

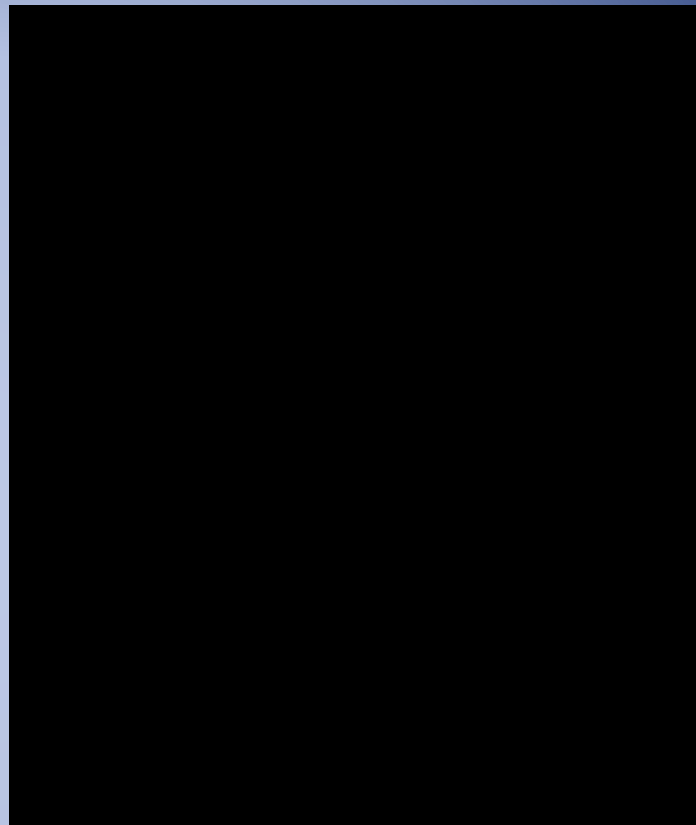
**PULMONARY MEDICINE-RADIOLOGY
CLINICAL MEET FEBURARY 2024**

**THREE FACES OF LEFT VENTRICULAR
HYPERTROPHY**

By Dr Aryaman Dhande (JR III)

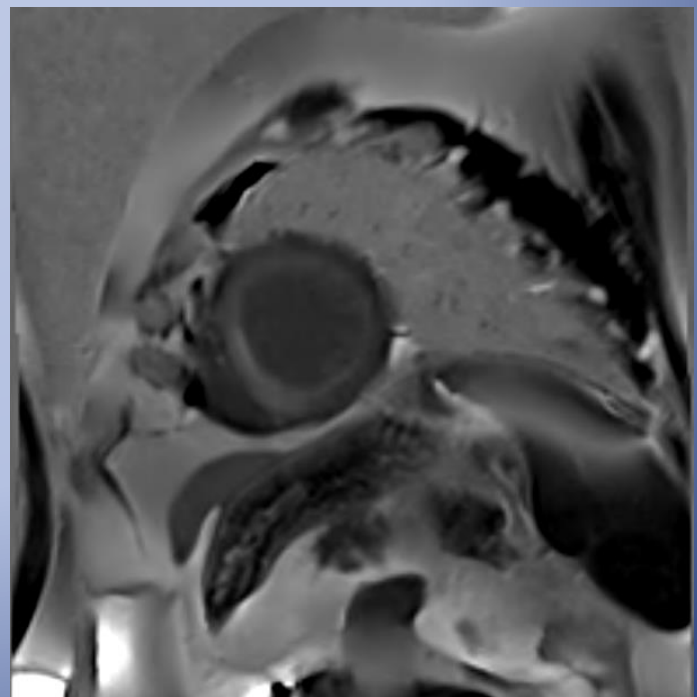
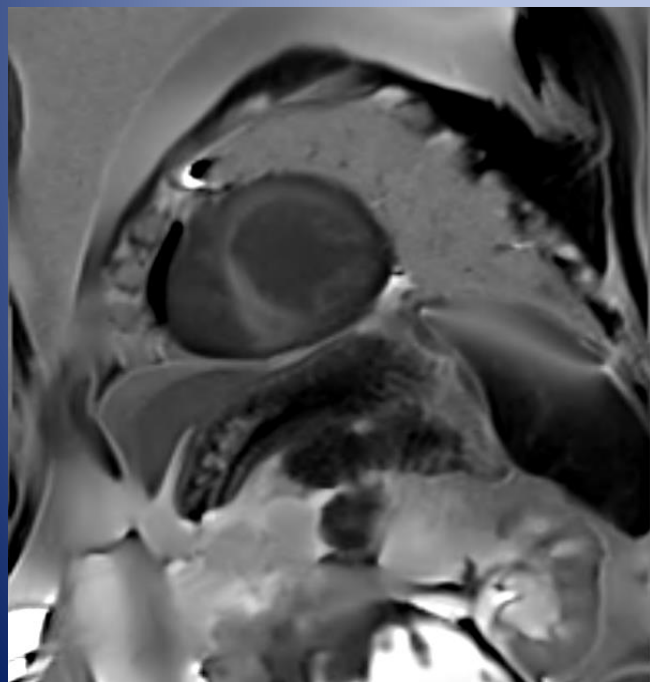
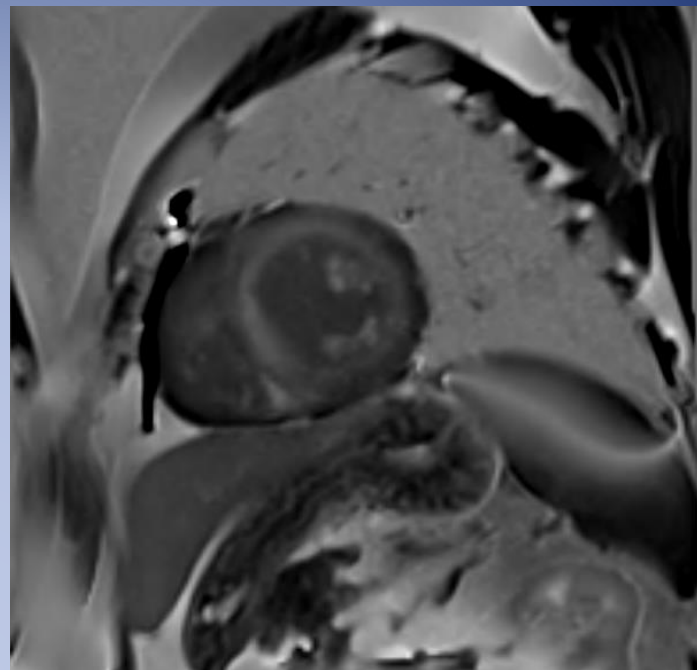
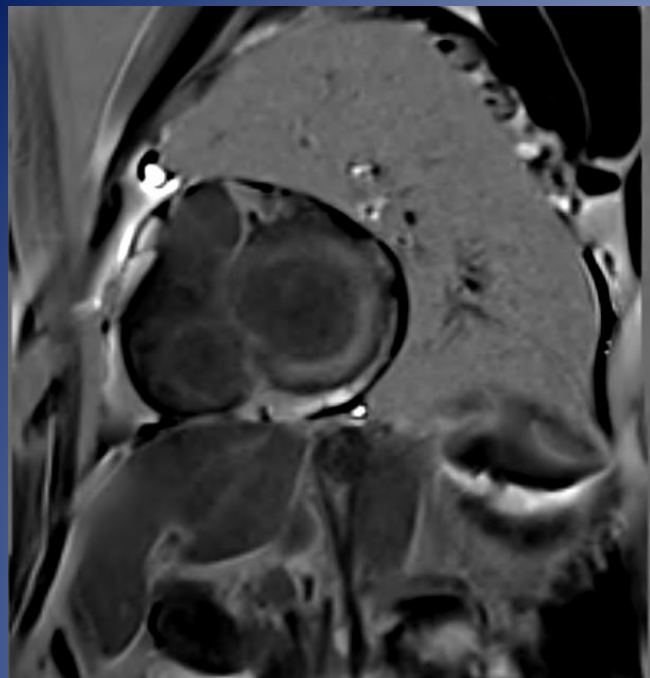
CASE 1

