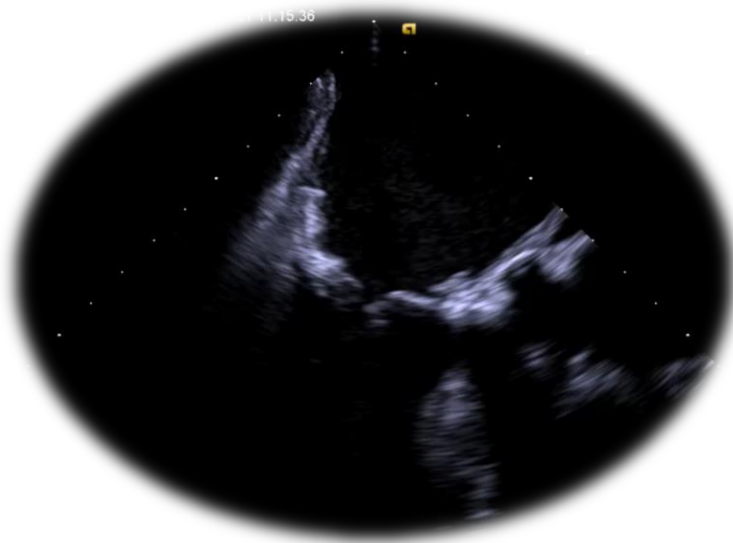




# MITRAL VALVE CALCIFICATION: CASE CHALLENGES & EVOLVING SOLUTIONS



**Corrado Fiore MD, FEACVI, FASE**  
Head of Cardiology Department and EchoLab  
Città di Lecce Hospital - GVM, Lecce, Italy

# MITRAL CALCIFICATION

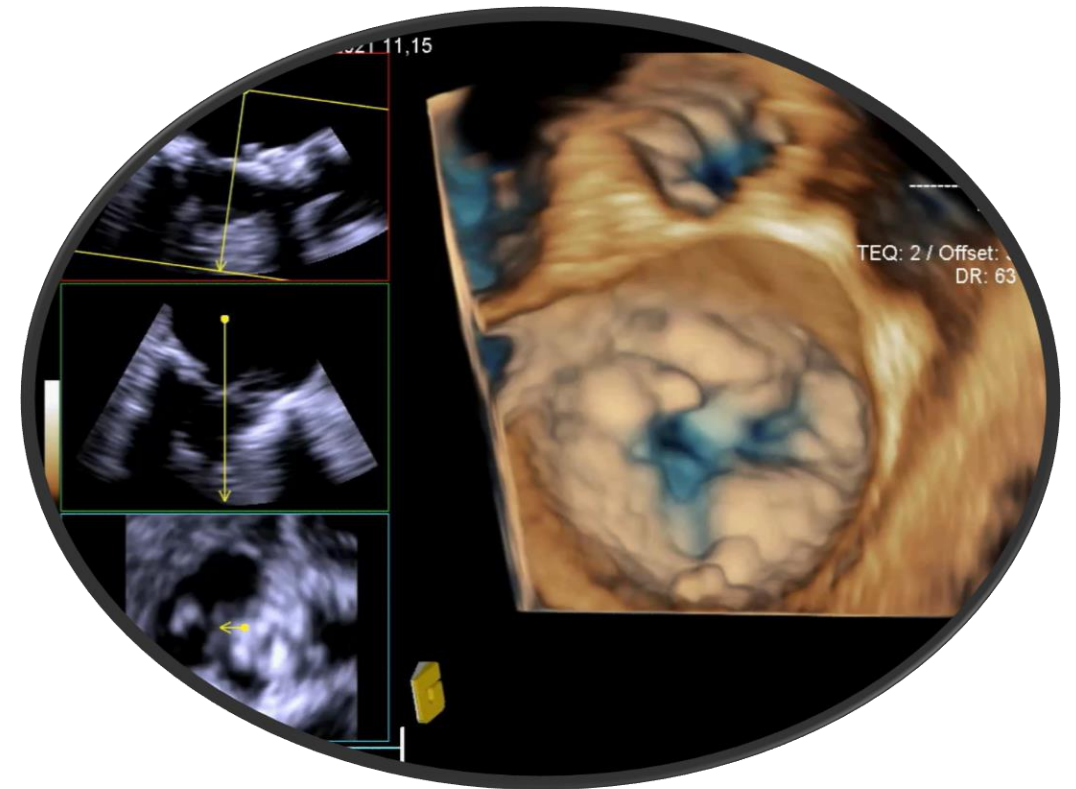
## *Cases overview*

**1. MAC**

**2. RHEUMATIC**

**3. RADIATION-INDUCED**

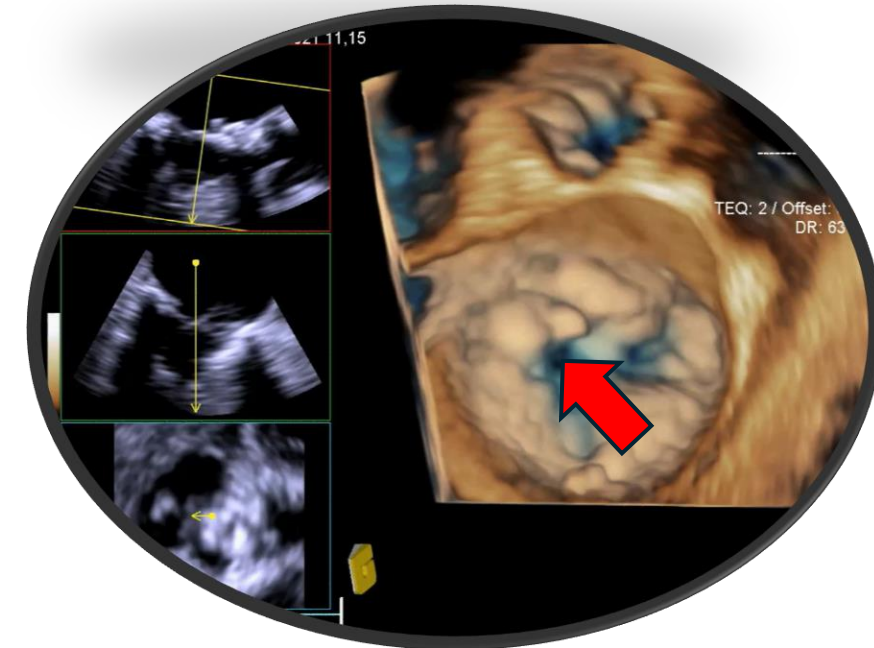
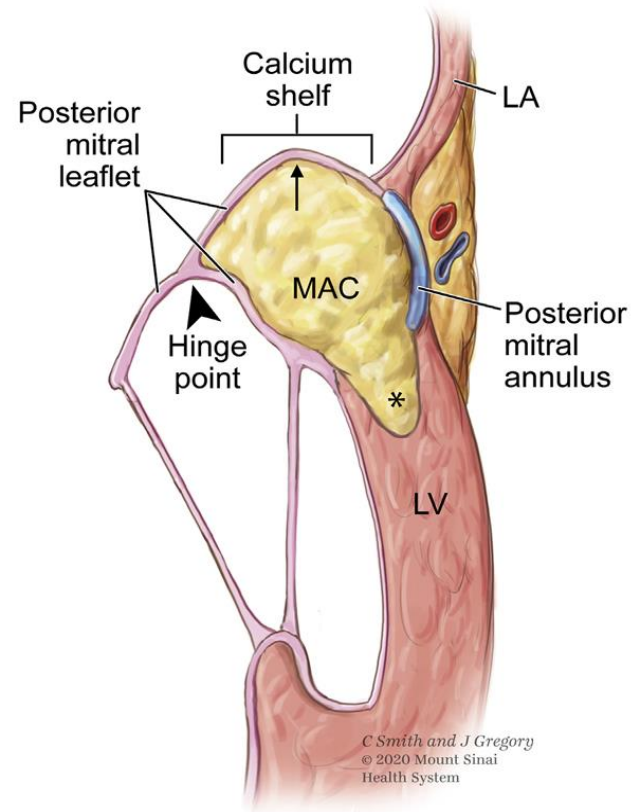
**4. DEGENERATIVE**



