

Mitral Stenosis

- Commonly 2/2 rheumatic heart disease
- Normal MV area 4-5 cm
- Symptoms when area < 2.5 cm
- \uparrow MS \rightarrow \uparrow LAP \rightarrow passive \uparrow PA pressures \rightarrow \uparrow RV pressure \rightarrow RVH \rightarrow RV failure
- \uparrow LAP also leads to \uparrow LA size and a-fib
- LV affected by \downarrow diastolic inflow and abnormal contractile function

PHILIPS

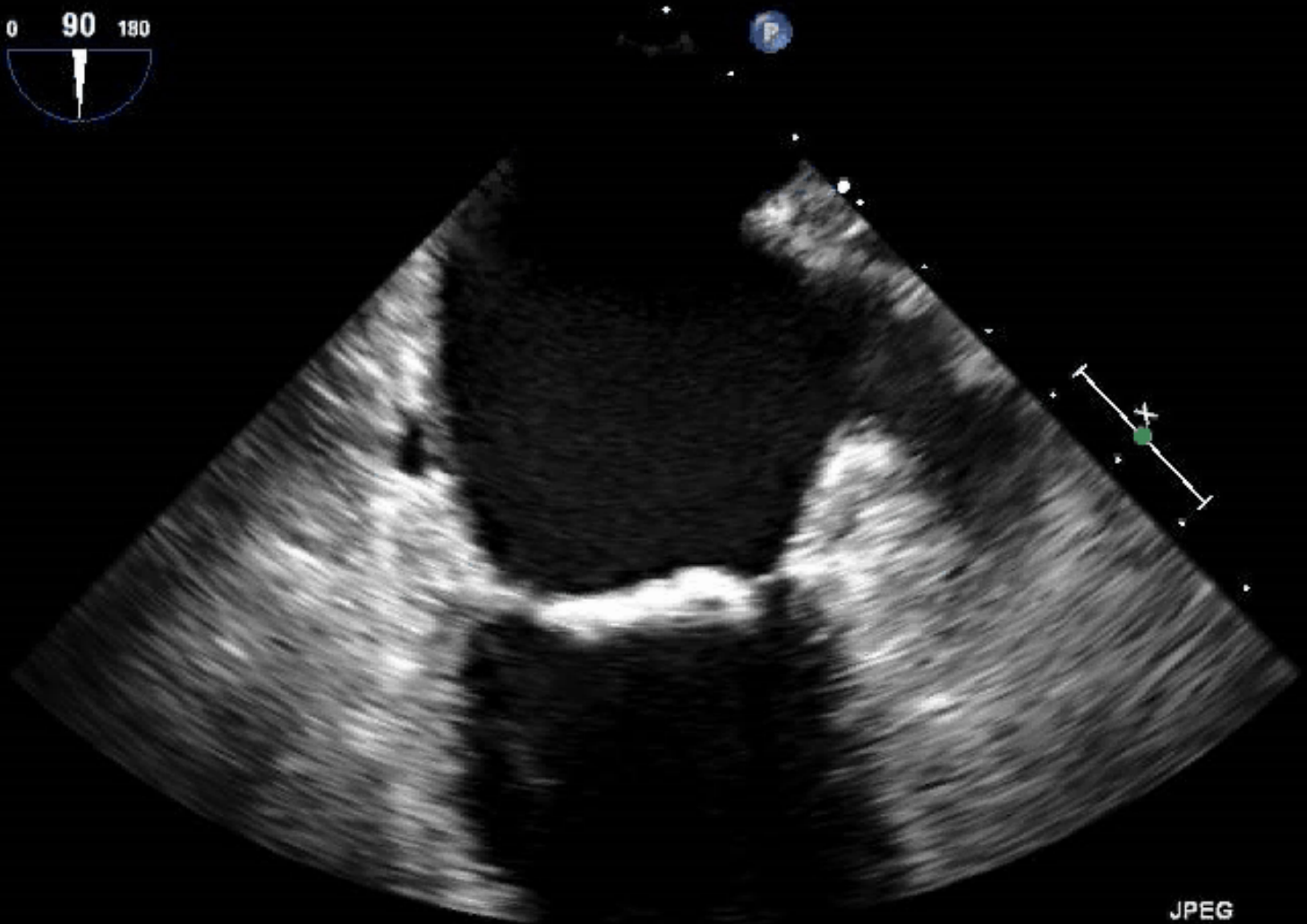
TISO.1 MI 0.4

X7-2t/TEE

FR 50Hz
10cm

M4

2D
60%
C 50
P Off
Gen



JPEG

PAT T: 37.0C
TEE T: 39.0C

65 bpm

PHILIPS

TIS0.5 MI 0.4

X7-2t/TEE

FR 20Hz

13cm

2D

66%

C 50

P Off

Gen

CF

60%

4.4MHz

WF High

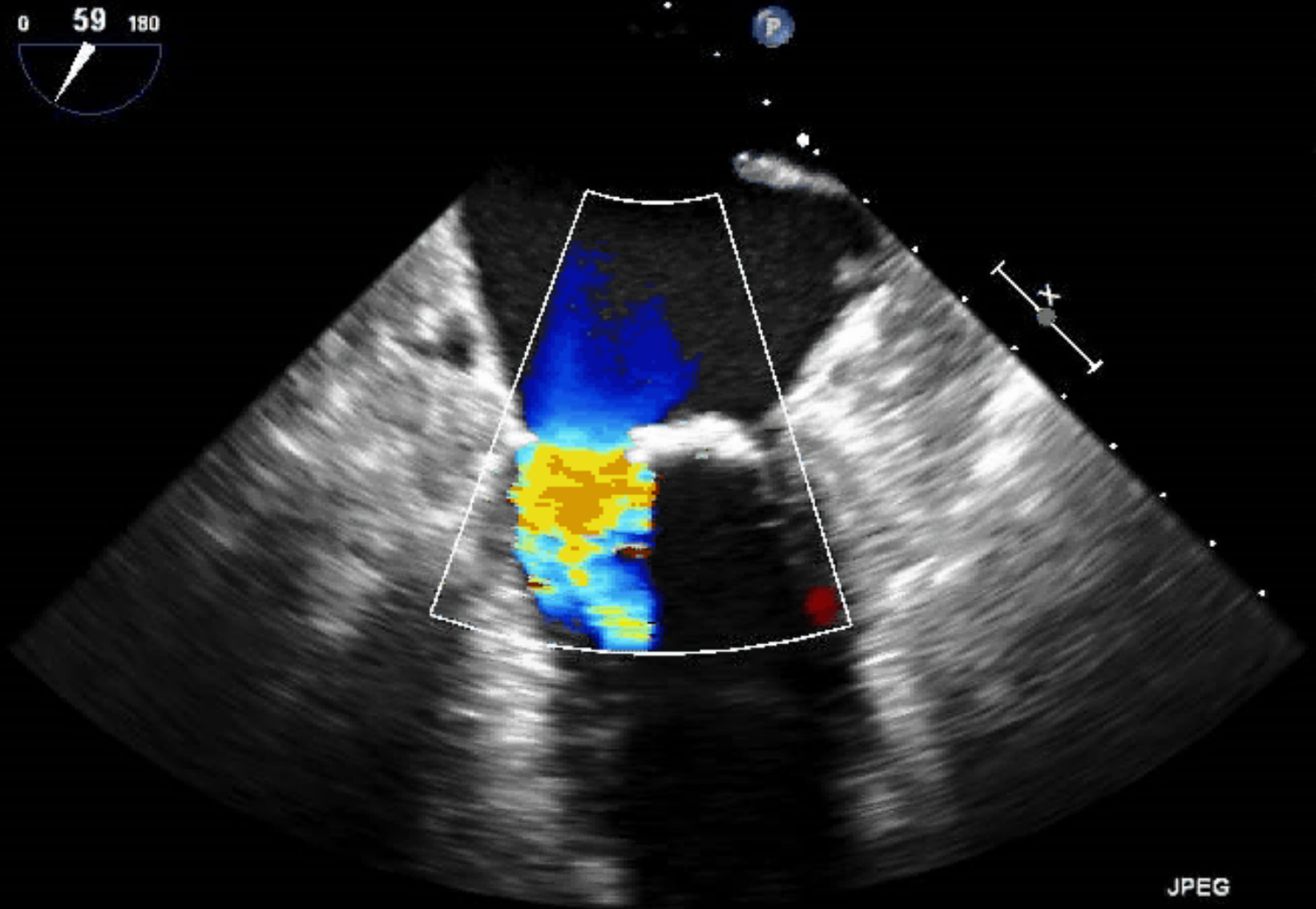
Med



M4 M4

+61.1

-61.1
cm/s



JPEG

PAT T: 37.0C
TEE T: 39.4C

69 bpm

MS Anesthetic Management

- Preload
 - Ventricular preload important for SV and CO
 - Tenuous balance between maintaining ventricular preload and preventing CHF
- Heart Rate (**most important**)
 - Tachycardia poorly tolerated 2/2 ↓ diastolic filling time
- Afterload
 - Normal range best as a ↓ SVR → ↓ preload
 - May be appropriate to slightly lower SVR in case of significant LV dysfunction

MS Anesthetic Management

- Ventricular dysfunction
 - RV dysfunction usually more pronounced than LV
 - Elevated PAP may be chronic and persistent even after MV replacement
 - Careful with PAC 2/2 ↑ risk of PA rupture
 - Hyperventilate, Hyperoxia, Acid/base status
 - Supporting RV often necessary
 - Epi/Milrinone often helpful

Mitral Regurgitation

- Retrograde blood flow from LV to LA during systole
- Normal Ejection Fraction misleading
 - LA is low-pressure pathway
- Chronic overloading of LA and LV
 - Eccentric LV hypertrophy
 - LA and LV chamber enlargement
 - Atrial fibrillation
 - Progression to ↑ PAP and RV dysfunction