- 58 year old male.
- K/C/O non-obstructive CAD on medical treatment.
- % breathlessness, chest pain, orthopnea.
- k/c/o HTN since 2 years.
- Neurological examination was unremarkable.
- Trop I - 847 pg/ml (raised)
- NT pro BNP - 16,280 (raised)
- 2D echo report revealed- dilated LA, global LV hypokinesia, mildly decreased LV systolic function (LVEF: 40-50 %), Grade III diastolic dysfunction, AV sclerosed, LV hypertrophy.




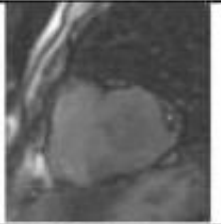
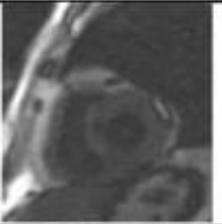
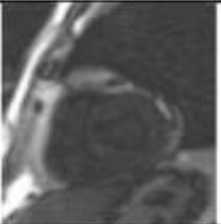
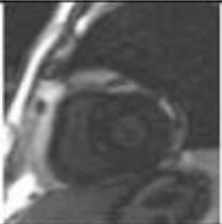
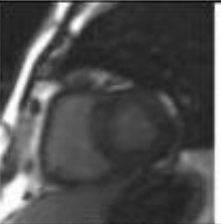


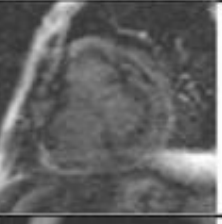
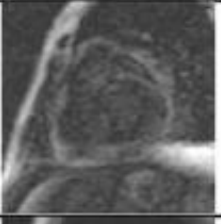
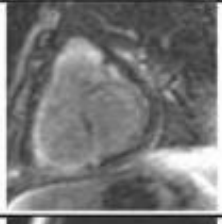
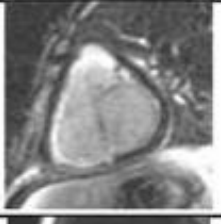
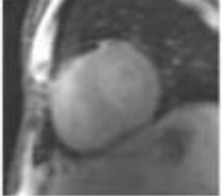











CARDIAC AMYLOIDOSIS (AL & ATTR)

