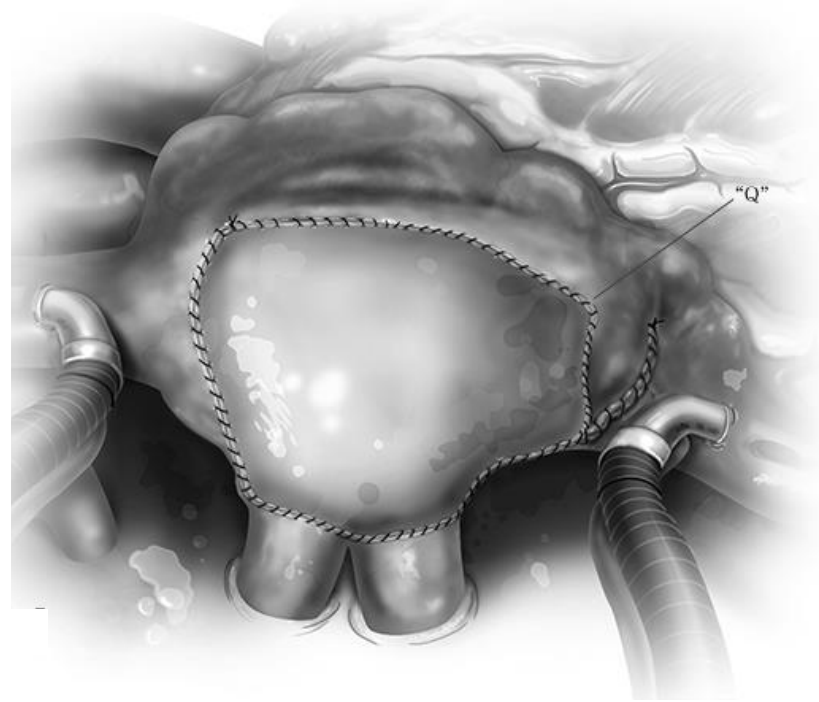
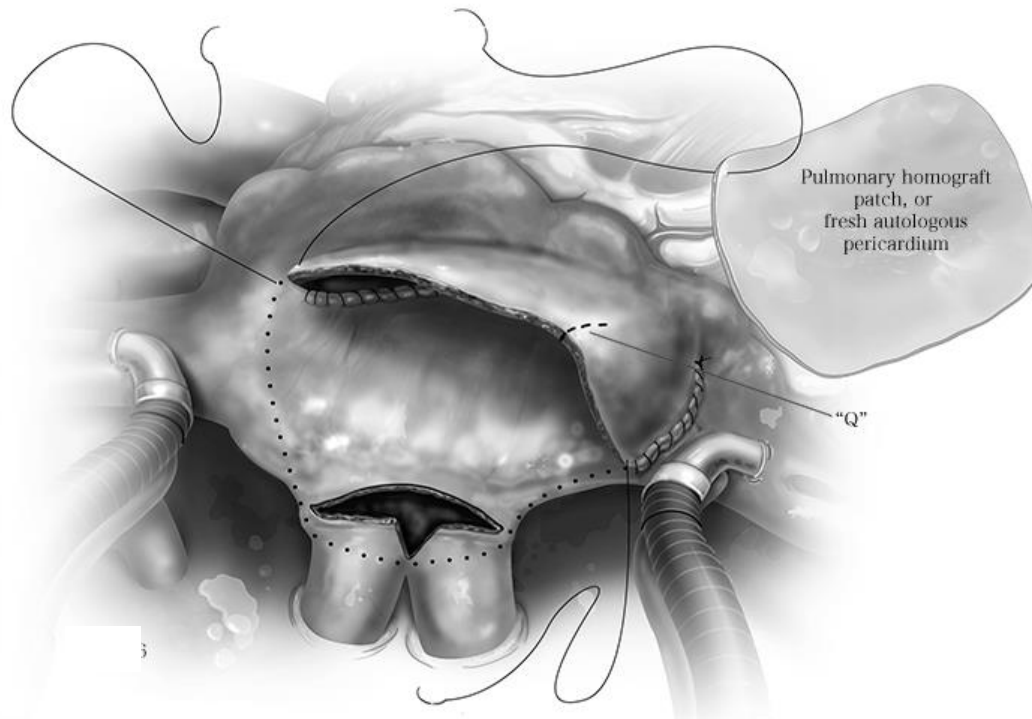


