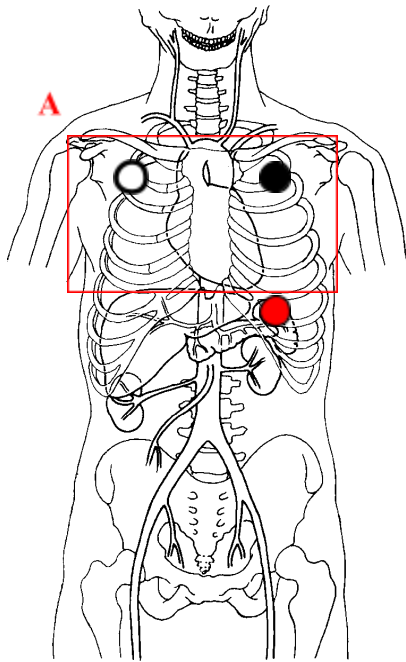


Cardiac MRI for Hypertrophic Cardiomyopathy

ACQUISITION

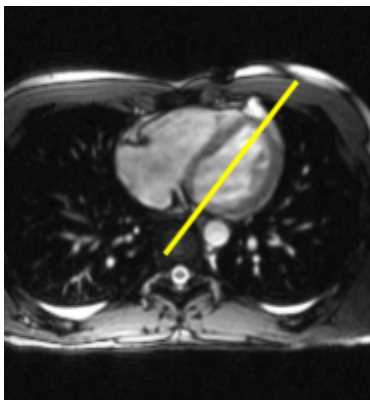
Overview	Patient Position	Supine, head first into gantry, heart positioned isocenter,
	Contrast	Oral: N/A IV: 21 gauge catheter
	Injection Rate	2 ml/sec
	Respiration	Breath hold
	Acquisition Specs	Appropriate localization to achieve images as specified in following sequences.
A Axial True FISP	Begin End	Top of aortic arch Below bottom of heart
B Short axis Ciné stack	Begin End	Mitral annulus Apex
C Horizontal long axis Ciné stack	Begin End	Anterior wall Posterior wall
D LVOT cine stack		
E LVOT in-plane and through- plane phase contrast	In-plane Thru plane	Left ventricle outflow tract
F Short axis T1 perfusion (setup)	Begin End	Mitral annulus Apex
G Short axis T1 perfusion	Begin End	Mitral annulus Apex
H Short axis T inversion scout	Begin End	Mid ventricle
I Delayed enhancement: 2, 3, 4 chamber and short axis stack		



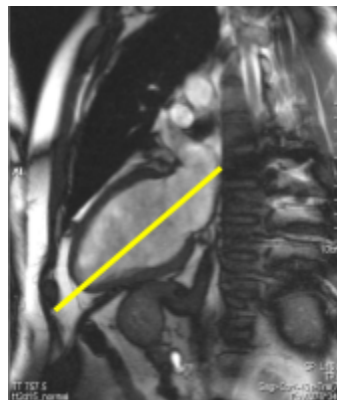
EKG GATING

Place white lead on right shoulder, black lead on left shoulder, and red lead on left lower chest.

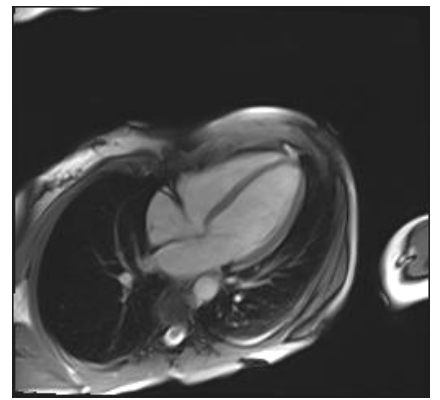
LOCALIZERS



Axial

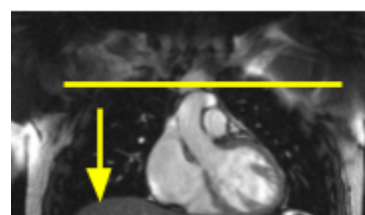


Two Chamber Cine'