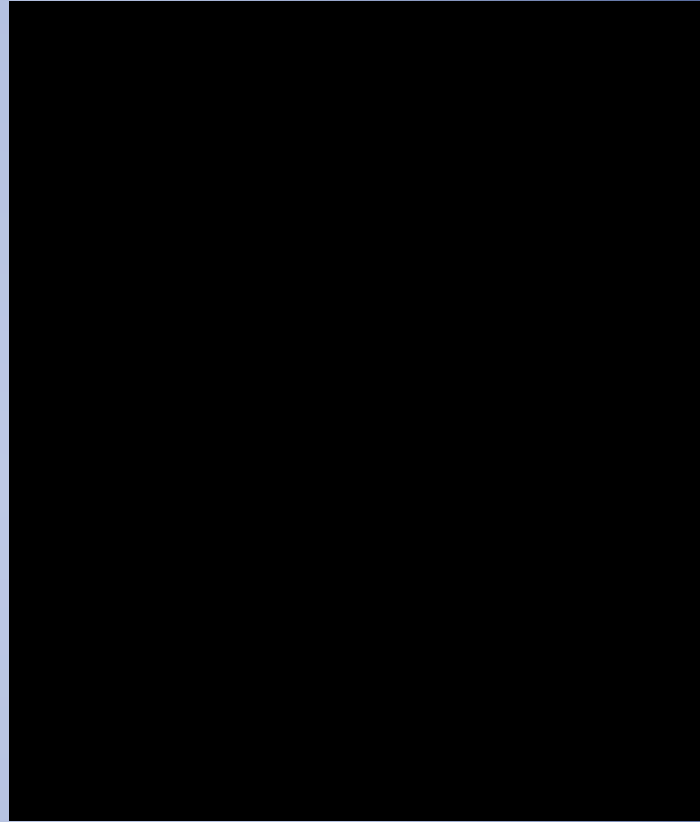
- Magnetic resonance imaging (MRI)-myocardial structure and function; gold standard.
- Myocardial mass, ventricular wall thickness, inter-atrial septal thickness, diastolic function, and myocardial late gadolinium enhancement (LGE) are all described surrogate markers of increased cardiac amyloid load.
- Time of inversion scout (TIS) sequence-reversed or coincident nulling pattern.
- LGE sequences- global sub-endocardial enhancement.
- Biventricular diastolic dysfunction and atrial dilation progressing to systolic dysfunction.
- Exercise intolerance, palpitations, and syncope.
- ECG shows low- voltage complexes.
- Echocardiography shows ventricular hypertrophy and a characteristic speckled appearance of the myocardium.

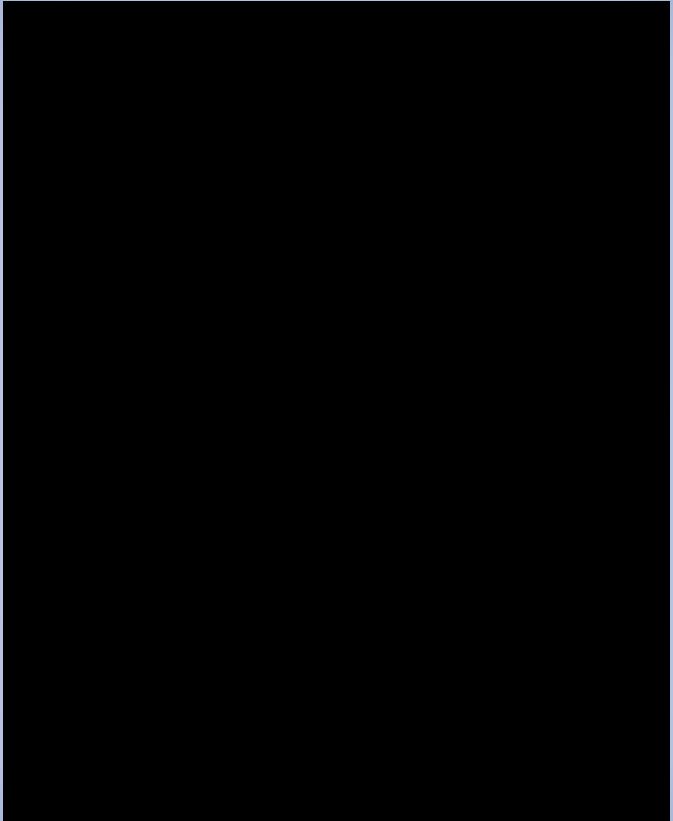
Time of inversion (milliseconds)	99.5	124.5	147	172	219.5	267
Normal nulling pattern						
Coincident nulling pattern						
Reversed nulling pattern						

