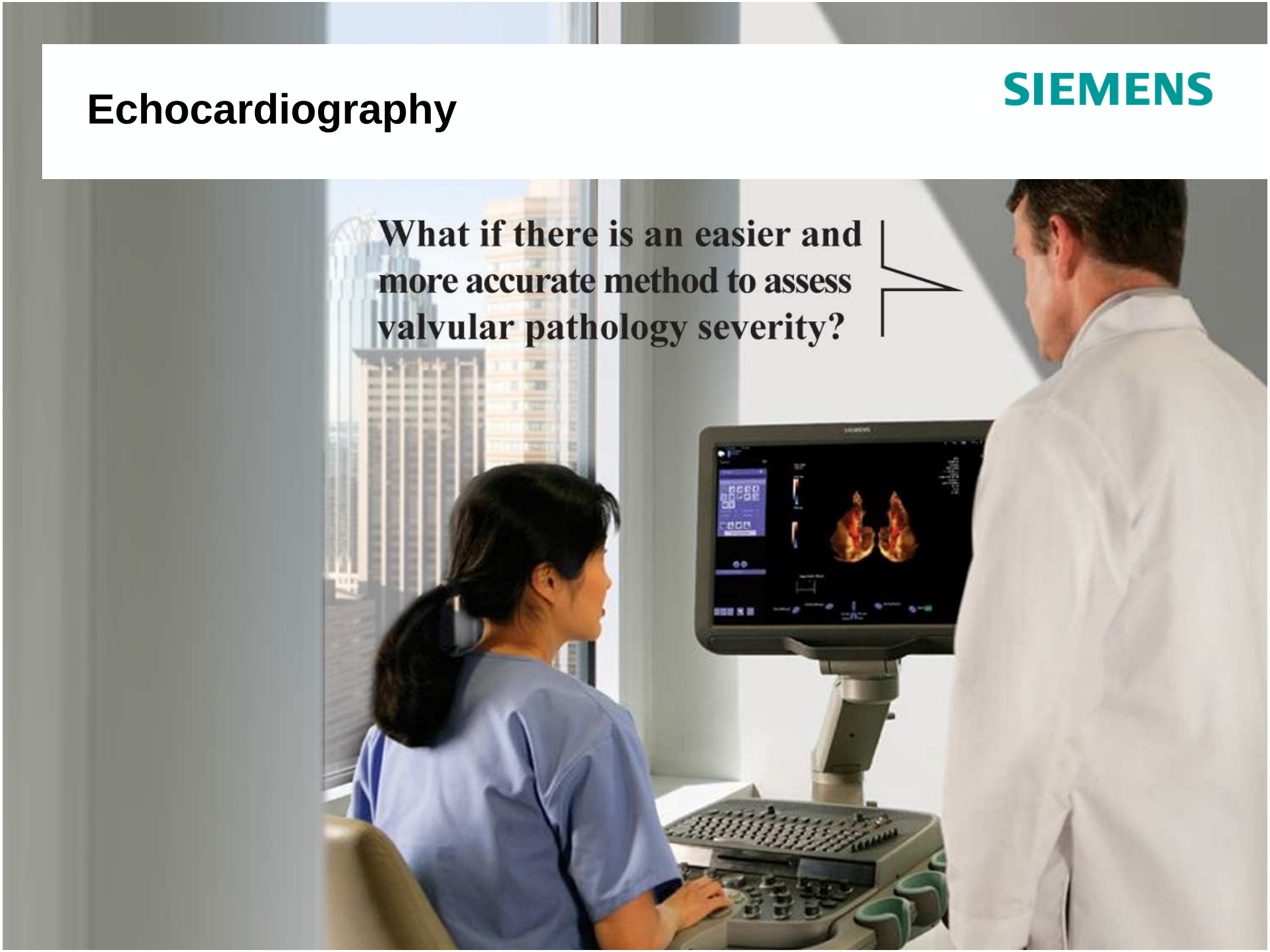
Echocardiography

SIEMENS



Automated, Quantitative Volume Color Doppler Imaging Of Mitral Regurgitation

