

TAVI summit 2012

Seoul, Sep 7, 2012

„CoreValve-in-degenerated-
CoreValve“

1st Re-do CoreValve

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Eberhard Grube, MD

Within the past 12 months, the presenter or their spouse/partner have had a financial interest/arrangement or affiliation with the organization(s) listed below.

Physician Name

Company/Relationship

Eberhard Grube, MD

Medtronic, CoreValve: C, SB, AB, OF
Sadra Medical: E, C, SB, AB
Direct Flow: C, SB, AB
Mitralign: AB, SB, E
Boston Scientific: C, SB, AB
Biosensors: E, SB, C, AB
Cordis: AB
Abbott Vascular: AB
Capella: SB, C, AB
Devax: SB, AB,
Embrella: SB
Claret: SB

Key

G – Grant and or Research Support E – Equity Interests S – Salary, AB – Advisory Board
C – Consulting fees, Honoraria R – Royalty Income I – Intellectual Property Rights
SB – Speaker's Bureau O – Ownership OF – Other Financial Benefits'

Medical History

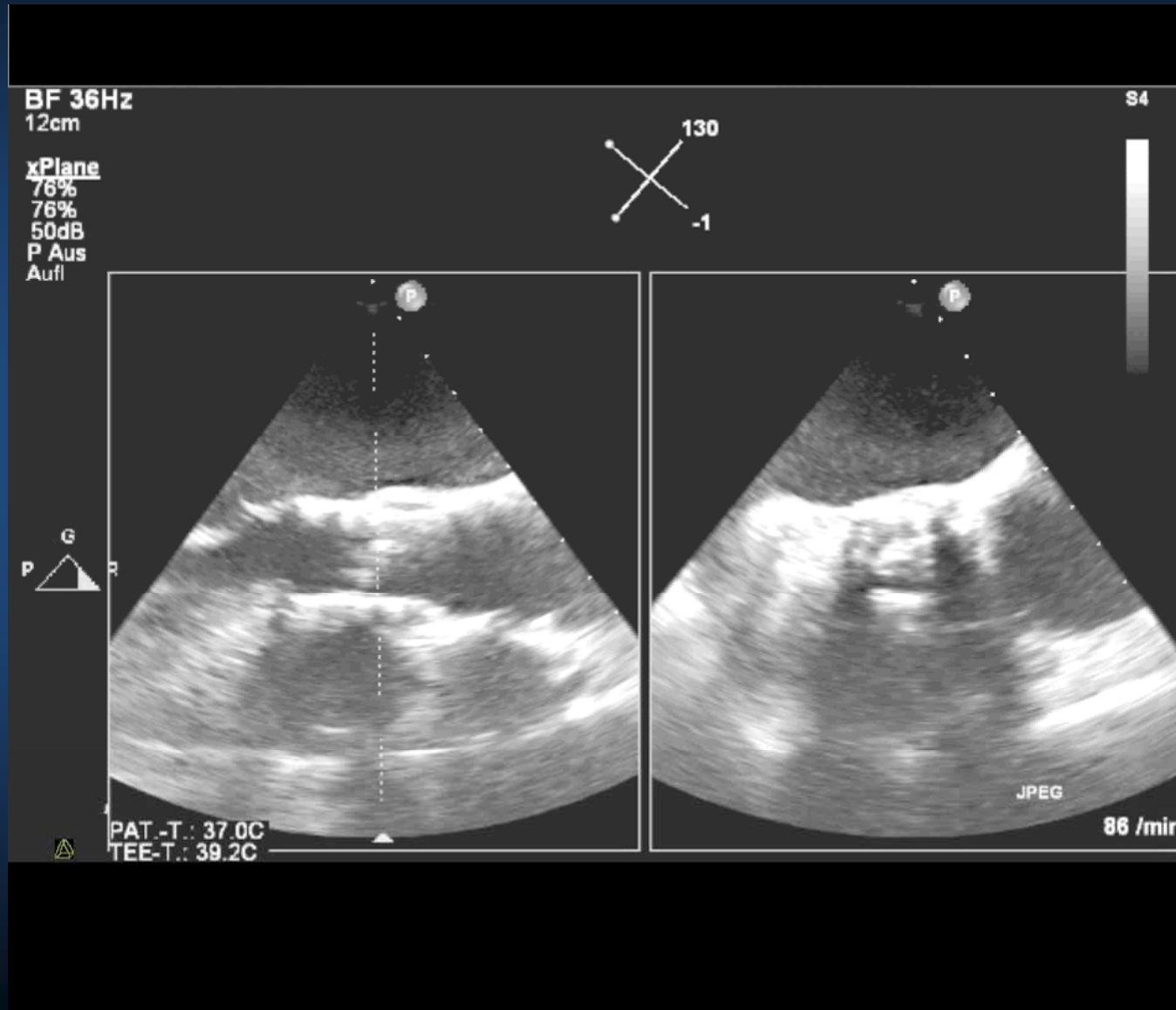
- Patient A.M.O., female, 91 years
- Presents with: Dyspnea NYHA III-IV
- Dx: Severe stenosis of a degenerated 26mm CoreValve prosthesis 1st generation (AVA 0.5 cm²) which was implanted via surgical cut-down on 08/31/2005.

Comorbidities

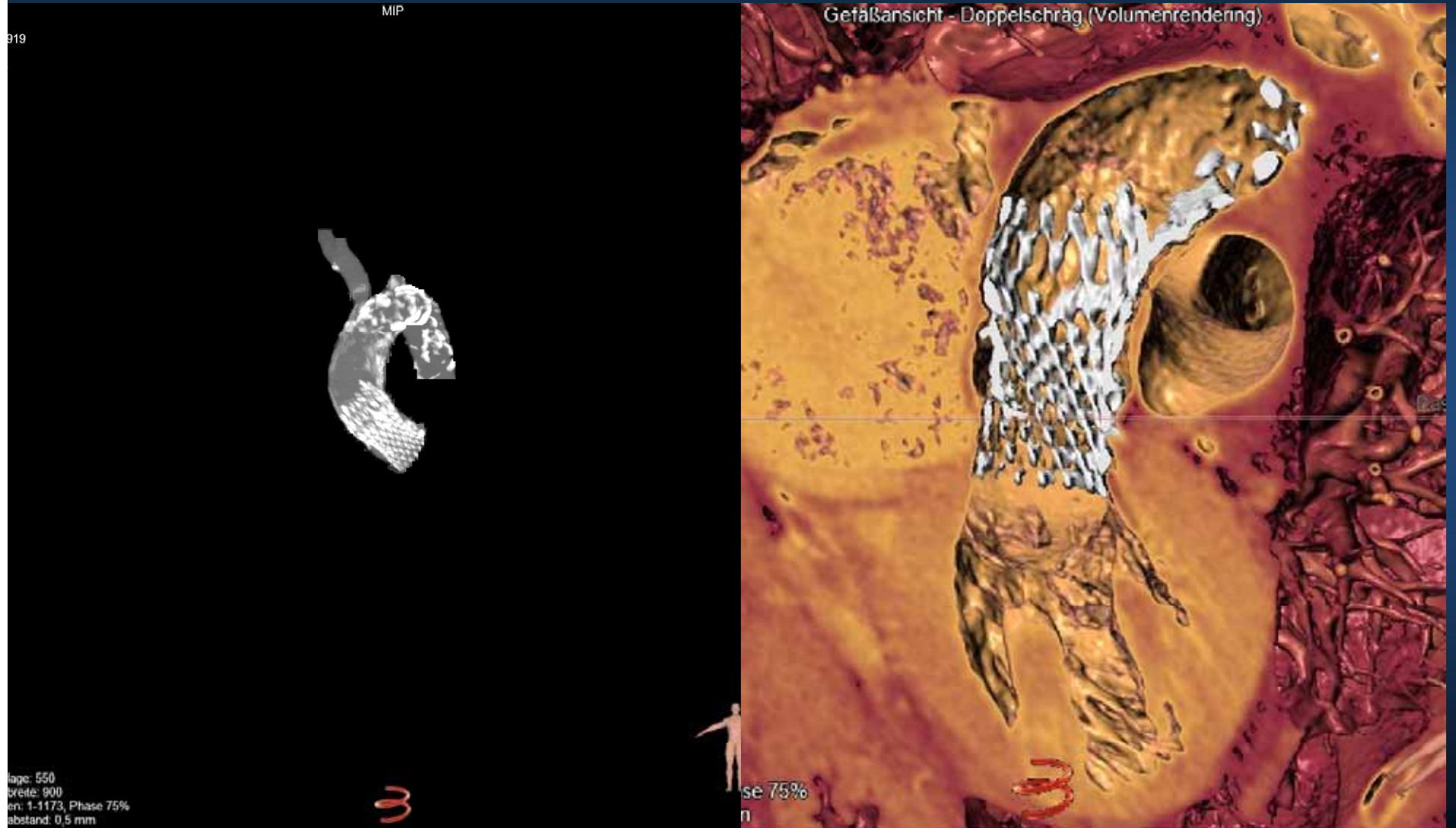
- Porcelain aorta
- Peripheral arterial disease Stadium IIa
- COPD
- Moderately reduced LV function (EF 40%)
- Pulmonary hypertension (PAP sys. 70 mmHg)
- Insignificant CAD

