31 GIORNATE CARDIOLOGICHE TORINESI

TURIN
October
24th-26th
2019

TRANSCAVAL AORTIC VALVE IMPLANTATION

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Conflict of Interest: None

Alternative Access for TAVI: What we don't know

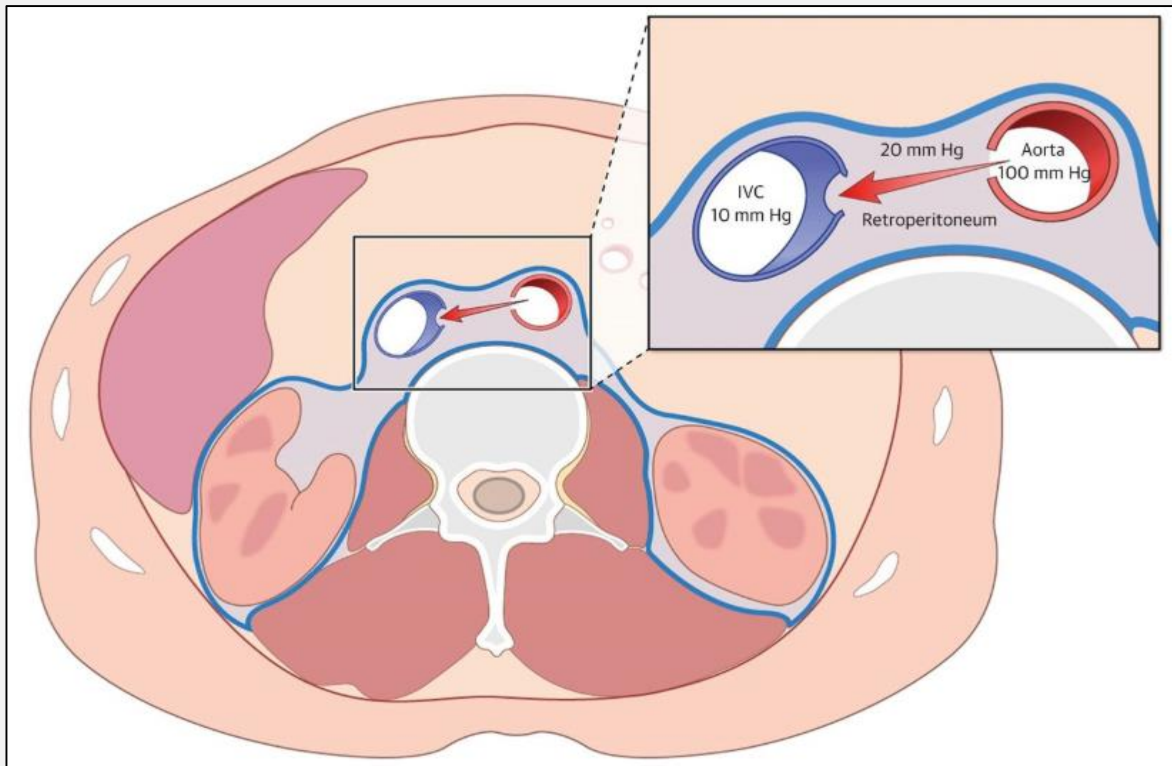
- Are the worse outcomes seen with nontransfemoral access related to the underlying morbidities or to the access method itself?

Access route					0.06
Transfemoral	1550	128/775 (16.8)	149/775 (20.4)	0.79 (0.62–1.00)	
Transthoracic	482	64/236 (27.7)	53/246 (23.4)	1.21 (0.84–1.74)	

Convertion of trans-thoracic access into more «transfemoral like» procedures should improve outcomes

