



# Echocardiogram Tips for Optimal Catheter Placement

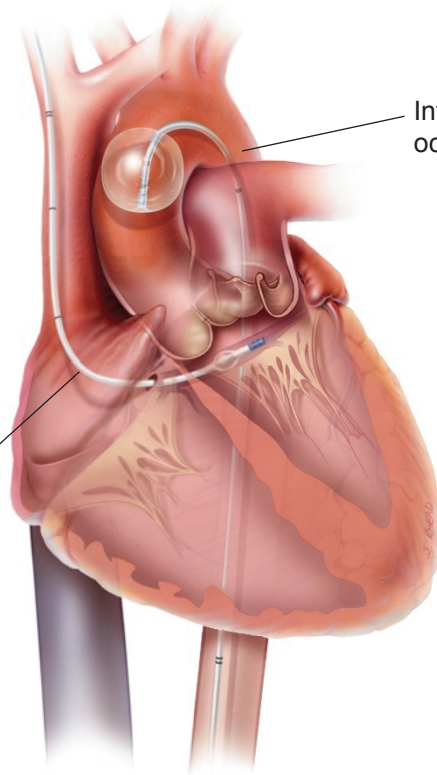


**ProPlege Peripheral Retrograde  
Cardioplegia Device**

**IntraClude Intra-aortic  
Occlusion Device**



ProPlege peripheral retrograde cardioplegia device



IntraClude intra-aortic occlusion device

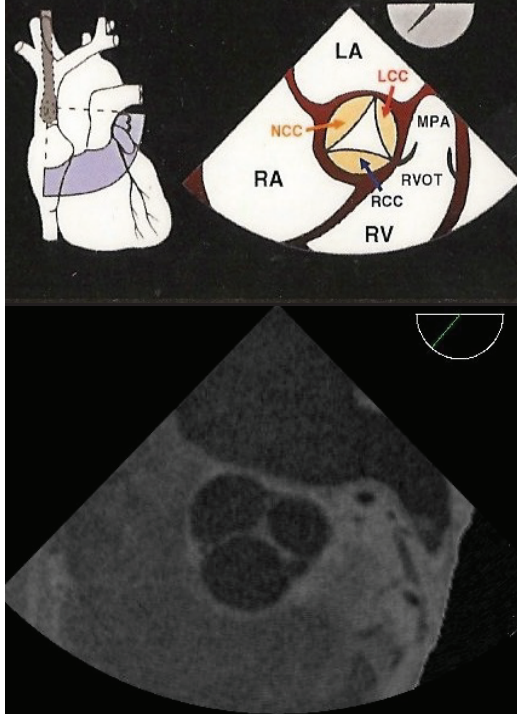


## ProPlege/IntraClude Device Placement

# Aortic Valve - View at 0-45°

- Start by advancing the probe to 28-34 cm
- The short axis (SAX) view of the aortic valve will be found between the 0- and 45-degree imaging plane
- This cross-sectional view of the aortic valve can help confirm that the probe is oriented toward the heart
- By adjusting the plane angle and turning the probe, additional anatomical landmarks within the heart may be visualized

## ME AV SAX

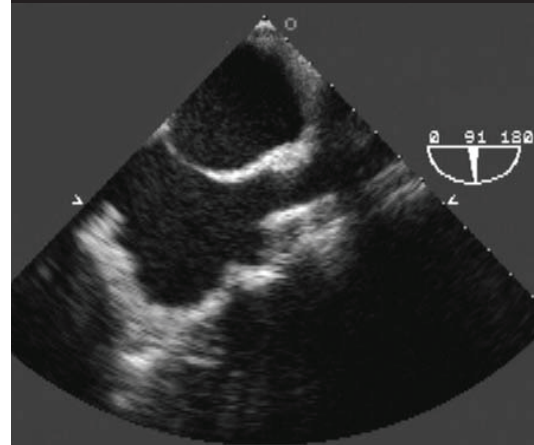
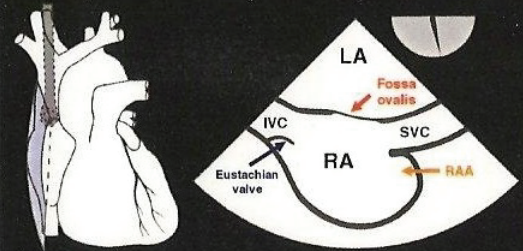


## ProPlege Device Placement

# Bicaval View

- This view is used most frequently for placement of the ProPlege device
- Turn the probe right and increase the imaging plane angle by manipulating the buttons from 0 to 90 degrees
- The bicaval view is a long axis (LAX) view of the superior vena cava, right atrium, and inferior vena cava as shown
- Visualize the ProPlege device as it enters the right atrium on the right side of the screen