Dr Mani Vannan

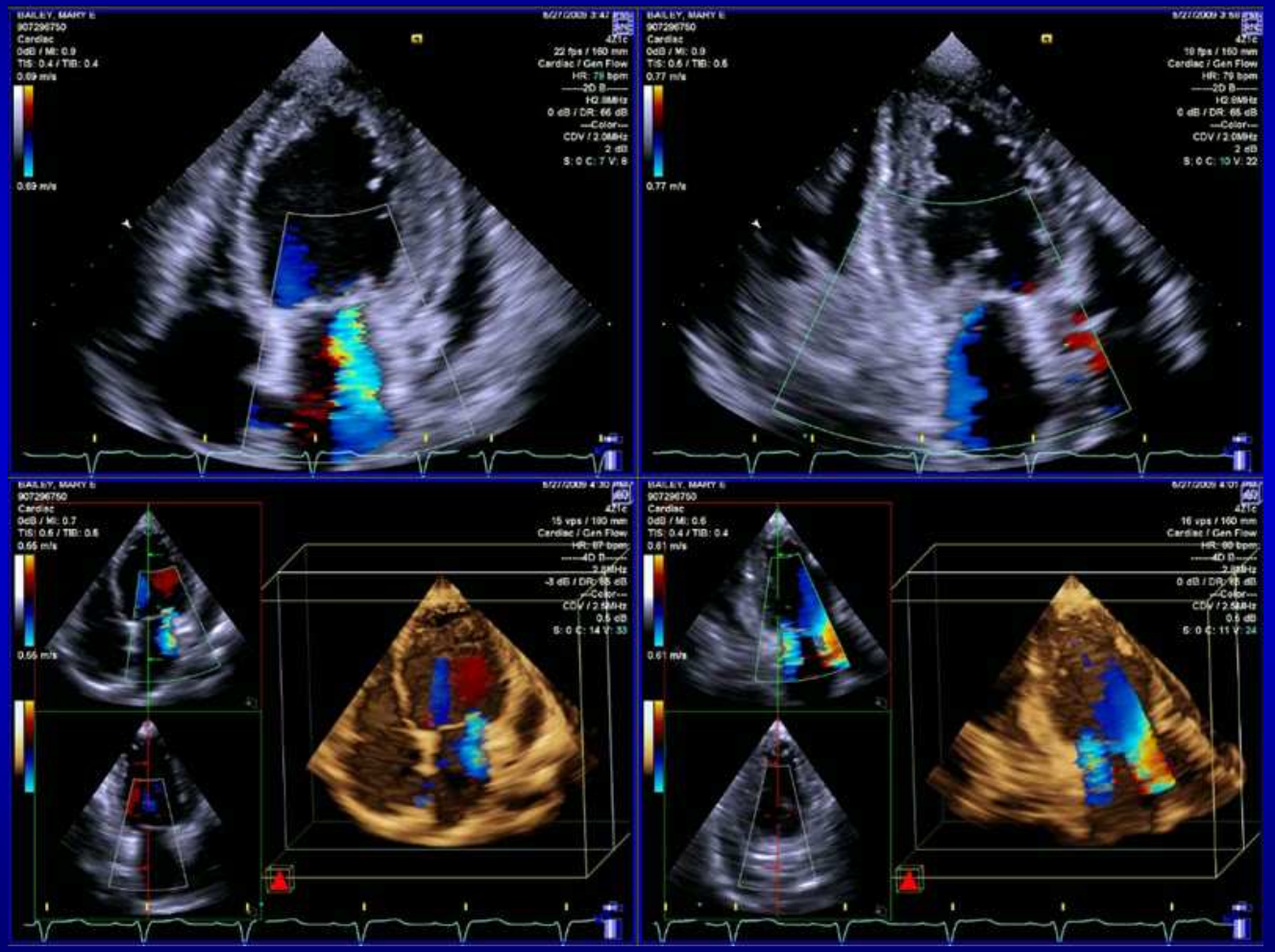
Ohio State University

March 2010

Patient History

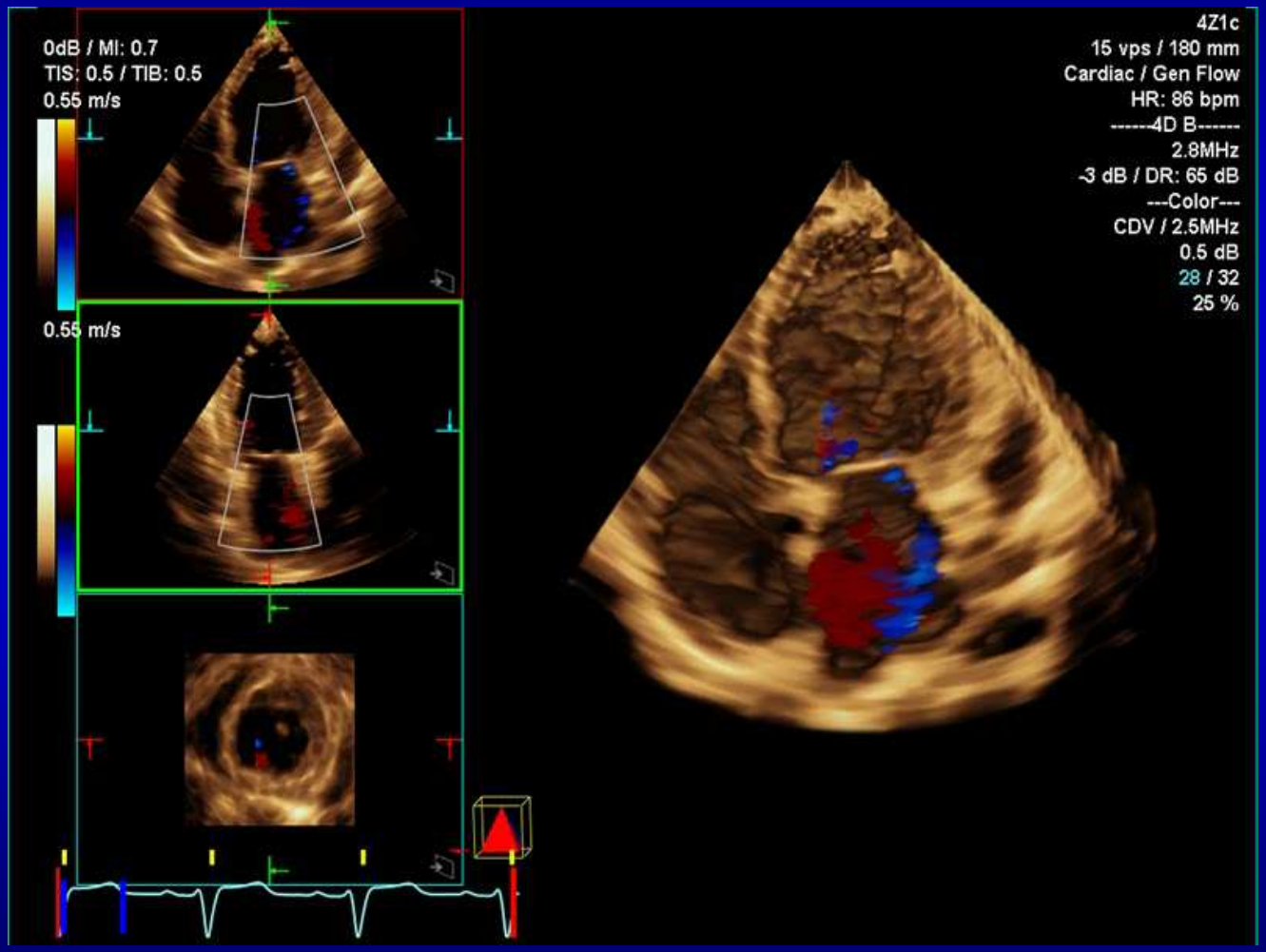
- 64 year old woman with dilated cardiomyopathy
- Shortness of breath at rest
- Echo to assess LV function and severity of MR