# The Third Layer

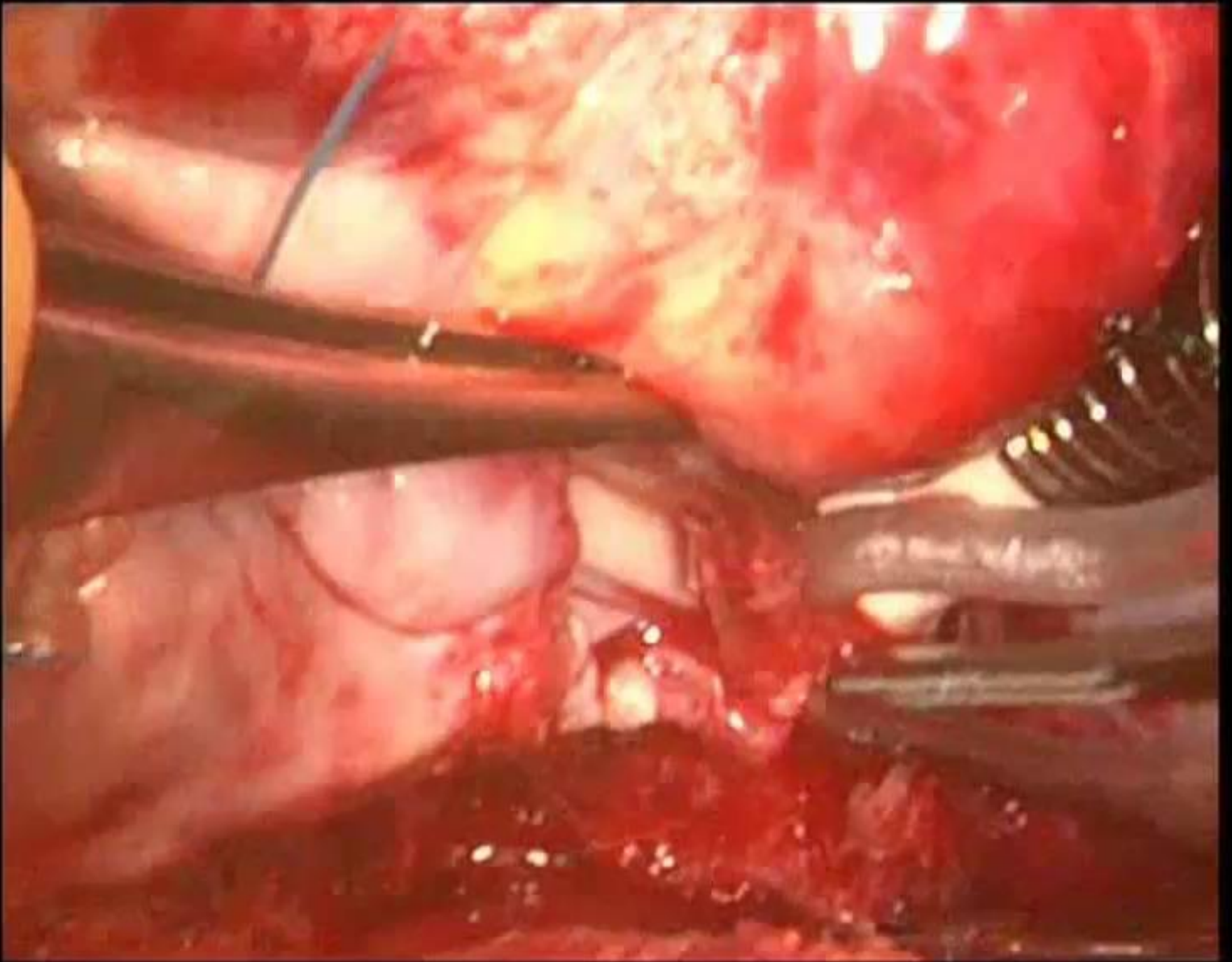
## Completing the Pulmonary Venous Pathway



