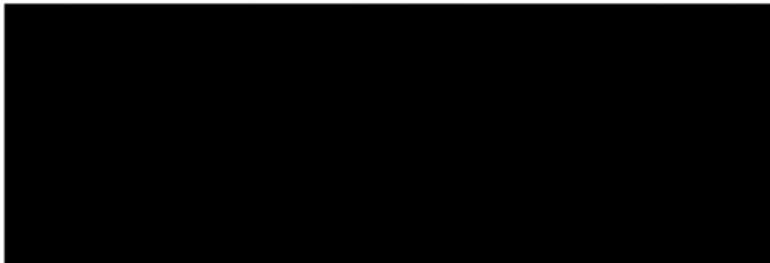
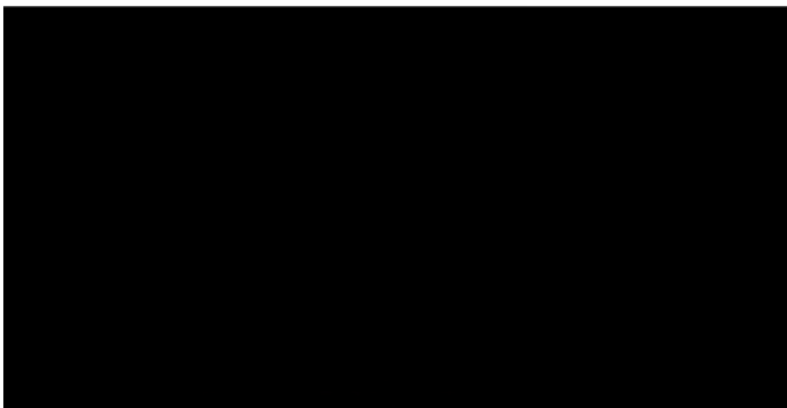


# Balloon Rupture

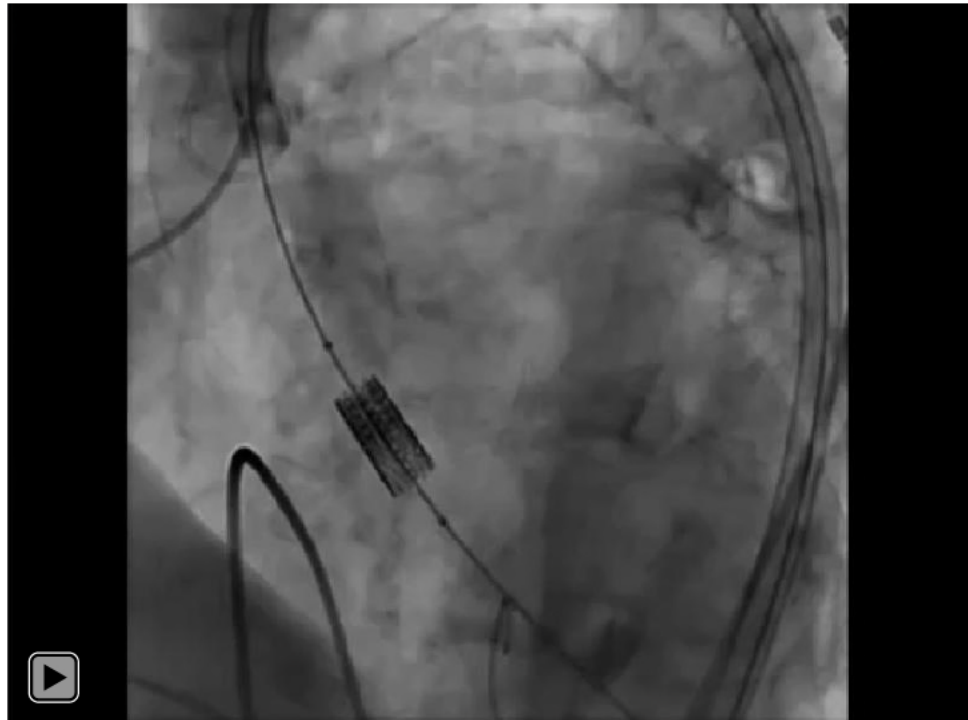
## If BAV Balloon Ruptures or Leaks During Deployment