PHILIPS

TIS0.6 MI 0.4

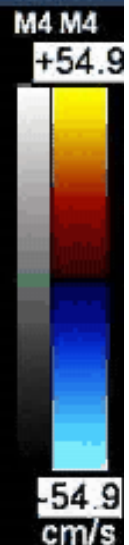
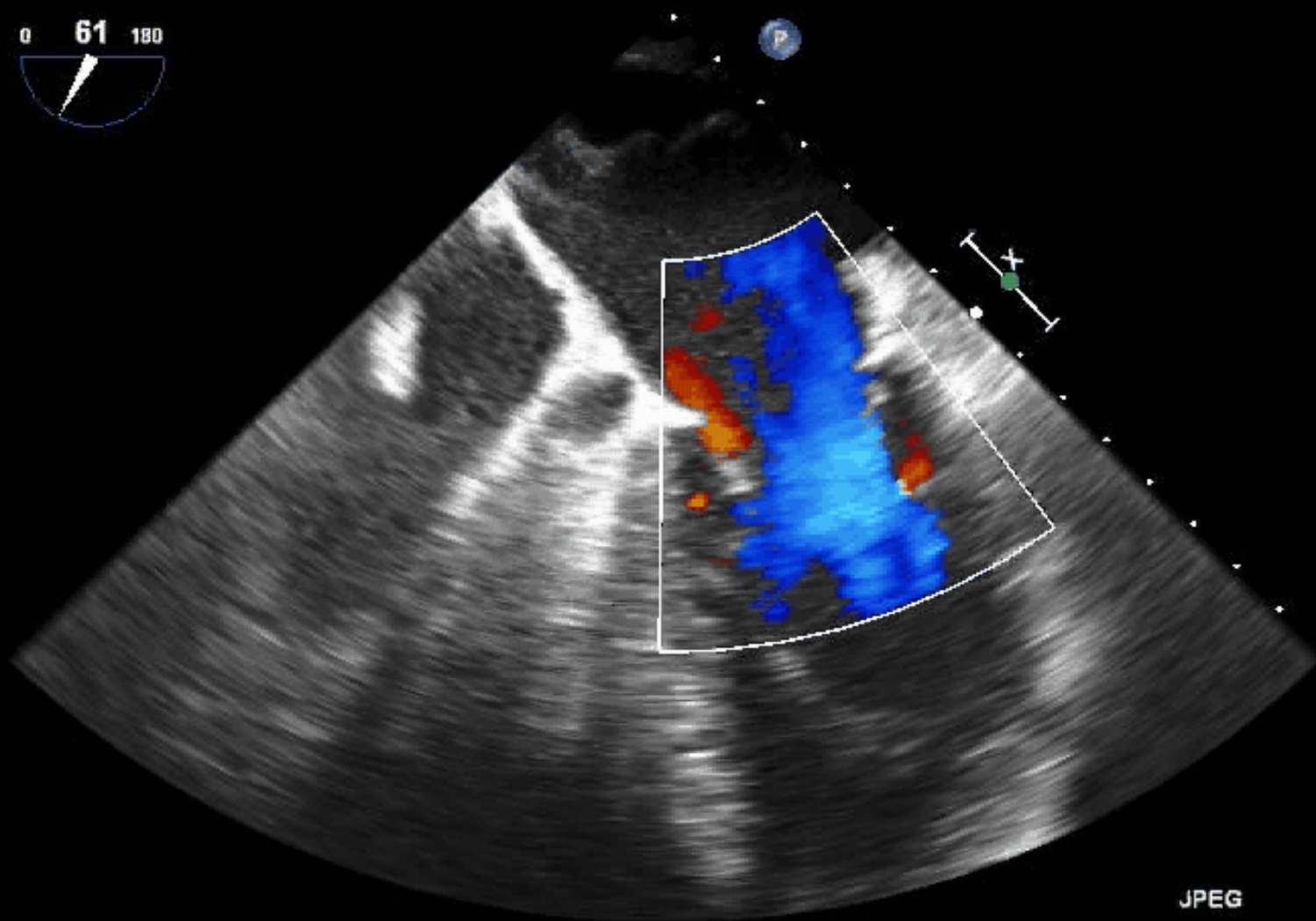
X7-2t/TEE

FR 19Hz
15cm

2D
76%
C 50
P Off
Gen



CF
60%
4.4MHz
WF High
Med



PAT T: 37.0C
TEE T: 38.9C

JPEG

83 bpm

MR Management

- Preload
 - Maintain, as LV sensitive in face of MR
 - Careful as LV distention can ↑ MR
- Heart Rate
 - High-normal range (80-100)
 - Bradycardia poorly tolerated
 - ↑ systolic time, thus ↑ MR
- Contractility
 - Support with inodilators like Milrinone/Dobutamine/low-dose epi
- Afterload
 - ↓ SVR to maintain forward flow
- Pulmonary HTN
 - Manage as previously discussed