Integrated 2D and volume color flow imaging



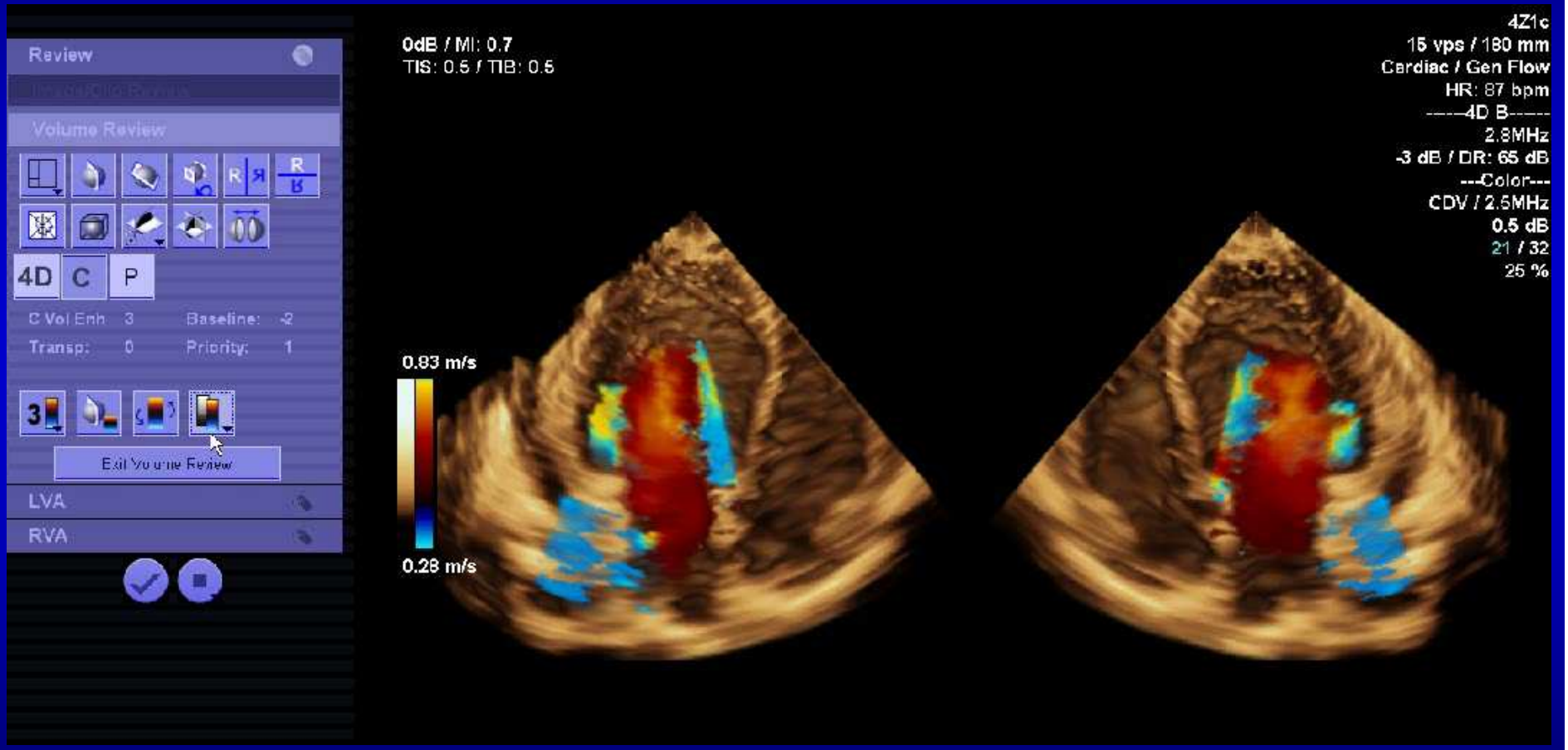
Medical Center

Visualization of 3D PISA, Vena Contracta and the Regurgitant Orifice