## ME Bicaval

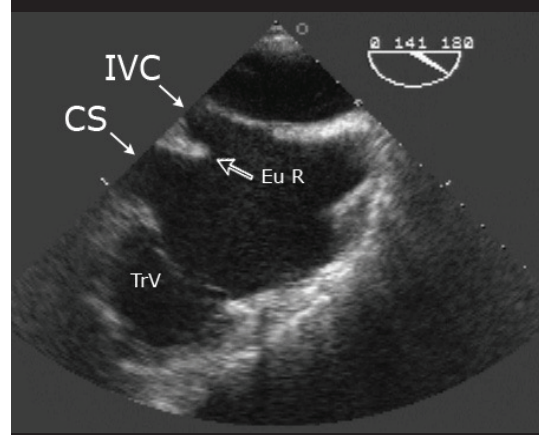
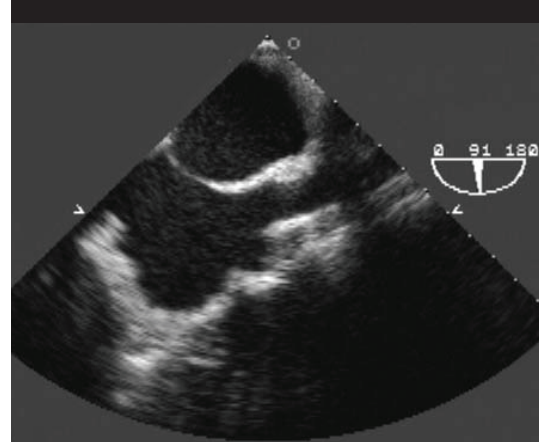




## ProPlege Device Placement

# Bicaval to “Double Barrel” View

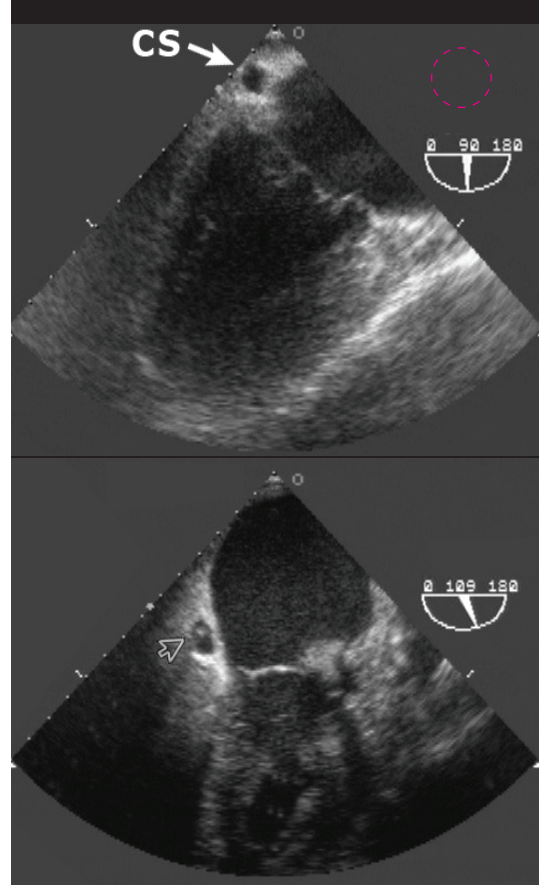
- Rotate the TEE probe counter-clockwise, and further increase the angle of the plane by manipulating the buttons
- Visualize the coronary sinus in a “double barrel” view. In this view, the coronary sinus often separates from the IVC, as shown in the lower image on the right
- When the ProPlege device is oriented toward the tricuspid valve (i.e. pointing down when facing the TEE screen), rotate the catheter counter-clockwise to move it towards the sinus ostium
- If the ProPlege device points towards the IVC, manipulate the catheter clockwise to help orient device tip toward the sinus ostium



## ProPlege Device Placement

# Two-Chamber 90° View (Left Atrium, Left Ventricle)

- This long axis (LAX) view of the left chambers can help confirm placement of the ProPlege device
- It allows for good visualization of the cross-section (short axis view) of the coronary sinus that runs in the left atrioventricular groove
- Once placement is confirmed on TEE, a balloon test should be completed. Look for ventricularization and/or use fluoroscopic assistance (C-Arm) to assess how far into the sinus the tip of the ProPlege device is advanced
- The lower picture on the right indicates correct placement of the ProPlege device within the sinus