# Augmentation of the Third Layer

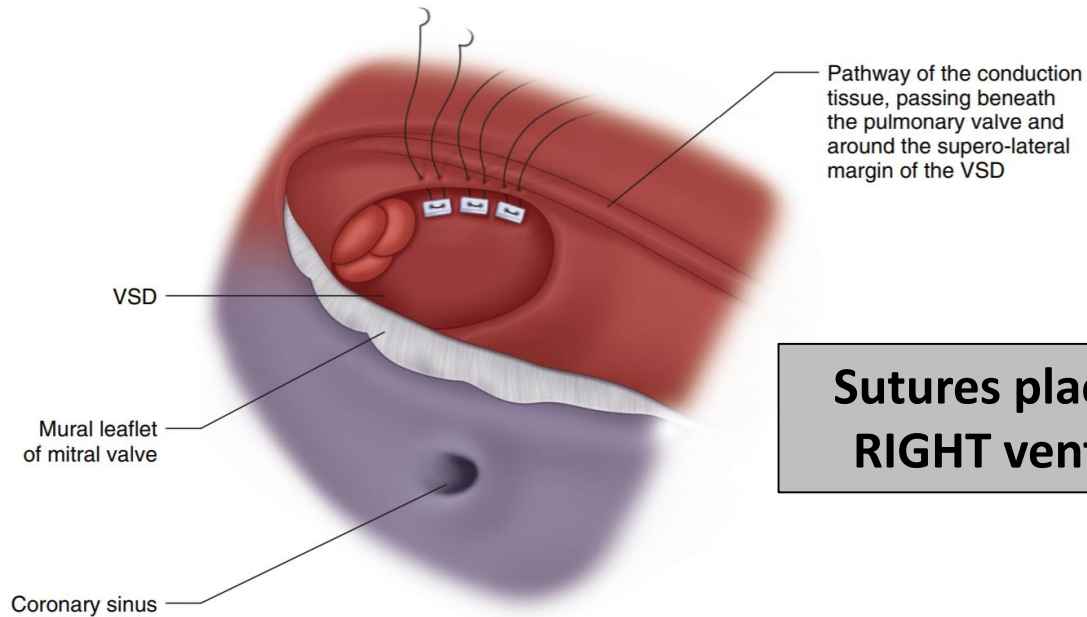






# VSD Closure

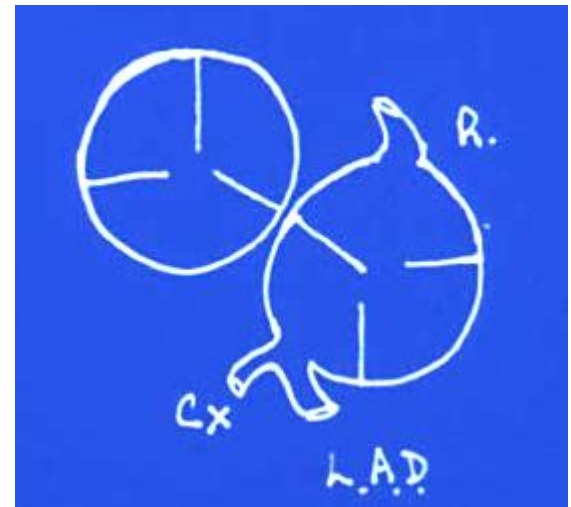
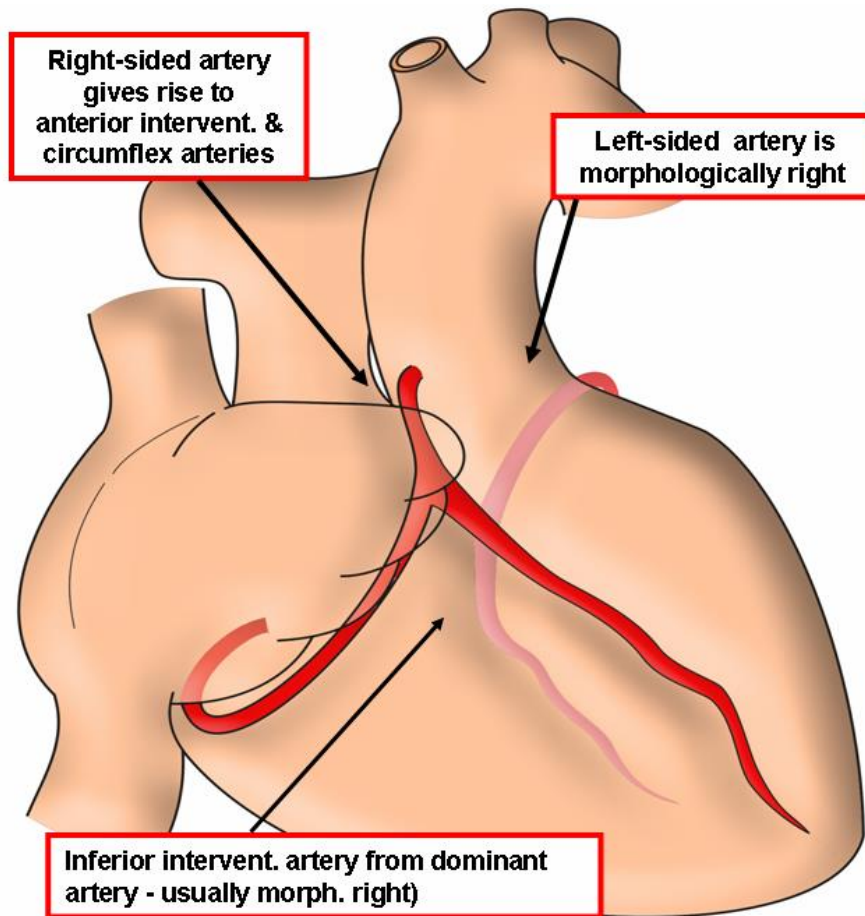
## View from the right atrium:



**Sutures placed from the RIGHT ventricular side**

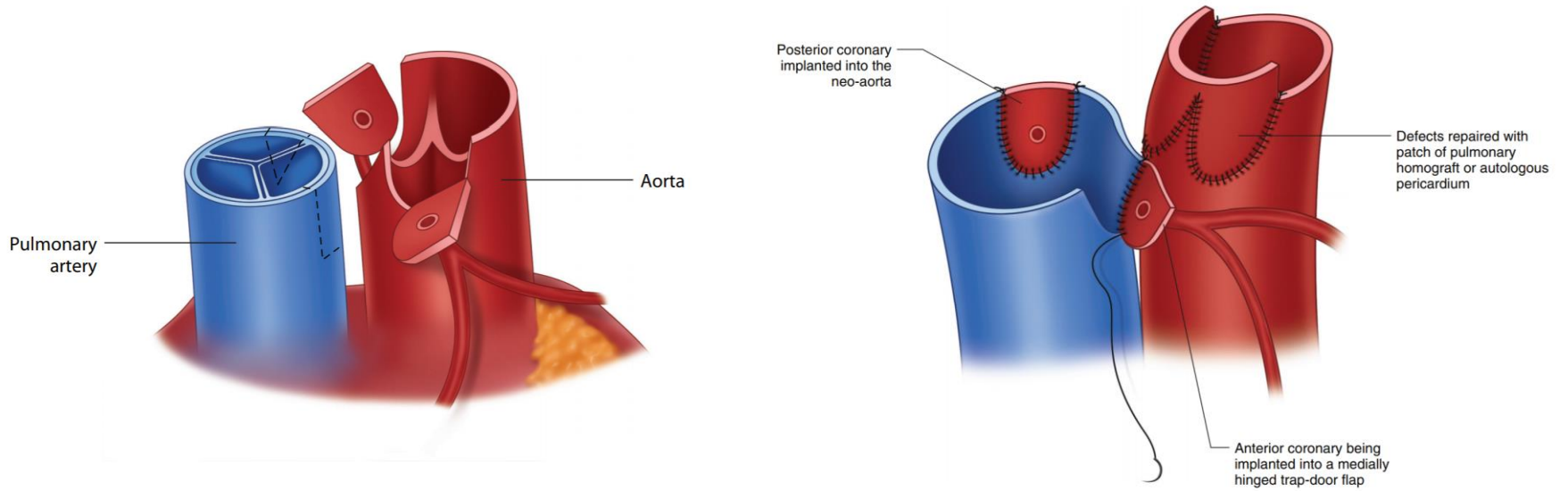
**\*\*Except in Situs Inversus**

# Coronary Patterns and the Arterial Switch in ccTGA



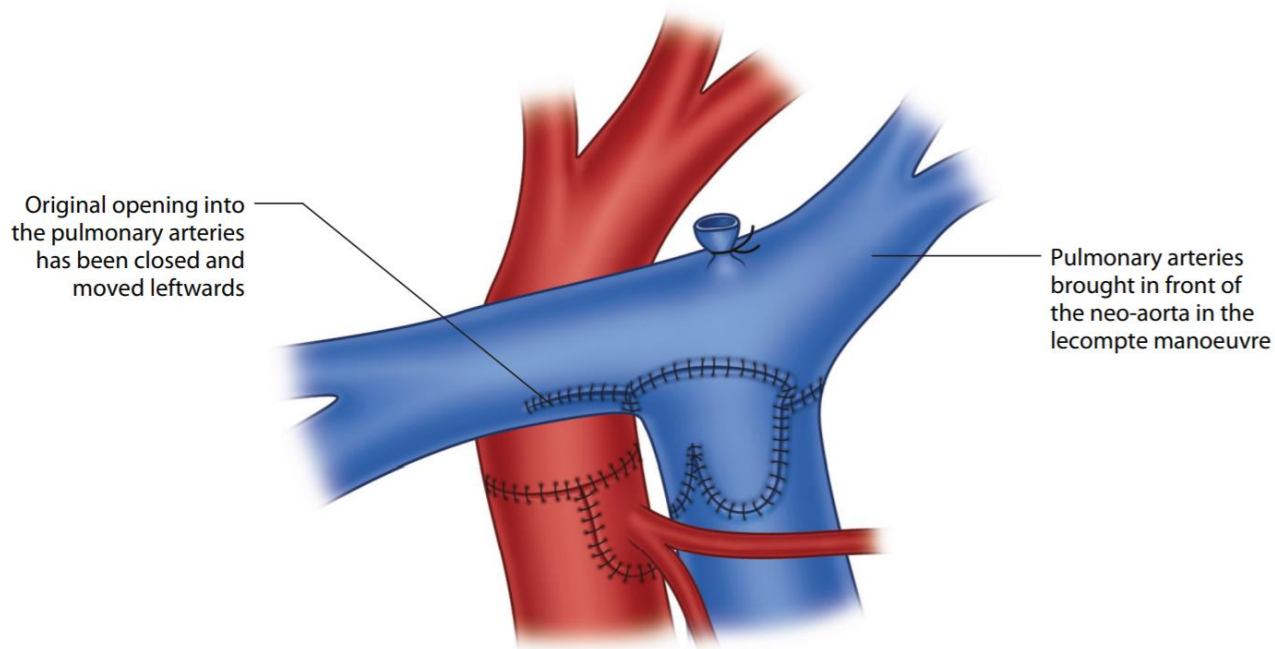
Abnormal Coronary Patterns are unusual in ccTGA  
Single coronary is very rare

# Arterial Switch



**Medially hinged trapdoor for anterior coronary**  
**Direct transfer for posterior coronary**

# Arterial Switch



**Great Vessels are typically more side-by-side than in d-TGA  
Lecompte may be difficult – especially in older children**