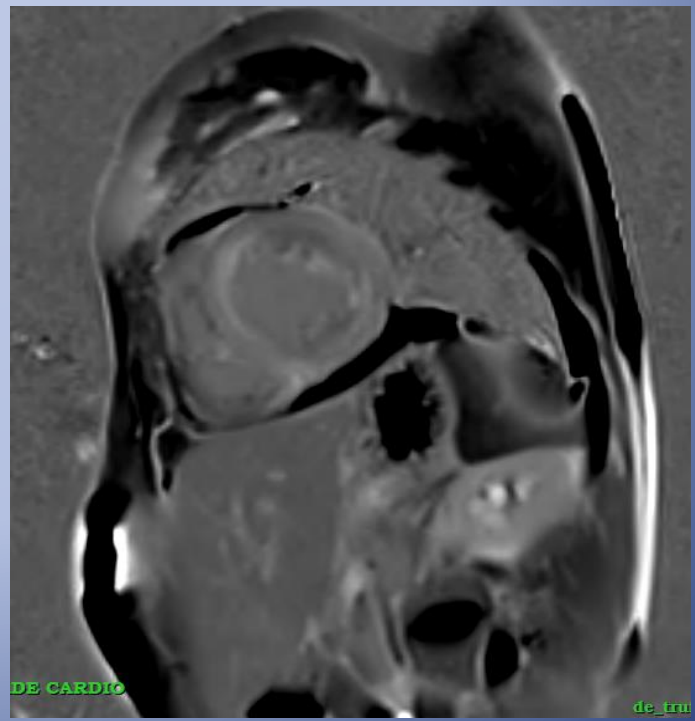
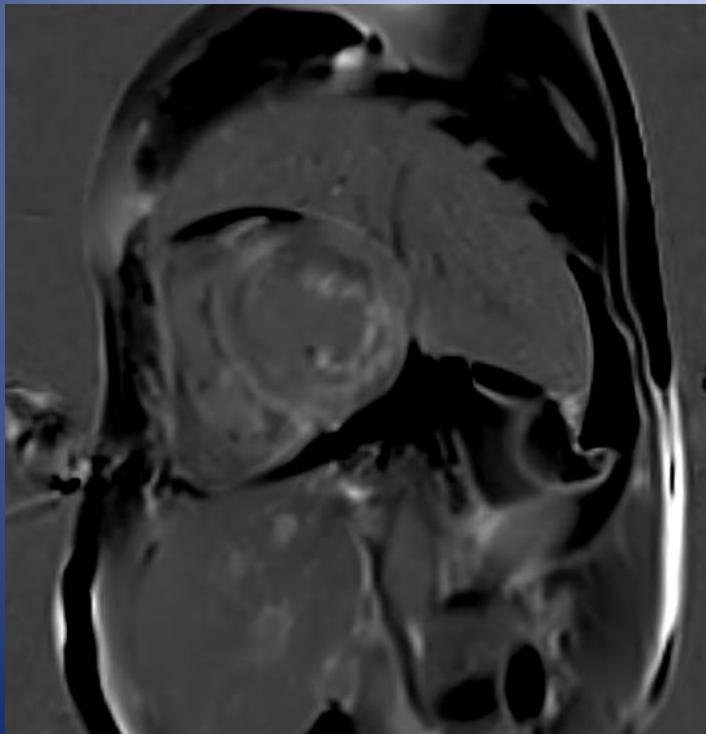
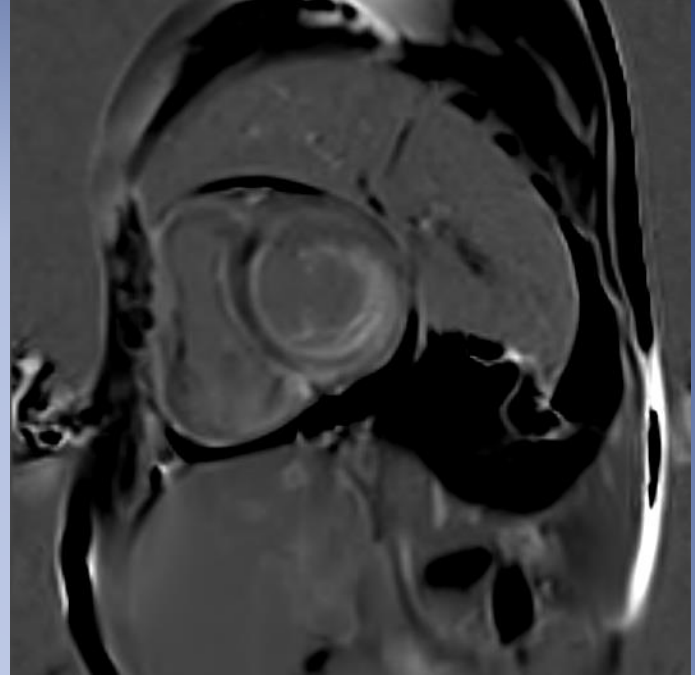
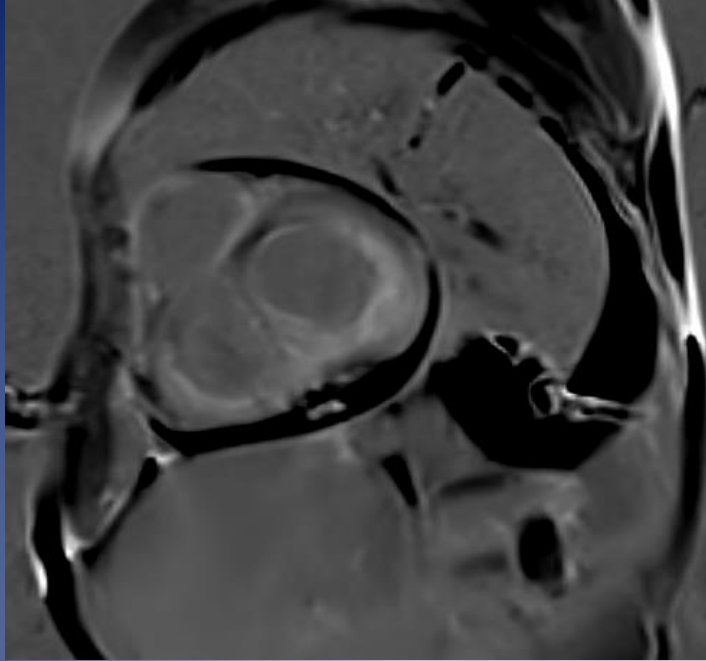
- Normal nulling pattern- blood nulling before myocardium.
- Coincident nulling pattern- blood nulling at the same time as myocardium.
- Reversed nulling pattern- myocardium nulling before blood.

