POCUS Conference 11/26

BY RAJIV BHAGAT

Case Overview:

80 year old man with rheumatic heart disease, benign prostatic hypertrophy and recent diagnosis of a right renal mass

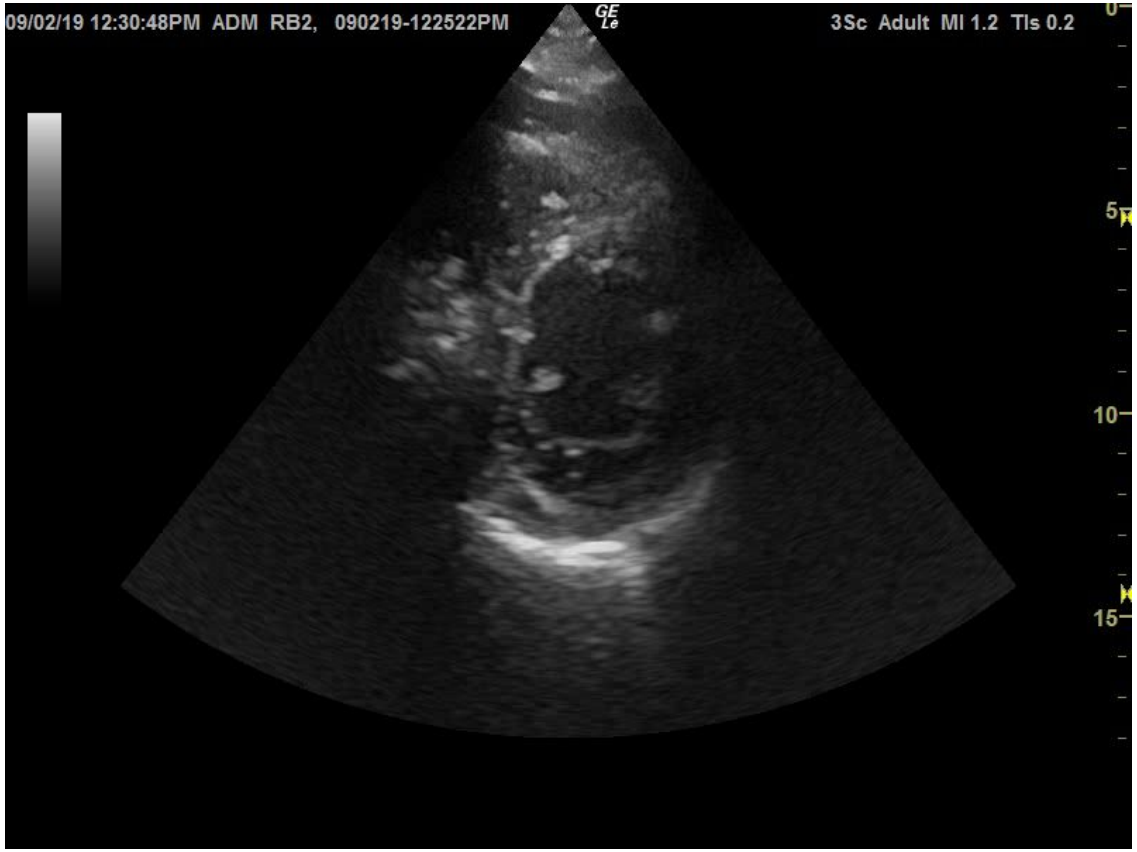
Presents with 1 week of weightloss and malaise

Case Overview:

-CT a/p with contrast done in ED:

-Bedside TTE performed by our team…


09/02/19 12:30:00PM ADM RB2, 090219-122522PM
3Sc Adult MI 1.2 TIs 0.2
0
5
10
15


09/02/19 12:30:48PM ADM RB2, 090219-122522PM
3Sc Adult MI 1.2 TIs 0.2
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09/02/19 12:37:33PM ADM RB2, 090219-122522PM
3Sc Adult MI 1.2 TIs 0.2
0
5
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09/02/19 12:39:17PM ADM RB2, 090219-122522PM
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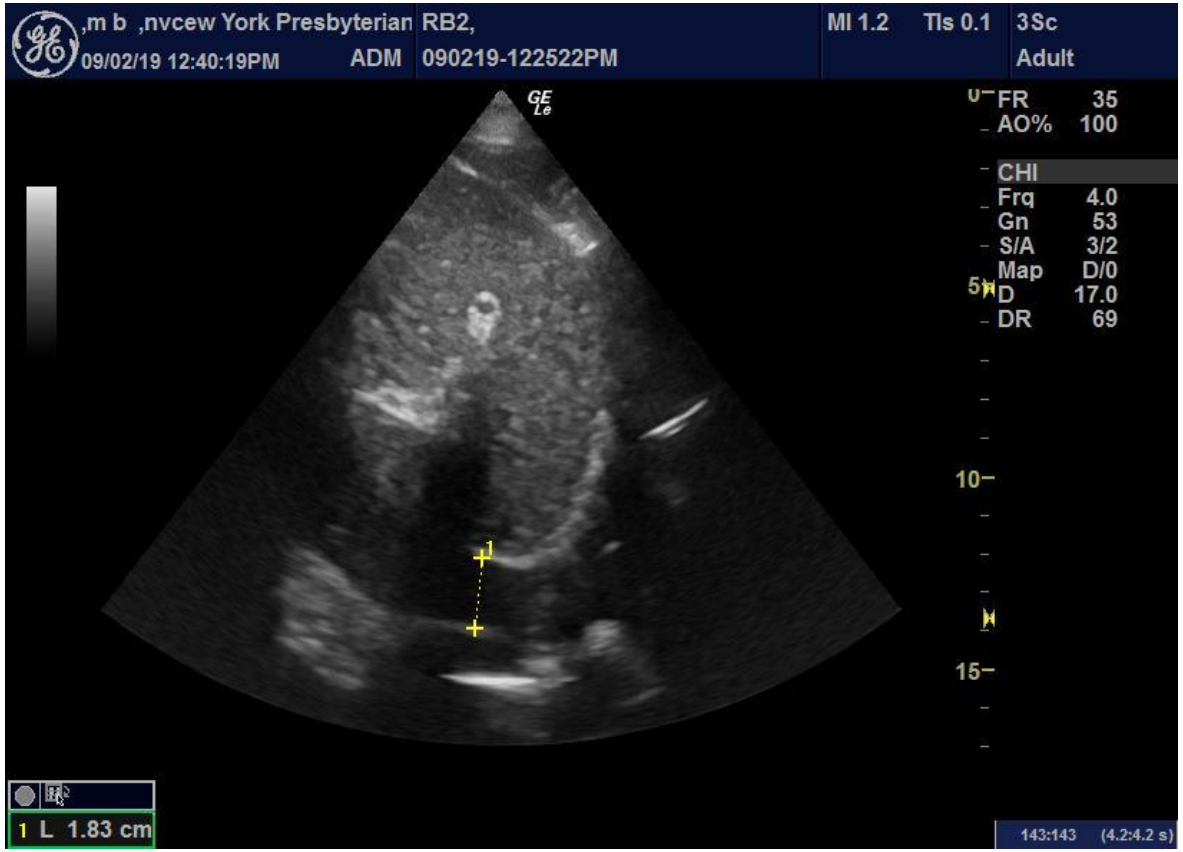

,m b ,nvcew York Presbyterian
09/02/19 12:40:19PM
ADM
RB2,
090219-122522PM
MI 1.2
TIs 0.1
3Sc
Adult
FR 35
AO% 100
CHI
Frq 4.0
Gn 53
S/A 3/2
Map D/0
D 17.0
DR 69
10
15
1 L 1.83 cm
143:143 (4.2:4.2 s)