# MITRAL ANNULUS CALCIFICATION

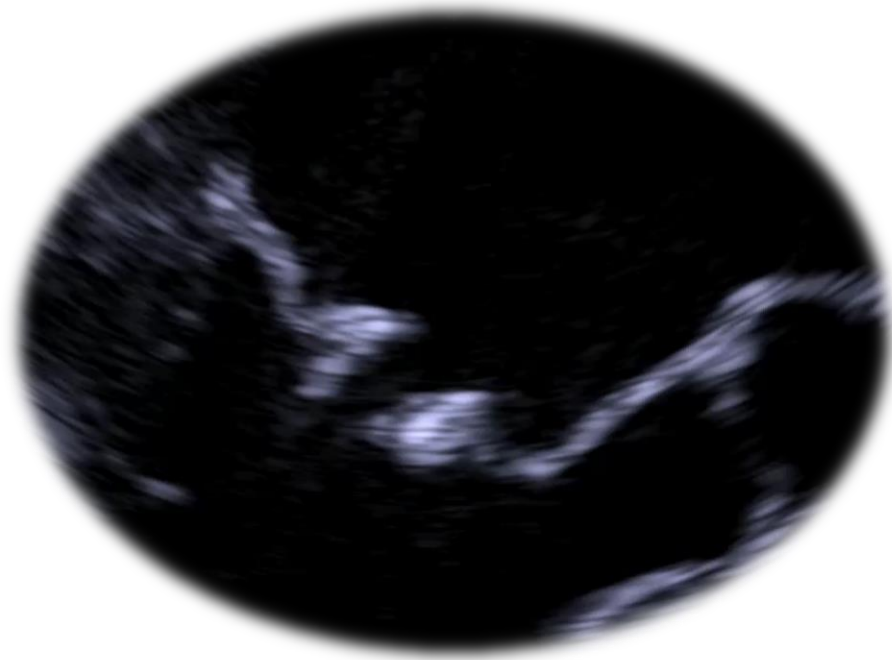
## Mitral Annular Calcification and Calcific Mitral Stenosis: Role of Echocardiography in Hemodynamic Assessment and Management

Jeffrey J. Silbiger, MD, *New York, New York*



# RHEUMATIC MITRAL DISEASE

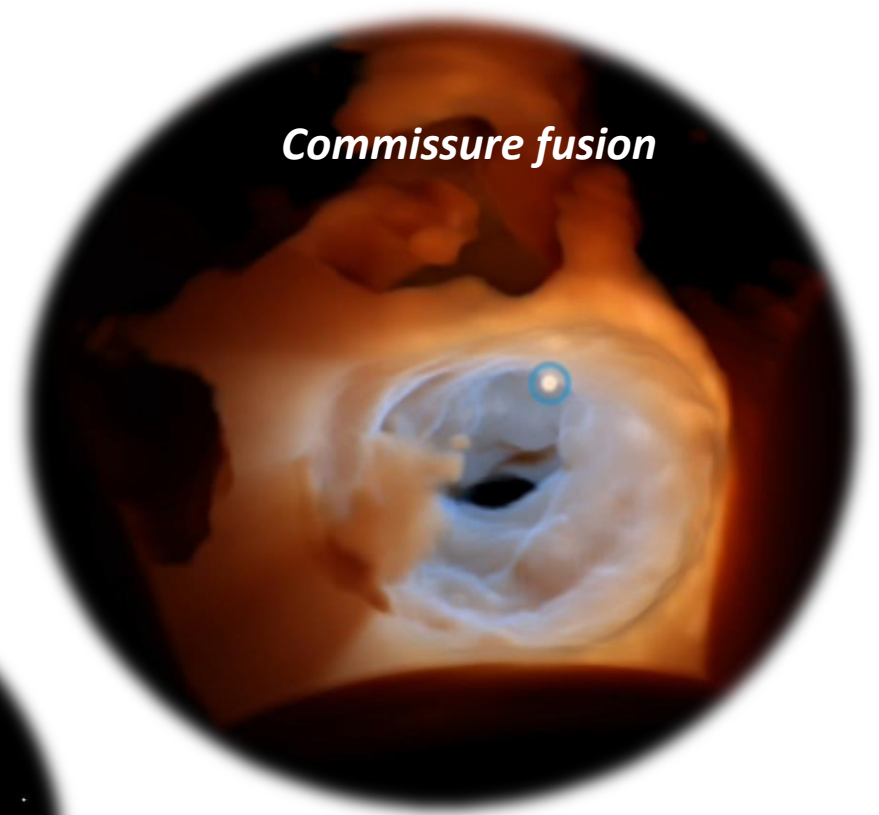
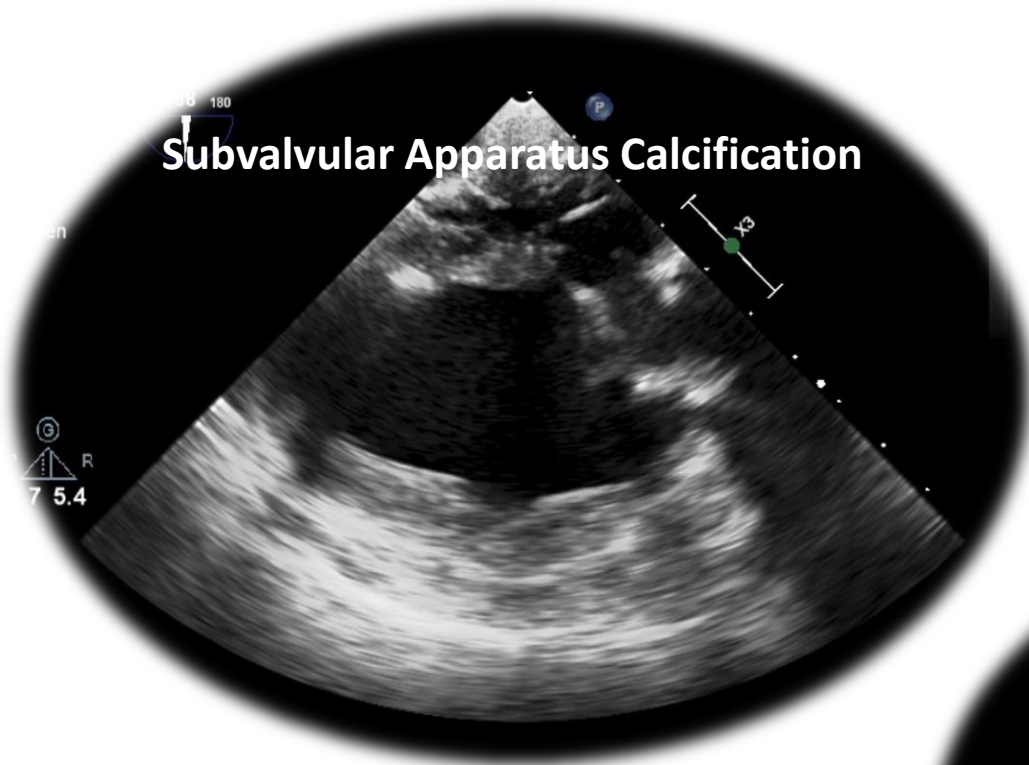
In the calcific form, calcifications proceeds from the annulus inward toward the leaflets' free margins, whereas **in rheumatic disease** it begins at the free margins of the leaflets and progresses outward toward the leaflets' bases