# Special Considerations and Alternative Strategies

# Dilated Aortic Root post PA Band

May be related to previous PA Banding

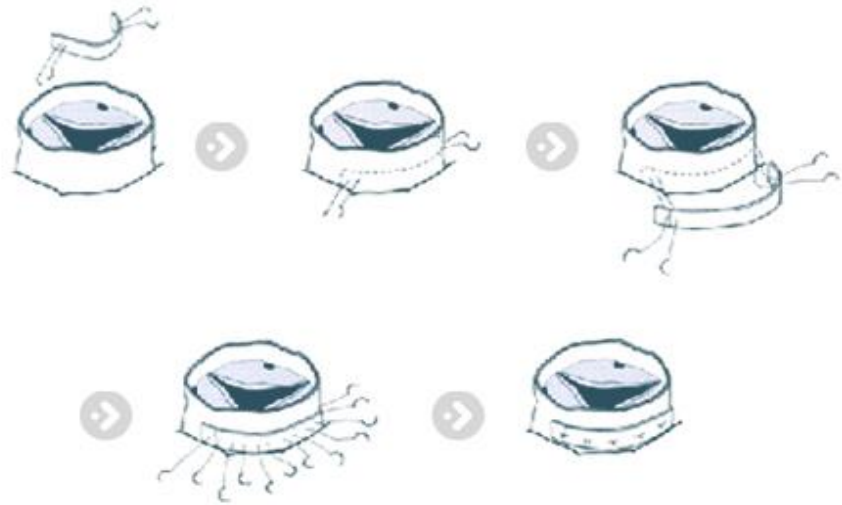
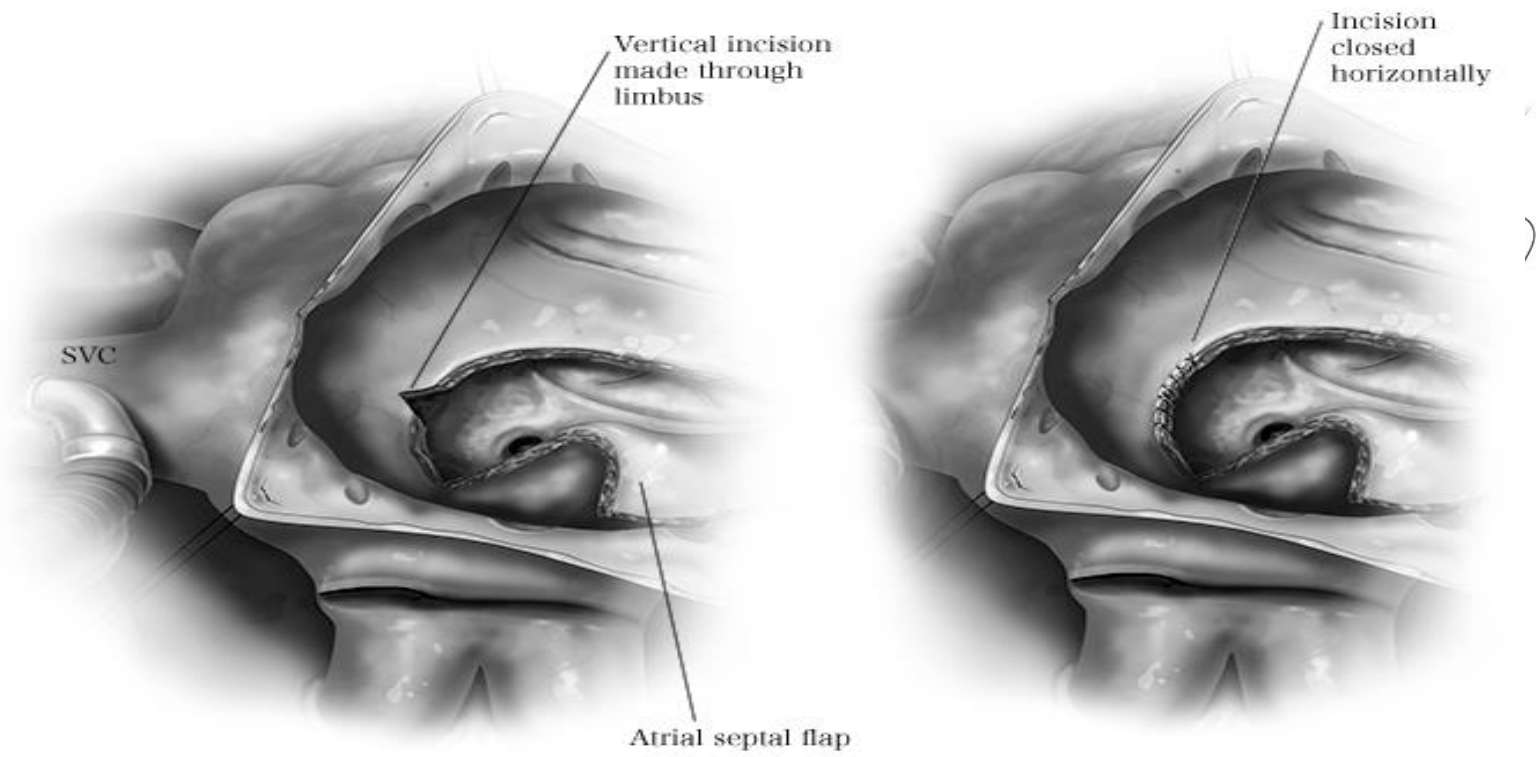