Differential Diagnosis:

-Tumor- intracardiac (mets vs primary) vs extracardiac

-Thrombus

-Vegetation

-Foreign Objects

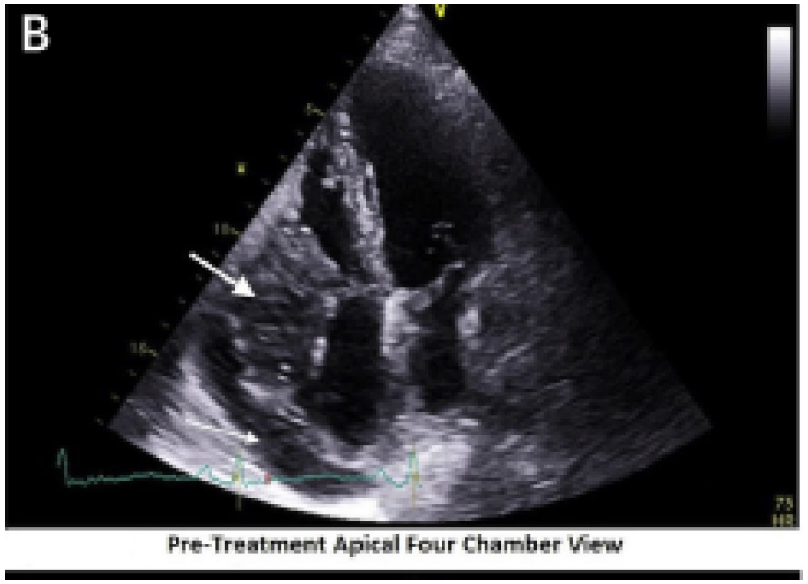
-Anatomic Variants

Intracardiac Tumors: Metastatic disease

-Majority are metastatic

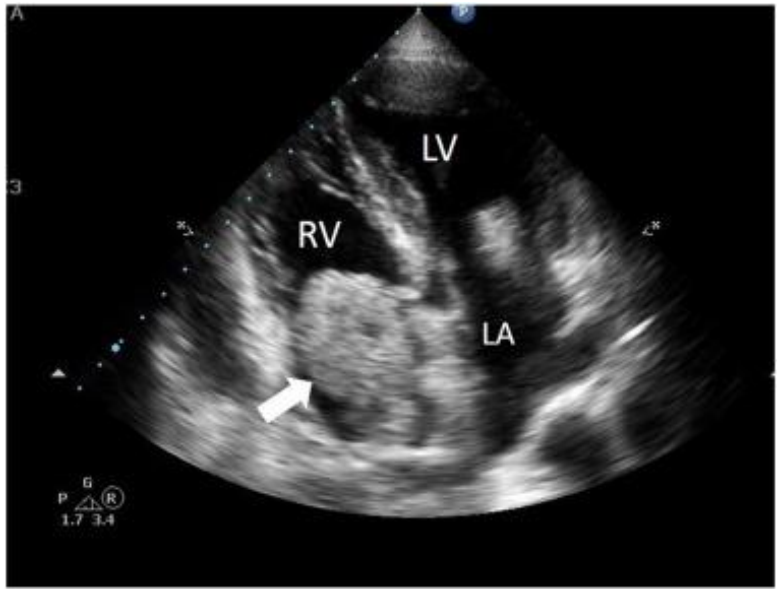
-Which metastatic malignancies?

-Pericardial disease or mass?