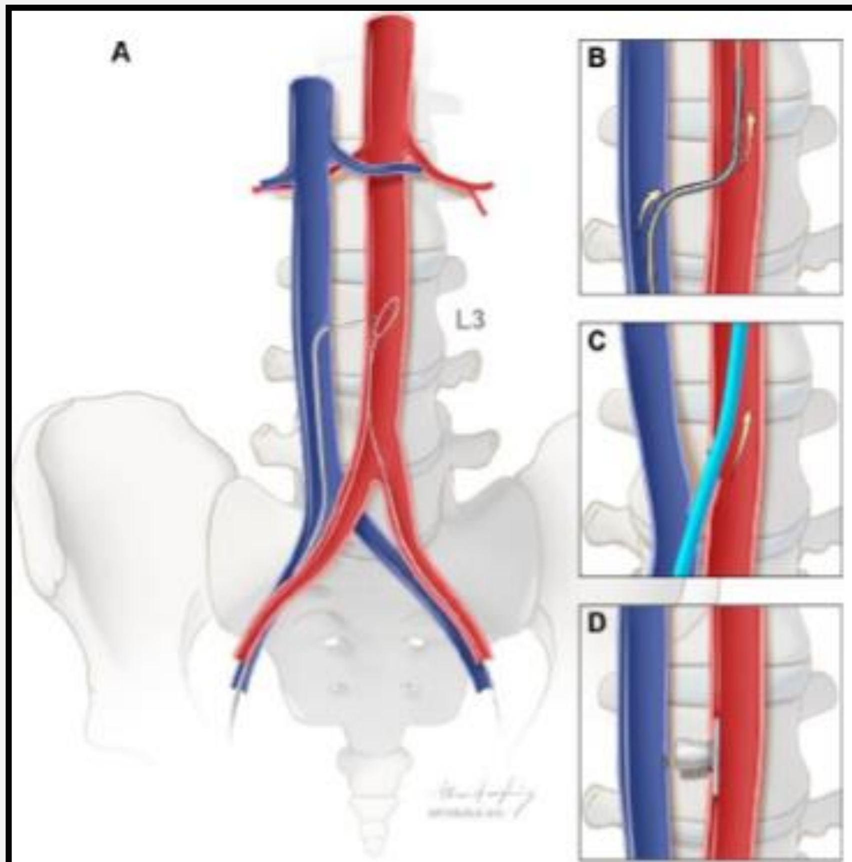
- Transcaval *is* transfemoral
- TC only needs conscious sedation
- TC is a transvenous procedure
- Allows rapid ambulation and reduces lengh of stay
- *Proctorship recommended!*

Transcaval Access for TAVI: Reassuring Physiology

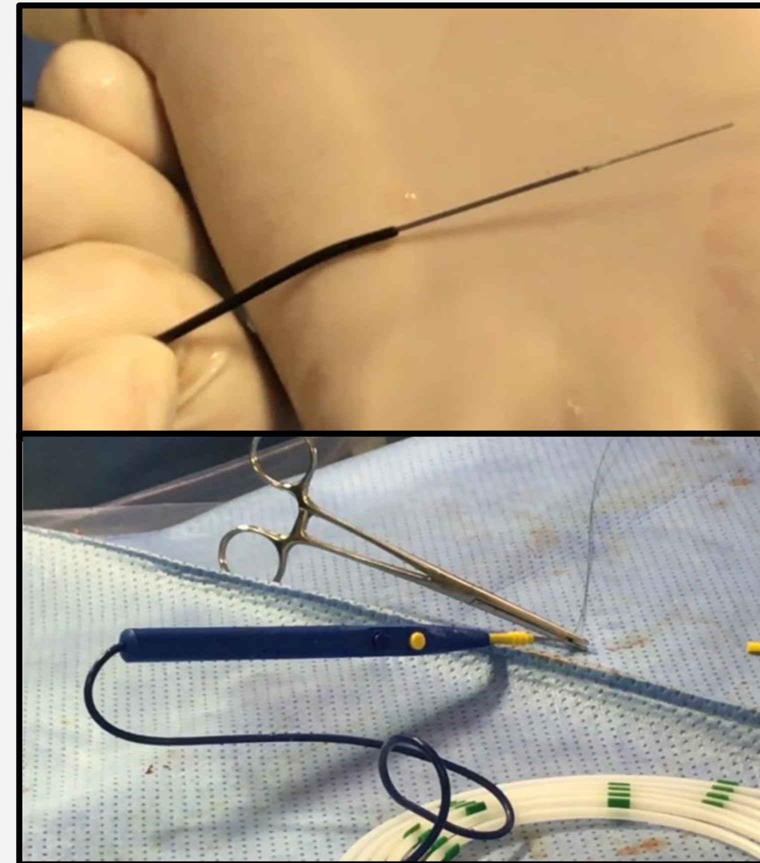


- IVC is usually close to aorta without significant intervening structures.
- Interstitial pressure in retroperitonal space is higher than vein.
- Aortic bleeding decompresses through a hole in IVC.

