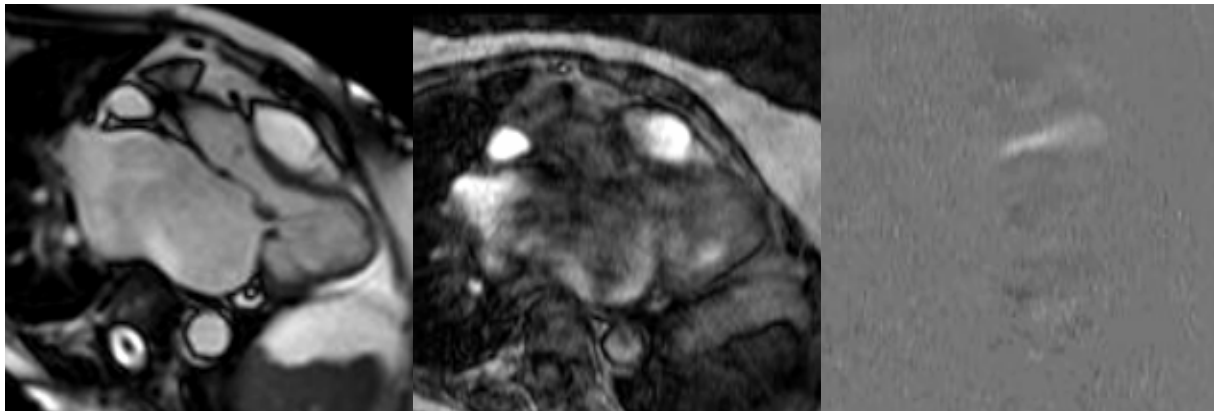


Mitral Valve Study: Step by Step Mitral Valve Flow

Equipment Check List:

1. Cardiac Synergy Coil
2. ECG or VCG cables
3. Electrodes
4. Electrode prep pads or gel scrub
5. 4 x 4 non-sterile pads

1. MV Valve LVOT View / Retrospective Quantitative Flow Mapping (non-breath hold: scan duration 2- 5 min or breath hold 15-20 sec.) – Average velocity encoding 150 cm/sec, breath hold or non-breath hold. Place slice using the LVOT cine geometry, rotate plane so flow is perpendicular to MV valve as demonstrated below.

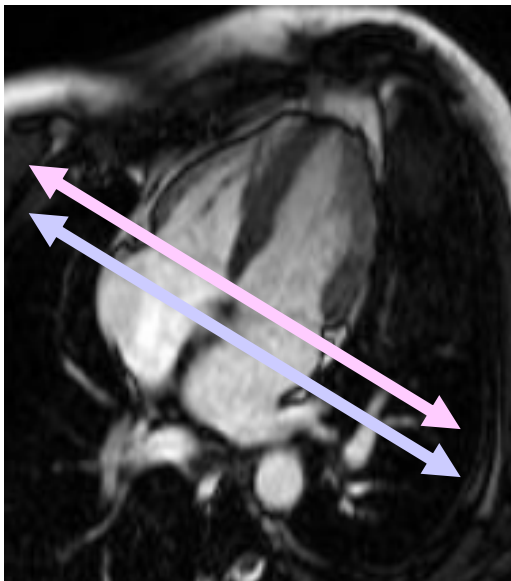


LVOT Cine Image

LVOT Q-Flow Image

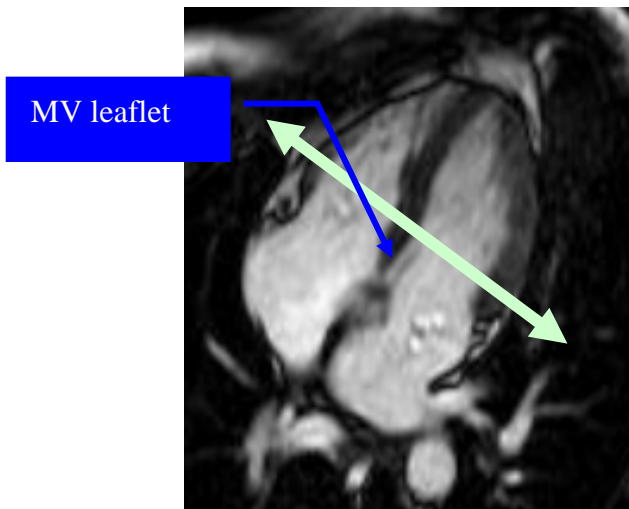
LVOT Q-Flow Phase Image

2. MV Valve in multiple Oblique Sagittal views / Retrospective Quantitative Flow Mapping (non-breath hold: scan duration 2- 5 min or breath hold 15-20 sec.) – Plan from the HLA cine image with the geometry saved to SA. **Set the heart rate to the actual value of that of the patient. Do not set it higher because of the retrospective gating.** Set the velocity encoding so that it measures the through plane velocity. If it is primarily a transverse plane encoding should be FH, coronal should be AP, sagittal should be RL. Set the Venc. at 150 cm/s. Note: Check resulting phase velocity images for proper encoding and free from aliasing artifact. Repeat the scan if necessary with another encoding direction and or increased velocity. Plan slices as demonstrated below.



