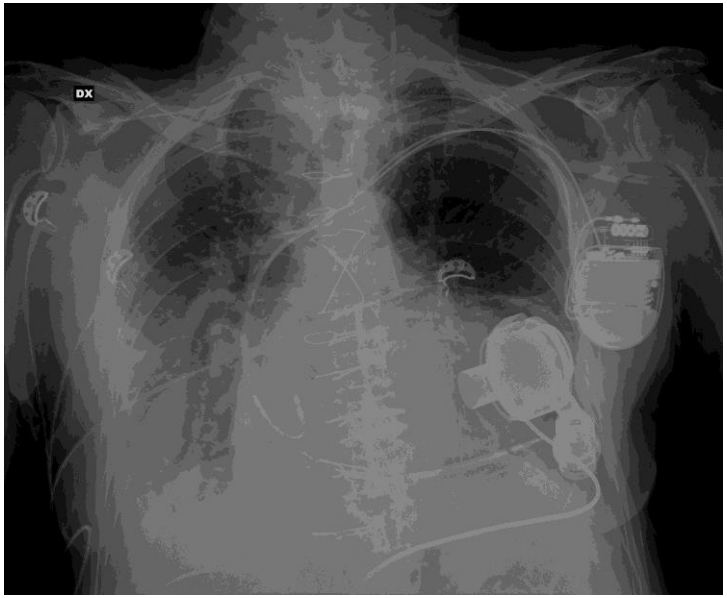
A challenging case of aortic regurgitation

Marco B Ancona, MD
Interventional Cardiology Unit
IRCCS San Raffaele Scientific Institute
Milan, Italy

A challenging case of aortic regurgitation

- 73 years old male
- Cardiovascular Hx:
  - Multivessel coronary artery disease
  - ICD (primary prevention)
  - Transcatheter repair for severe mitral regurgitation
  - Left ventricular assist device
- Comorbidities:
  - Peripheral artery disease
  - Chronic kidney disease (stage IIIb)



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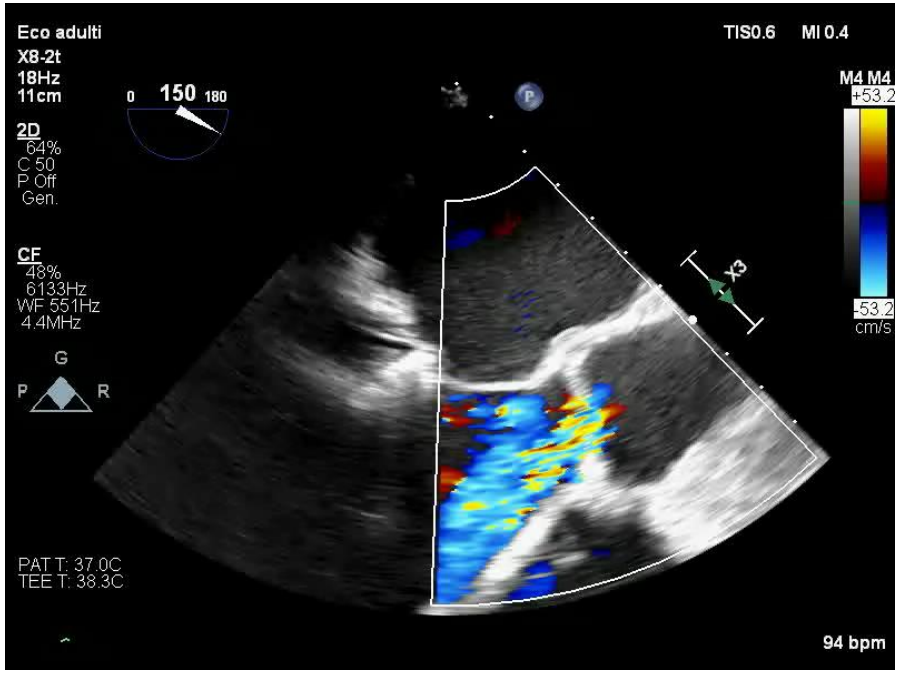
- Presenting with acutely decompensated heart failure
- Started on i.v. loop diuretics, with progressive improvement of congestion
- Echo: severe, continuous aortic regurgitation