- Logistic EuroSCORE **64.97%**
- STS Score **27.0%**

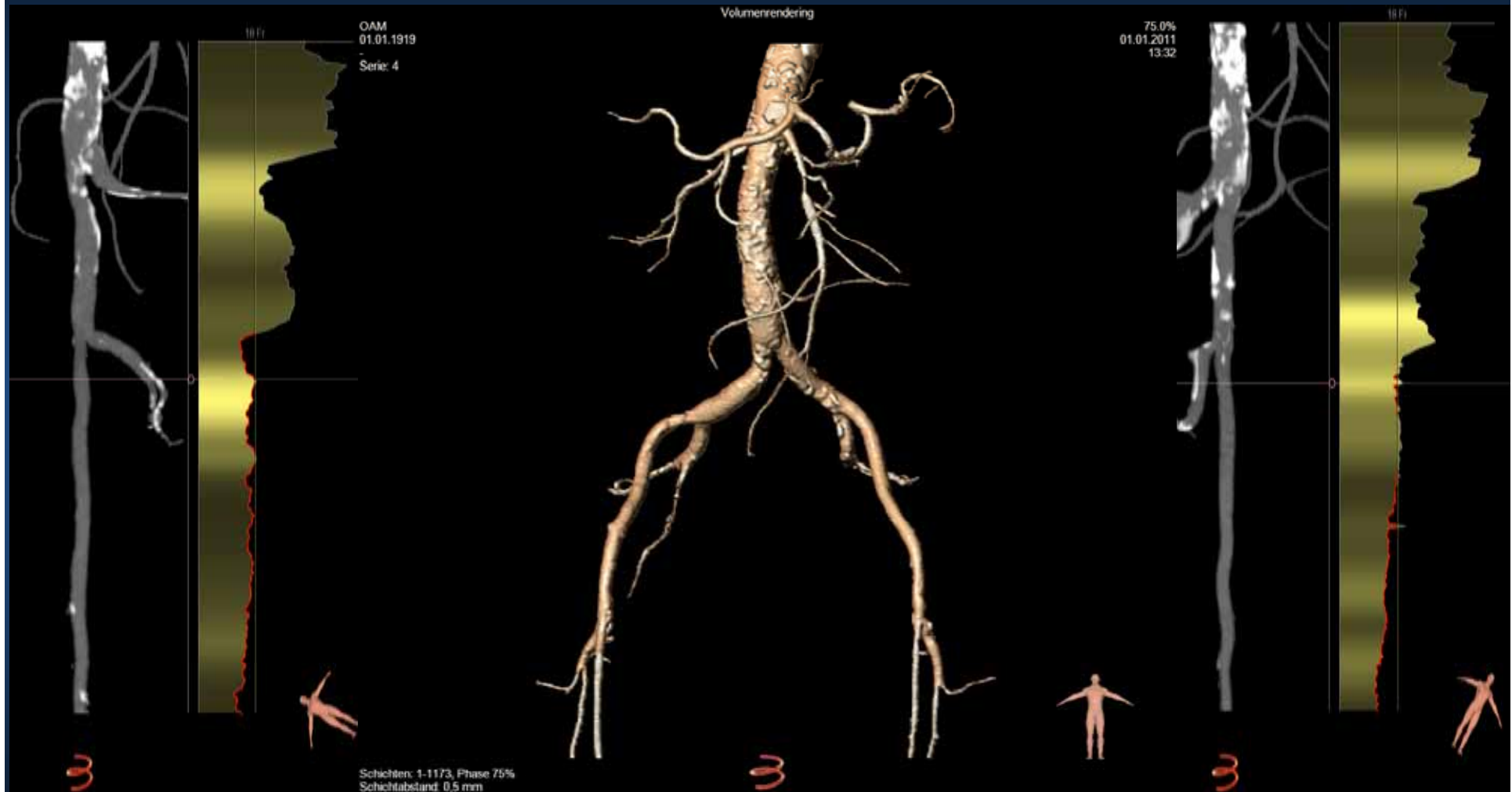
TEE



CoreValve 26mm Prosthesis



Transfemoral Access



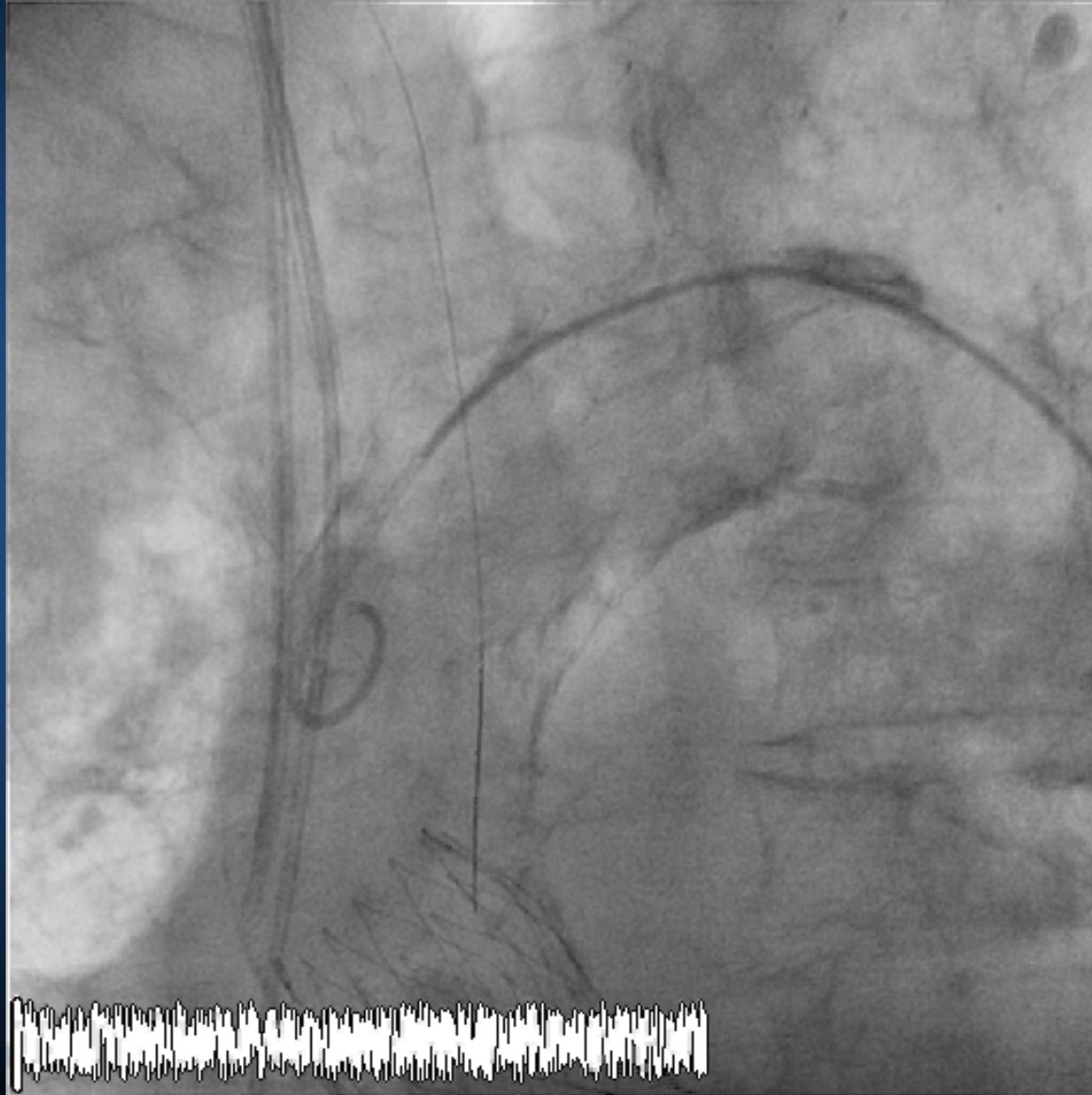
Right AIC: 5mm; AFC: 6mm

Left AIC: 6mm; AFC: 6mm

Aortogram of stenosed Core Valve Prosthesis 26mm



Aortic Arch with Narrowing of Truncus



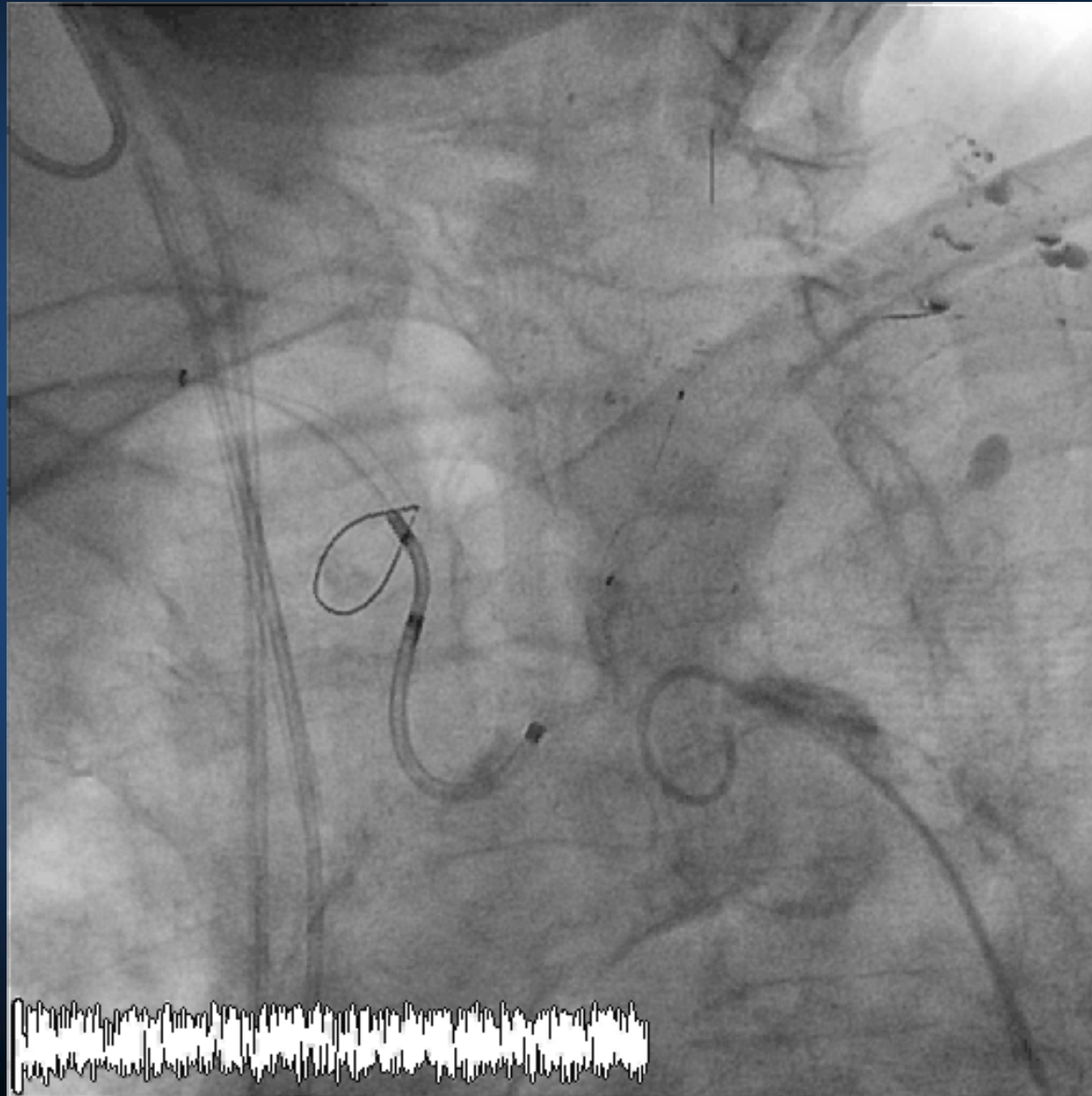
Claret Deployment proximal Filter



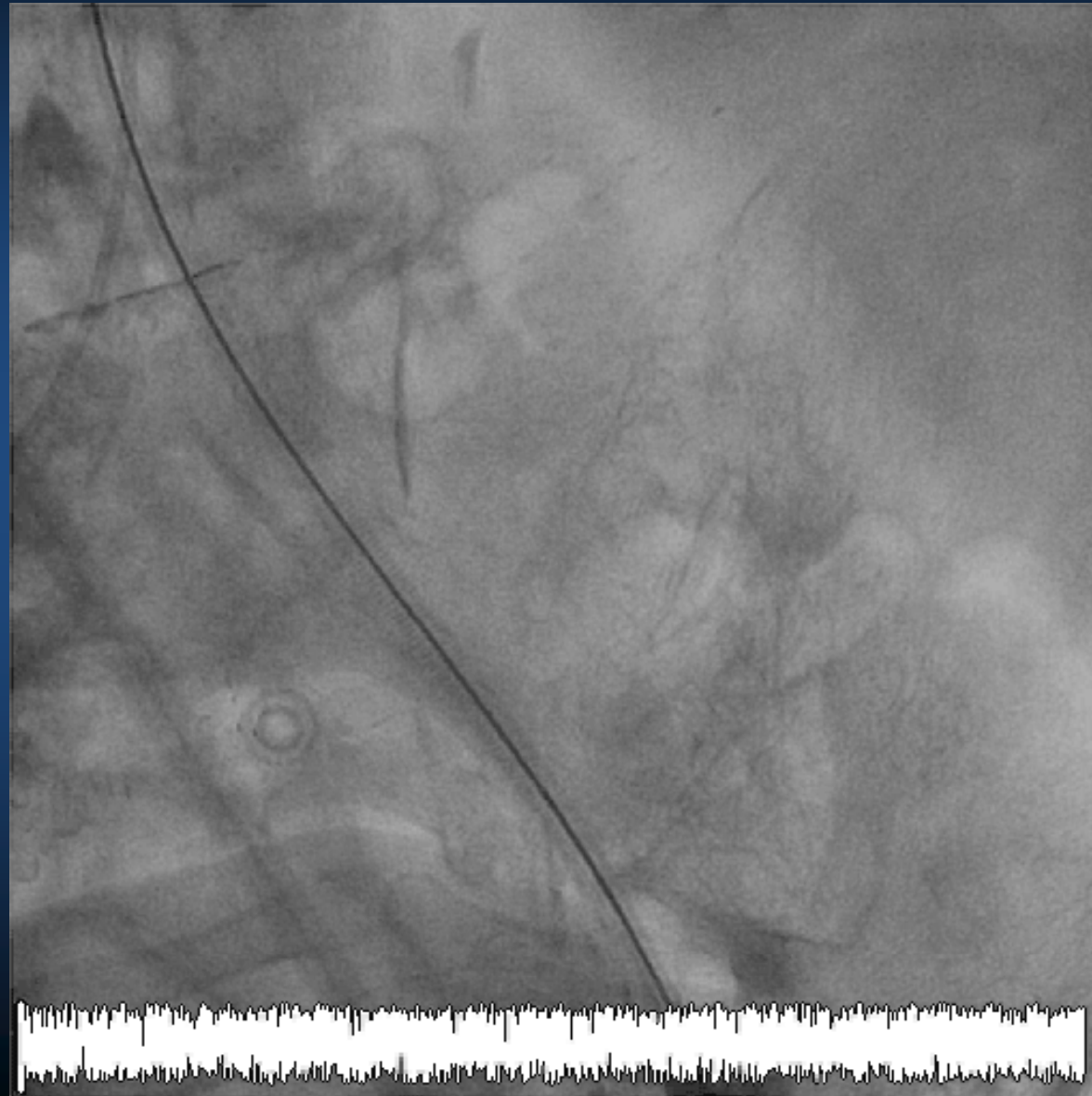
Claret second Filter deployed (left Carotid)



