

TTT @ TCTAP 2018

Transcatheter Aortic Valve Implantation in a Patient with Type B Aortic Dissection

Hsin-Bang Leu, MD, PhD, FACC

Taipei Veterans General Hospital

Case Presentation

- Mr. 史, 86 y/o male
- PH: Hypertension, CAD, Chronic renal failure
- Acute respiratory failure caused by heart failure and superimposed pneumonia, underwent mechanical ventilation and hemodialysis

Echocardiography

- AVA: 0.9 cm² , peak pressure gradient: 68 mmHg
- Mild AR
- Concentric LVH, hypokinesis of anterior wall of LV
- TAVR was suggested due to high surgical risk (Euroscore: 46%)

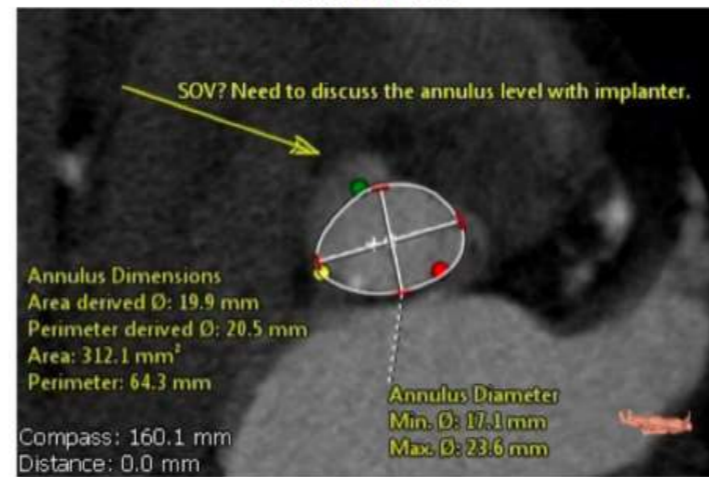


Diameter Determination

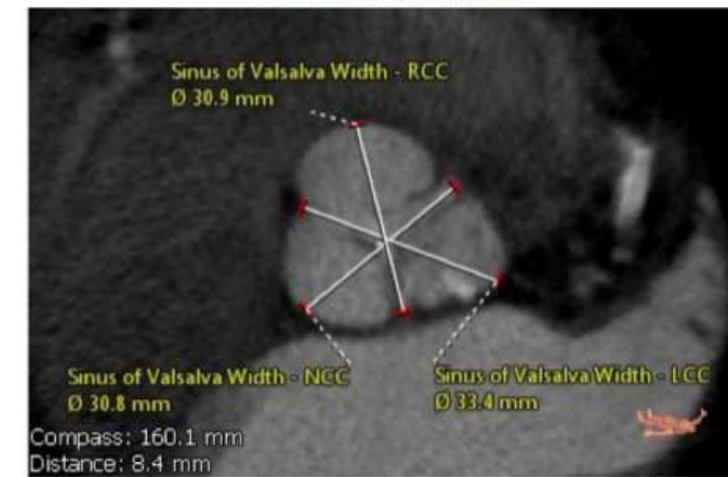
MEDTRONIC ANALYSIS

| | | | |
|------------------------------------|-----------------------|-----------------------------|--------------------------|
| Max Ascending Aorta Diameter (mm) | 32.2 | | |
| Sinotubular Junction Diameter (mm) | 27.2 Min | 29.1 Max | |
| ANNULUS | | | |
| Diameter (mm) | 17.1 Min | 23.6 Max | 20.4 mm Mean |
| Perimeter (mm) | 64.3 | | 20.5 Derived Diameter |
| Area | 312.1 mm ² | 19.9 mm Derived Diameter | |