Free edges calcification



# MAIN FEATURES OF RMS

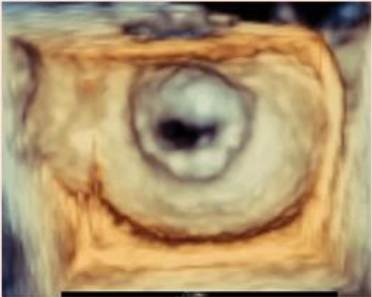


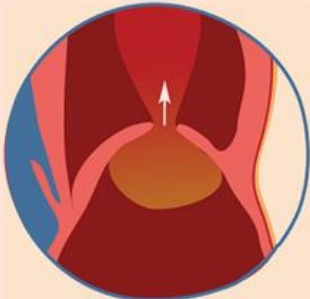
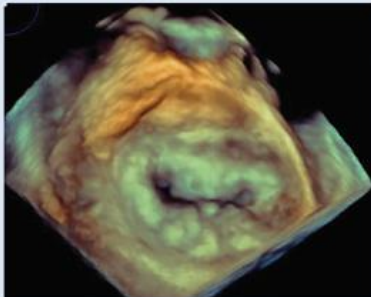
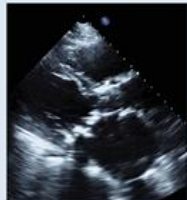
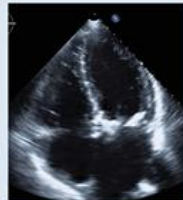



# Mitral Valve Dysfunction in Patients With Annular Calcification



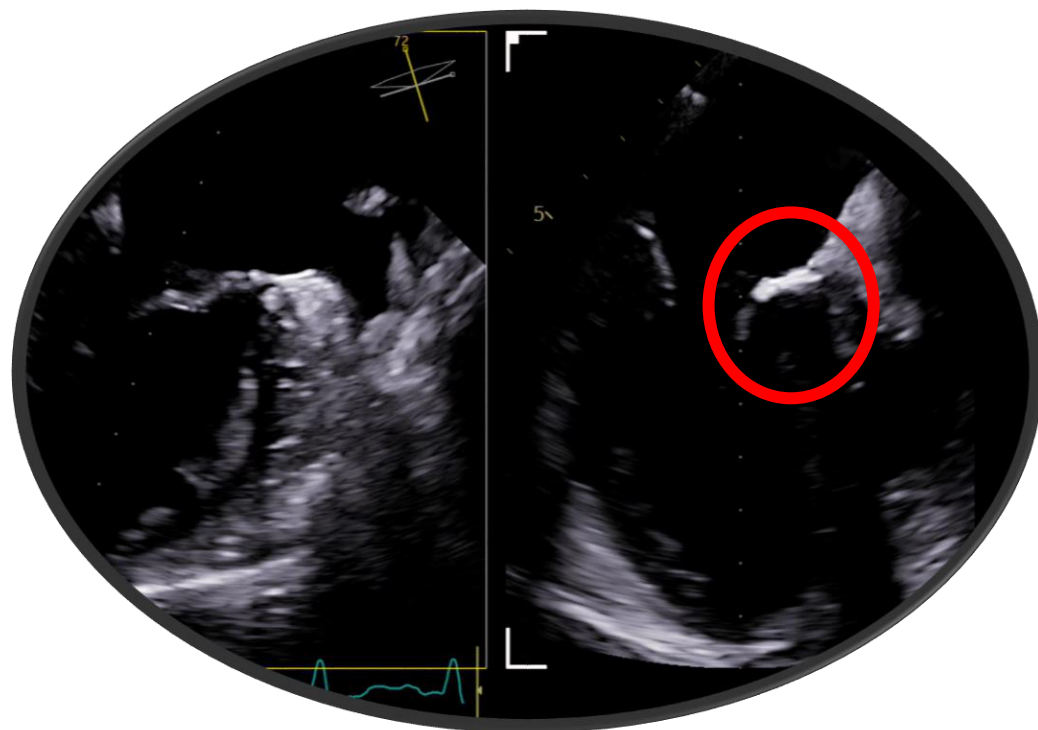
## JACC Review Topic of the Week

Timothy W. Churchill, MD,<sup>a</sup> Evin Yucel, MD,<sup>a</sup> Sébastien Deferm, MD, PhD,<sup>b,c</sup> Robert A. Levine, MD,<sup>a</sup> Judy Hung, MD,<sup>a</sup> Philippe B. Bertrand, MD, PhD<sup>a,b,c</sup>