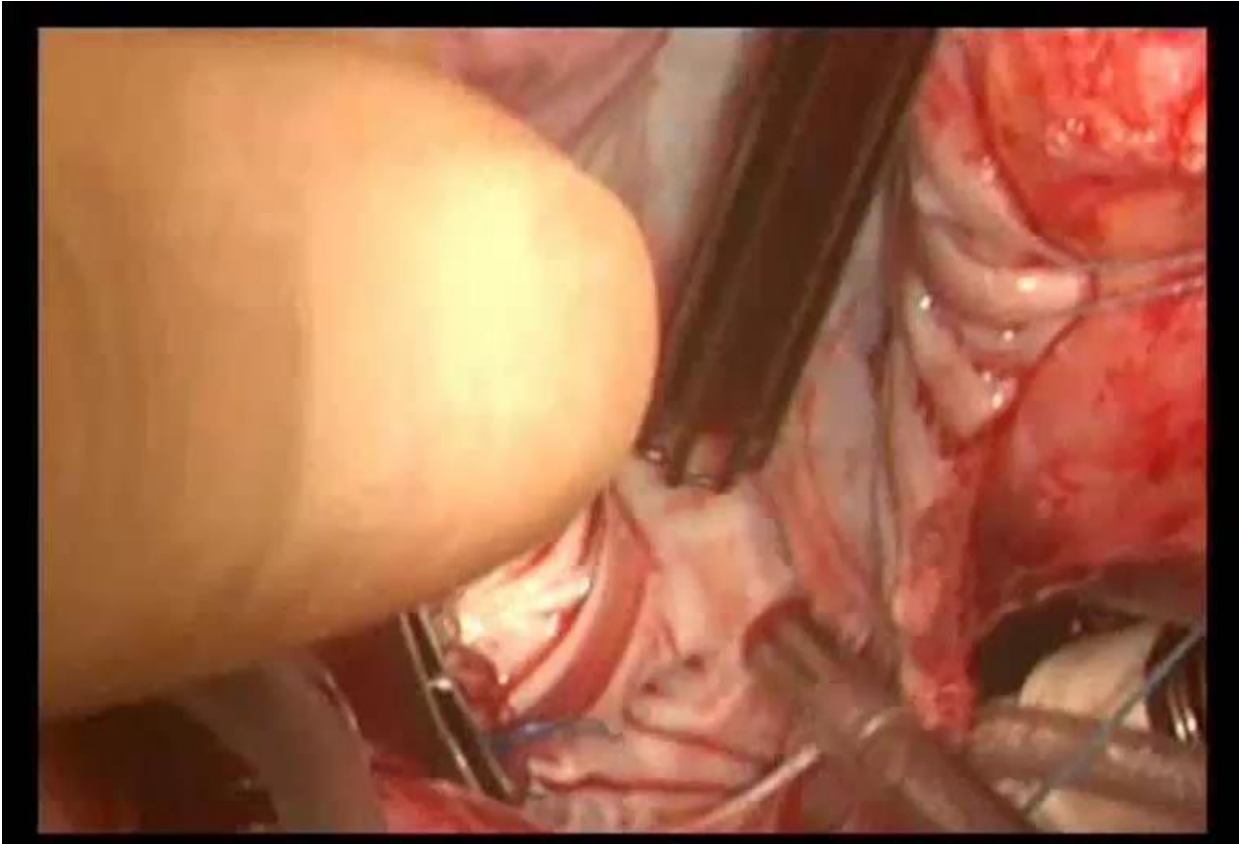
Fig. 8. Procedure of annulus reduction.