CASE 2

- 47 year old female
- % dyspnea on exertion for 2 months
- Respiratory and neurological examination was unremarkable.
- PR: 72 bpm
- BP: 90/60 mm Hg
- 2D echo reveals:
 - -Global LV hypokinesia
 - -Dilated LA, RA
 - -Moderate MR
 - -Moderately Depressed LV systolic function
 - -Grade III diastolic dysfunction
 - -Moderate TR, Mild PAH
 - -Thin rim of pericardial effusion
 - -Features suggestive of restrictive physiology.





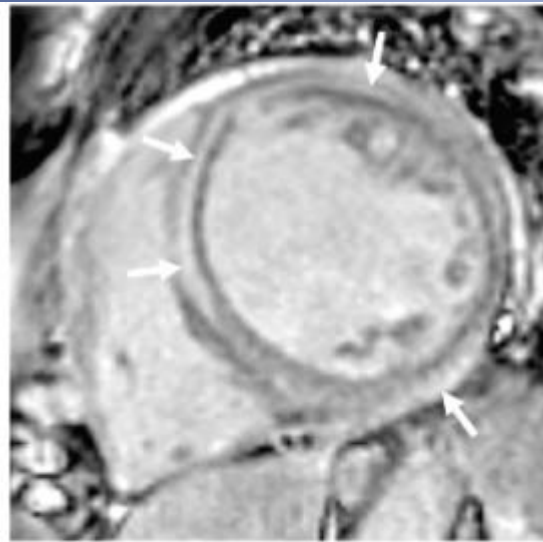


DE CARDIO

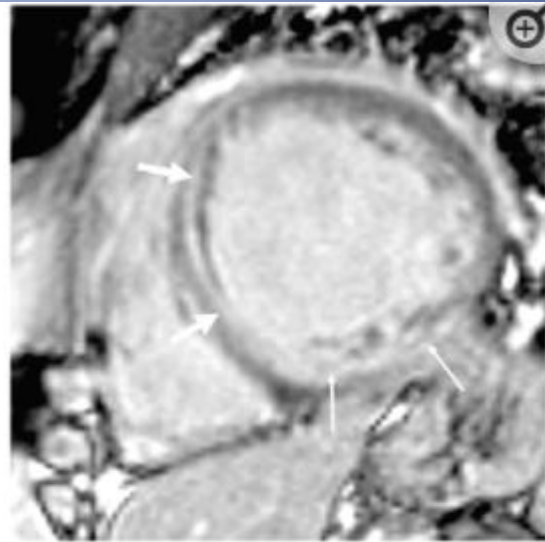
de_tru

CARDIAC SARCOIDOSIS

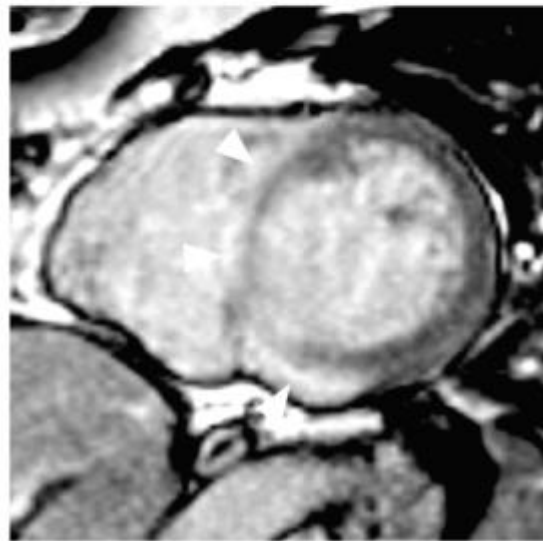
- CS can be almost asymptomatic; however, it is a life-threatening disorder that can cause fatal ventricular tachyarrhythmia, conduction disturbances, left ventricular dysfunction, and sudden death.
- Myocardial biopsy-gold standard method.
- Late gadolinium-enhanced cardiac magnetic resonance (MR) imaging demonstrates improved sensitivity for diagnosing CS.
- The LGE in each segment was also classified into 4 patterns according to the myocardial layer in which it occurred (the sub-epicardial, sub-endocardial, intramural, and transmural layer patterns).
- Sub-epicardial > intra-mural > sub-endocardial > transmural.