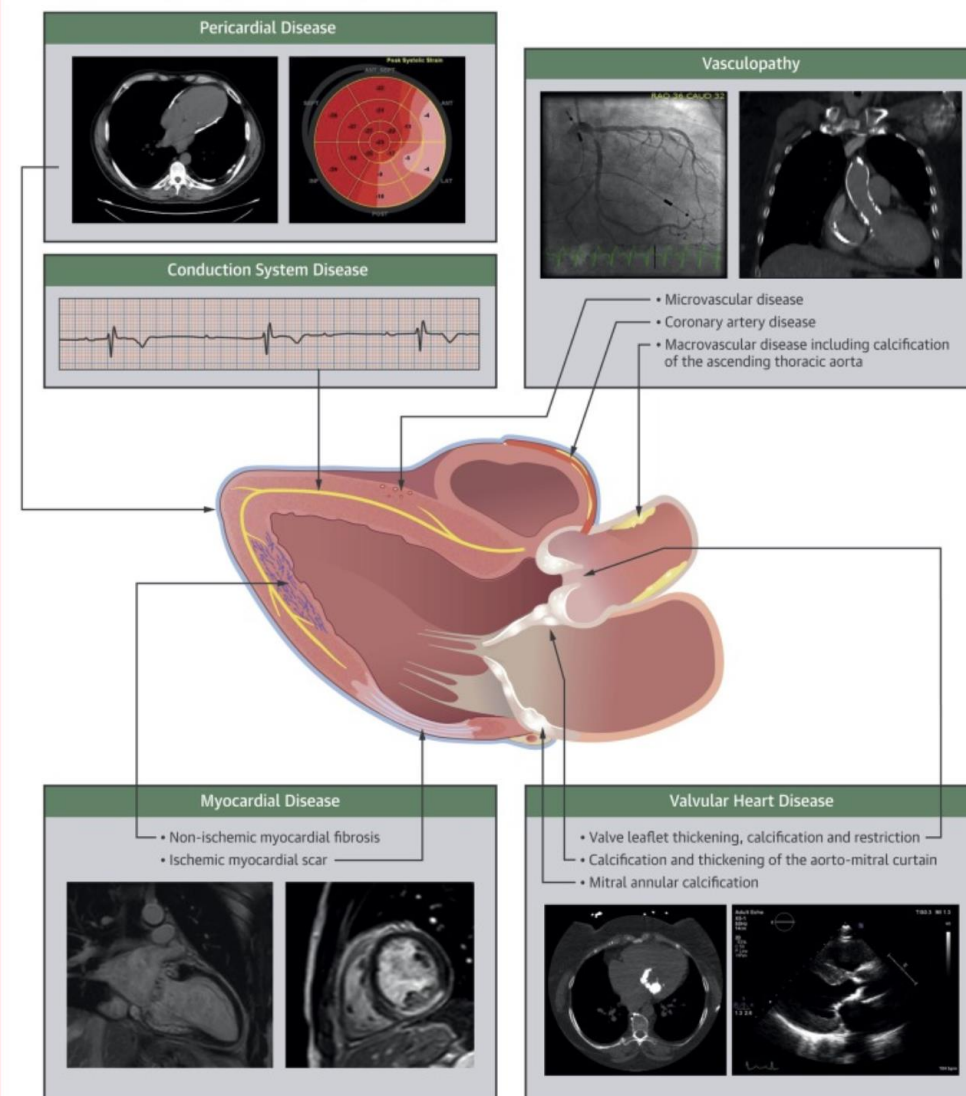
Rheumatic Mitral Valve Disease		MAC-Related Mitral Valve Dysfunction	
    <p><b>Funnel-shaped geometry</b></p>		    <p><b>Tubular orifice geometry</b></p>	
<p>Commissural fusion Funnel-shaped geometry</p>		<p>Commissures spared Tubular orifice geometry</p>	
<p>Younger population</p>		<p>Elderly, comorbid population</p>	
<p>MVA quantification validated</p>		<p>MVA quantification challenging</p>	
<p>Percutaneous balloon mitral valvuloplasty</p>		<p>Poor valvuloplasty candidates; medical therapy vs valve repair or replacement</p>	
Anatomy			
Epidemiology			
Assessment			
Treatment			

# RADIATION INDUCED

**Aorto-mitral curtain thickening/calcification** is being recognized as a hallmark of previous heart irradiation and its extent is strongly associated with mortality in subjects undergoing cardiac surgery