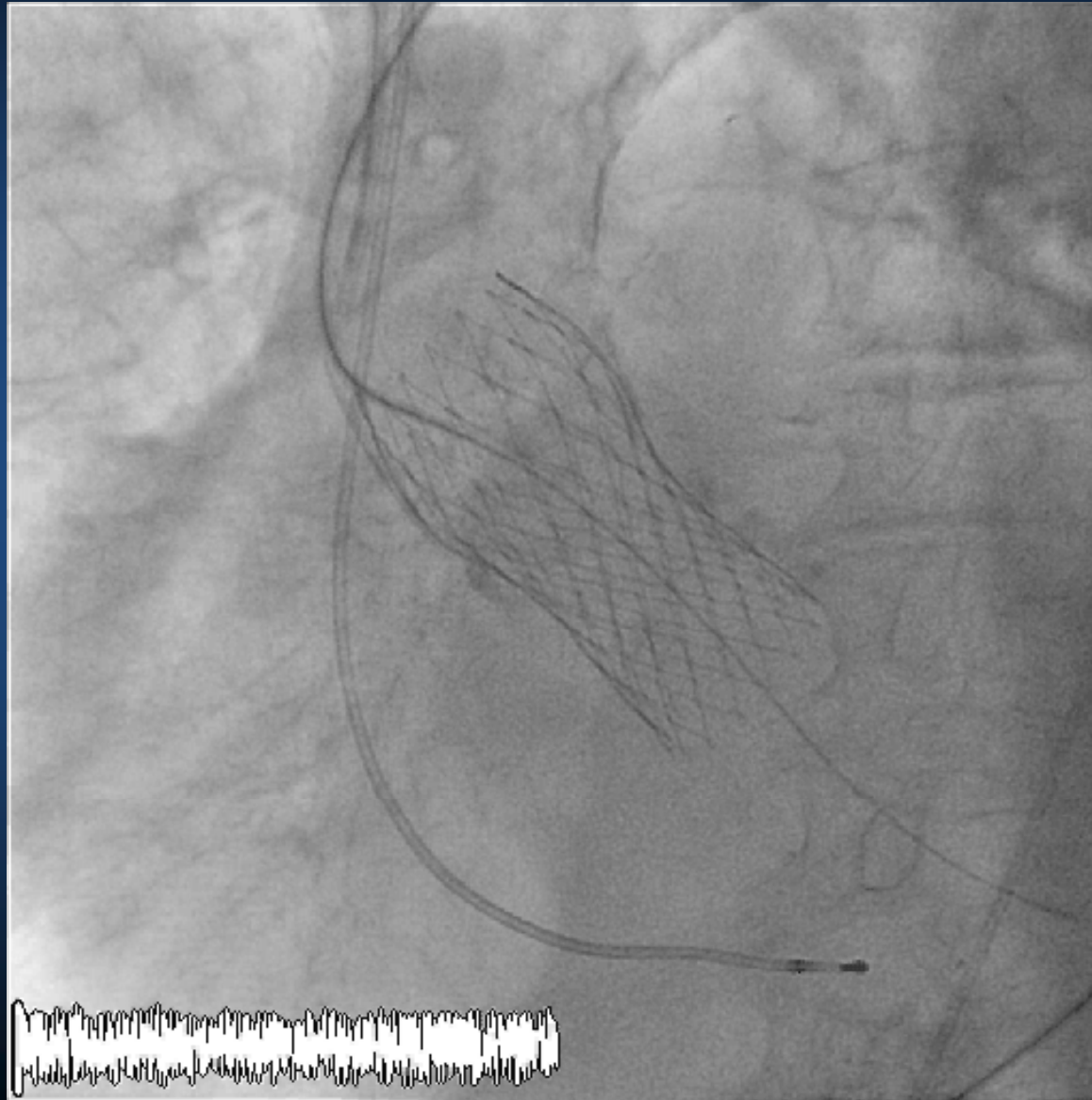
Claret second Filter deployed (left Carotid) Position Control



Inflation of "Onset" Sheath in left Femoral Artery 18 French



1st attempt to cross the Valve with AL1 and Terumo straight (through Struts)



Attempt to re-cross with Terumo Wire

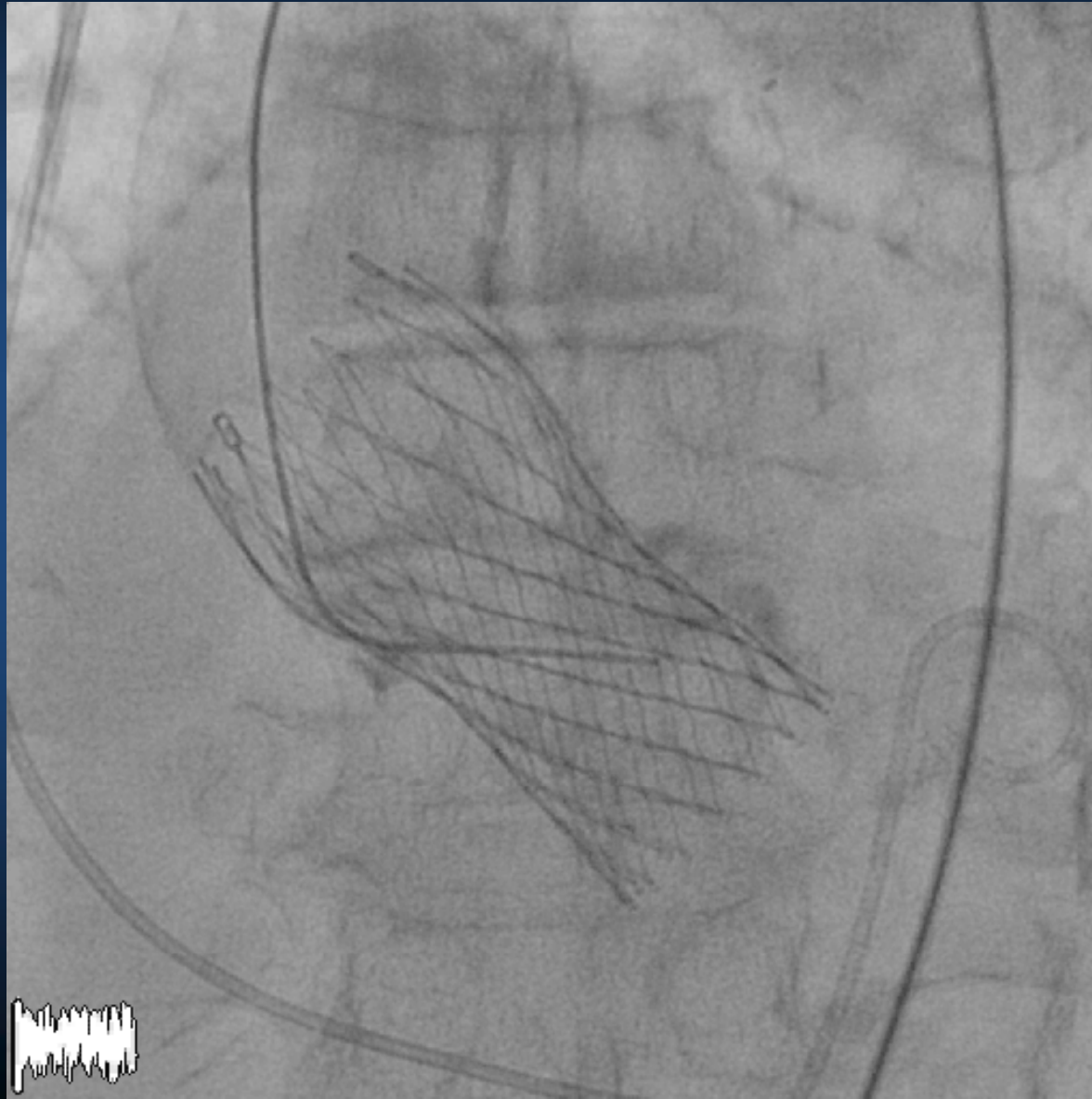


Material used to cross the Valve

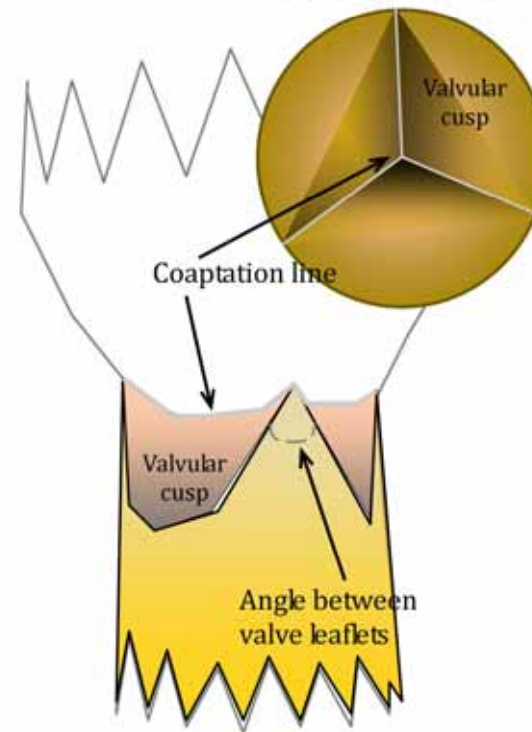
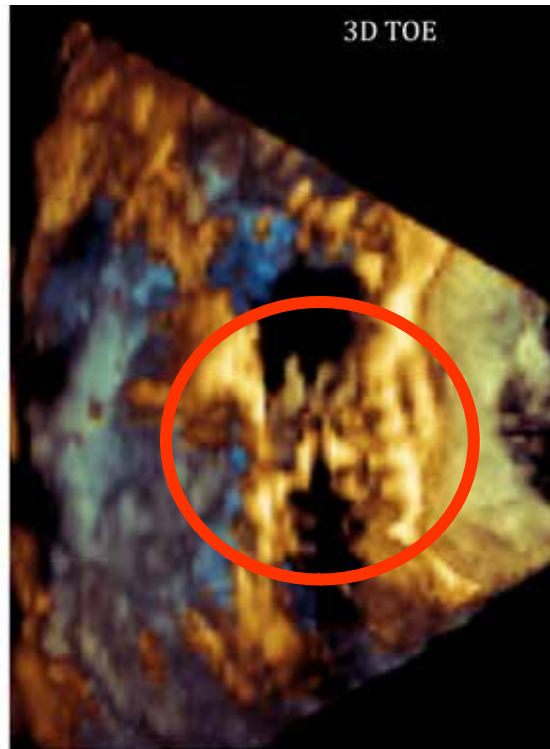
1. Terumo straight/curved
2. 35' Guide wire
3. AL1
4. AL 2
5. JR
6. Multipurpose
7. Swan Ganz with Terumo

after 45 Minutes.....