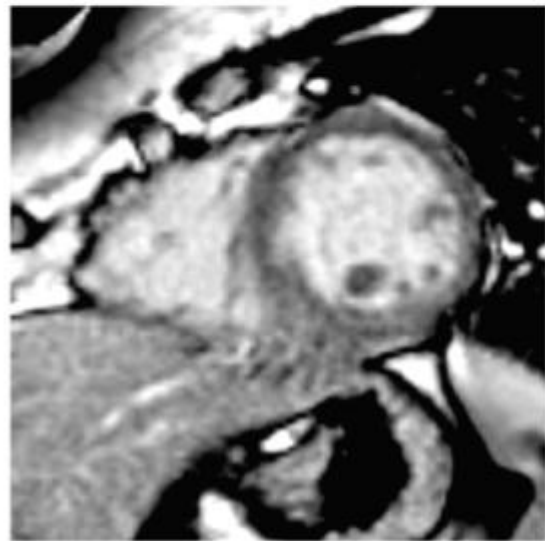
A



B



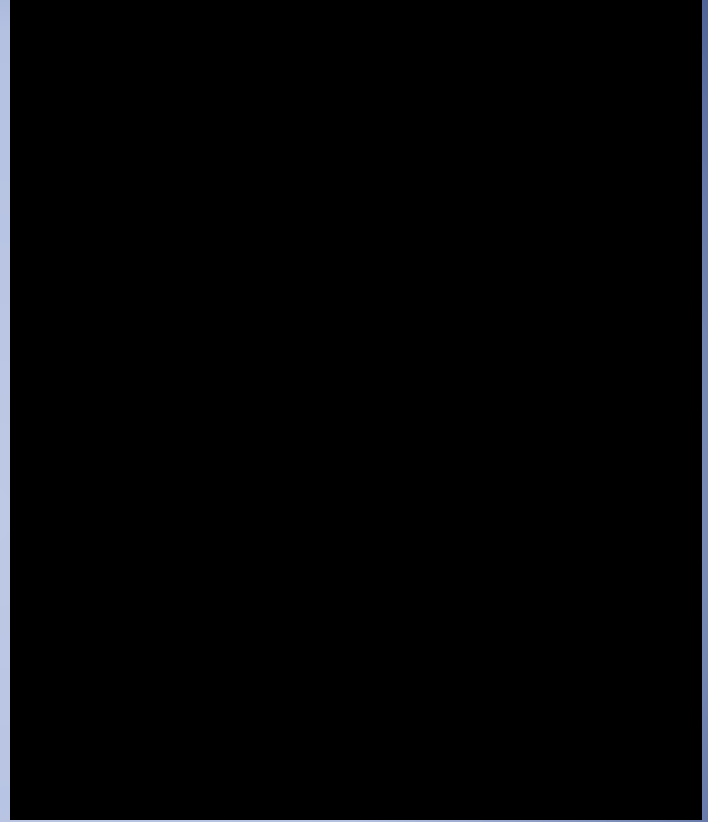
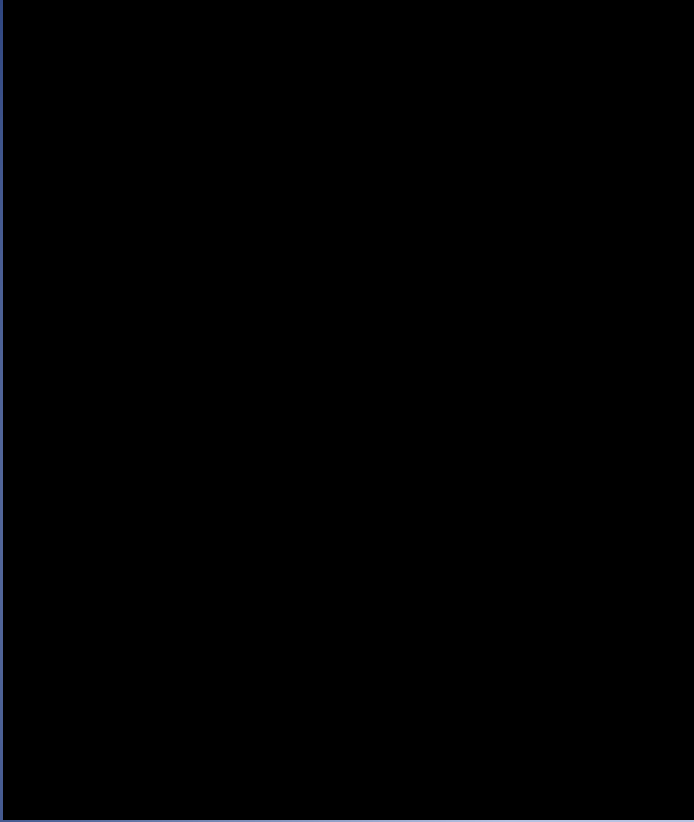
C