# 1. The SVC Pathway

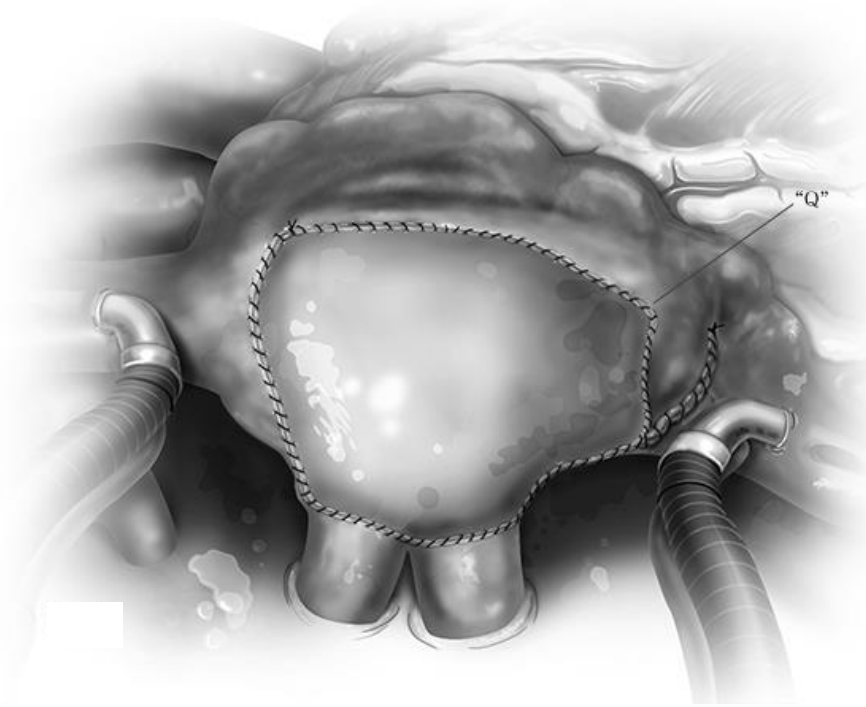
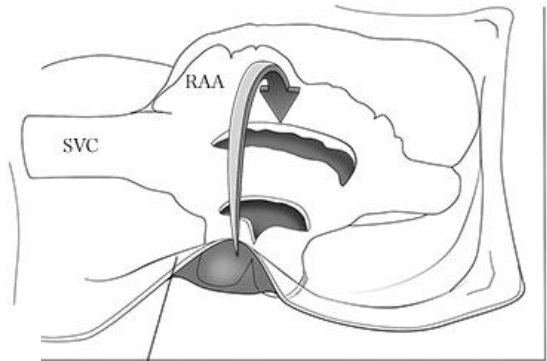