## CENTRAL ILLUSTRATION: Multimodality Imaging Manifestations of Radiation-Associated Cardiac Disease



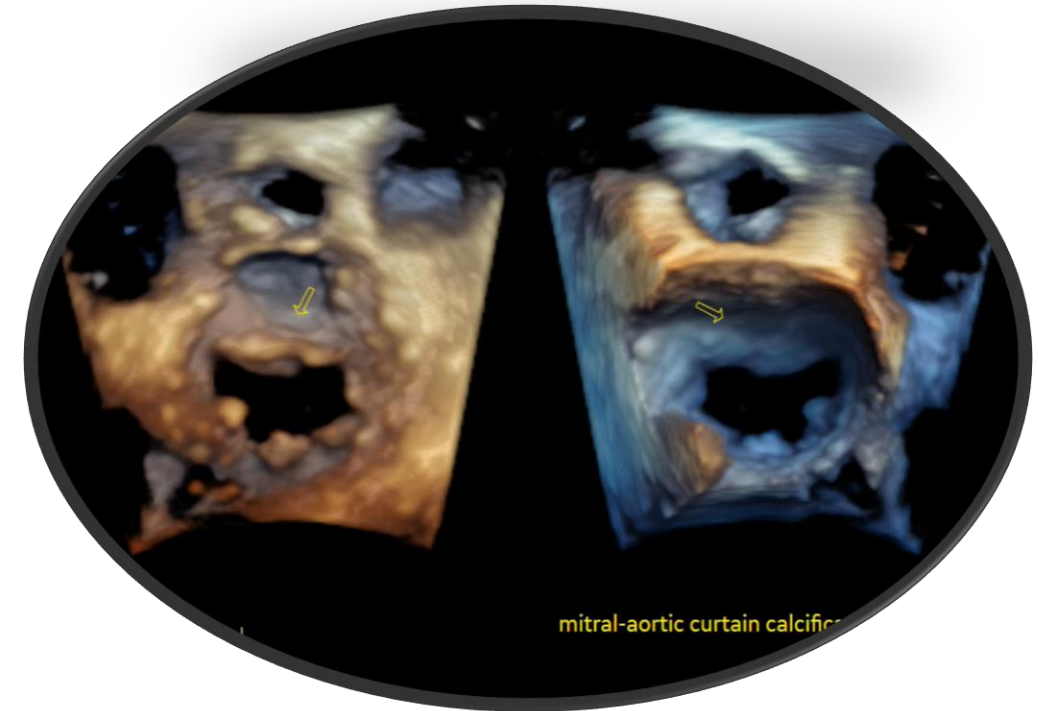
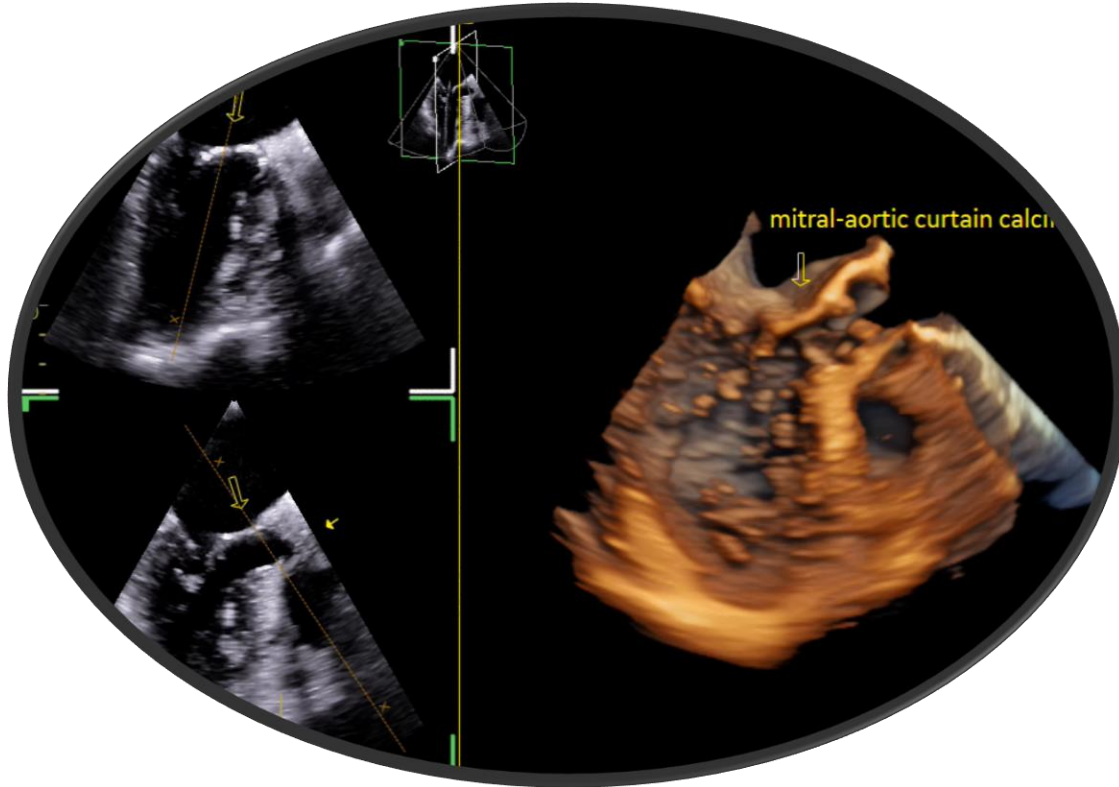
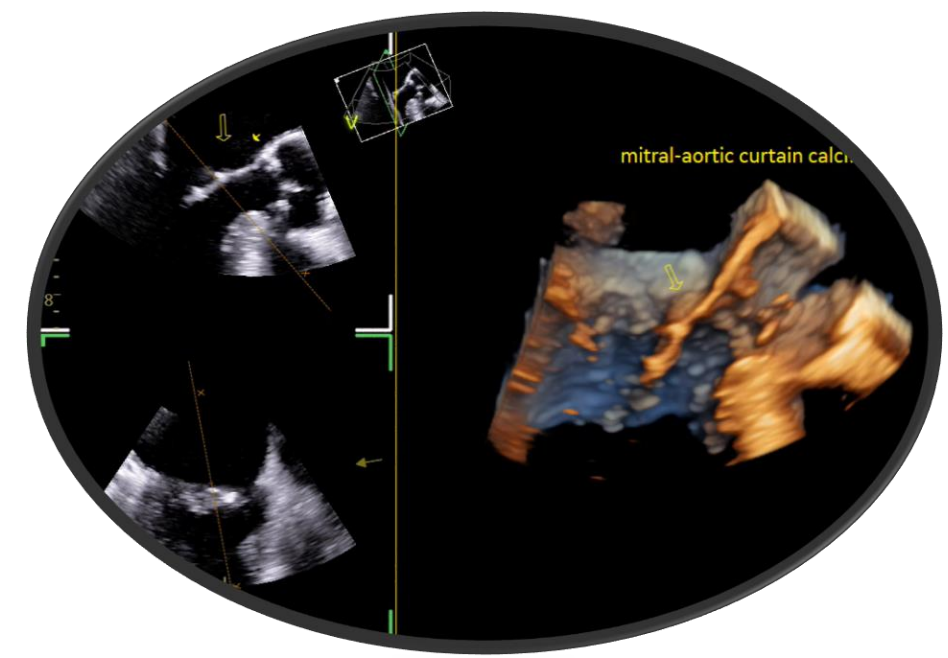
Desai, M.Y. et al. J Am Coll Cardiol Img. 2018;11(8):1132-49.



# Increased Aorto-Mitral Curtain Thickness Independently Predicts Mortality in Patients With Radiation-Associated Cardiac Disease Undergoing Cardiac Surgery

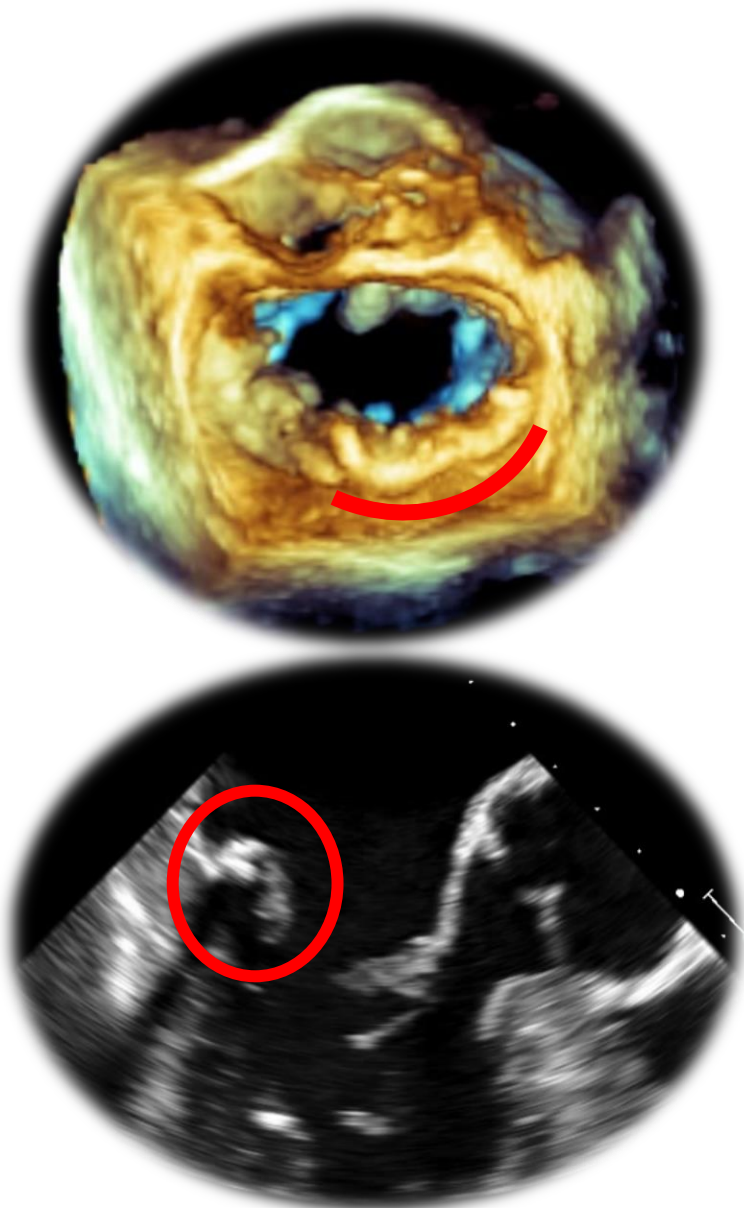
Milind Y. Desai, MD, Willis Wu, MD, Ahmad Masri, MD, Zoran B. Popovic, MD, PhD,  
Shikhar Agarwal, MD, MPH, Nicholas G. Smedira, MD, Bruce W. Lytle, MD, and  
Brian P. Griffin, MD