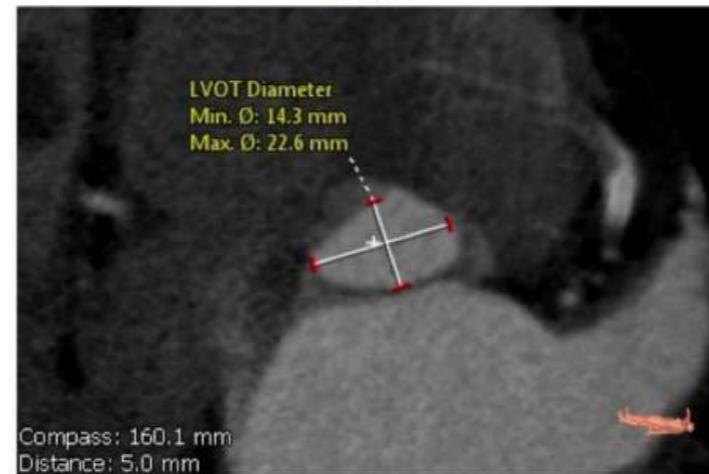
ANNULUS



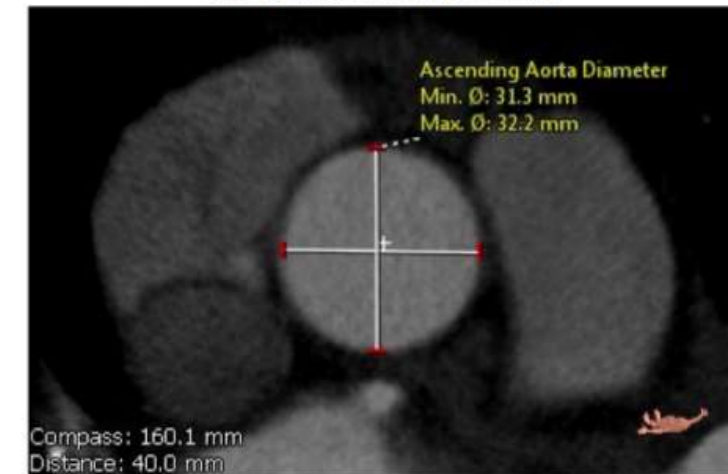