Pre-Treatment Apical Four Chamber View

https://casereports.onlinejacc.org/content/jacccr/1/3/332.full.pdf

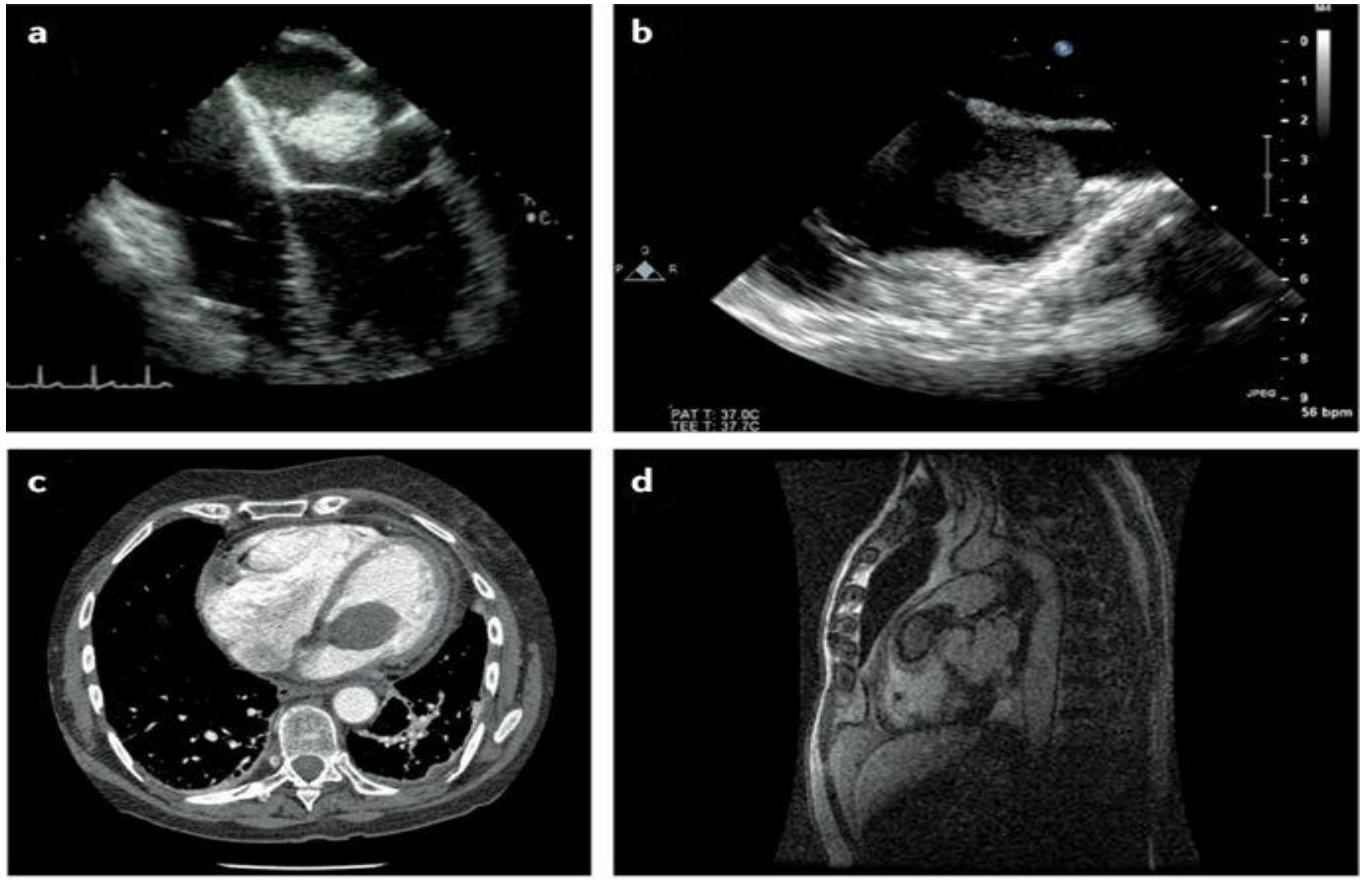


https://www.sciencedirect.com/science/article/pii/S2405818116300320#f0005

Intracardiac Primary Tumors: Benign

-Cardiac Myxoma

-Rhabdomyoma



Nature Reviews | Cardiology

Intracardiac Primary Tumors: Malignant