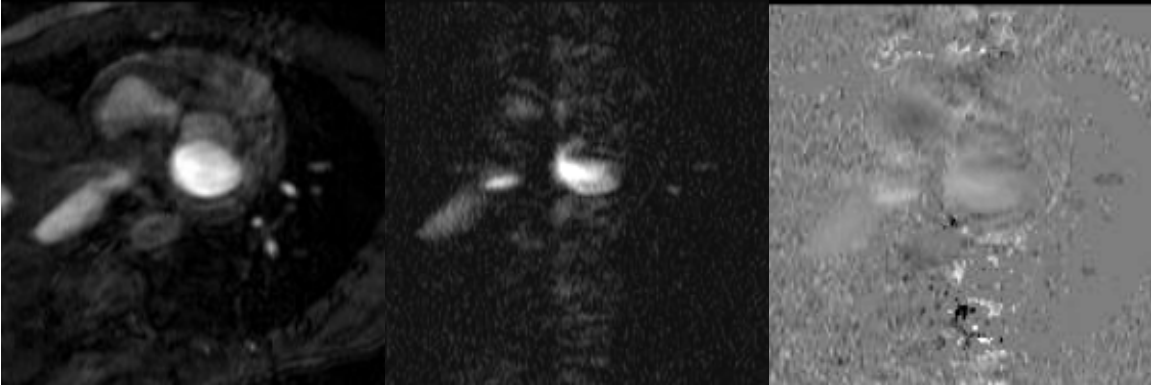
1. Flow directly over MV valve at end-diastolic phase of HLA cine. This slice is placed parallel and through the valve plane. 150 VENC

2. Flow 1.5cm from MV valve, negative flow, 150 VENC

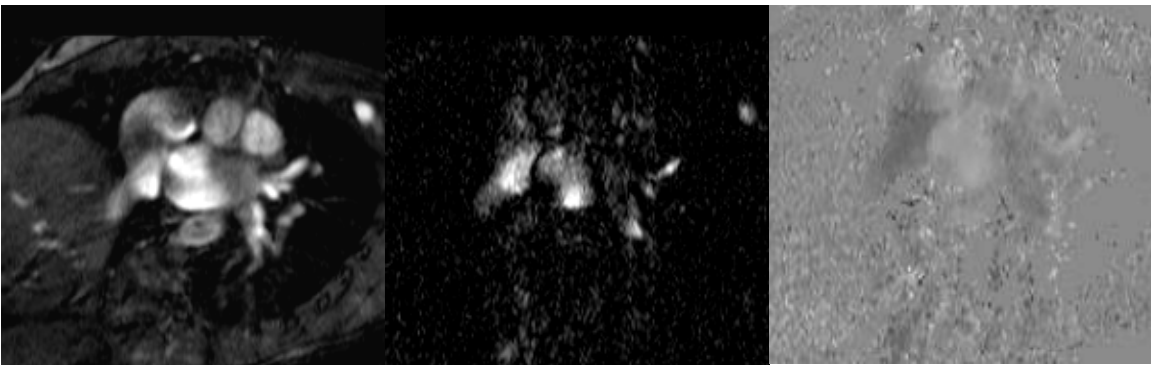


3. Then determine the phase within the cardiac cycle where the mitral valve is just opening. This is just after the beginning of diastole (end of the T-wave), around 400 ms after the R-wave at a HR of 60 b/min. Position the imaging plane parallel to the mitral valve plane, about 1-2 cm (look for the length of the valve) on the LV side of the valve. The imaging plane should be proximal to the papillary muscles. The slice should be placed just at the tip of the leaflets of the valve because of artifacts induced by the valve, positive flow, 150 VENC

1. Flow directly over Mitral Valve, positive flow, 150 VENC



2. Flow 1.5cm from MV valve, negative flow, 150 VENC



3. Flow directly in front of valve leaflets, positive flow, 150 VENC