The Ohio State University Medical Center

Assessment of MR, 3D PISA, and Vena Contracta



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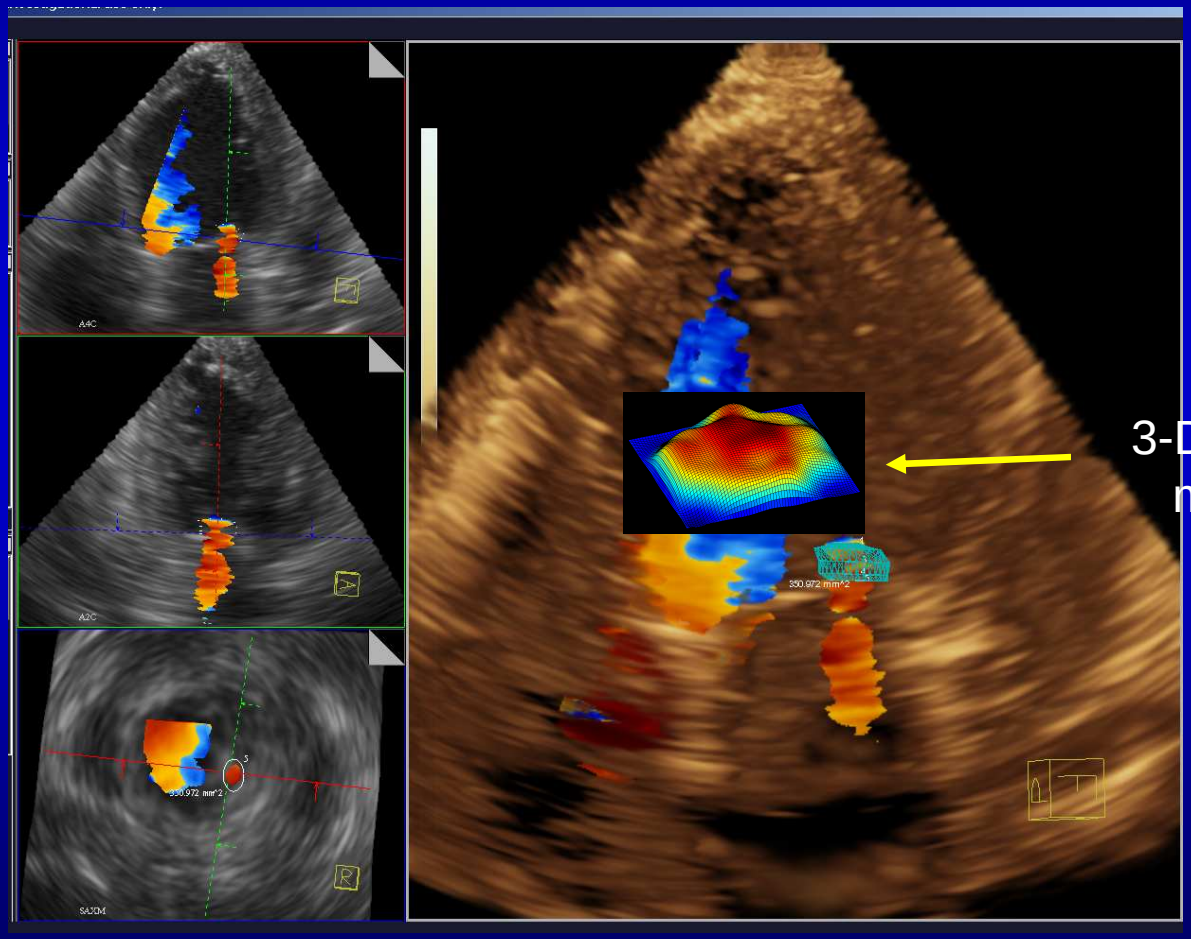
3D PISA Surface Area Modeling