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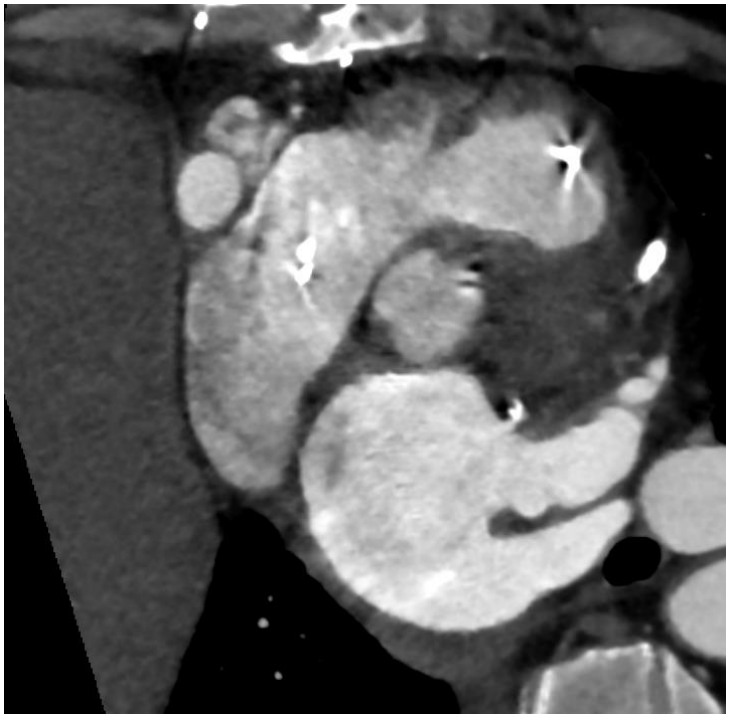
- Given prohibitive surgical risk, the patient was evaluated for TAVR

- Challanges:
  - Pure aortic regurgitation
  - Little calcifications (anchoring!)
  - Large virtual basal ring (544 mmq in diastole)



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- Prosthesis choice:
  1. Diastolic virtual basal ring 544 mmq
  2. Oversize for systole: 15%
  3. Oversize for optimal anchoring: 25%
  4. Ideal size: 782 mmq
     (derived perimeter 99 mm)

- No self expanding prosthesis!

- Large balloon-expandable prosthesis:

Myval 32 mm (Meril Lifesciences)