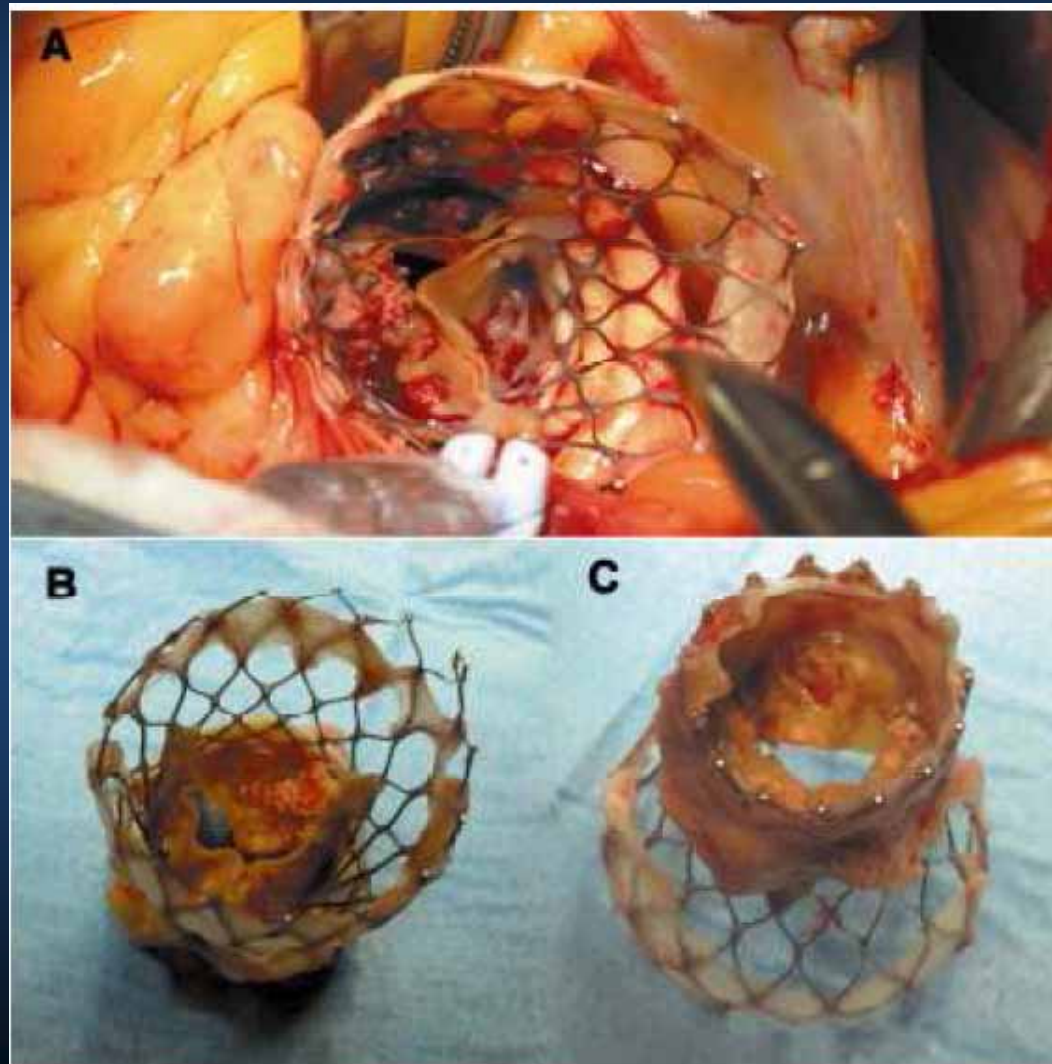
**Final attempt with 35' Guide wire
...but the with hard !**



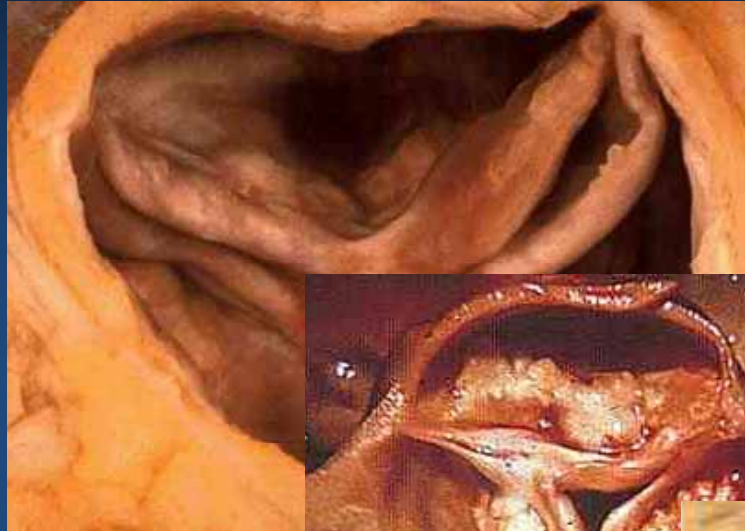
3D Echo of stenosed Core Valve



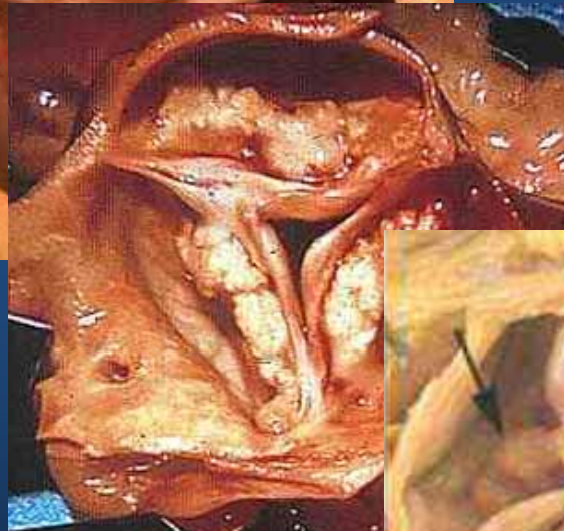
Degenerated Core Valve (6 years)



Calcific Aortic Stenosis



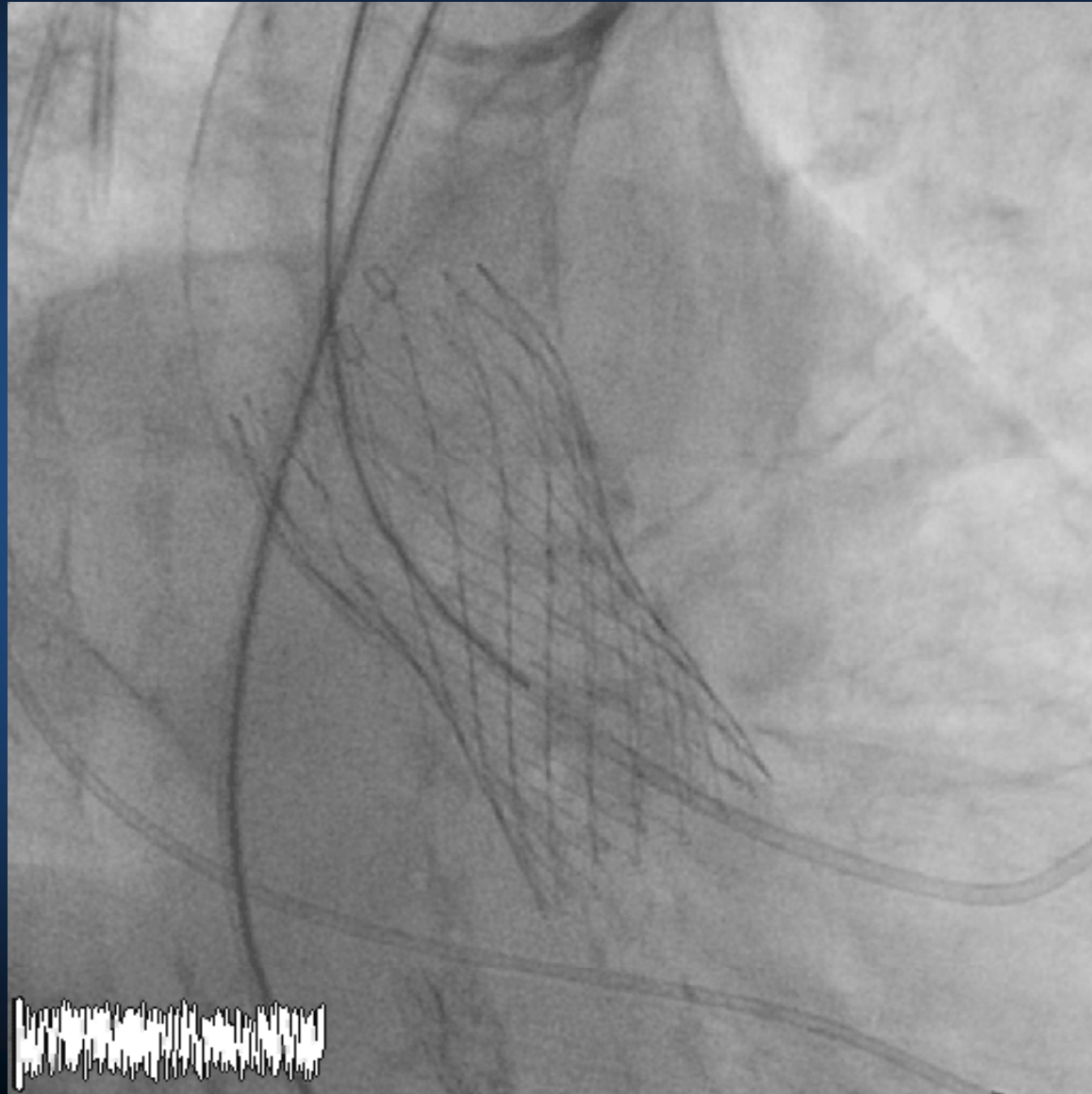
*Deformed
Eccentric
Calcified
Nodular
Rigid*