Two New Concepts



Transmural Pathways



Transcatheter Electrosurgery

Obtain CT-based Treatment Plan

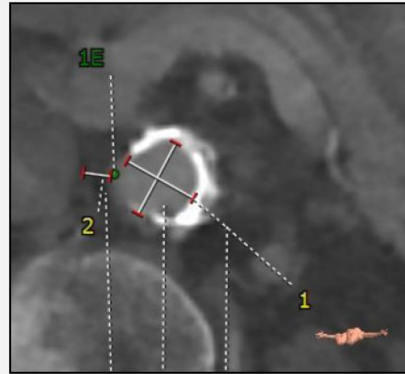
Key elements

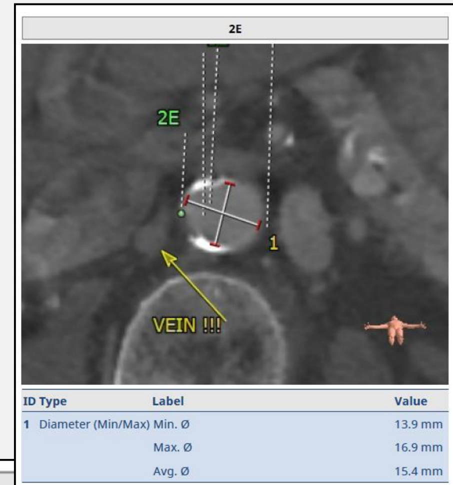
Calcium-free target

Nothing interposed

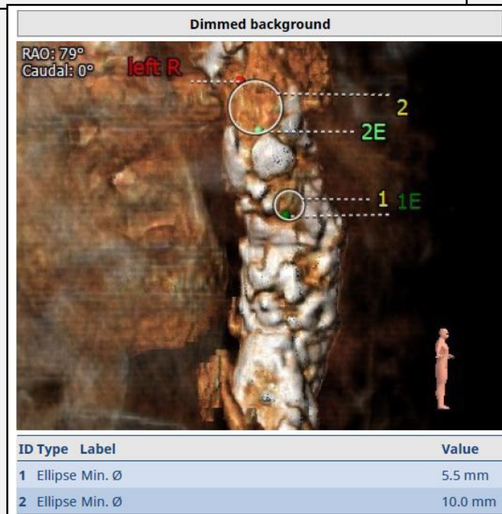
Away from renal and iliacs

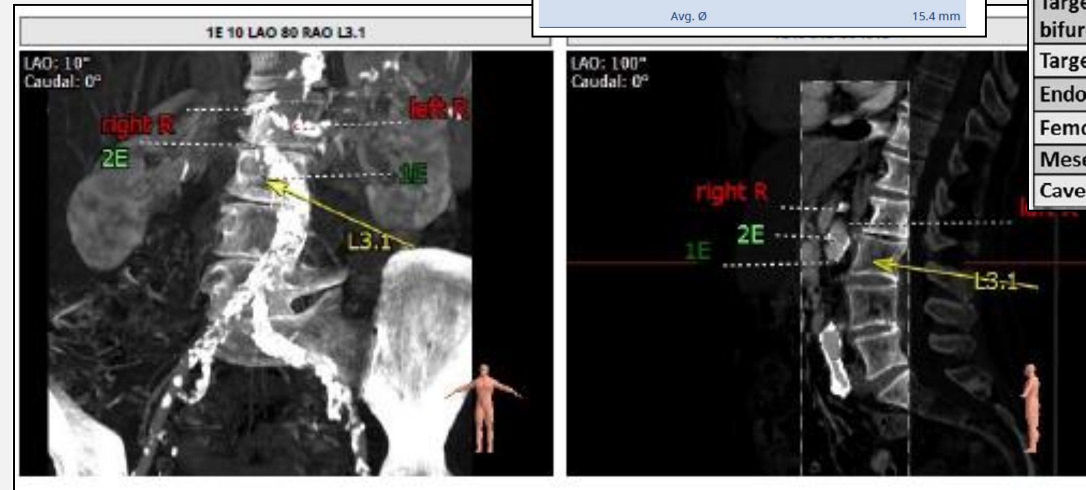
Bailout plan



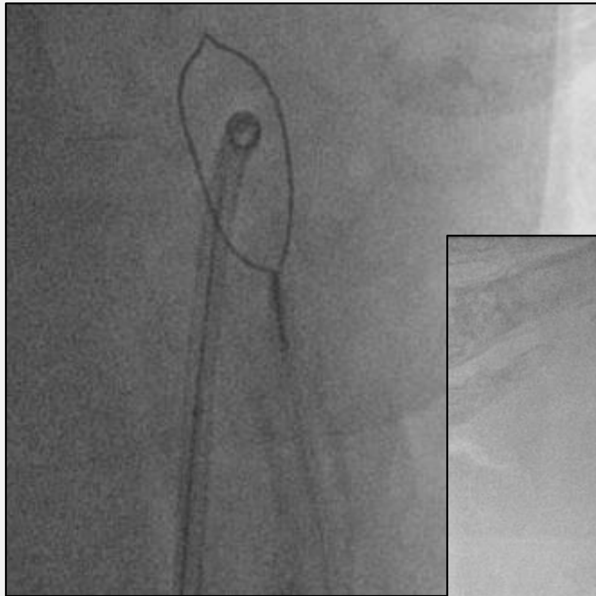


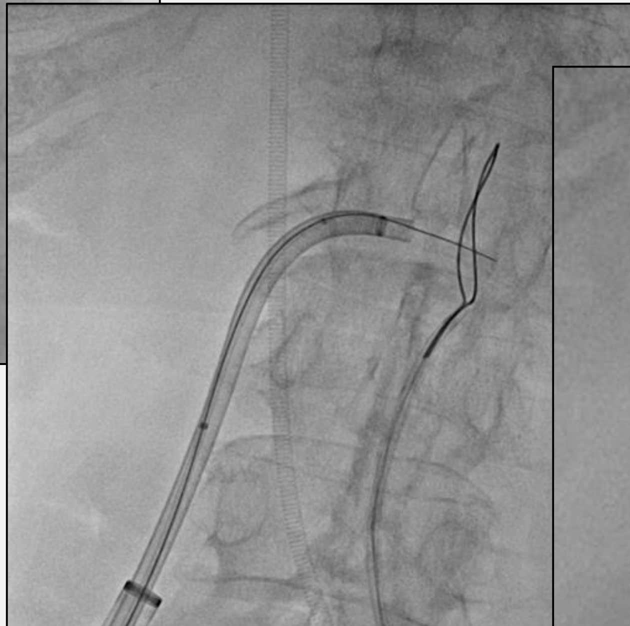
Recommendation (CA-TAVR eligibility)	Favorable; ~~Uncertain; Unfavorable~~
Aortic Ca^{2+} / thickening / ectasia	Aortic calcium grade 2
Target entry site lumbar vertebra	Mid Body L3 (L3.0)
Orthogonal projection	Anteroposterior
Caval-aortic distance X-Y	6 mm
Interposed structures	none
Nearby structures	Bowel anterior to target
Caval lumen diameter	23 mm
Aortic lumen diameter (+3/0/-1.2cm)	15 mm / **16 mm** / 14 mm
Target distance above aorto-iliac bifurcation	12 mm
Target distance below R renal artery	75 mm
Endograft bailout limb access	**RCIA 5.2 mm**, LCIA 3.0 mm
Femoral to target centerline distance	24 cm
Mesenterics	Celiac patent; SMA patent
Caveat & Comments	15x20 mm target window