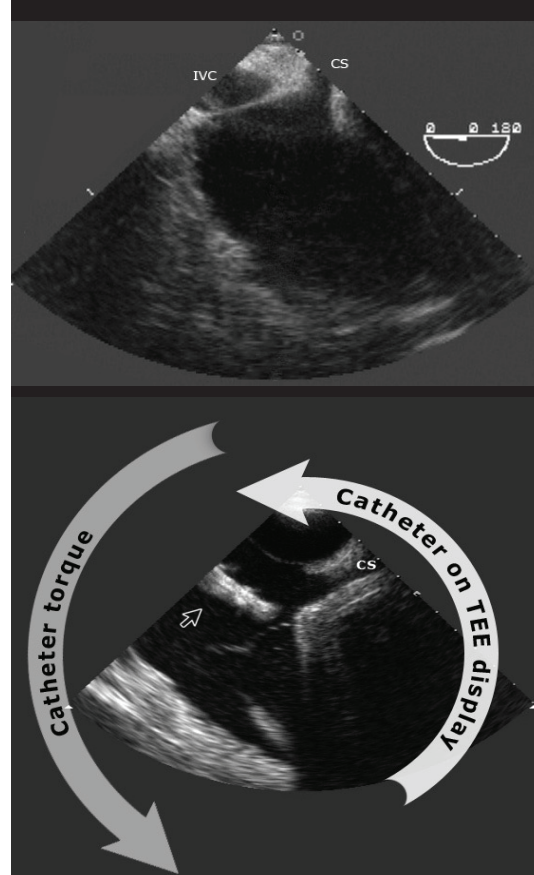




## ProPlege Device Placement

# 0° 4-Chamber View

- This is an alternate view, preferred by some anesthesiologists, for initial placement of the ProPlege device
- However, visualization of the ProPlege device as it approaches the coronary sinus ostium may be difficult
- In this plane, the sinus ostium is at 1 o'clock, and the tricuspid valve is at 4 o'clock
- If the catheter can be visualized, and it is oriented towards the tricuspid, rotate the ProPlege device counter-clockwise to move it up towards the sinus
- If the catheter tip is oriented towards the IVC (which may not be visualized in this view at all), adjust the ProPlege device clockwise and turn it toward the coronary sinus.

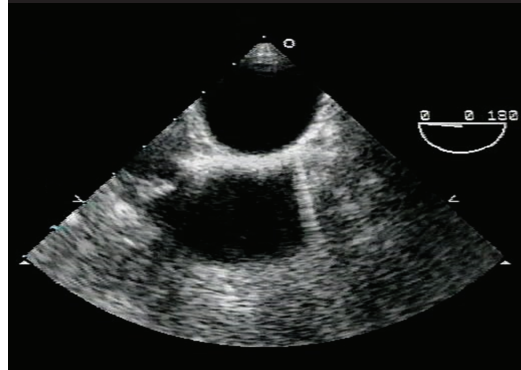
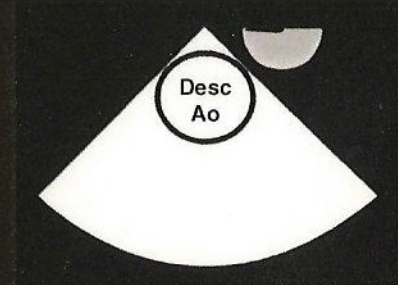


## IntraClude Device Placement

# 0 Degree Descending Aortic View

- Once placement of the guidewire is visually confirmed, the IntraClude device is advanced over the wire
- After confirming placement of the IntraClude device in the descending aorta, proceed to visualization of the ascending aorta

Descending  
Aorta SAX





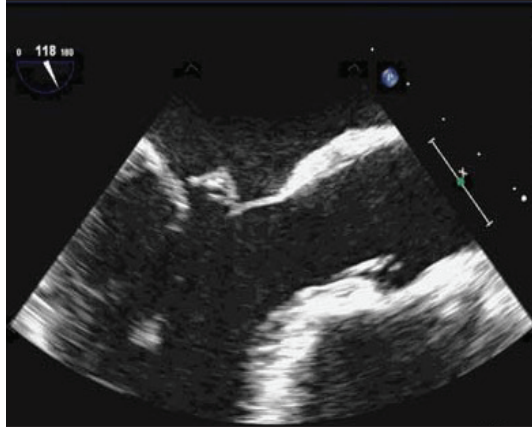
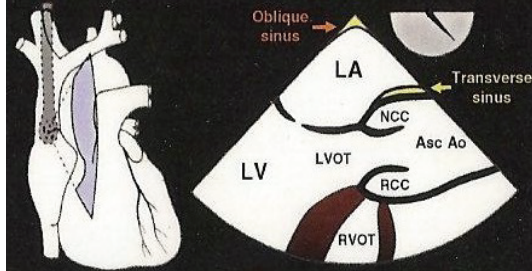


## IntraClude Device Placement

# LAX View of the Ascending Aorta “Dog Bone” View

- Use this view for assessment of the ascending aorta, including calcification, diameter, and dilation
- Visually confirm placement of the guidewire, and subsequently, the advancement of the IntraClude device into the ascending aorta, between the aortic valve and the innominate artery
- This view can be found by increasing the angle of the plane to 90-130 degrees

## ME AV LAX





Images courtesy of Gregory S. Miller, MD.

Adapted from: Miller GS. ProPlege Peripheral Retrograde Cardioplegia Device™ Placement [White paper].  
Edwards Lifesciences. 2015.

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