A

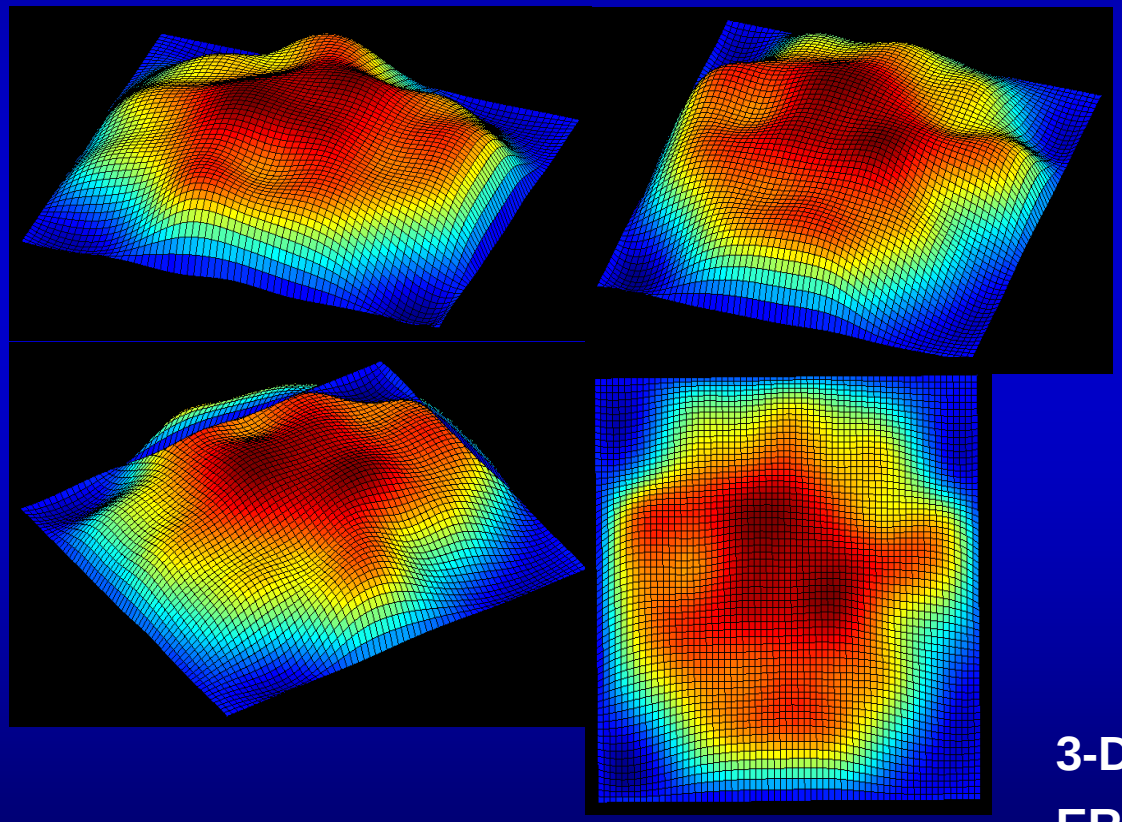
B

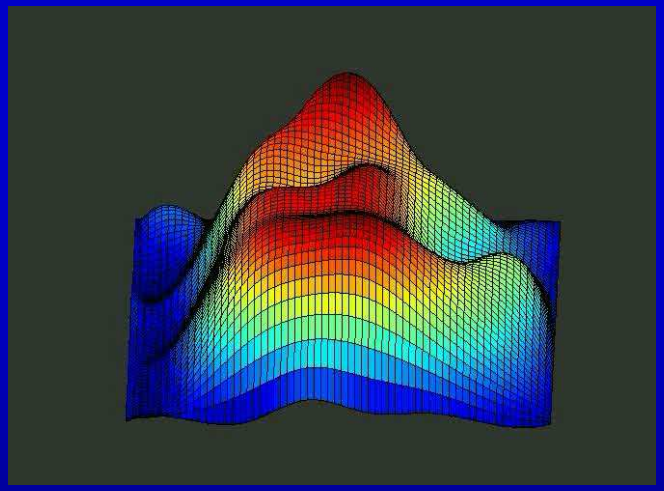
C



Work in Progress

Auto Quantification of 3D PISA Surface Modeling and Effective Regurgitant Orifice (ERO)