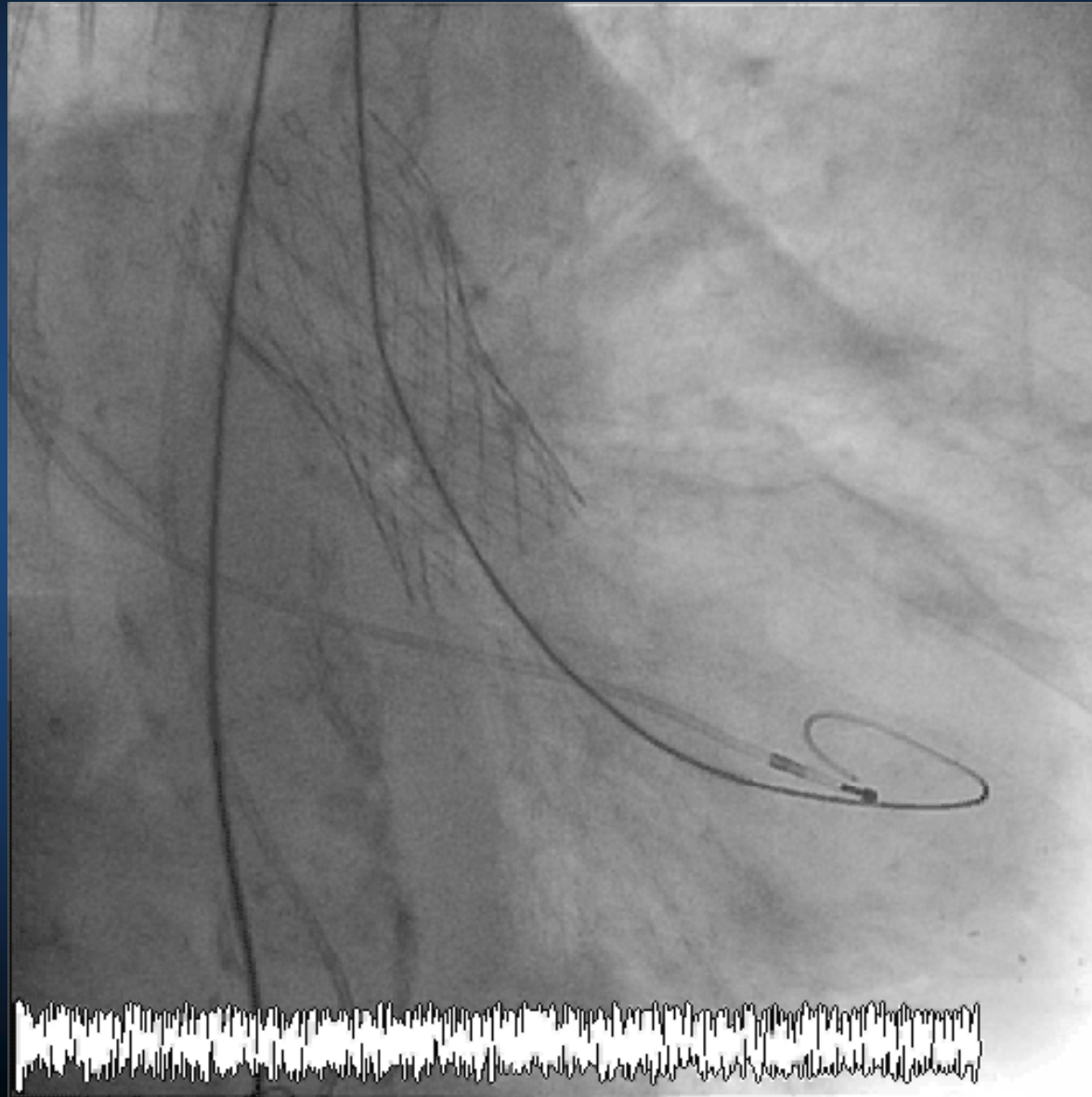
*HOSTILE
TARGET*

- *difficult to displace*
- *prone to fragmentation and embolization*

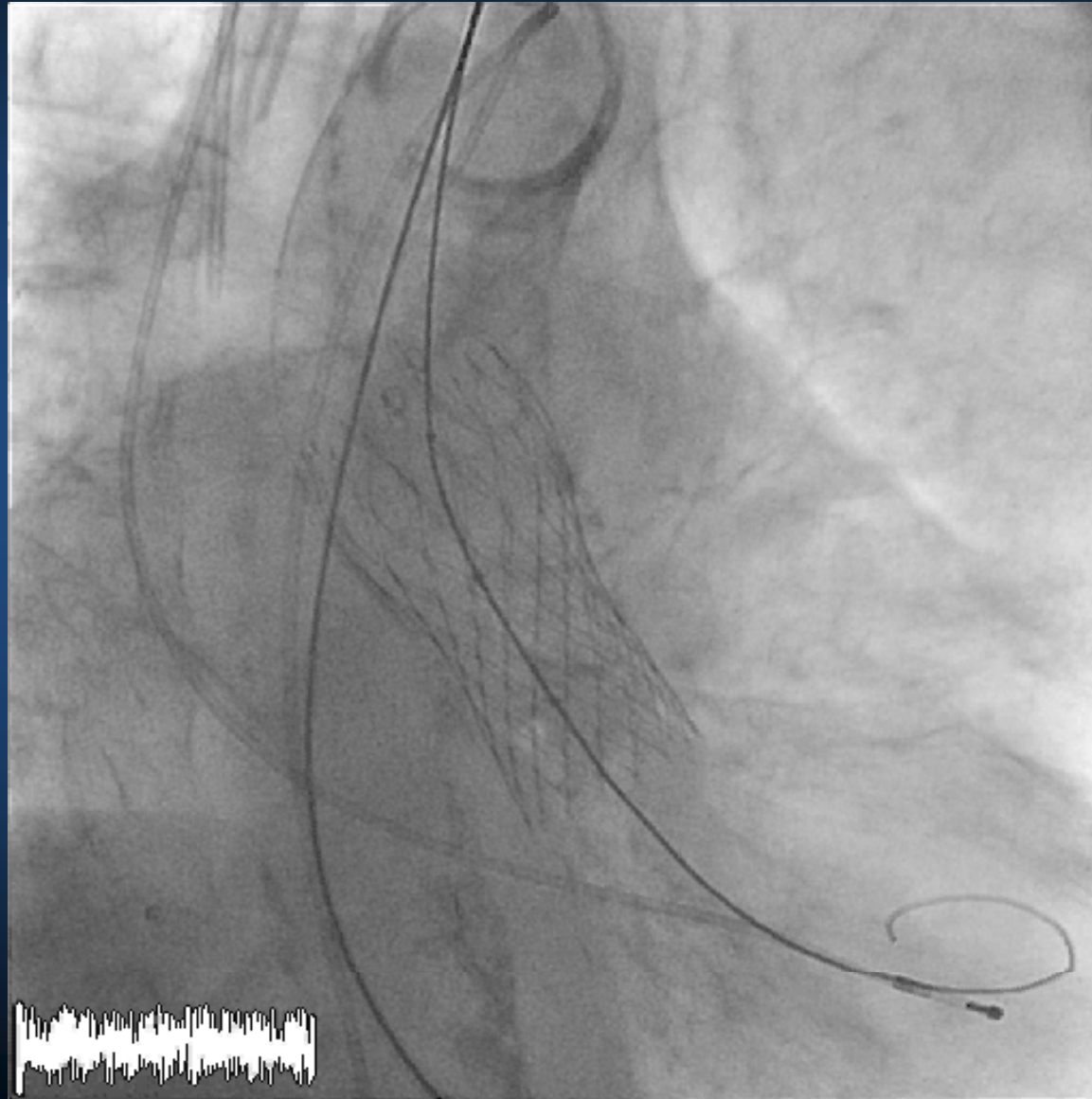
Crossing with JR and Guide



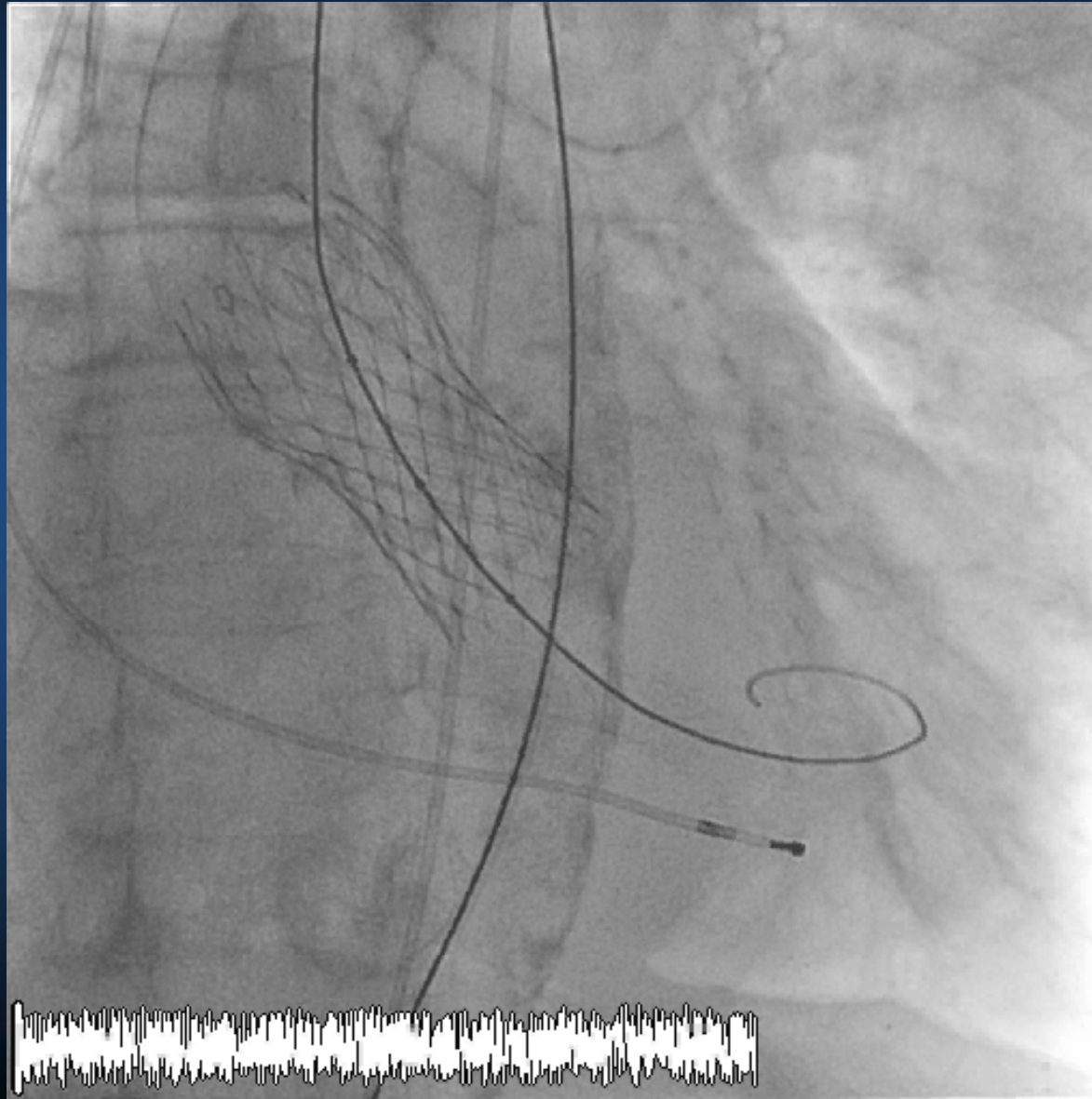
Super Stiff in LV