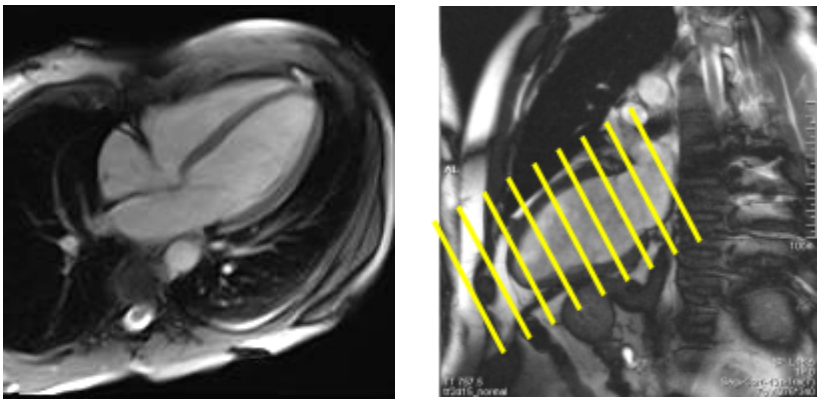
Horizontal Long Axis Cine'

ACQUISITION

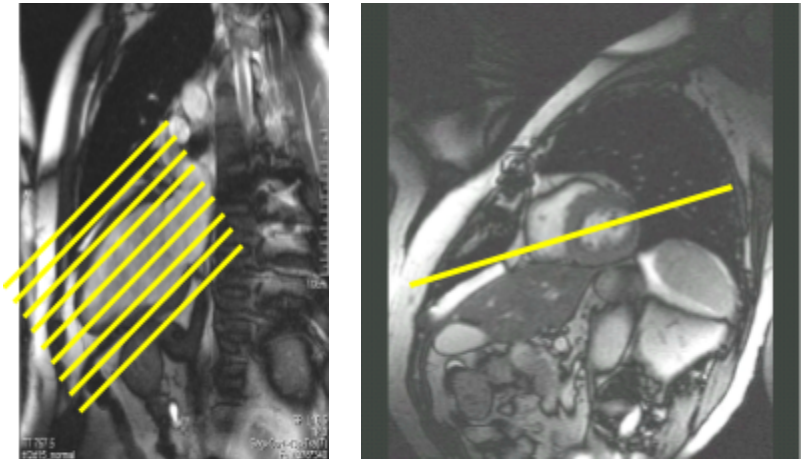


A	Sequence	AX True Fisp
	Slices	50
	Thickness	3.5mm
	Spacing	0%
	FOV	300
	TR/TE	553.68/1.38

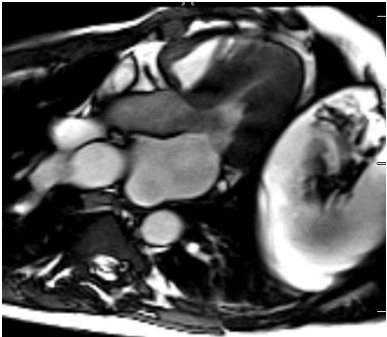
B	Sequence	SAX CINE
	Slices	16
	Thickness	7mm
	Spacing	20%
	FOV	340
	TR/TE	38.87/1.27



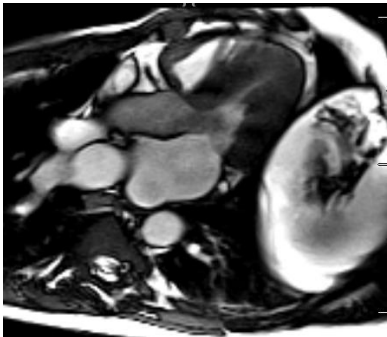
C	Sequence	Horizontal Long Axis Cine Stack
	Slices	7
	Thickness	4
	Spacing	0 %
	FOV	280
	TR/TE	34.2 / 1.3



D	Sequence	LVOT 3-ch Cine Stack
	Spacing	0 %
	FOV	280
	TR/TE	34.2 / 1.3



E	Sequence	LVOT phase contrast
	Slices	1
	Thickness	6 mm
	Spacing	n/a
	FOV	360
	TR/TE	41.4 / 3.5