Heart and Vascular Institute, Cleveland Clinic, Cleveland, Ohio





# DEGENERATIVE



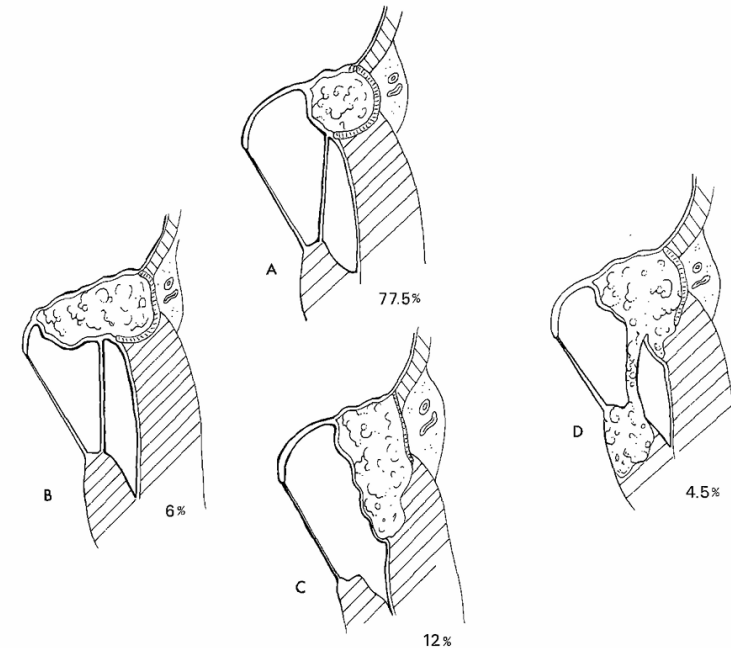
## EXTENSIVE CALCIFICATION OF THE MITRAL VALVE ANULUS: PATHOLOGY AND SURGICAL MANAGEMENT

Alain F. Carpentier, MD, PhD  
Michel Pellerin, MD\*§  
Jean-François Fuzellier, MD§  
John Y. M. Relland, MD§

Extensive calcification of the mitral valve annulus is a pathologic entity frequently associated with degenerative valvular disease. The calcification process remains localized to the annulus in 77% of the cases. It may extend, however, to the underlying myocardium. Whenever an operation is neces-