SOV DIAMETER



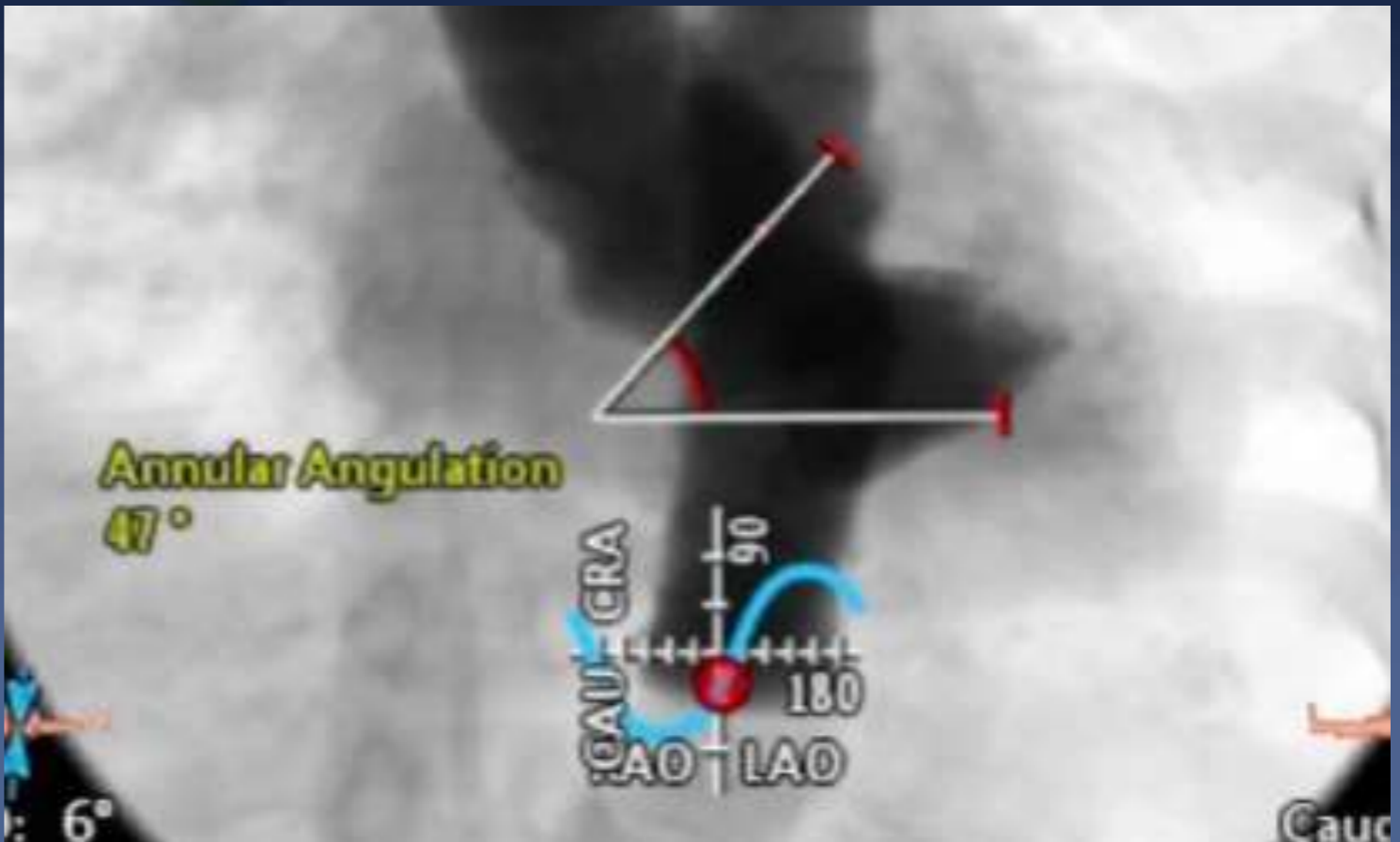
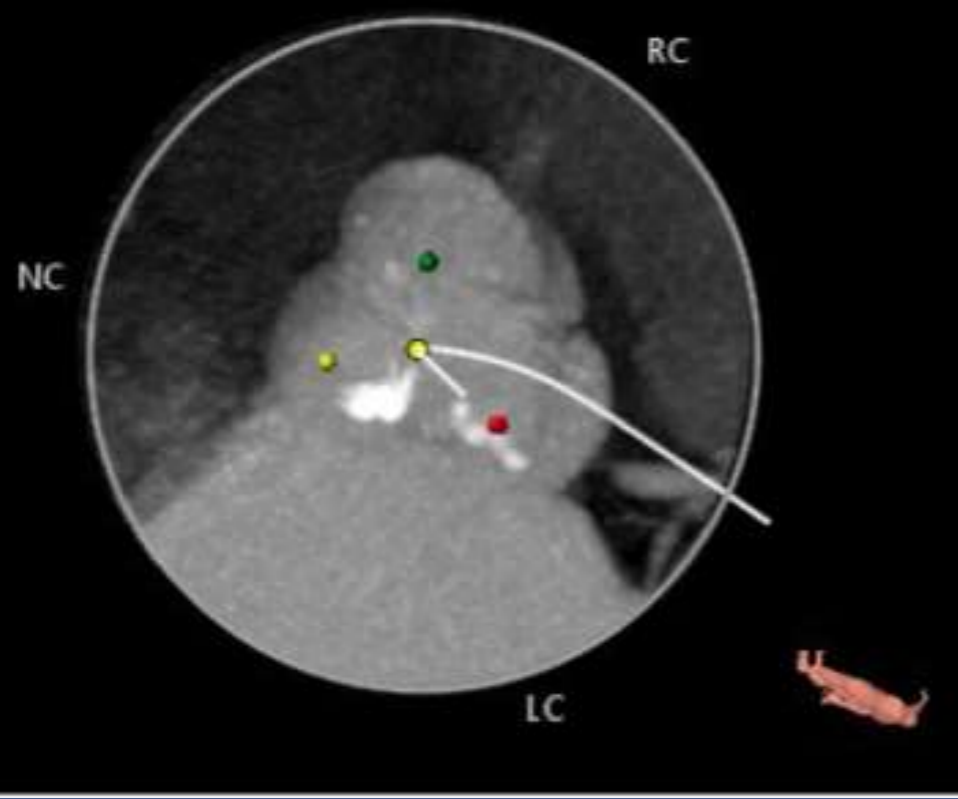
LVOT