3-D Surface Area: 5.44 cm^2

ERO (PISA): 0.27 cm^2

Work in Progress – 3D PISA quantification

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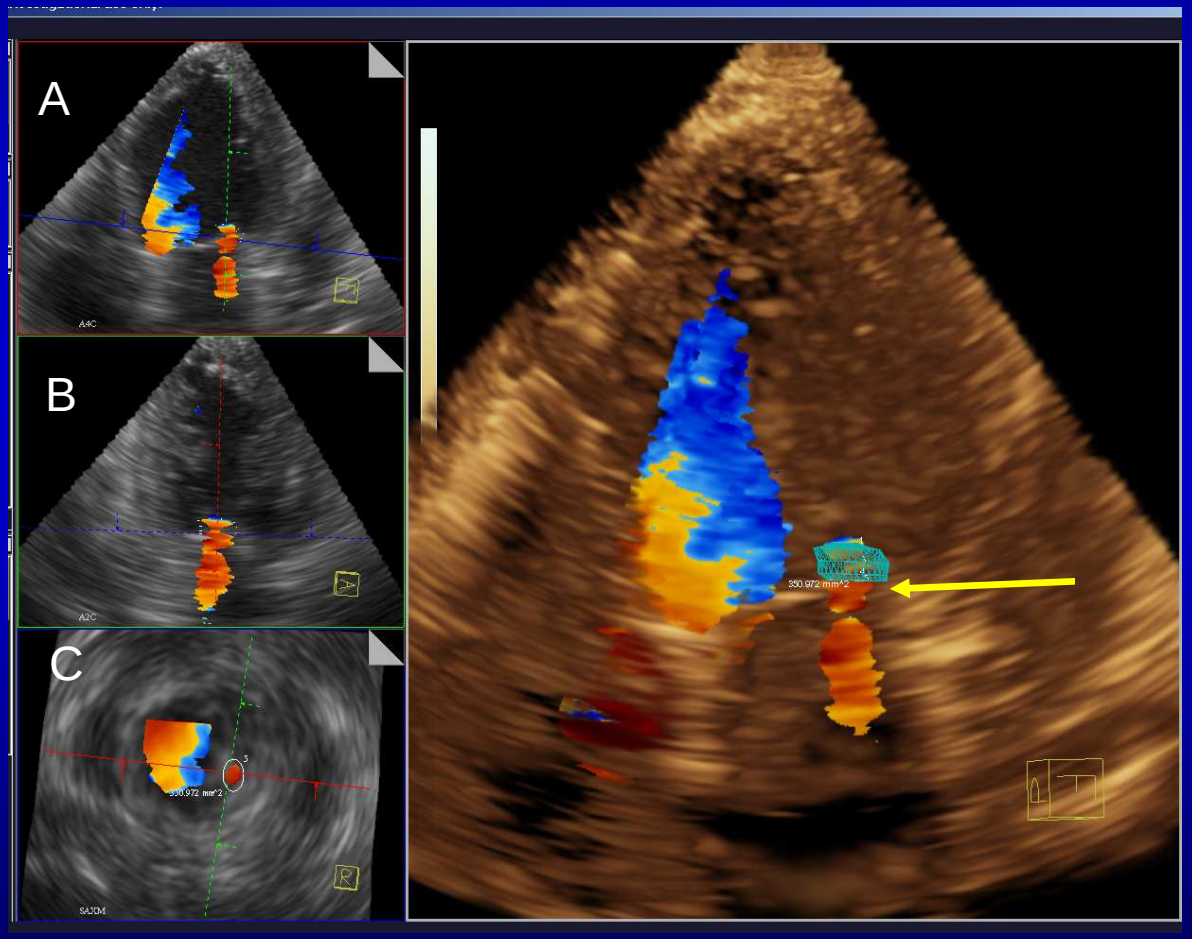
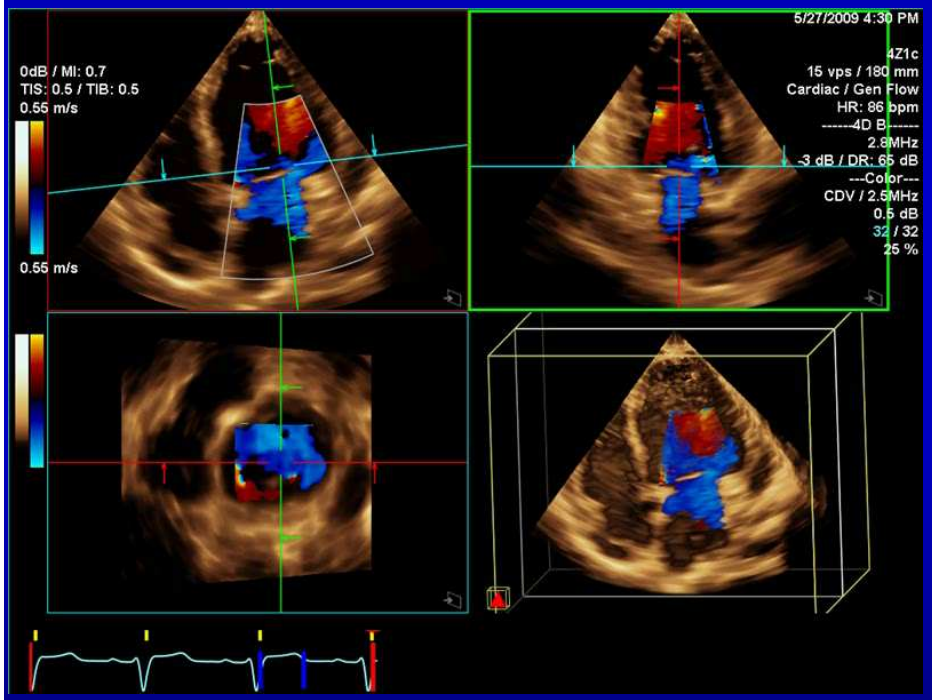
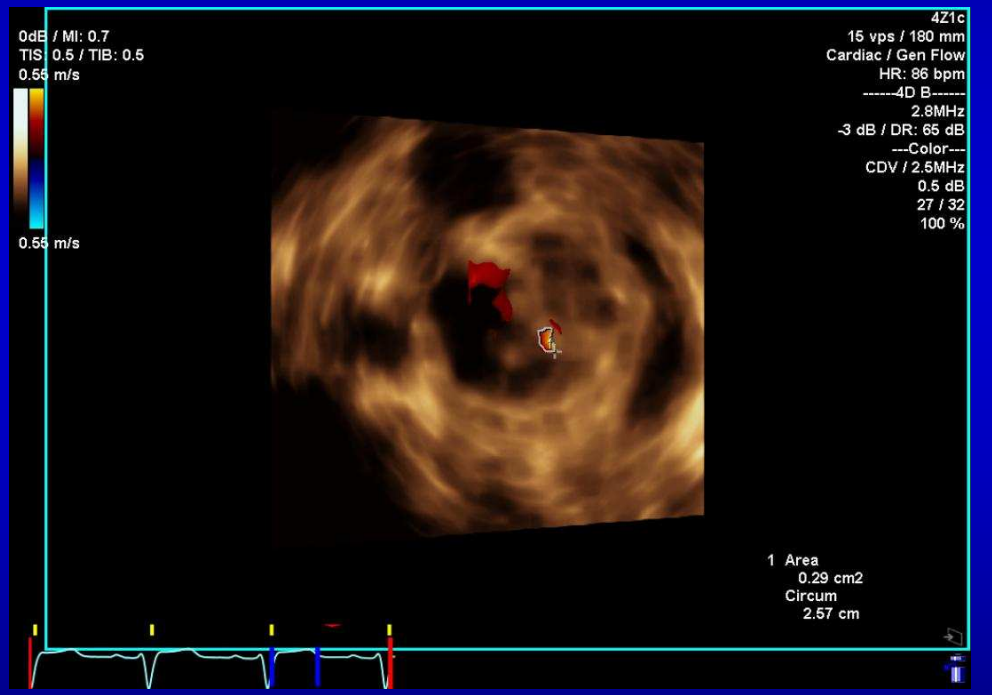
Vena Contracta Surface Modeling



Work in Progress

Auto Quantification of 3D Vena Contracta (ERO)





VC Area (ERO) = 0.29 cm^2

Work in Progress – 3D VC quantification

Medical Center

Conclusion

Real time volume color flow data provides the following:

A simpler and more precise way to assess the severity of mitral regurgitation

- Visualizing regurgitation jets in 3D
- Assessing 3D PISA, vena contracta and regurgitant orifice
- Quantifying automatically 3D PISA and vena contracta ERO

ACUSON SC2000™
Volume Imaging Ultrasound System

SIEMENS

- First real time volume color flow to assess regurgitant flow
- Ease of visualization in 3D
- Increased accuracy vs 2D and stitched imaging
- Accurate quantification of 3D PISA, Vena Contracta ERO (WIP)