

***Element 27.00***

**Adams/Strub**

# Echo and Failure

- What to measure?
- How to measure?
- When to measure?

# Technical Tips

- **Evaluating pts over time**

*look at old study*

*standard views*

*measure same plane*

*ASE guidelines to set lab standards*

# Technical Tips

## *Left ventricle*

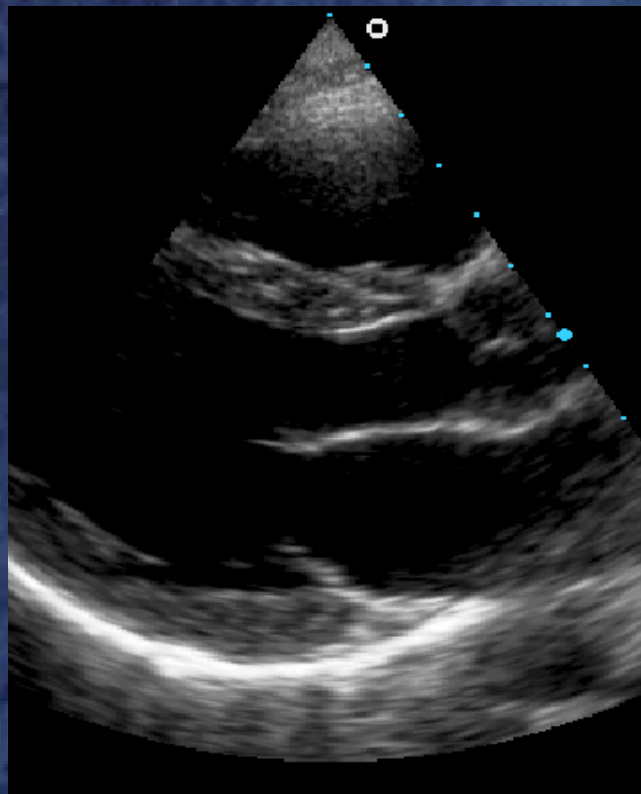
- Harmonic imaging
- Contrast
- Gain/compress
- Monitor settings

# Harmonic Imaging

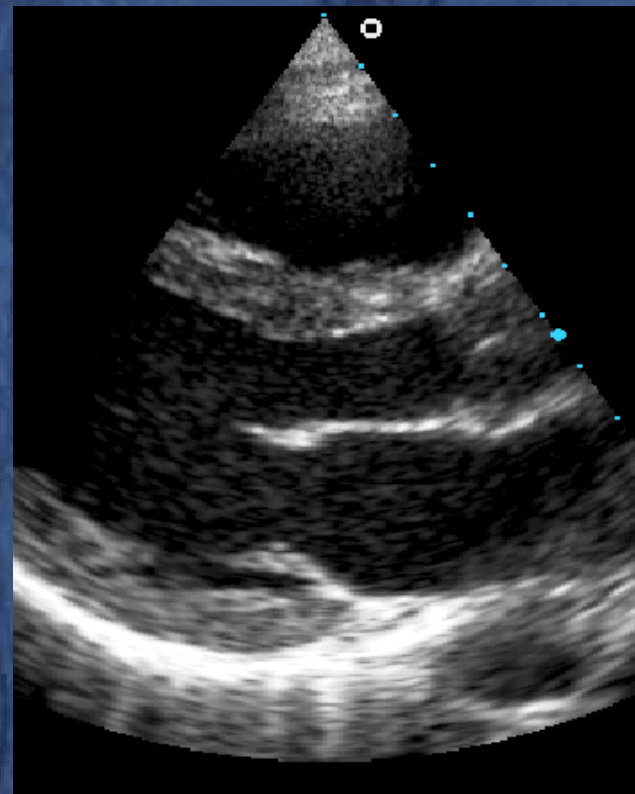
- Helps find endocardium
- Use with contrast agents
- *Beware* makes valves thick
- *Don't use* in easy pts