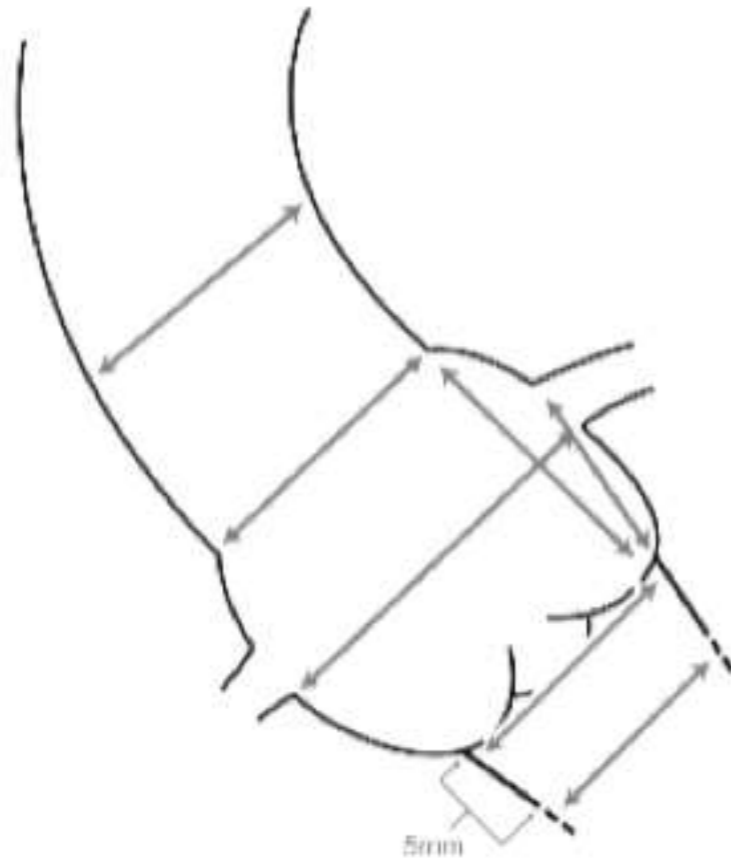


ASCENDING AORTA



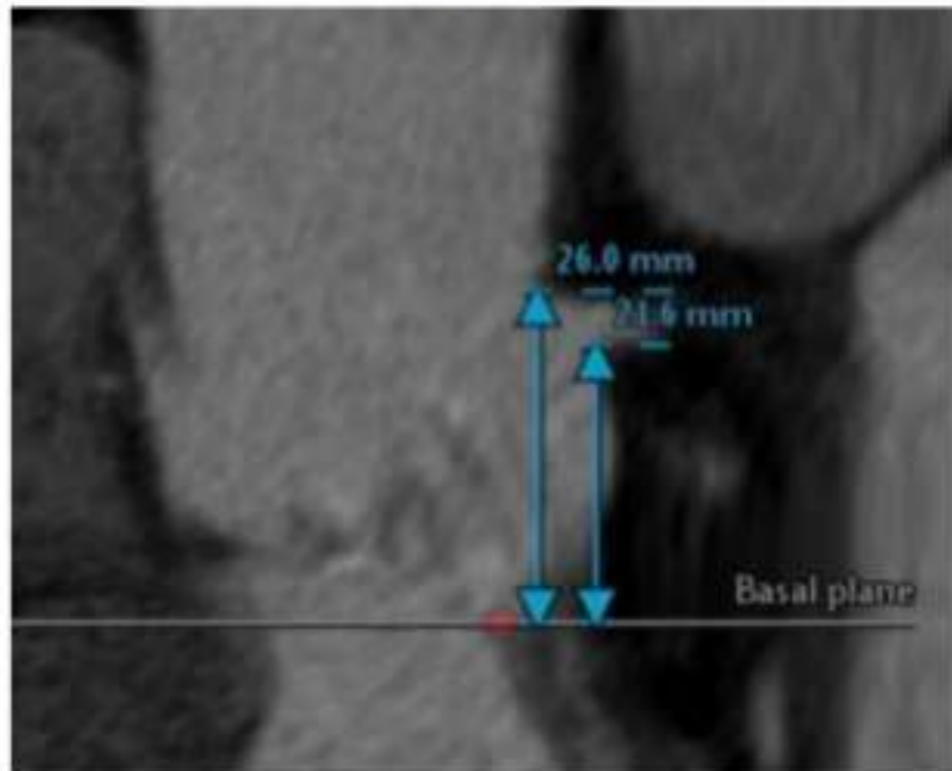
LAO: 111°
Caudal: 42°



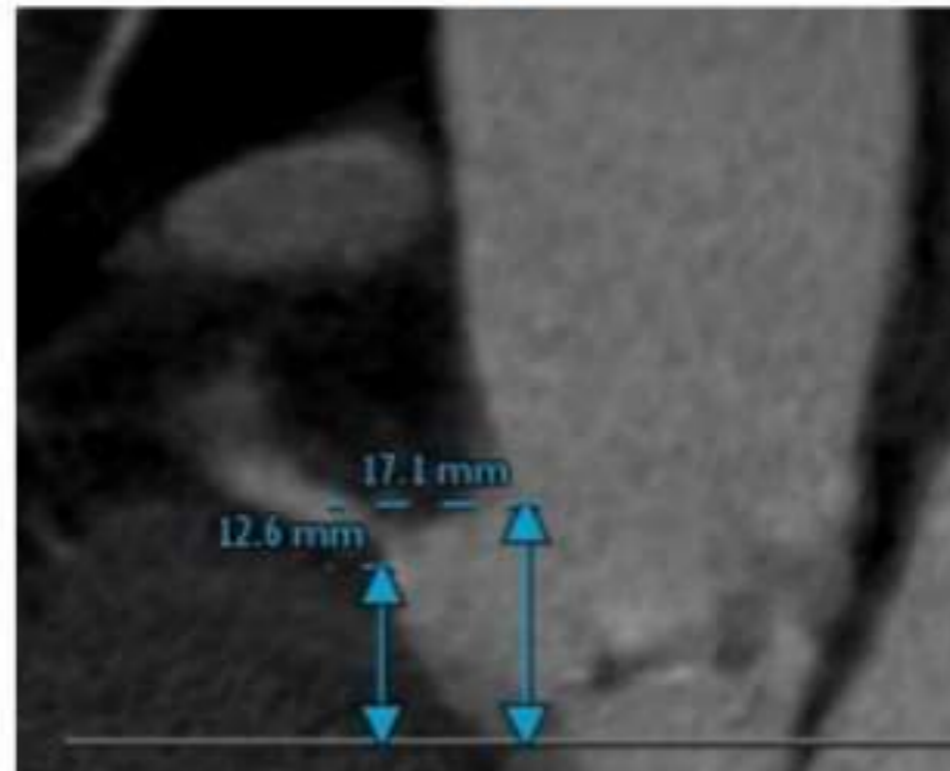


| | | | |
|---------------------------------|--------------|---------------|-------------|
| Sinus of Valsalva Diameter (mm) | 33.4 LCC | 30.9 RCC | 30.8 NCC |
| Sinus of Valsalva Height (mm) | 26.0 LCC | 17.1 RCC | 14.6 NCC |
| Coronary Ostia Height (mm) | 21.6 Left | 12.6 Right | |
| LVOT Diameter (mm) | 14.3 Min | x | 22.6 Max |