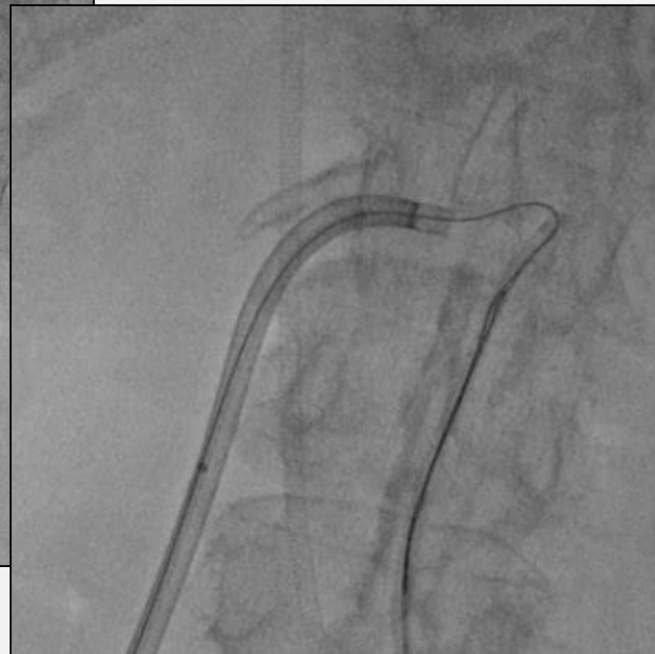


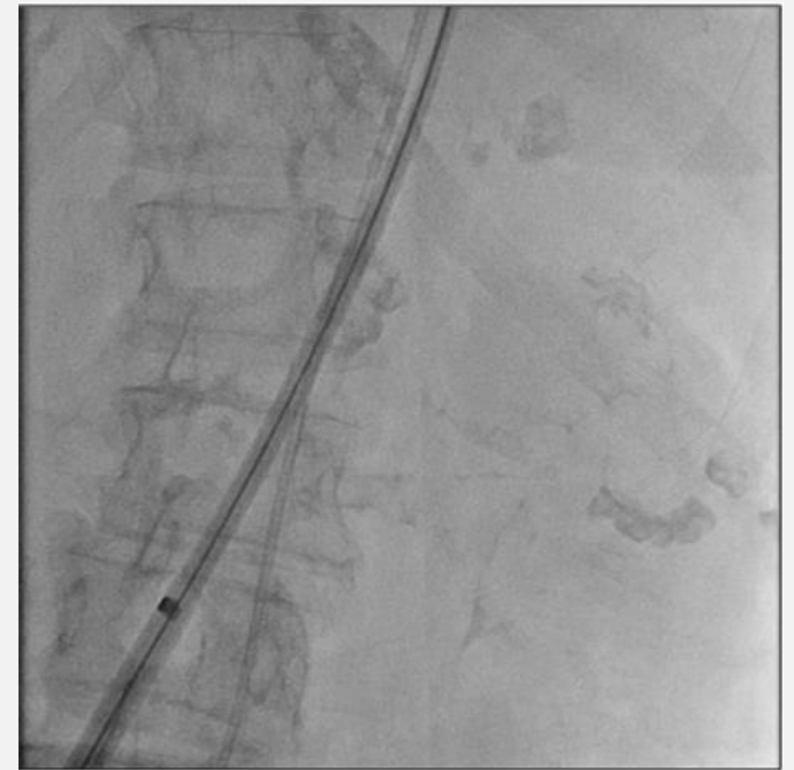


Aligning, Crossing, Snaring & Advancing



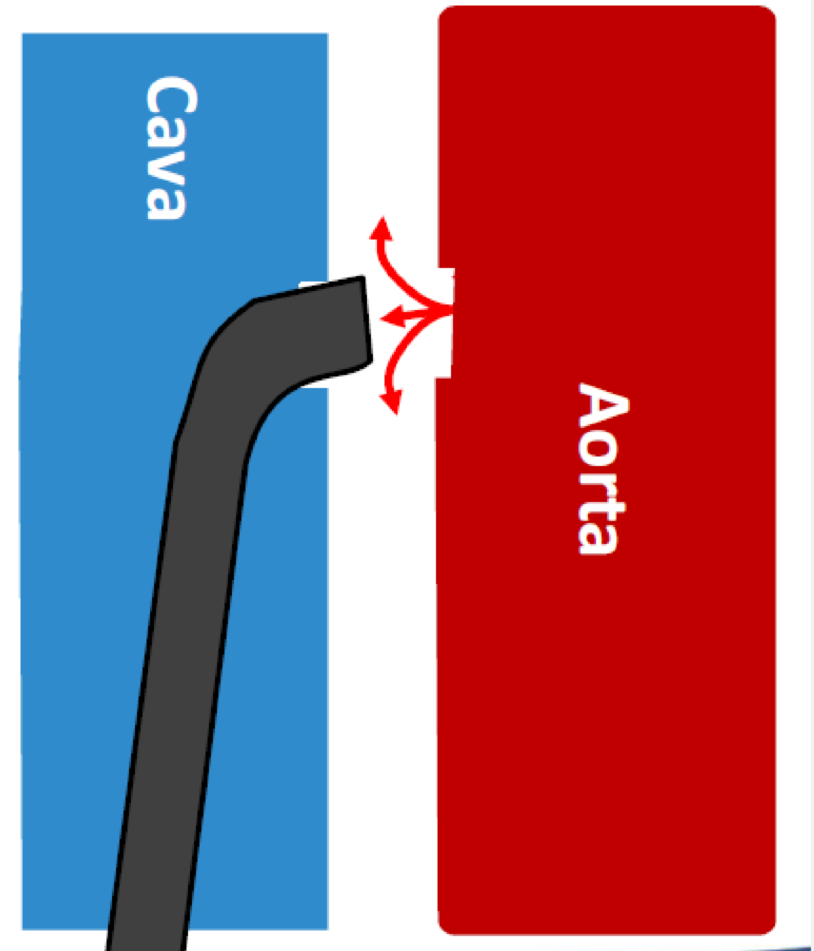




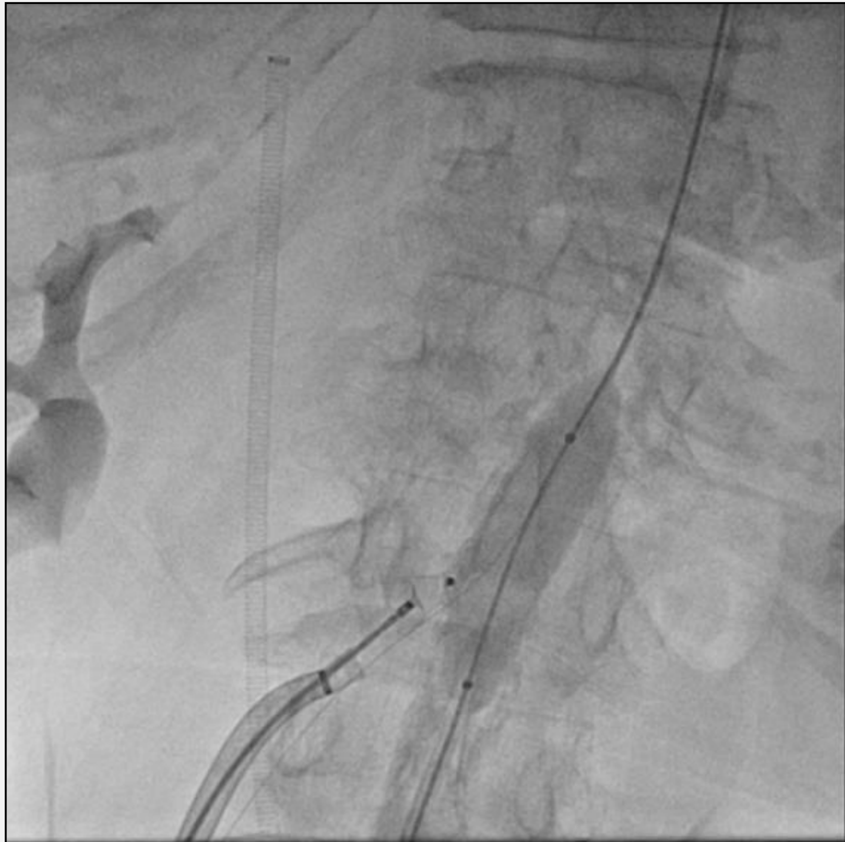


Closure: Fundamental Pathophysiology Principle