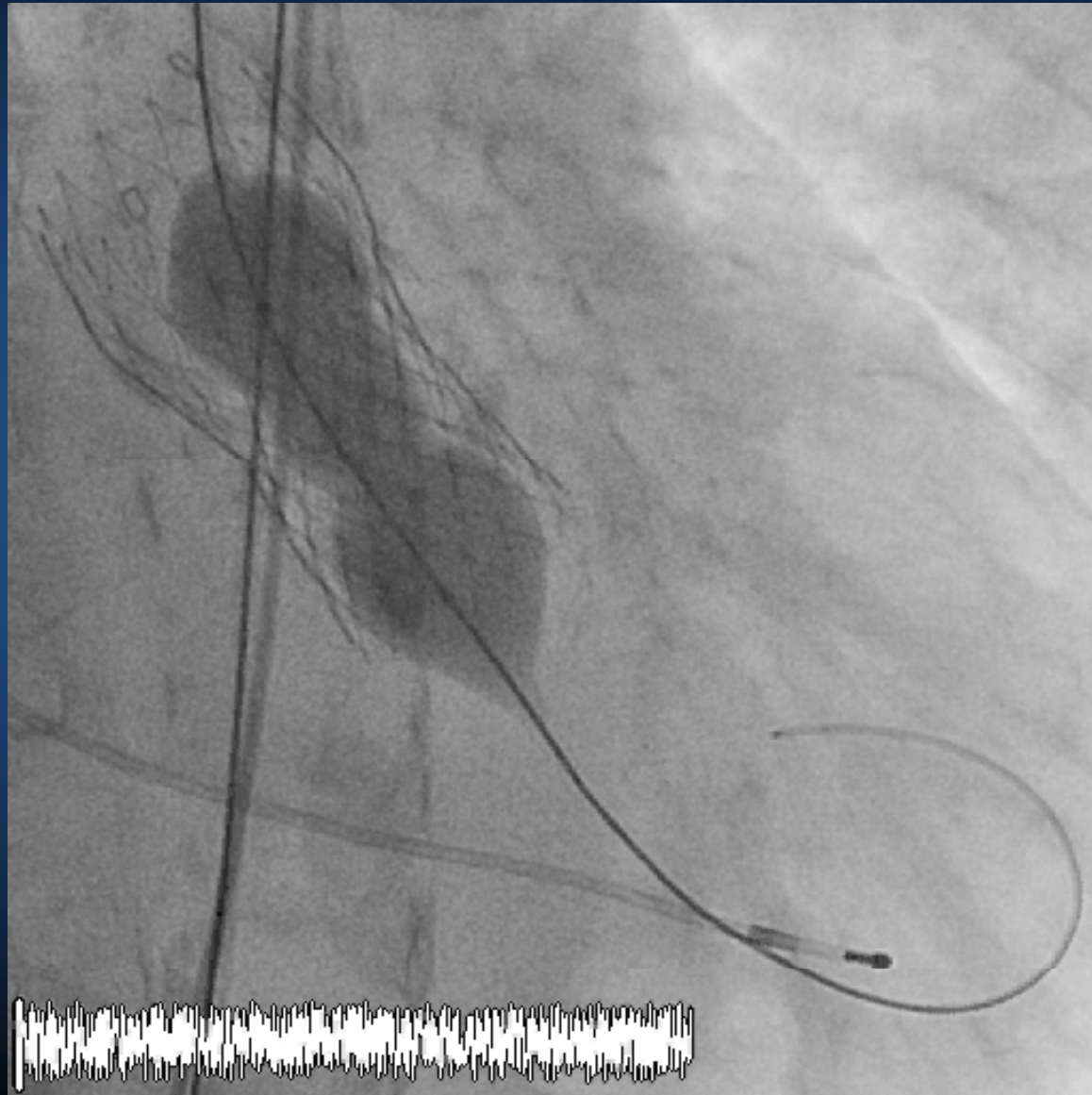
1st attempt with Nucleus Balloon



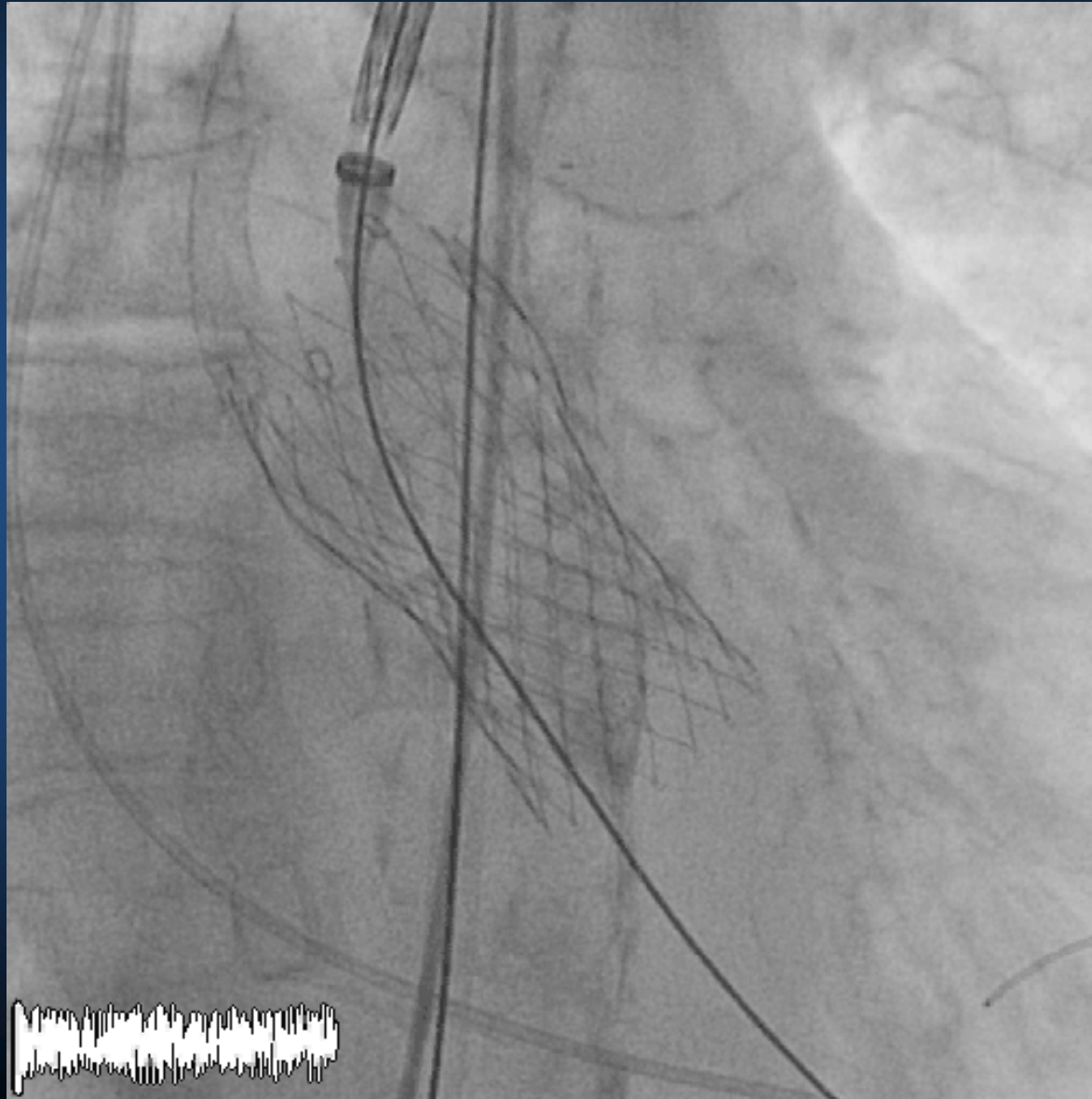
Rupture of Nucleus Balloon



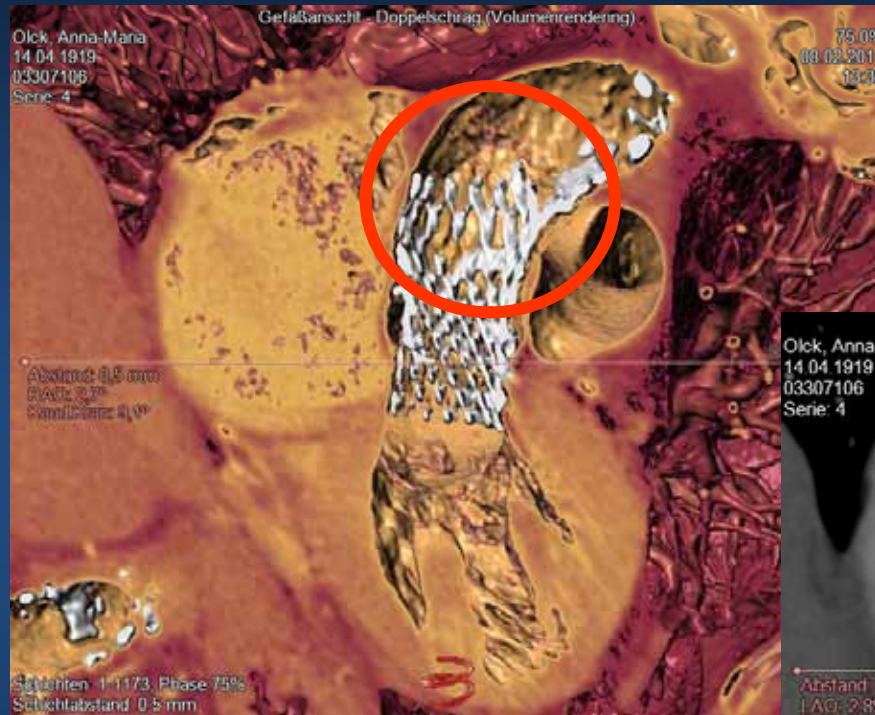
Second Balloon Rupture



**2nd Core Valve does not cross; stalls in
the crown of previous Core Valve**