## If Delivery System Balloon Ruptures or Leaks During Deployment Without THV Embolization



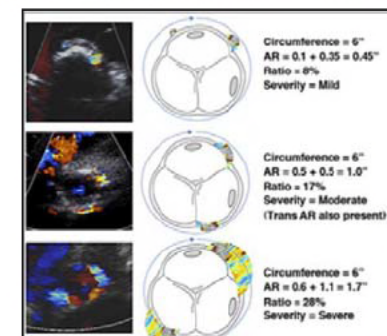
Previous generation device used for illustration



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# Assessing Aortic Regurgitation

- Good diastolic pressures post-implant may indicate adequate THV function
- Echocardiography is the gold standard for assessing prosthetic THV function
- Severity of aortic regurgitation must be assessed incorporating multiple criteria (both quantitative and qualitative)
- American Society of Echocardiography VARC guidelines<sup>1</sup> provide an important framework



Parameter	Mild	Moderate	Severe
<b>Valve Structure and Motion</b>			
<b>Mechanical or Bioprosthetic</b>	Usually Normal	Usually Abnormal	Usually Abnormal
<b>Structural Parameters</b>			
<b>LV Size</b>	Normal	Normal or Mildly Dilated	Dilated
<b>Doppler Parameters (Qualitative or Semiquantitative)</b>			
<b>Jet Width in Central Jets (%LVO Diameter): Color</b>	Narrow ( $\leq 25\%$ )	Intermediate (26-64%)	Large ( $\geq 65\%$ )
<b>Jet Density: CW Doppler</b>	Incomplete or Faint	Dense	Dense
<b>Jet Deceleration Rate (PHT, ms): CW Doppler</b>	Slow ( $>500$ )	Variable (200-500)	Steep ( $<200$ )
<b>LVO Flow versus Pulmonary Flow: PW Doppler</b>	Slightly Increased	Intermediate	Greatly Increased
<b>Diastolic Flow Reversal in the Descending Aorta: PW Doppler</b>	Absent or Brief Early Diastolic	Intermediate	Prominent, Holodiastolic
<b>Circumferential Extent of Paraprosthetic AR (%)</b>	$<10$	10-20	$>20$
<b>Doppler Parameters (Quantitative)</b>			
<b>Regurgitant Volume (ml/beat)</b>	$<30$	30-59	$>60$
<b>Regurgitant Fraction (%)</b>	$<30$	30-50	$>50$

<sup>1</sup>Leon et al. VARC Consensus Endpoints After TAVI for High-Risk AS, *JACC Vol. 57, No. 3, 2011: 253-69*  
 Image Credit: CC Patrick J. Lynch and C. Carl Jaffe, Yale University, 2006



# Assessing Aortic Regurgitation: Management

## Differential Diagnosis

- Wide pulse pressure (with lower diastolic pressure than baseline) may indicate severe AR

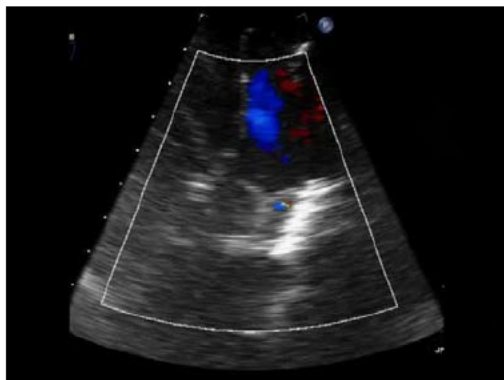


## Management

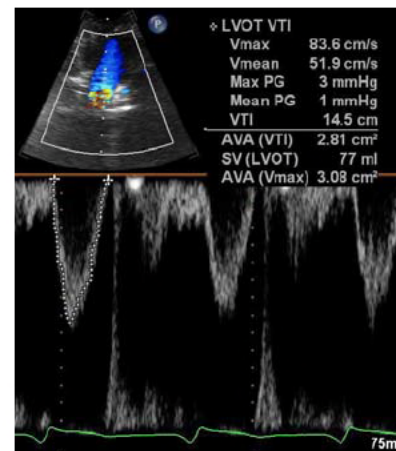
- Depends on etiology
- Stabilization of hemodynamics priority
- Management can include post-dilatation or surgery