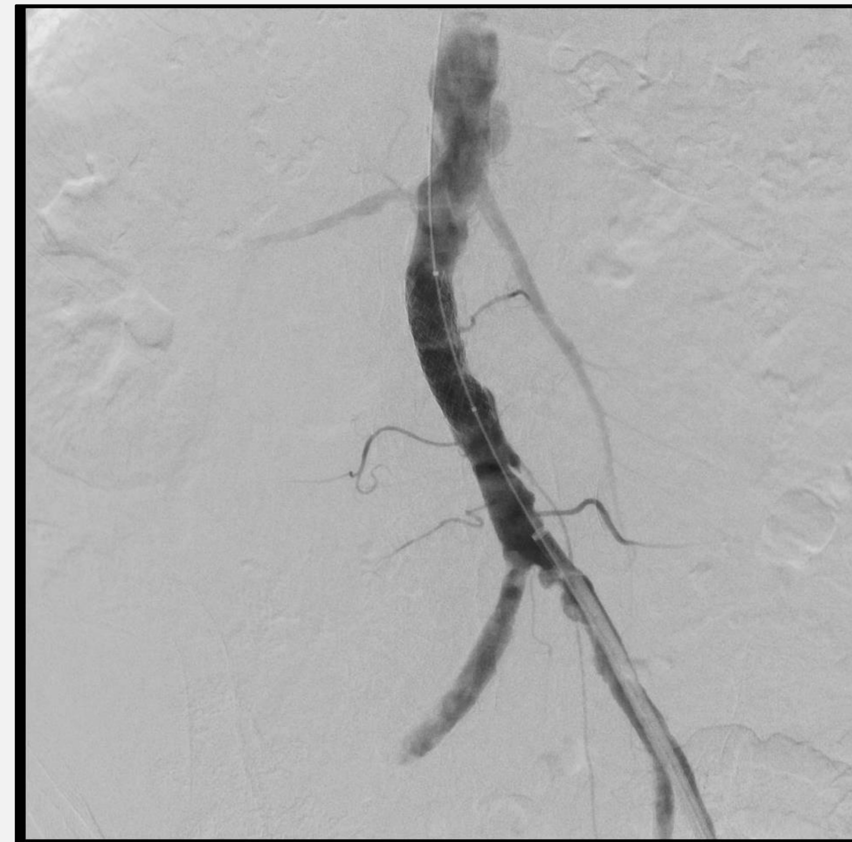
- A venous sink/sump is required to decompress arterial hemorrage
- The hole in IVC must not be occluded unless the hole in the aorta is occluded
- Only withdraw aortic sheath COMPLETELY into cava



All further remedies are endovascular (≥ 9F)!



Balloon aortic tamponade



Aortic stent graft

D.E. , 81 yo female

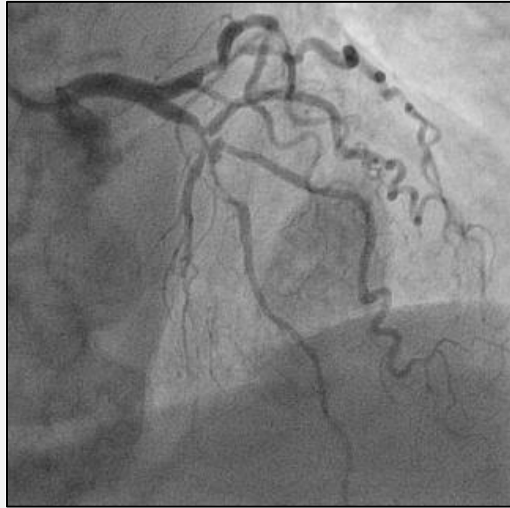
STS score morbidity or mortality **20.6 %,** mortality **5.5%**
EUROSCORE II 11.7 %