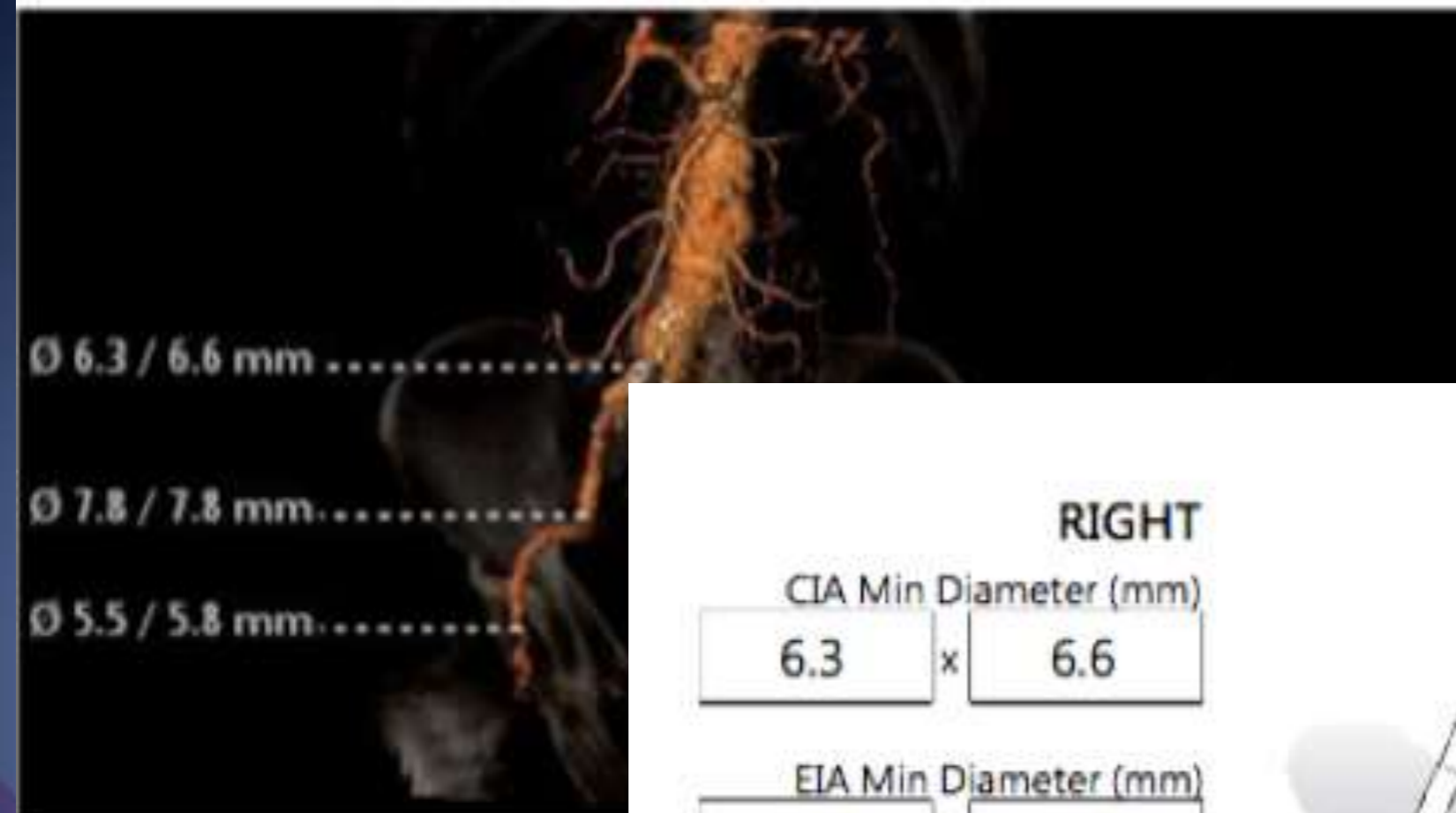
LCC



RCC



Dimmed background



RIGHT

CIA Min Diameter (mm)

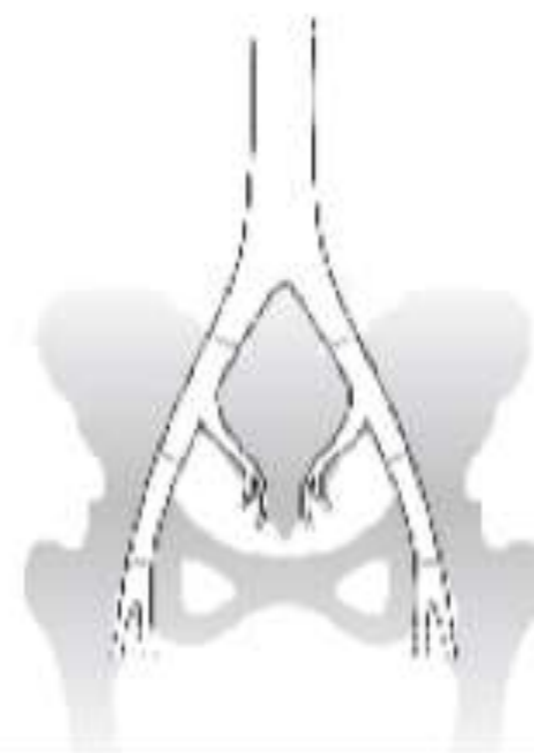
6.3 x 6.6

EIA Min Diameter (mm)