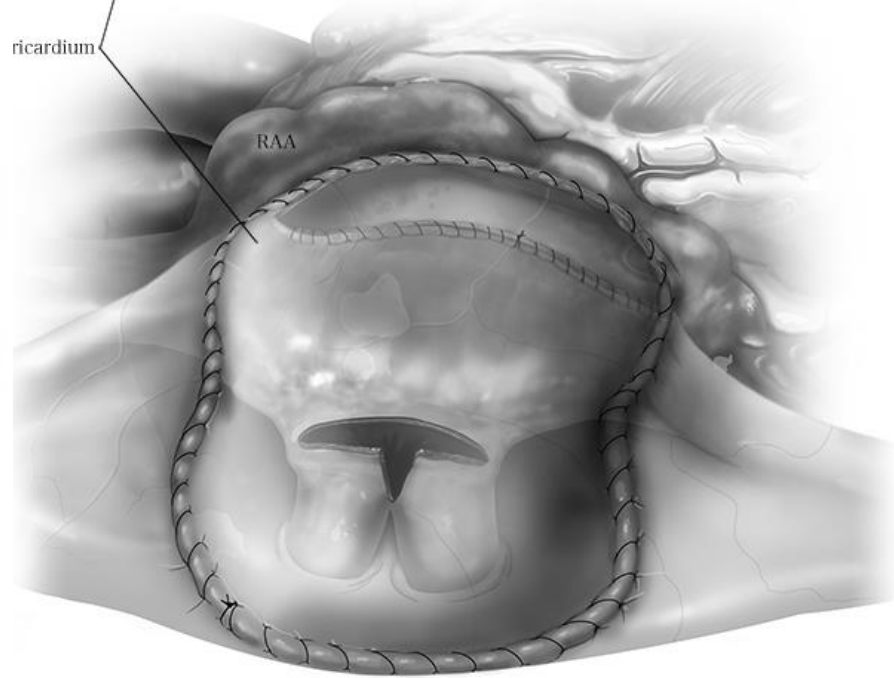
## 2. The IVC Pathway



### 3. Dextrocardia:

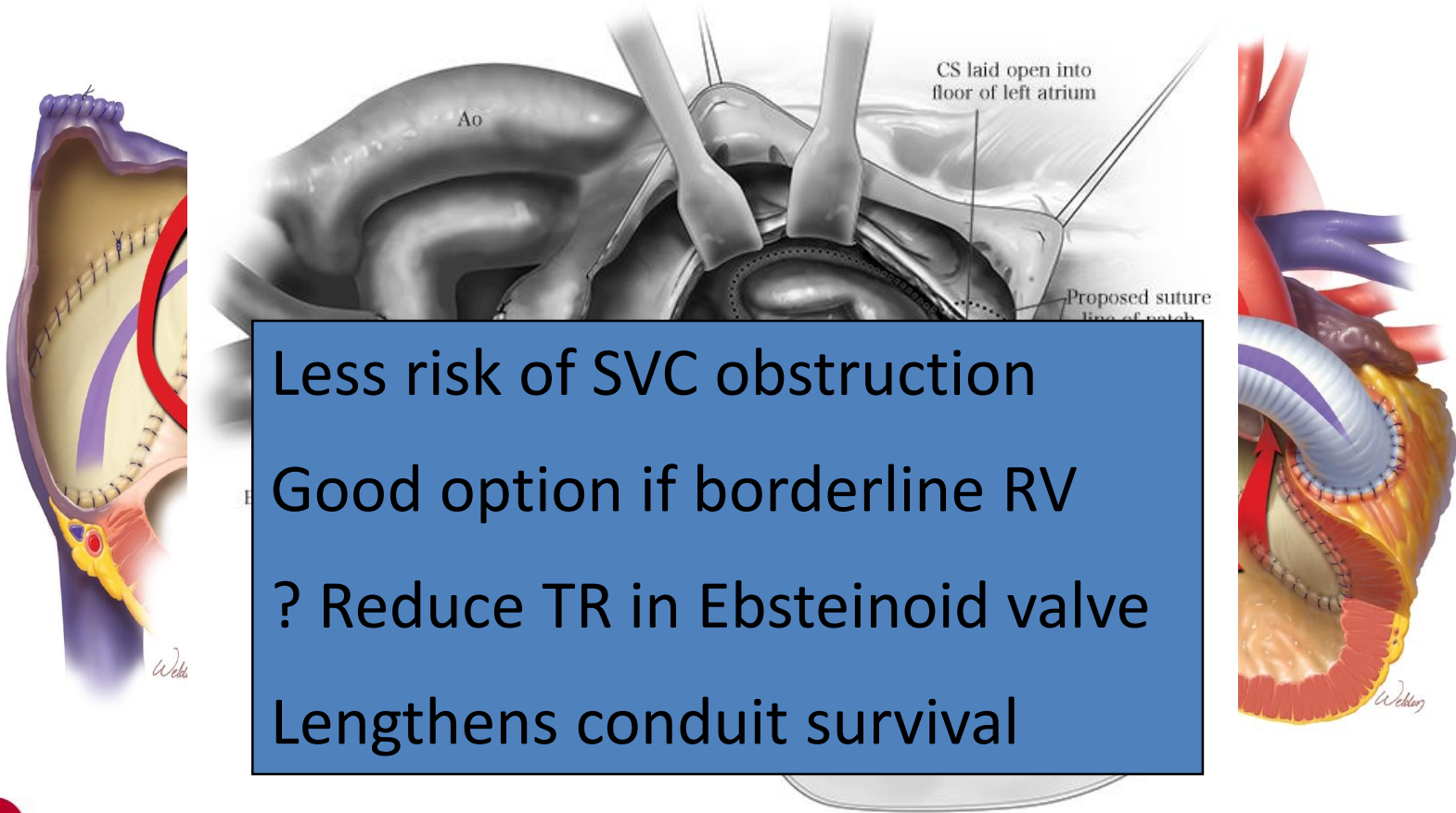


**Patch Augmentation**



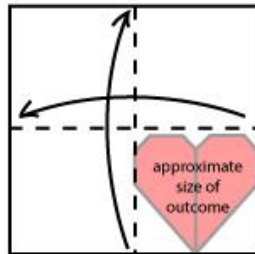
**Pericardial Well or Shumacher Technique**

## 4. One-and-a-Half Repair:

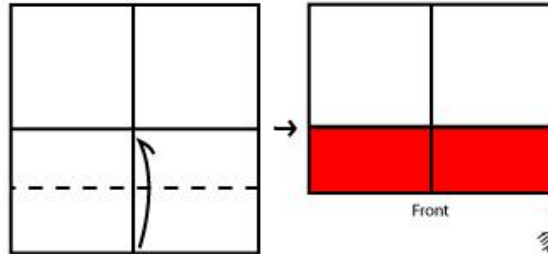


Less risk of SVC obstruction  
Good option if borderline RV  
? Reduce TR in Ebsteinoid valve  
Lengthens conduit survival

# Cardiac Origami

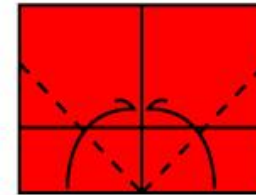


1. Fold Horizontal and Vertical, then unfold

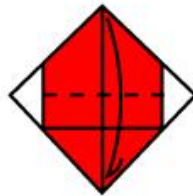


2. Fold bottom edge to the center

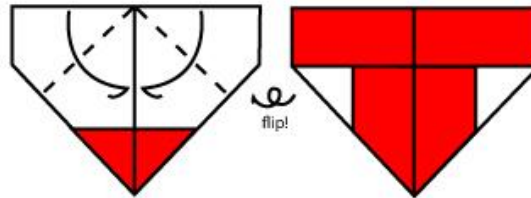
flip!



3. Fold bottom edge flaps to the center vertical line

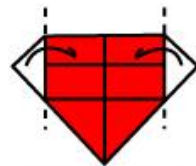


5. Fold top flap down to bottom top without folding the triangles on the side



4. Fold top flaps to center vertical line

flip!



6. Fold edge triangles along their inner edge



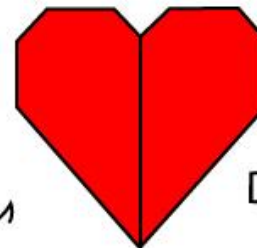
7. Fold top corners down to edge made by the top flap fold



8. Bend down top tips.



flip!



Done!! <3