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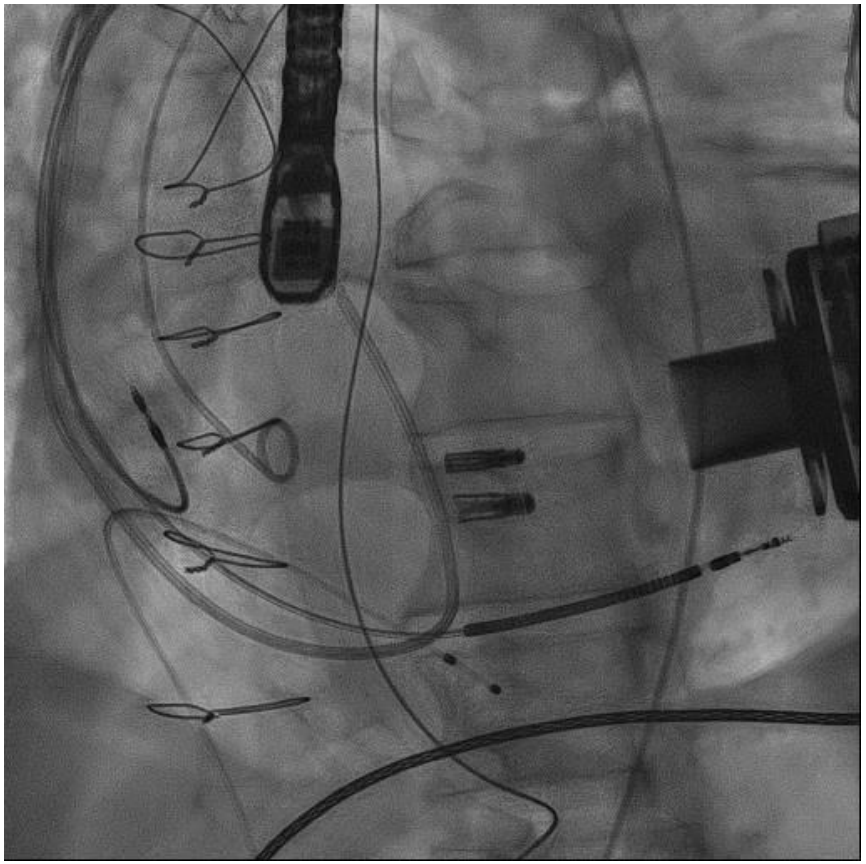
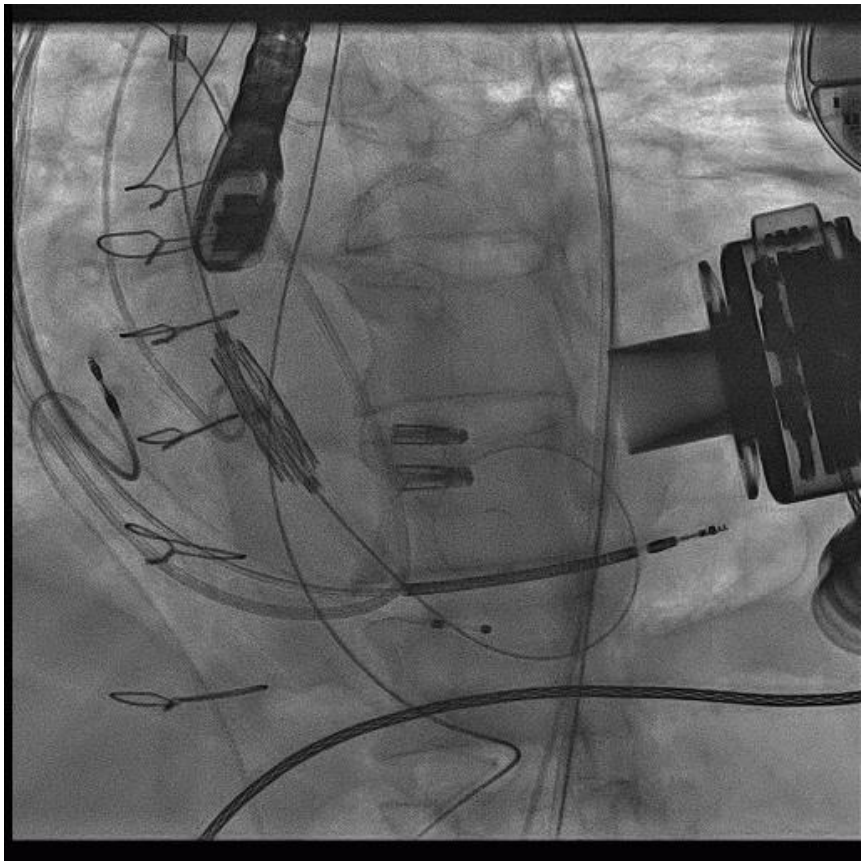
- Transfemoral approach
- Implant under rapid pacing AND left ventricular assist device flow minimization