The Journal of Thoracic and  
Cardiovascular Surgery  
Volume 111, Number 4

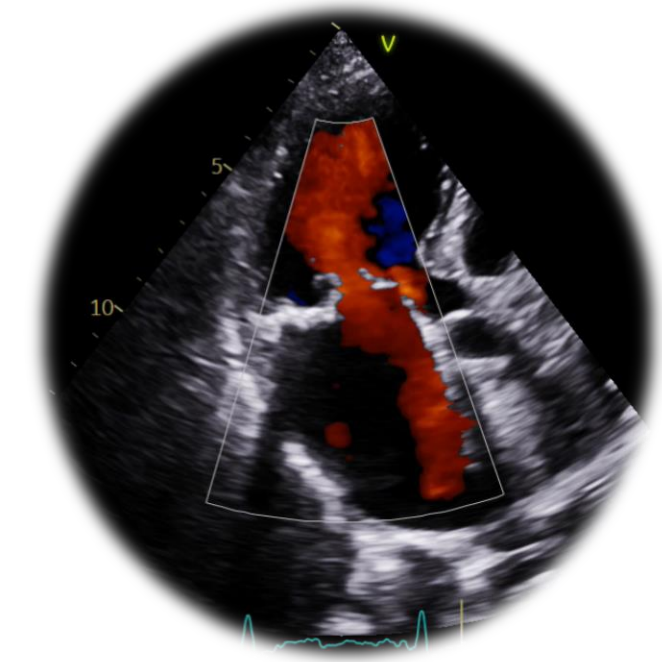
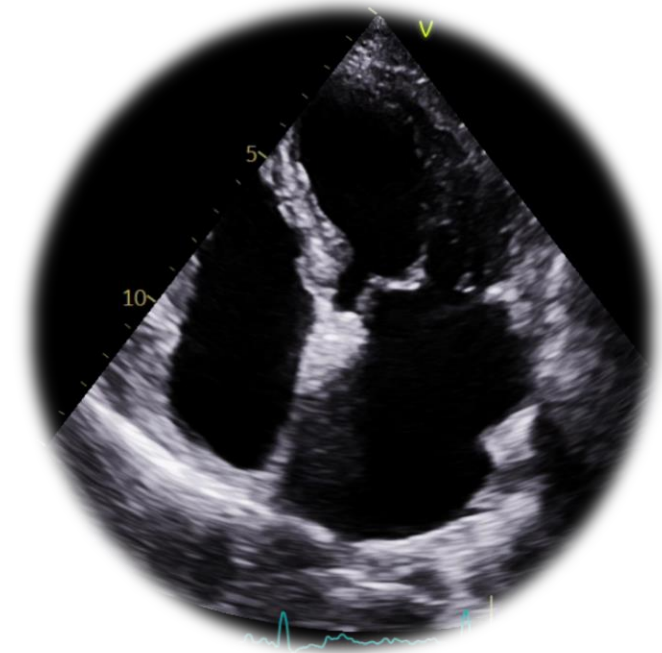
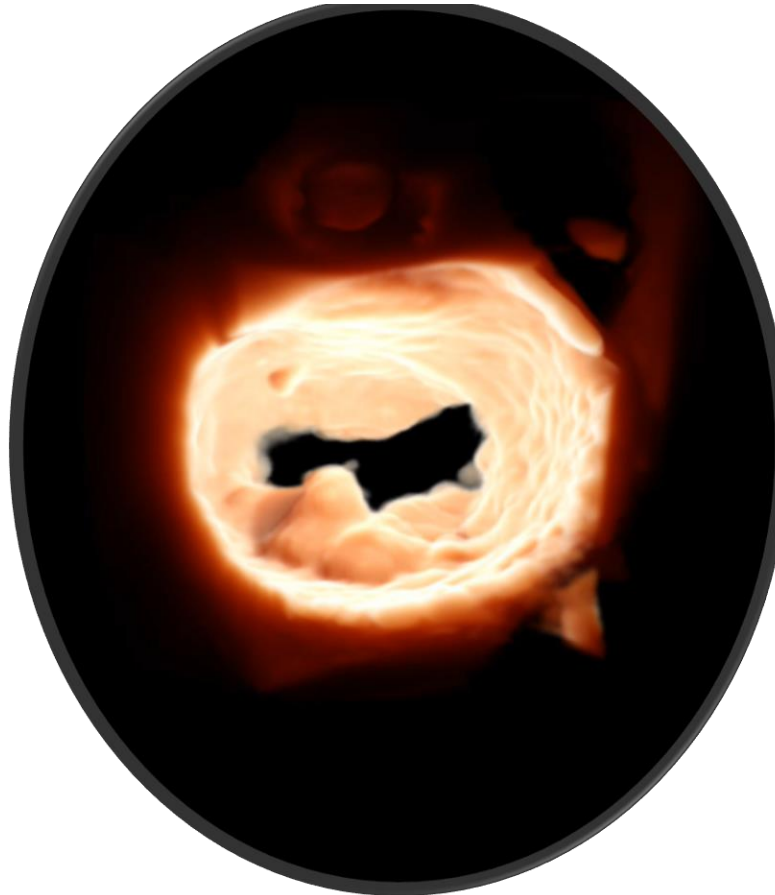
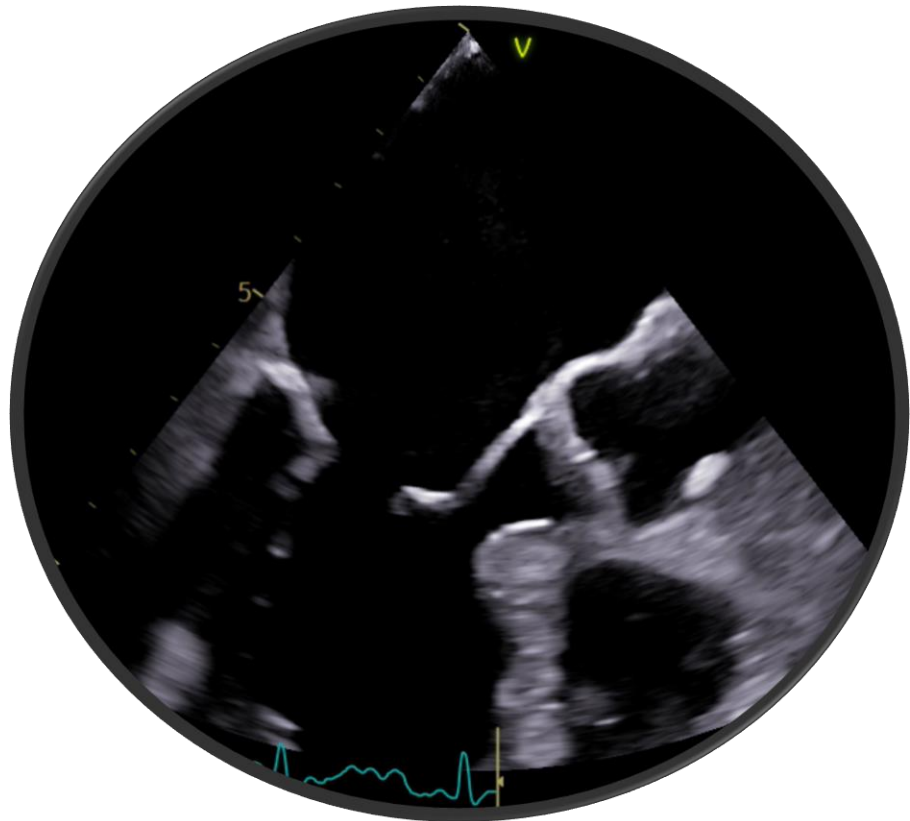
Carpentier et al. 721



# Barlow's Mitral Valve Disease: A Comparison of Neochordal (Loop) and Edge-To-Edge (Alfieri) Minimally Invasive Repair Techniques