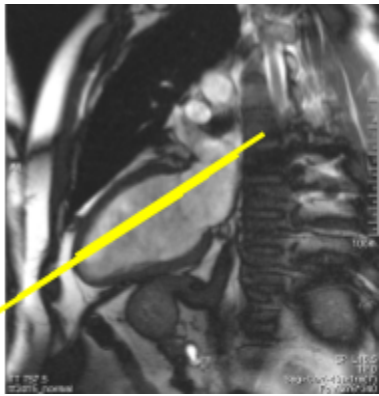
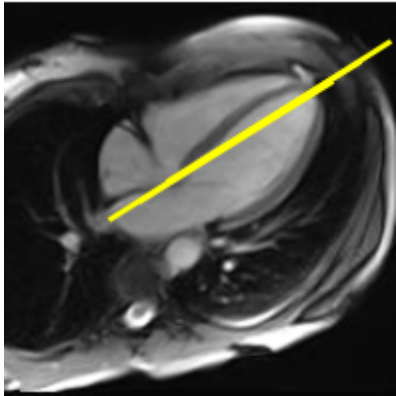


****both in-plane and thru-plane****

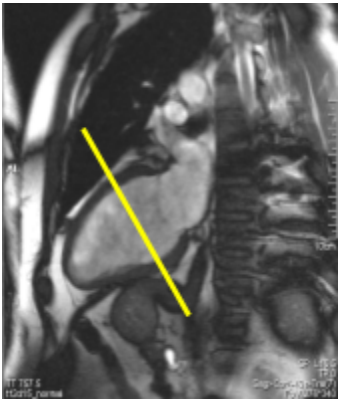
F	Sequence	Perfusion pre-contrast
	Slices	3
	Thickness	8mm
	Spacing	200%
	FOV	360
	TR/TE	211.96/1.22
		5 measurements

G	Sequence	+fl_sr_dyn_160 (perfusion)
	Slices	3
	Thickness	8.0mm
	Spacing	200%
	FOV	360
	TR/TE	224.22/1.22

H	Sequence	T1 scout
	Slices	1
	Thickness	7mm

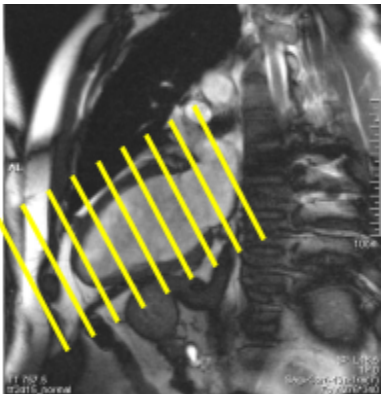
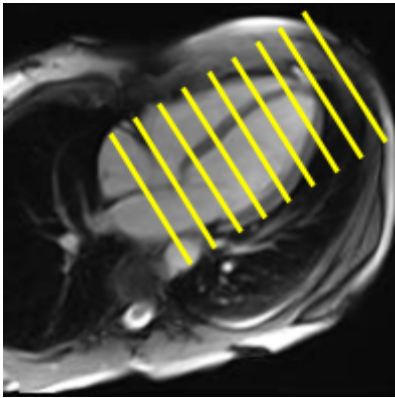


Spacing	20%
FOV	340
TR/TE	38.87/1.27



F) 2, 3, 4-chamber delayed enhancement
 Followed by short axis.

I	Sequence	SAX delayed enhancement
	Slices	16
	Thickness	6.0mm
	Spacing	25%
	FOV	340
	TR/TE	565/3.16



OTHER

10 min between perfusion and delayed enhancement.

T1 scout add initial 30ms, then additional 10ms to maintain quality or repeat T1 scout as needed.

INDICATIONS

HOCM, shortness of breath, chest pain, syncope, and sudden cardiac death
Screening of 1st degree relatives for hypertrophic cardiomyopathy
Evaluate for myocardial scar pre and post therapy.

POST PROCESSING

Left ventricle *epicardial* and *endocardial* contour analysis