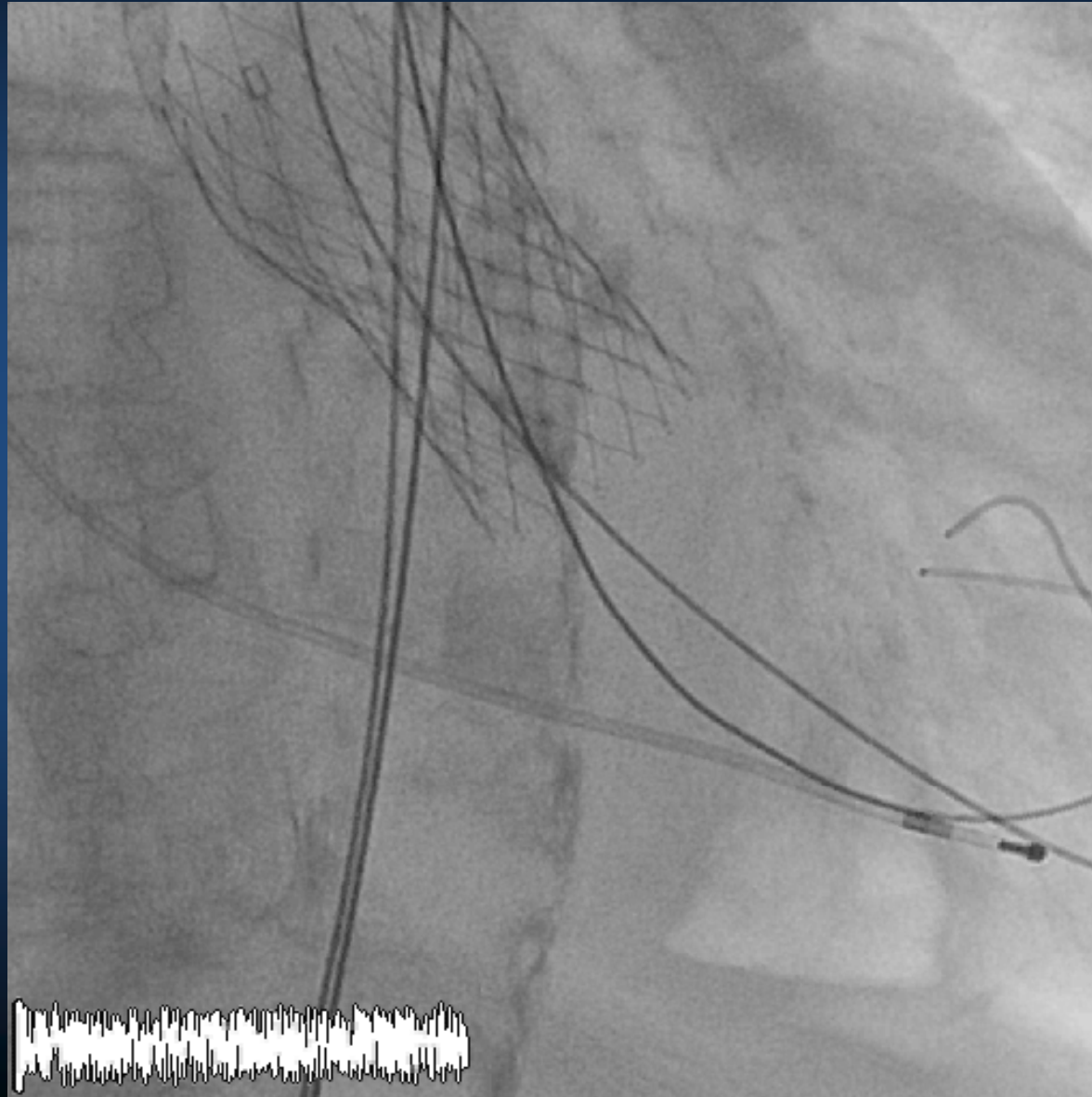


Superior Crown of the CV

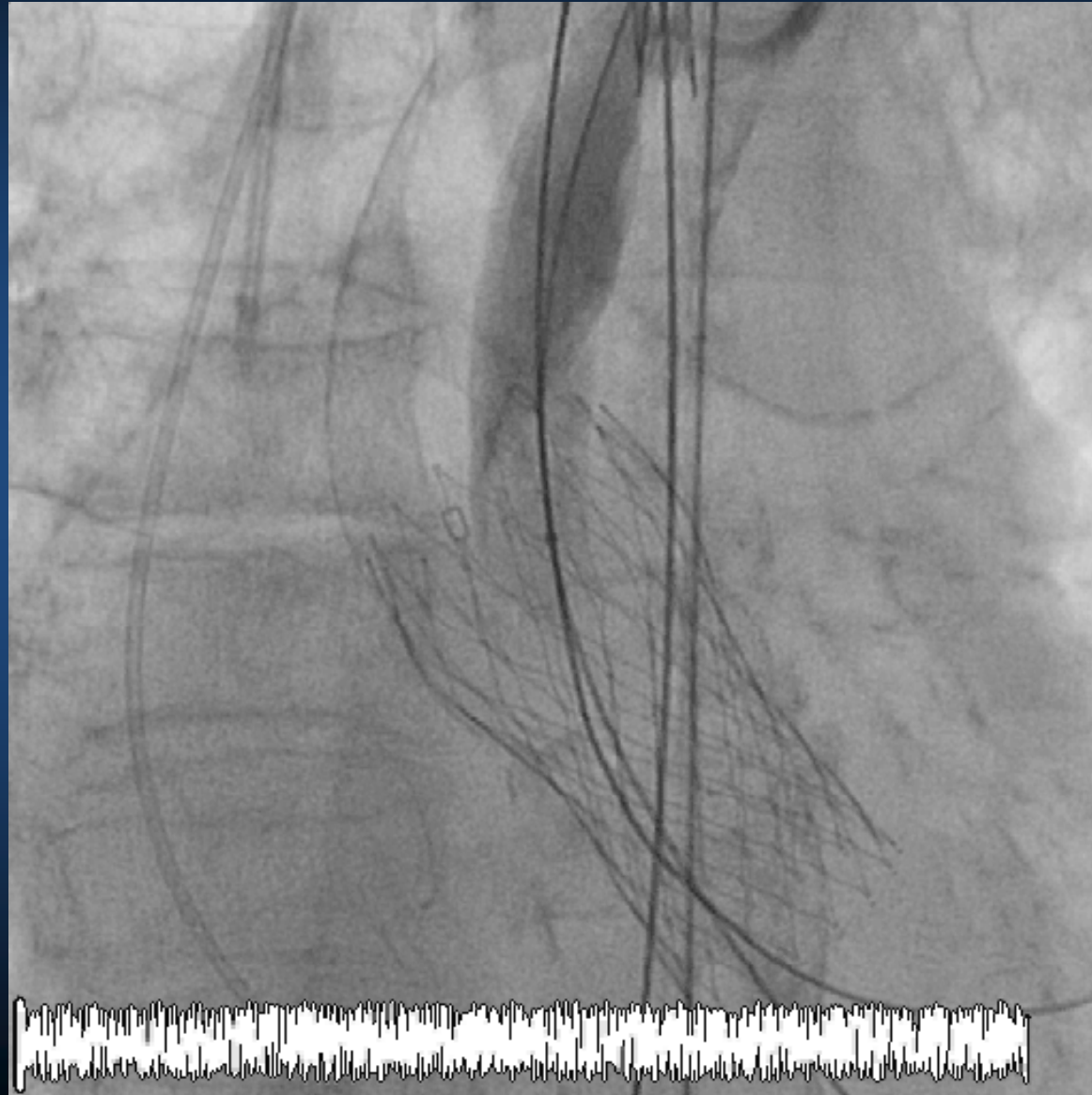


Buddy Wire

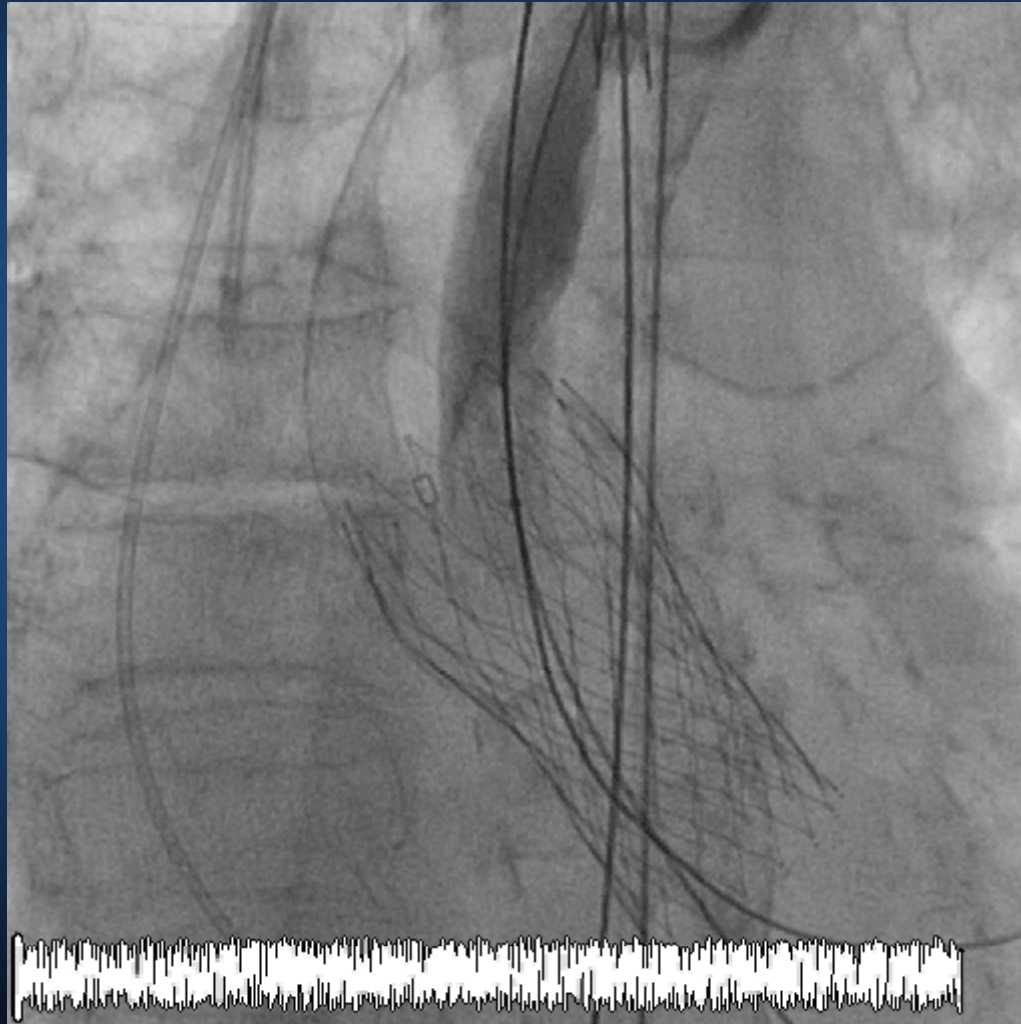
Buddy Wire and Balloon



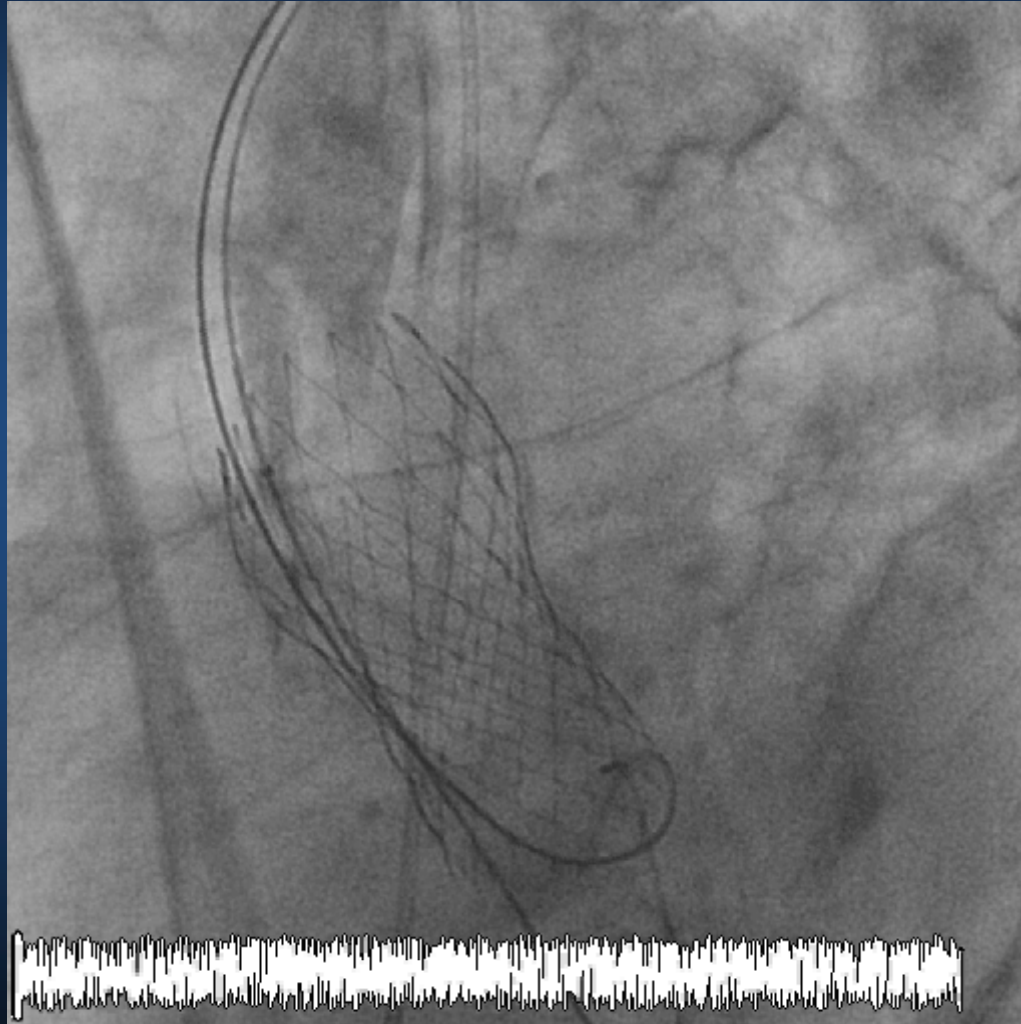
Attempt to cross with Buddy Wire and Balloon