# Assessing Aortic Regurgitation: Quantification

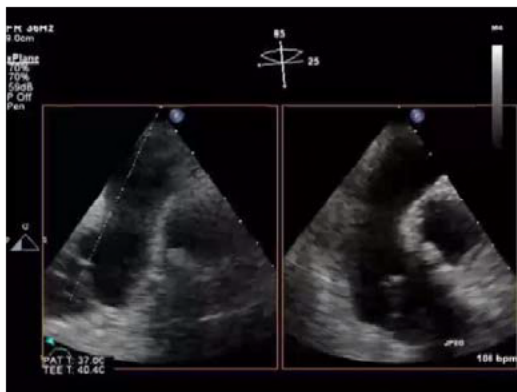


Deep Gastric



## Quantitative Doppler

- LVOT stroke volume = 77 cc
- RVOT stroke volume = 55 cc
- Regurgitant volume = 22 cc

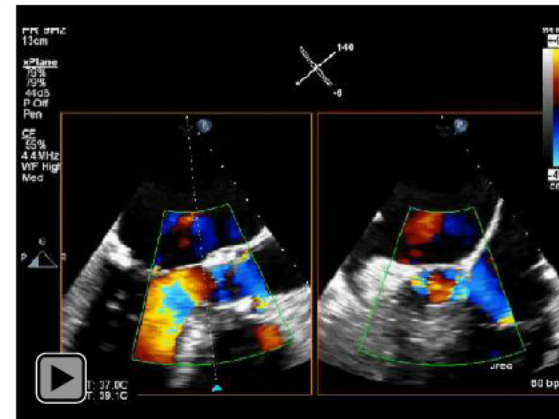


High Esoph PV

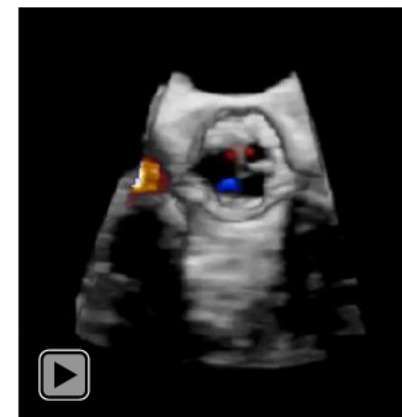


# Assessing Aortic Regurgitation: Paravalvular

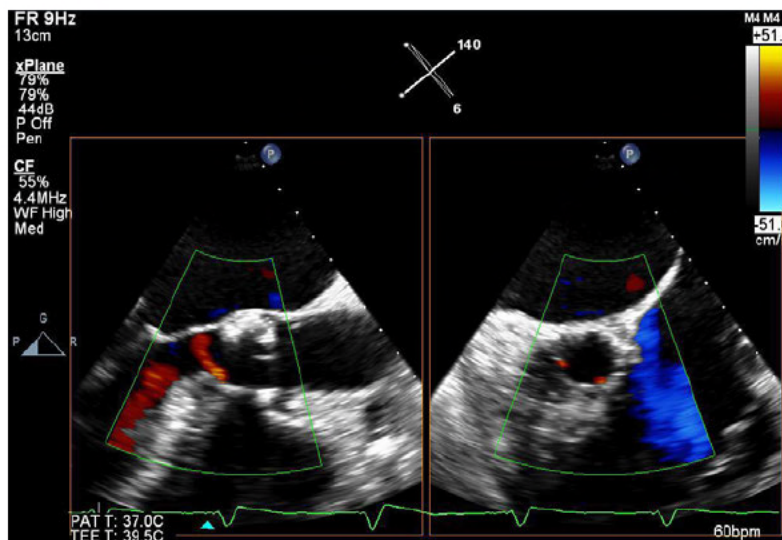
- Small paravalvular regurgitant jets are common
  - They are hemodynamically insignificant
  - They may resolve within minutes to hours



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