7.8 x 7.8

Femoral Min Diameter (mm)

5.5 x 5.8



LEFT

CIA Min Diameter (mm)

7.9 x 8.0

EIA Min Diameter (mm)

6.9 x 7.9

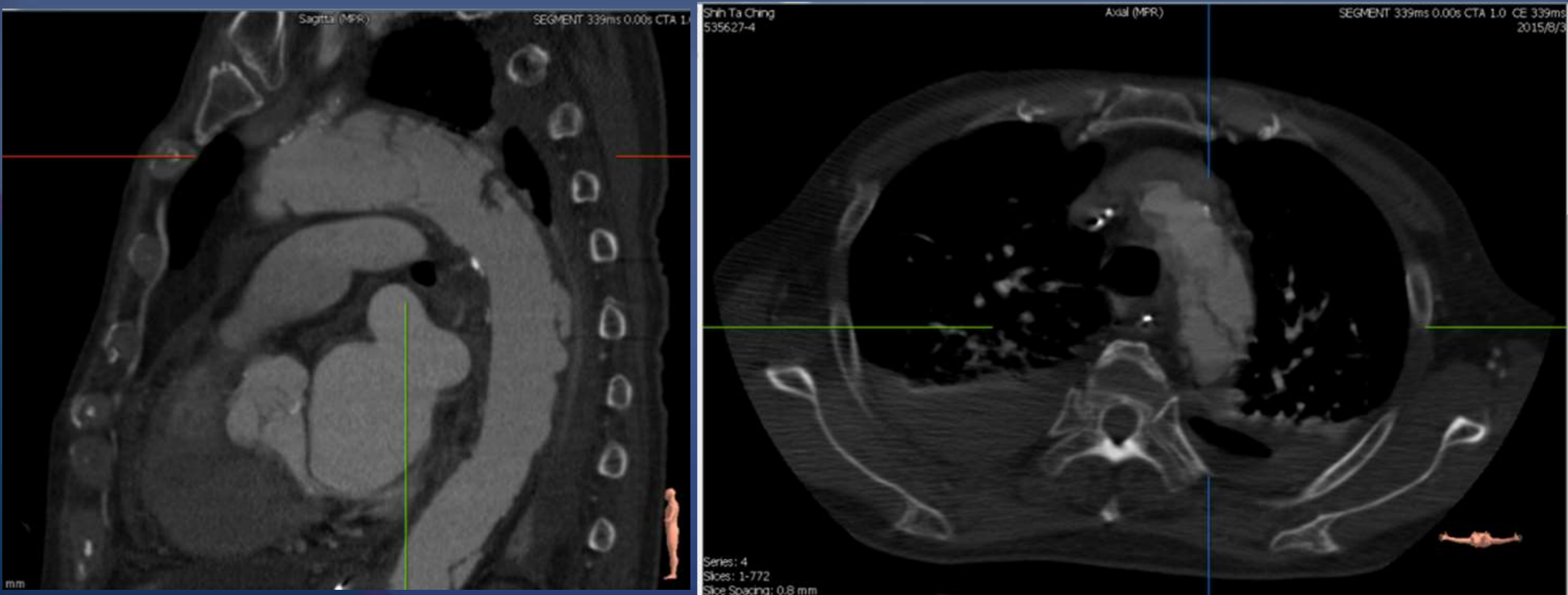
Femoral Min Diameter (mm)

6.0 x 6.3

Calcium: Mild Moderate Severe

CT scan

- Type B aortic dissection involving aortic arch, which started next to the origin of the innominate artery and extended into the origins of left subclavian artery and left carotid artery
- Intimal tears found in the descending aorta





Difficulties

- Aortic dissection and tears precluded transfemoral approach or access via left subclavian or left carotid artery approach
- Direct aortic (DA) or transapical approach were undesirable because incisions and open wound may delay mobility and increase mortality risk after operation