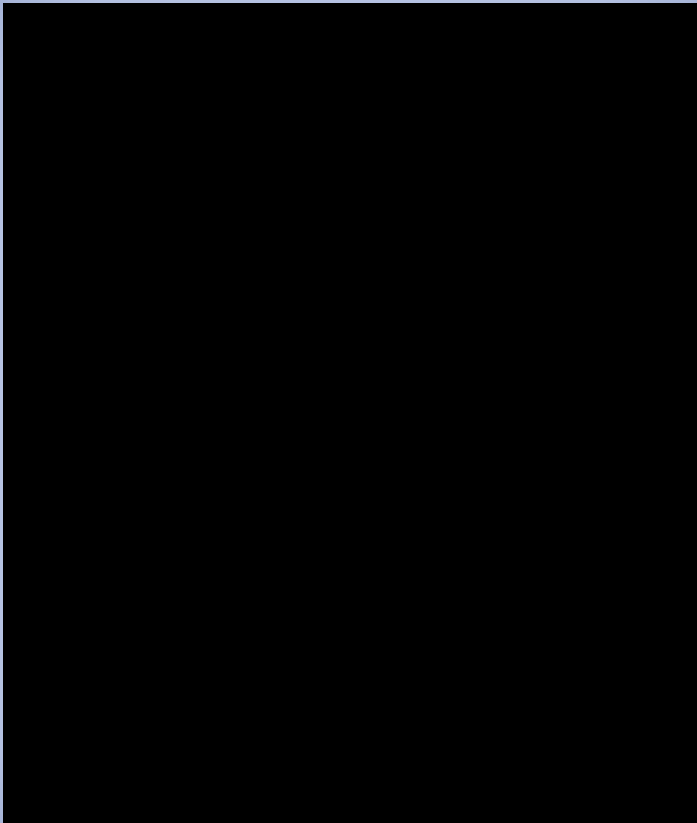


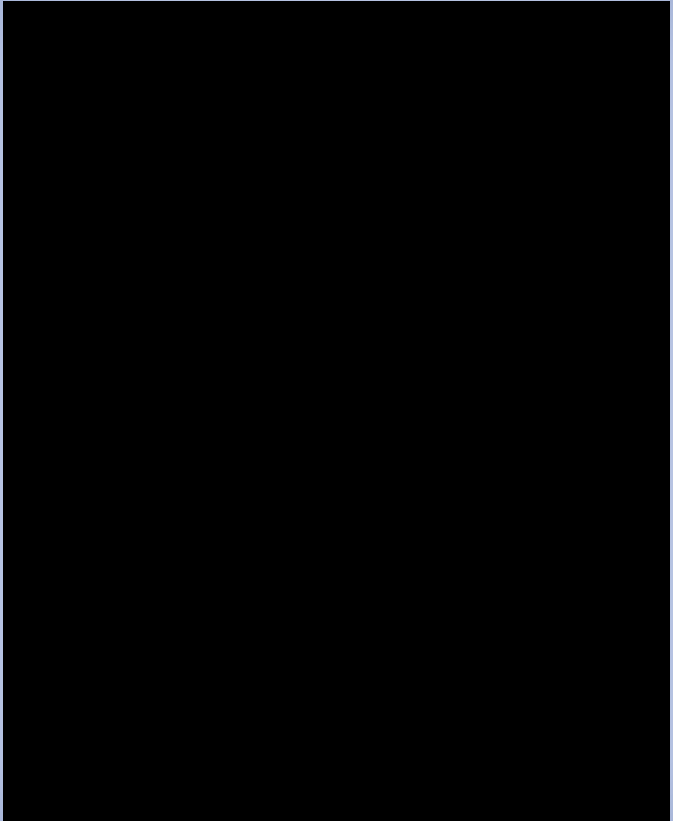
D

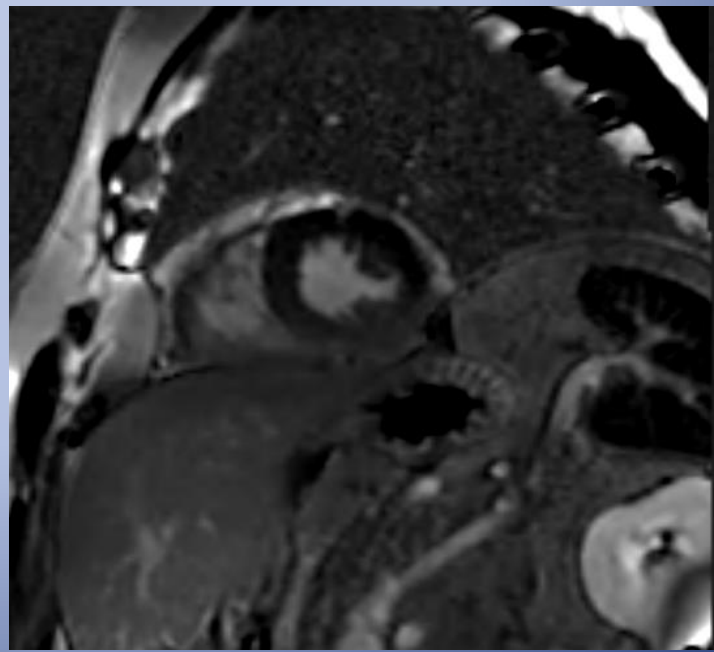
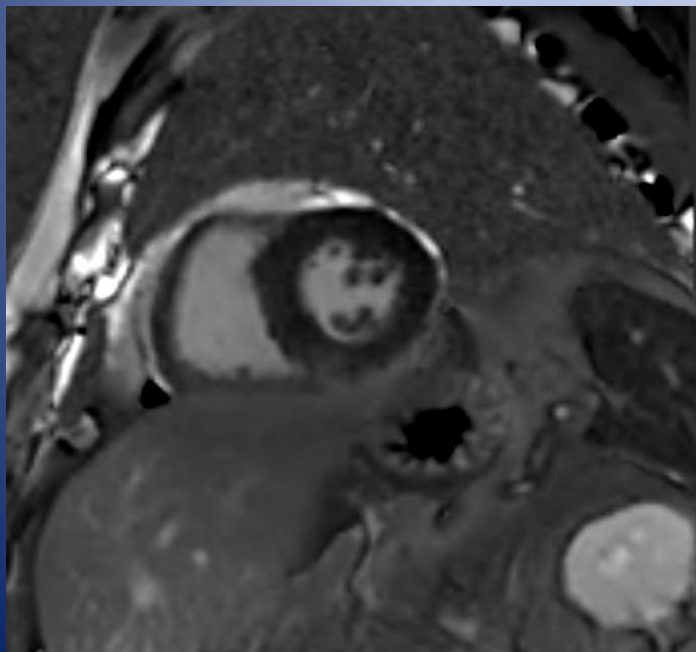
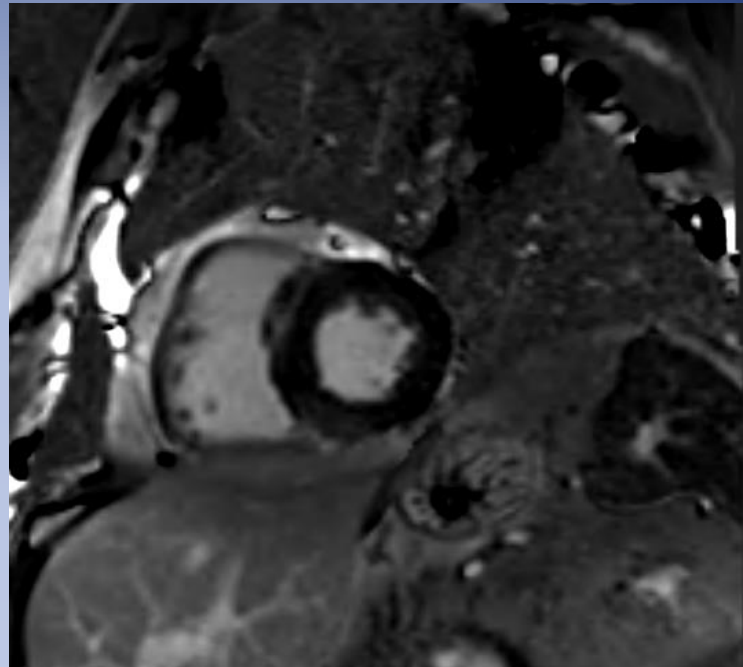
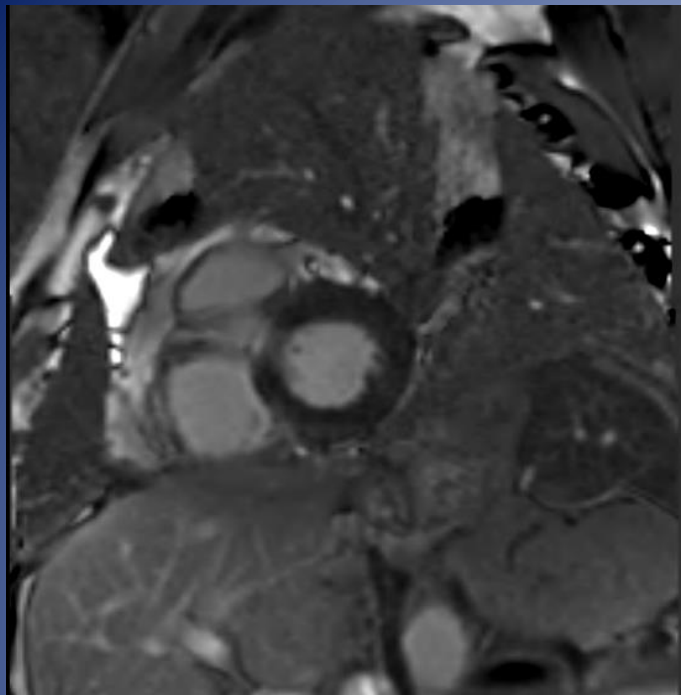
CASE 3

- 63 year old male.
- Cardiovascular and respiratory examination was unremarkable.
- ECG: incomplete RBBB
- 2D echo: LVEF : 65 %,borderline LV hypertrophy.
- k/c/o bronchial asthma / DM X 7 years
- No/TB/ HTN / seizures / relevant surgeries /trauma / addictions
- Neurological examination was unremarkable.









DIFFERENTIAL DIAGNOSIS FOR LEFT VENTRICULAR HYPERTROPHY

PHYSIOLOGICAL	PATHOLOGICAL
ATHLETIC HEART WITH PHYSIOLOGICAL LVH	ESSENTIAL HYPERTENSION
	VALVULAR HEART DISEASES
	COARCTATION OF AORTA
	HYPERTROPHIC CARDIOMYOPATHY WITH OR WITHOUT OUTFLOW TRACT OBSTRUCTION
	INFILTRATIVE CARDIAC PROCESS (E.G. AMYLOIDOSIS, FABRY DISEASE, DANON DISEASE, SARCOIDOSIS).
	RENAL ARTERY STENOSIS