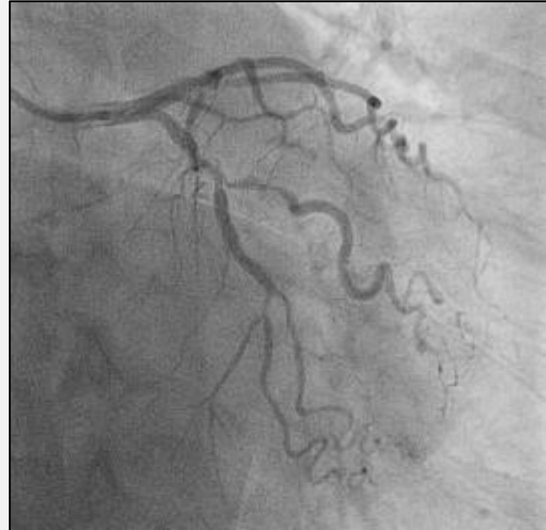
81 Kg x 156 cm

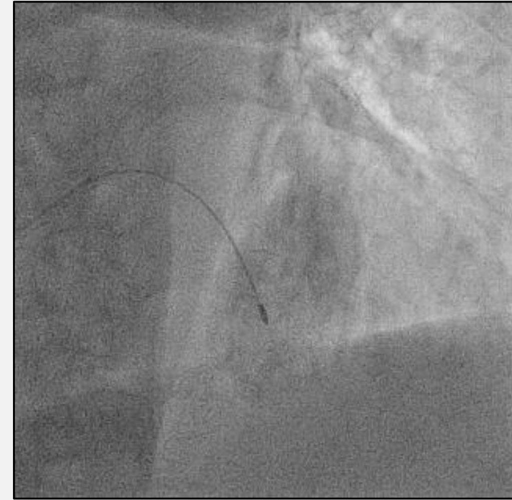
Cardiovascular risk factors:
Hypertension, diabetes mellitus, dyslipidemia, obesity, OSAS

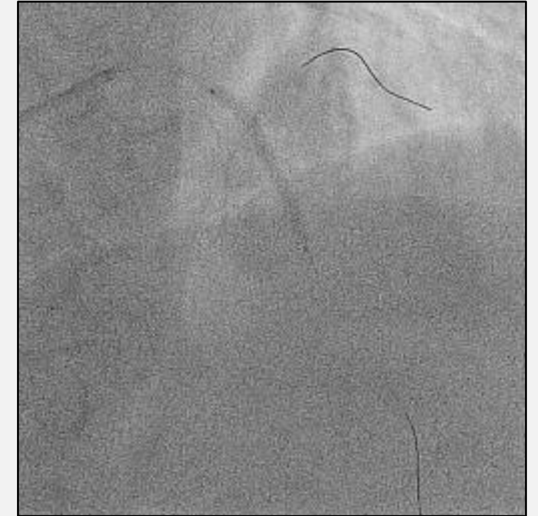
Comorbidity:
PAD, sideropenic anemia, previous TEA ICA dx. Previous hysterectomy (uterus carcinoma). COPD. CKD (eGFR 35 ml/min/1.73 m2), hip arthrosis.

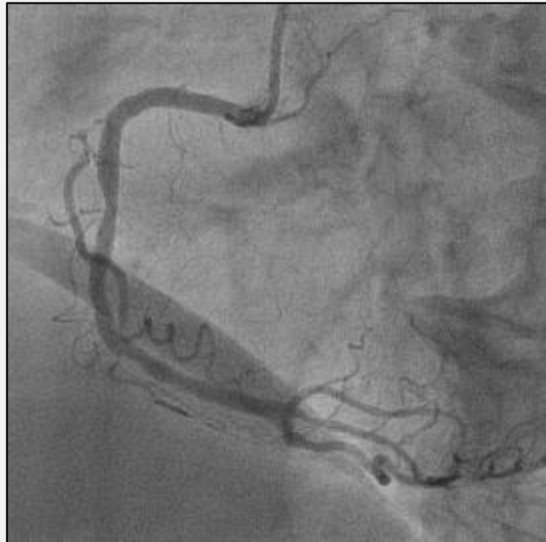
Cardiological anamnesis:
Known hypertensive cardiopathy
Previous hospitalizations for AHF managed with diuretics
Worsening NYHA III class
Discovery of **severe aortic stenosis** (AVA 0.8 cm2, Gradient max/med 62/42 mmHg). EF 56%

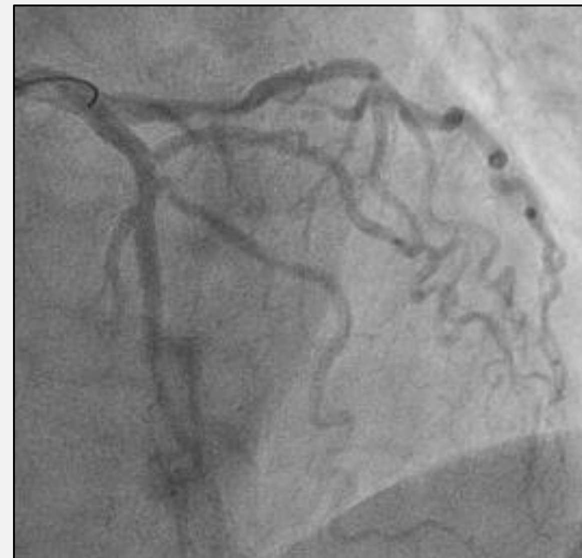












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