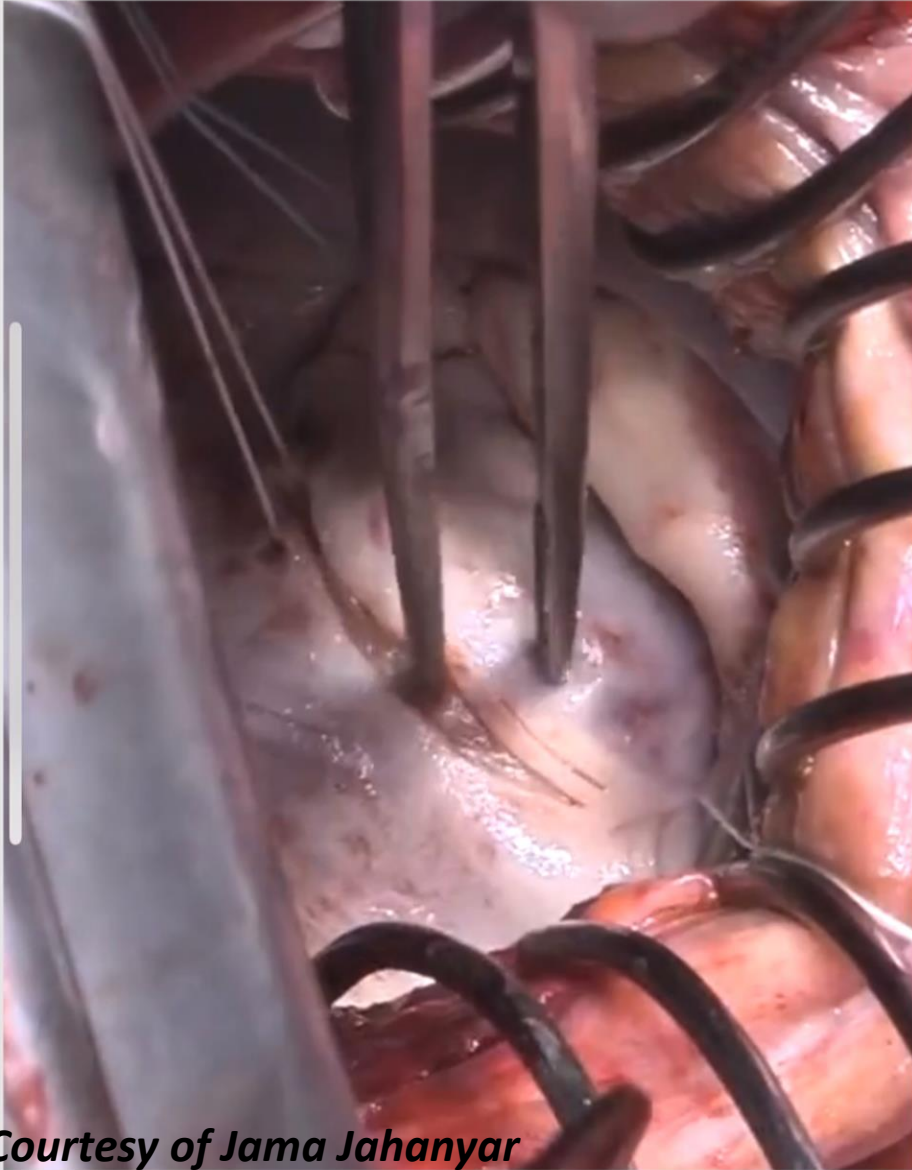
Jaqueline G. da Rocha e Silva, MD, Ricardo Spampinato, MD, Martin Misfeld, MD, PhD, Joerg Seeburger, MD, PhD, Bettina Pfannmüller, MD, PhD, Sandra Eifert, MD, PhD, Friedrich W. Mohr, MD, PhD, and Michael A. Borger, MD, PhD

Department of Cardiac Surgery, Leipzig Heart Center, Leipzig, Germany; and Division of Cardiac, Thoracic and Vascular Surgery, Columbia University Medical Center, New York, New York

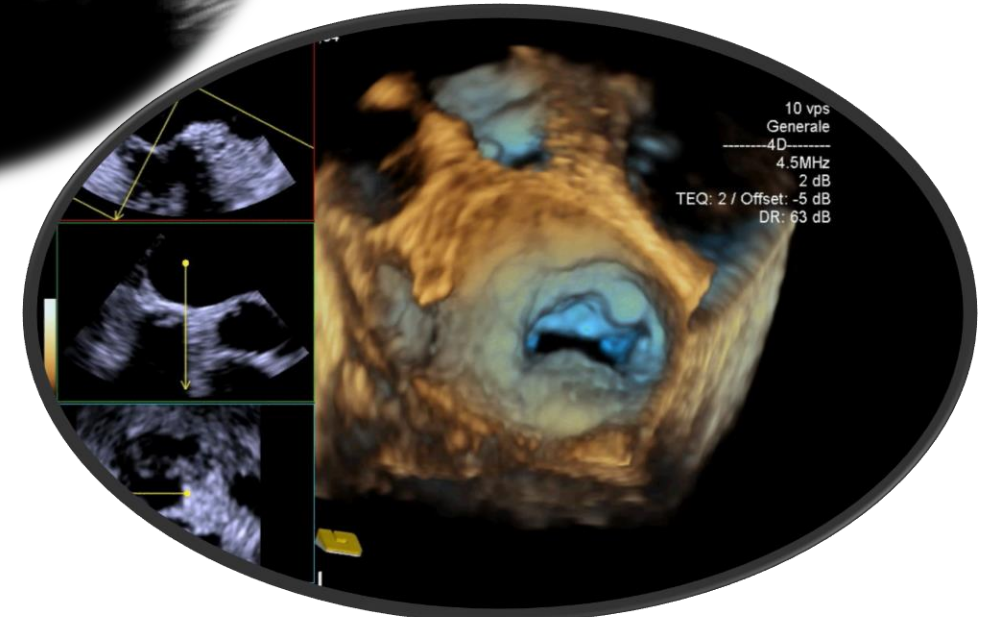
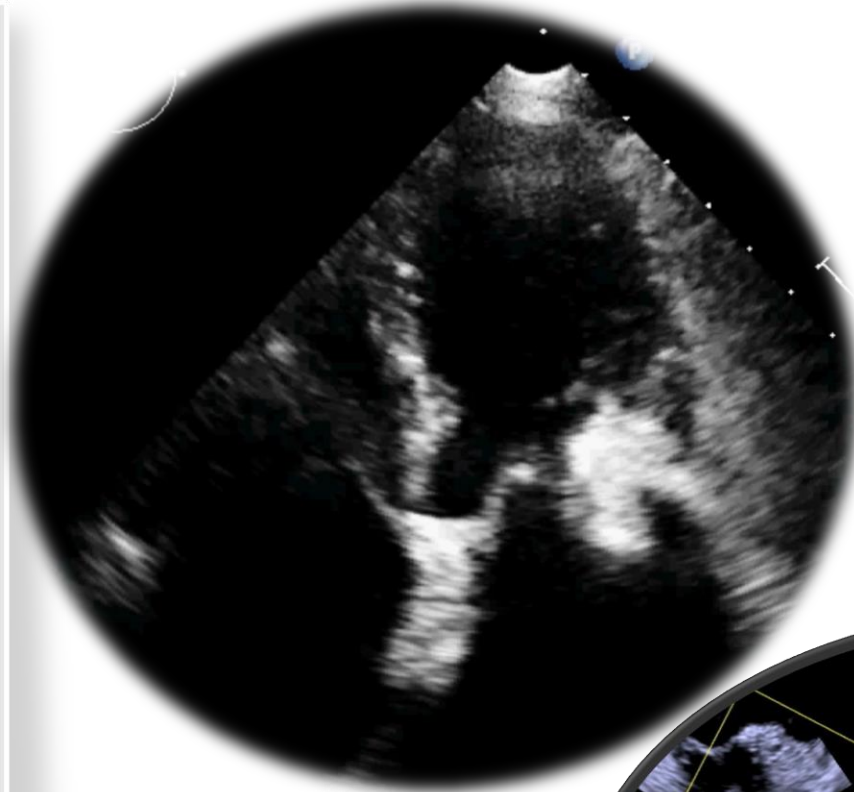




# LIQUEFACTIVE NECROSIS OF MITRAL ANNULAR CALCIFICATION – CASEOUS DEGENERATION



*Courtesy of Jama Jahanyar*



**5 CASE**





## Why do mitral calcifications matter?

- **VALVE DYSFUNCTION**
- **DECISION-MAKING** (Repair vs Replacement vs Percutaneous)
- **EMBOLIC RISK**