Attempt to cross with Buddy Wire and Balloon



Attempt to cross with Buddy Wire and Balloon



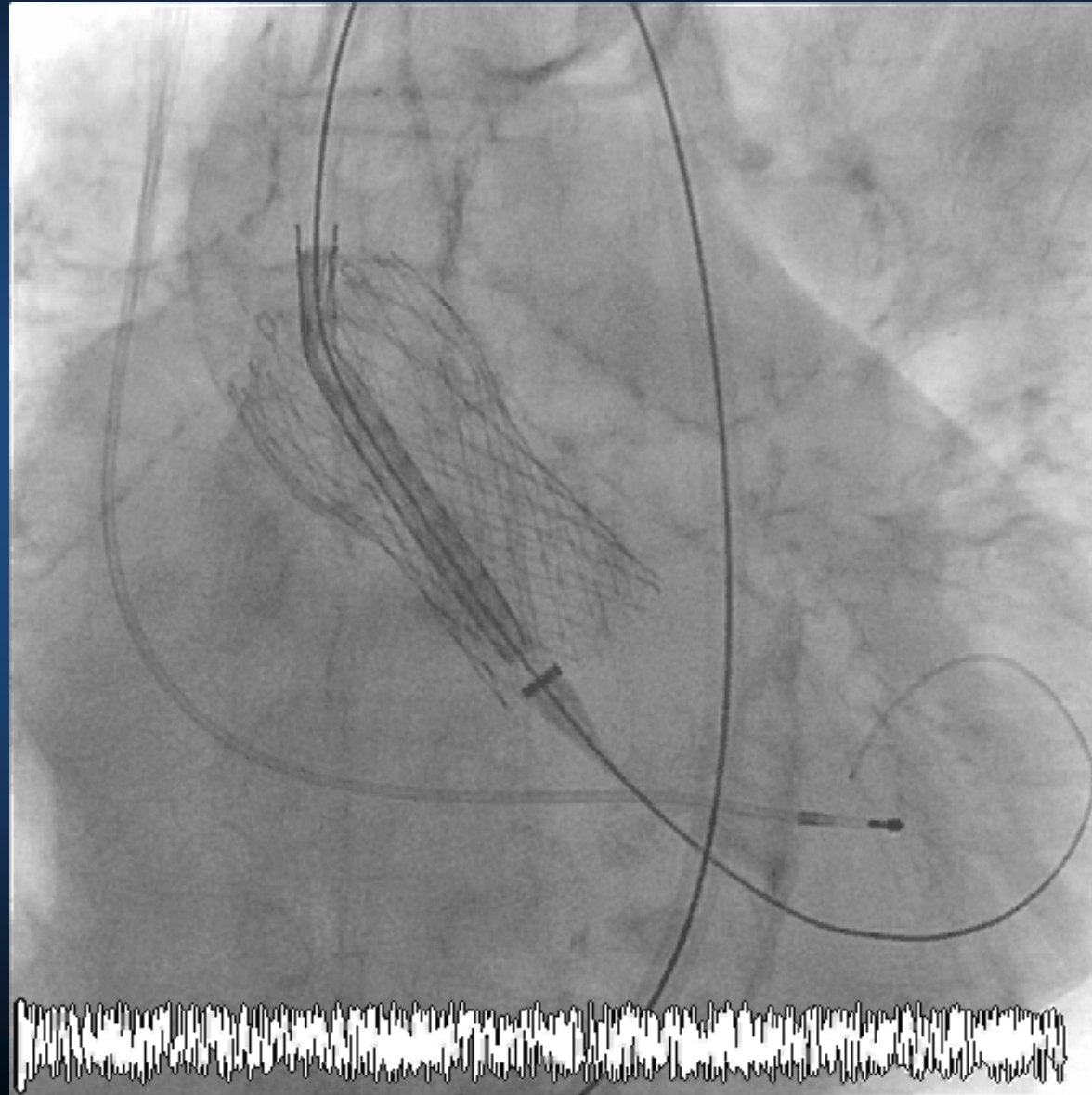
Attempt to cross with Buddy Wire and Balloon



Attempt to cross with Buddy Wire and Balloon



Positioning of 2nd CV (slightly higher)



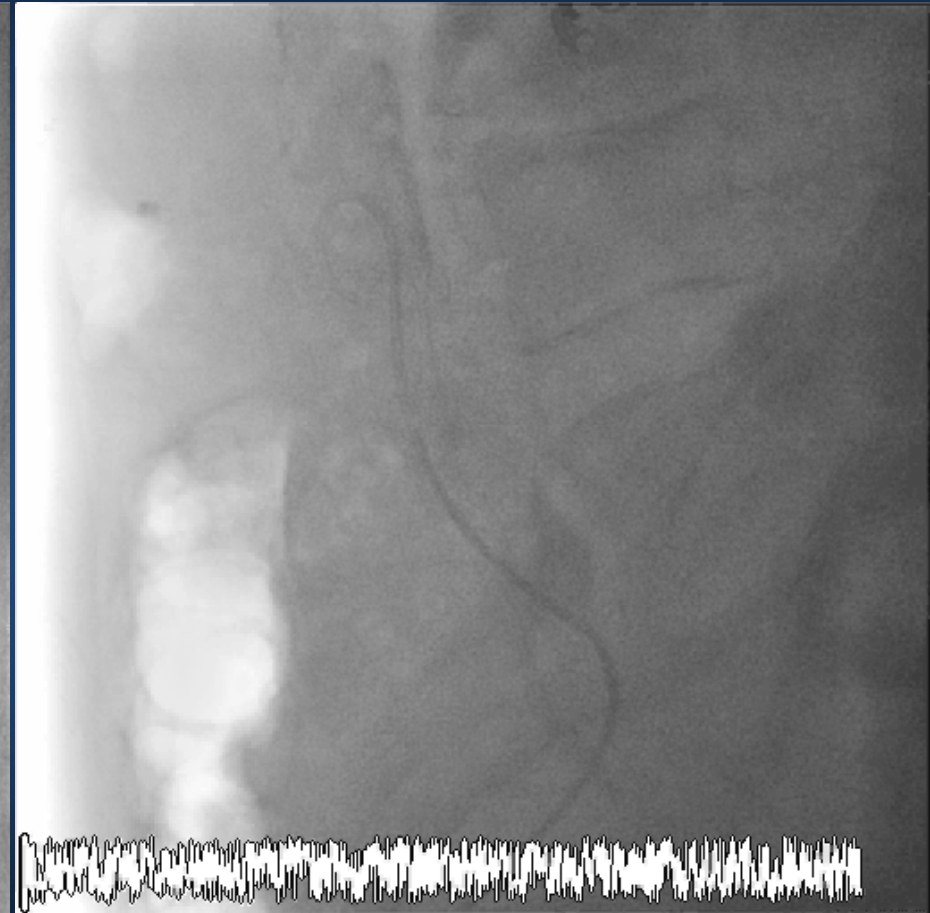
Delivery of 2nd Core Valve



Final Results



Dissection of left common Femoral Artery

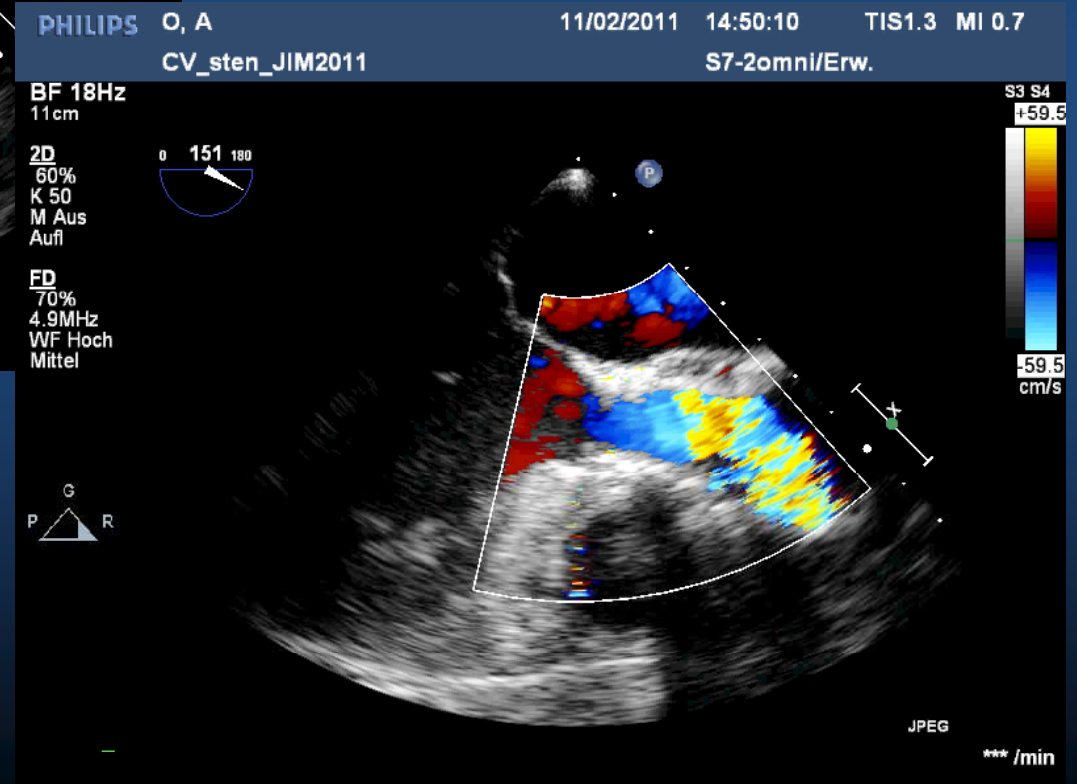
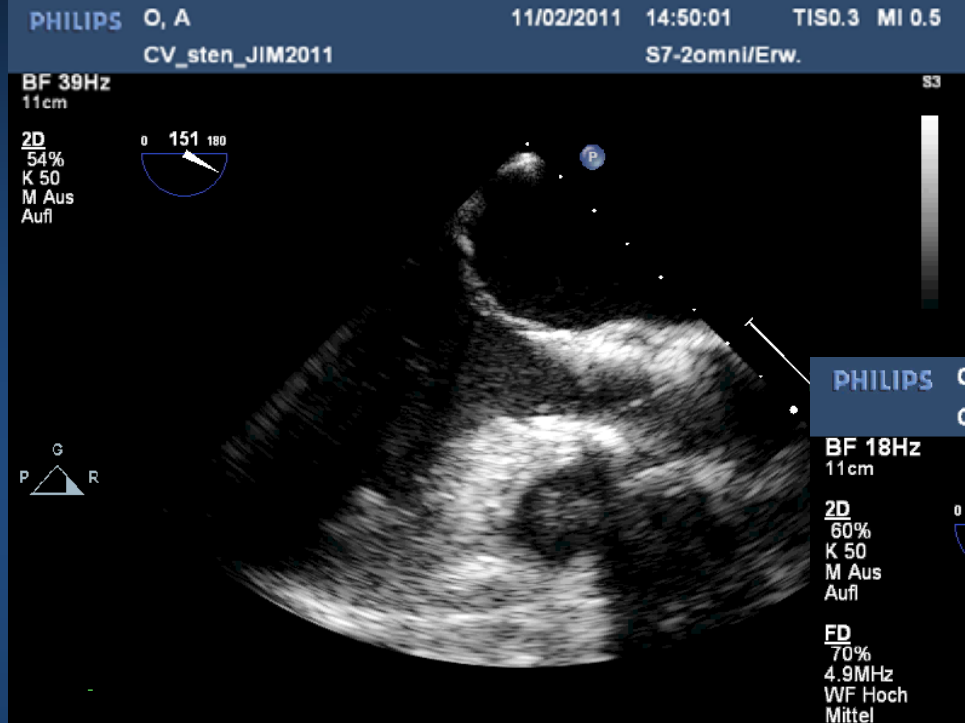


Variety of Emboli Captured & Removed



Embolic Material

Final Results before Discharge



Lessons learned:

1. Due to “tenting” of the restenosed and calcified leaflets, retrograde passage of the Valve is very difficult.
2. Preferred approach is antegrade via transseptal/LV/Ao Valve and then snare the wire in the aorta. This wire then serves as a rail for the Balloon.
3. Use aggressive Predilatation to “crack” calcifications
4. In order to “pull” the prosthesis around the aortic arch into the previous prosthesis, place a “snare” around the tip of the Core Valve before introducing into sheath.
5. Position the 2nd Core Valve slightly higher than the previous valve and use the upper crown as a reference for delivery.