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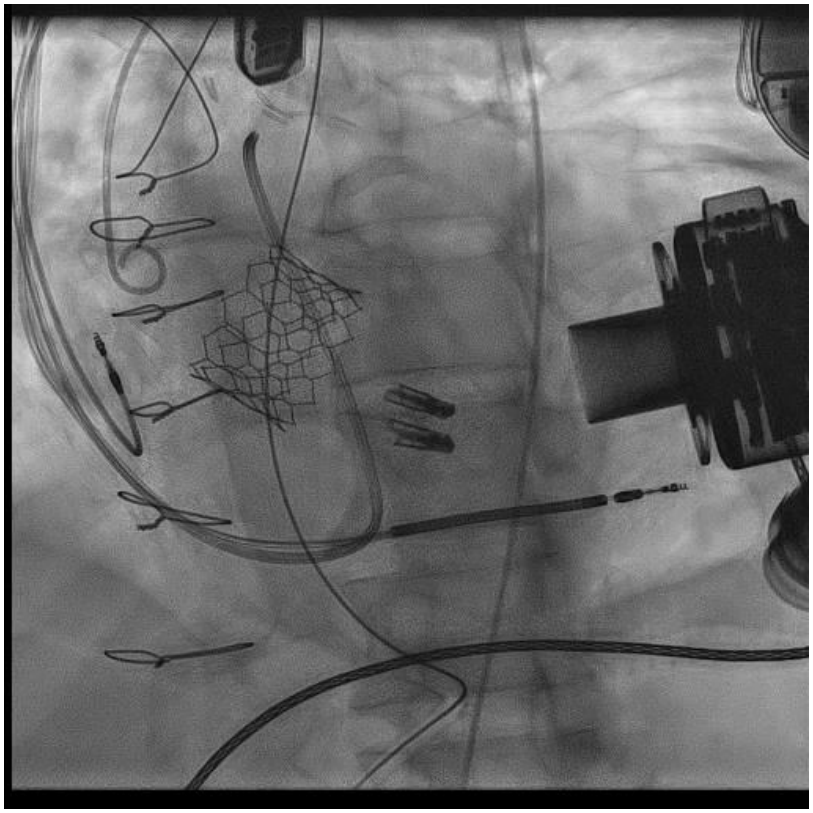
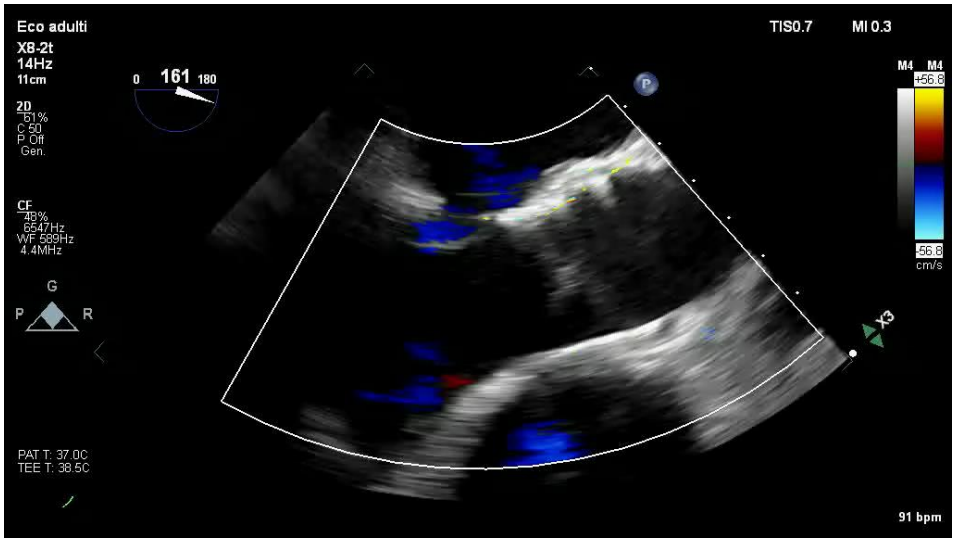
Final result: optimal prosthesis positioning, no significant residual regurgitation





Conclusion

- Aortic valve regurgitation affects up to 52% of patients after one year of LVAD
- TAVR has been described as a feasible option in this setting, usually with self-expanding prosthesis.
  - Risk of prosthesis migration into the left ventricle
  - Risk of significant paravalvular leak
- Sufficient prosthesis oversize should be guarantee
- This is **the first report of 32mm Myval** implanted in a patient with **LVAD-related AR**
- Large balloon-expandable prosthesis should be considered when a significant oversize is needed