# Technical Tips

*Harmonics thicken valves*



**Fundamental**



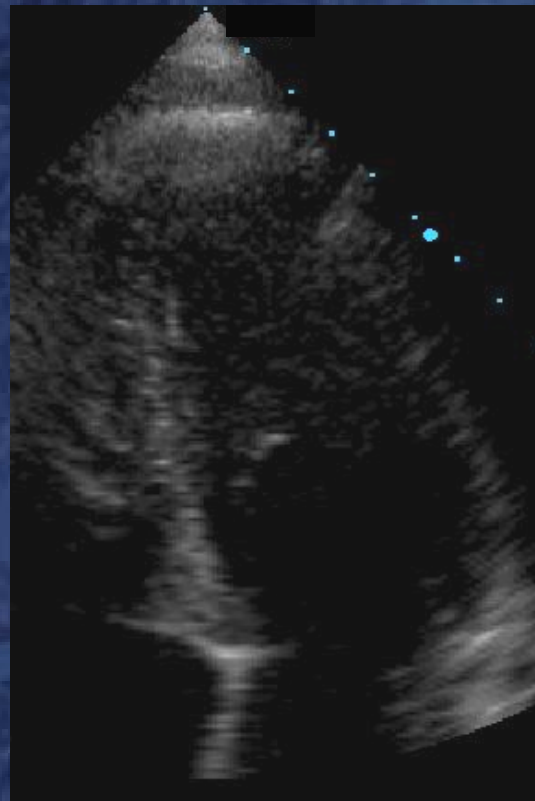
**Harmonic**

# Contrast

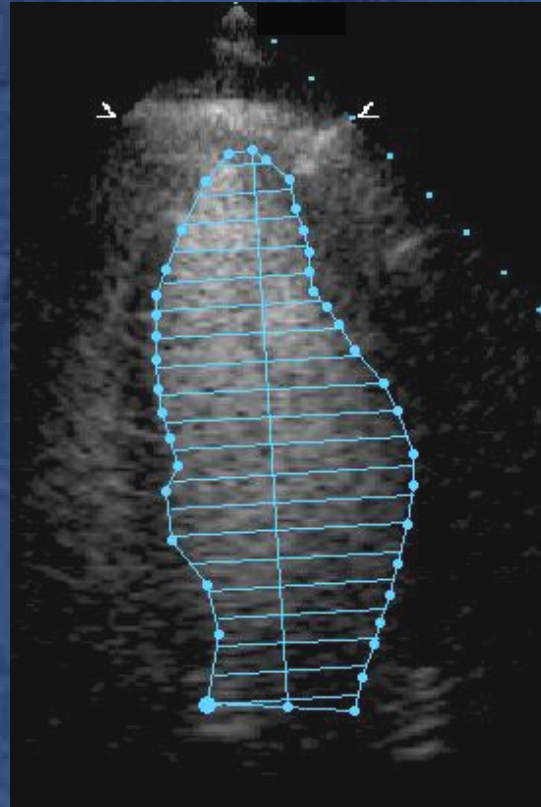
- Endocardial borders
- Helps quantitation
- Thrombus delineation
- Perfusion not proven

# Technical Tips

## *Contrast enhancement*



**No contrast**



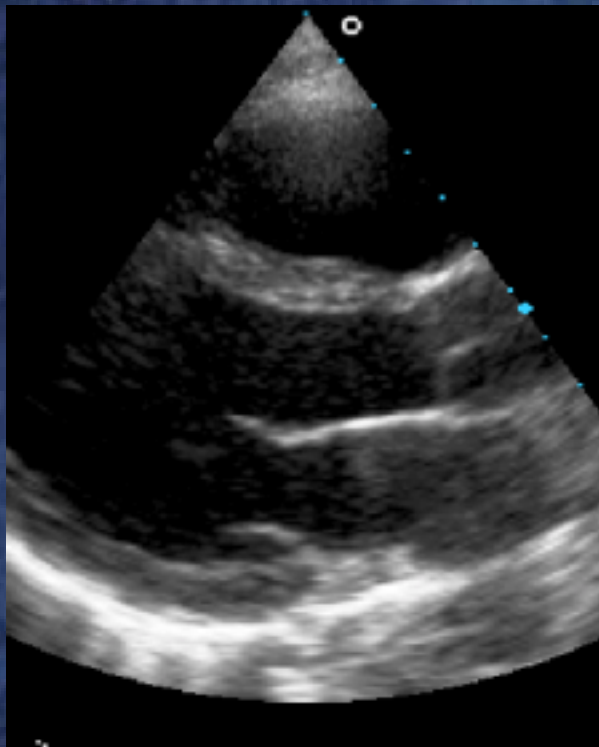
**Contrast**

# Image Gain

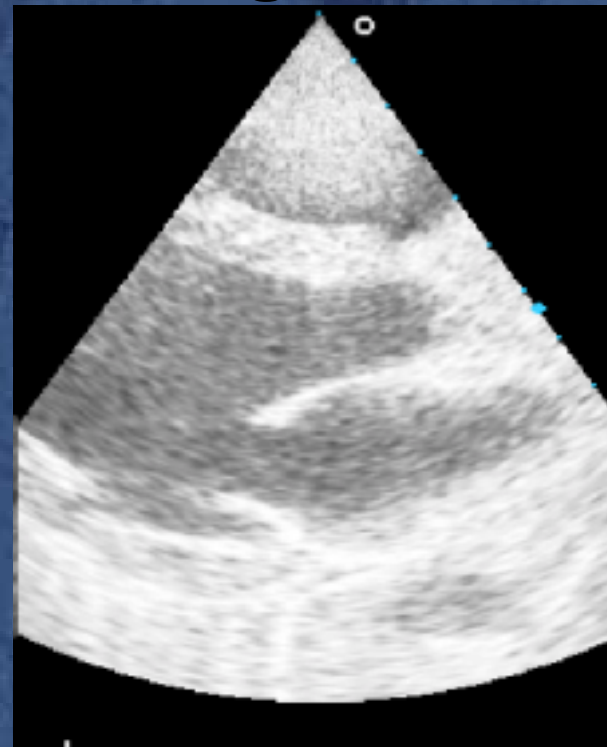
- **Excess gain most common problem**
- **Destroys resolution**
- **Degrades Doppler signals**

# Technical Tips

## *Effect of excess gain*



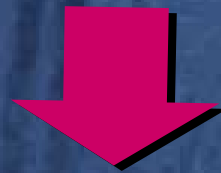
**Proper gain**



**Excess gain**

# Monitor Settings

- If brightness on machine monitor is too dark



- Operator compensates by increasing image gain

# **Technical Tips**

## ***Left Ventricle***

- **Left lateral position**
- **Suspend respiration**
- **High frequency transducer**
- **Narrow sector**
- **Focal zone**

# Pitfalls

- **Wrong angulation**
- **Truncated apical views**
- **Poor endocardial definition**

# What to measure?

- Left ventricle

*size*

*geometry*

*function*

# What to measure?

- **LV systolic function**

*volumes*

*shape*

*ejection fraction*

*mass*

# What to measure?

- **LV diastolic function**

*mitral E/A ratio*

*deceleration time*

*pulmonary venous inflow*

# Mitral Regurgitation

- Present in 70% of CHF pts
- Escalates LV dysfunction
- Severe MR with normal EF indicates LV dysfunction