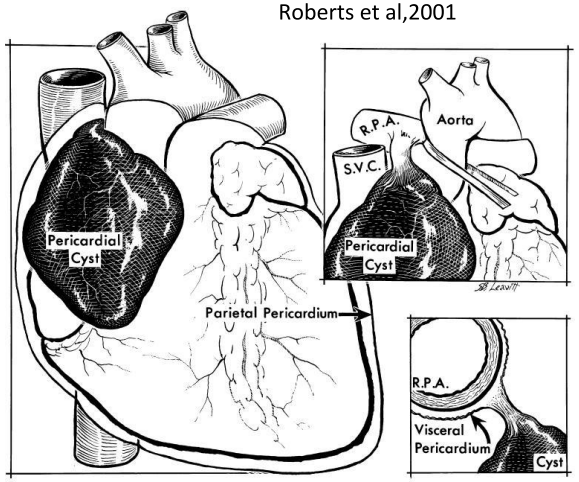
-Angiosarcoma

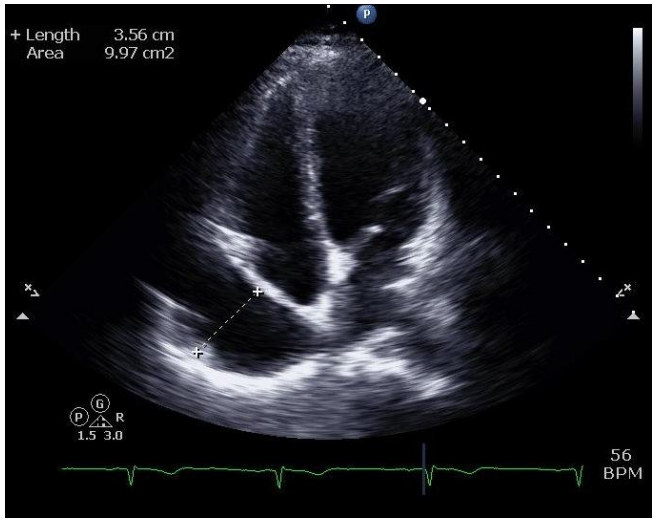
-Undifferentiated sarcoma

Extracardiac Mass

-Pericardial cysts:

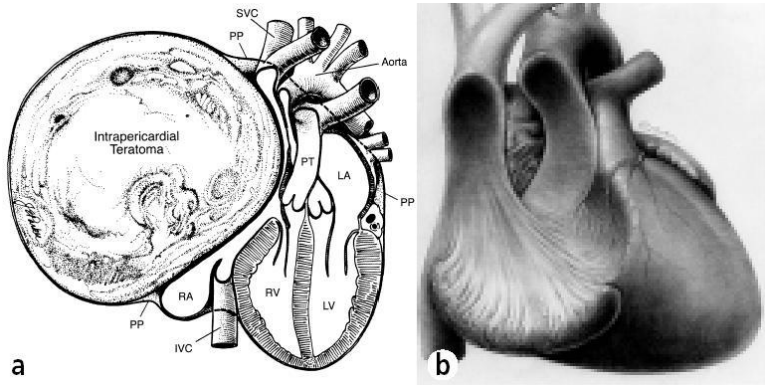
Roberts et al,2001





http://echocardiographer.org/Image%20Library/Pericardial%20Diseases/Pericardial%20Cyst/Pericardial%20Cyst.html

-Teratoma:



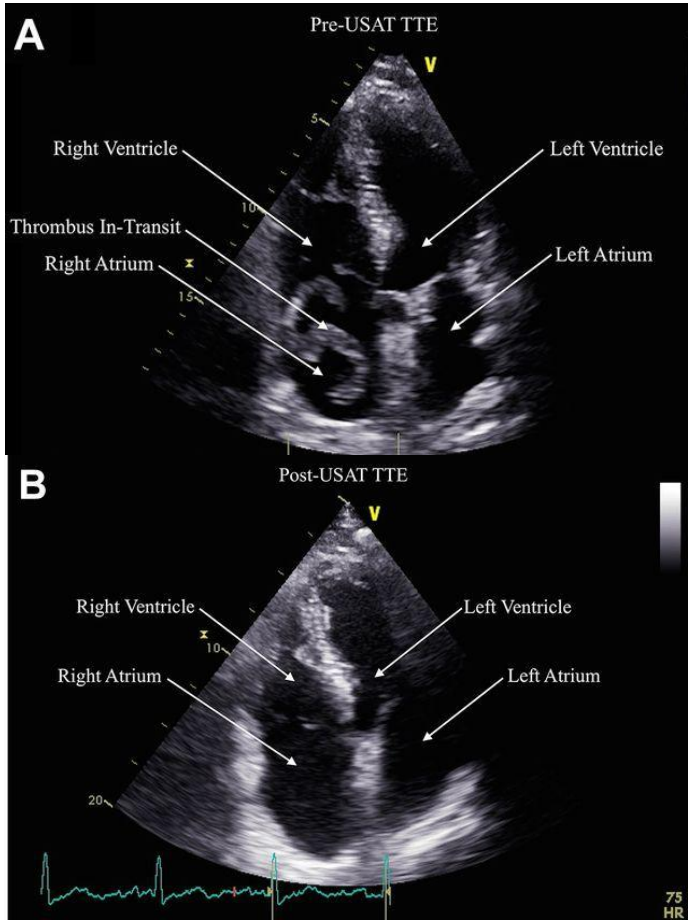
Thrombus:

-Most common intracardiac mass

-Most common in left atrium and left ventricle

-Right heart thrombi etiology?

-Peripheral vs cardiac origin? Kronig et al, 1989



http://interventions.onlinejacc.org/content/10/14/e135

Thrombus vs. Tumor- MRI?

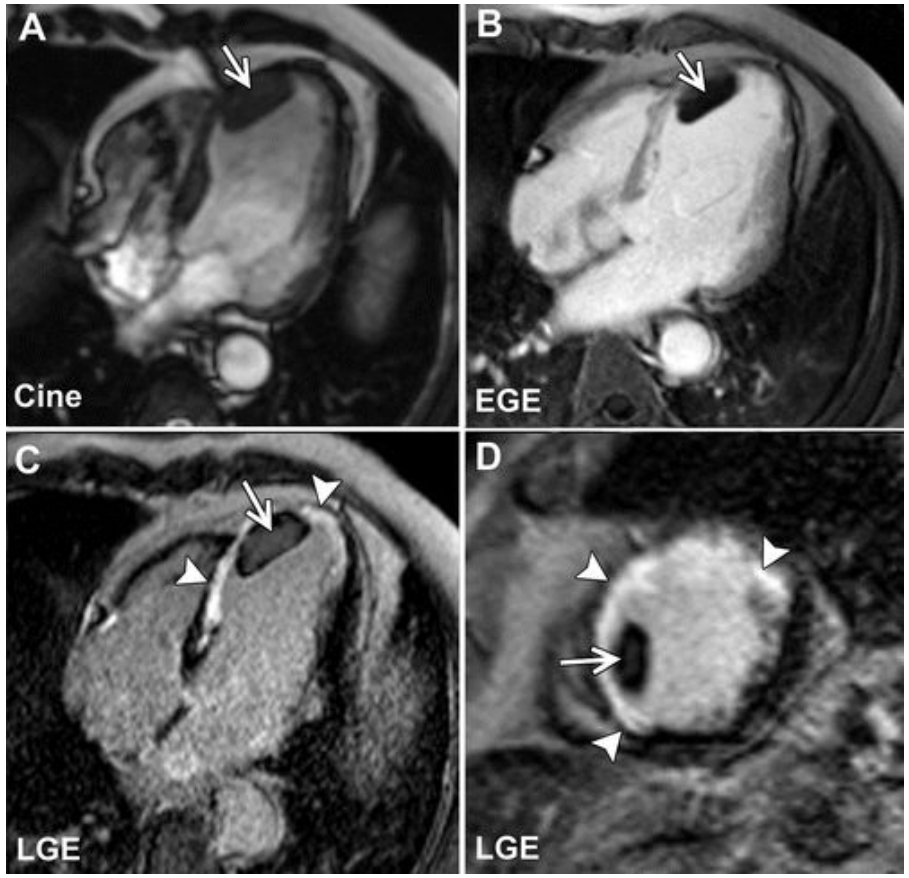
MRI:

-Thrombus features vs Tumor

-Study in IHD patients: +LR/-LR: 88/0.12

-vs TTE (6/0.8) vs TEE (11/.5)

Age of Thrombus	T1-weighted Signal Intensity	T2-weighted Signal Intensity	EGE Imaging	LGE Imaging
Acute	High	High	No uptake	No uptake
Subacute	High	Low	No uptake	No uptake
Chronic	Low	Low	No uptake	No uptake*



Motwani et al, 2013

Thrombus vs. Tumor- Contrast TTE?

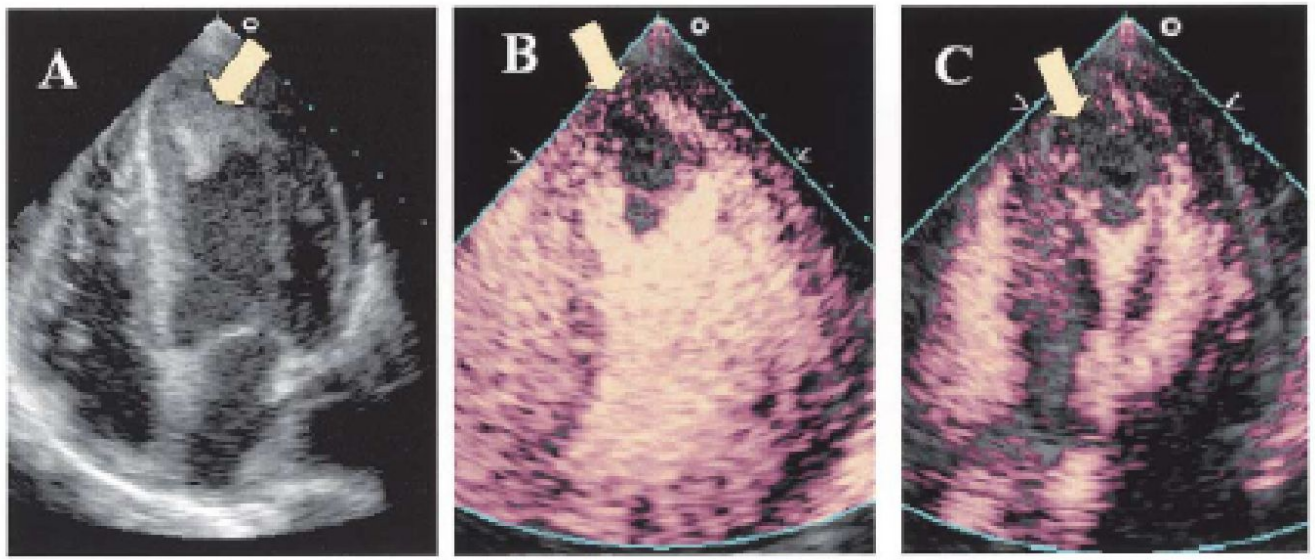
Theory:

-Neovascularization + Vascular Tumor: enhance

-Benign Stromal Tumor (Myxoma):

partial enhance

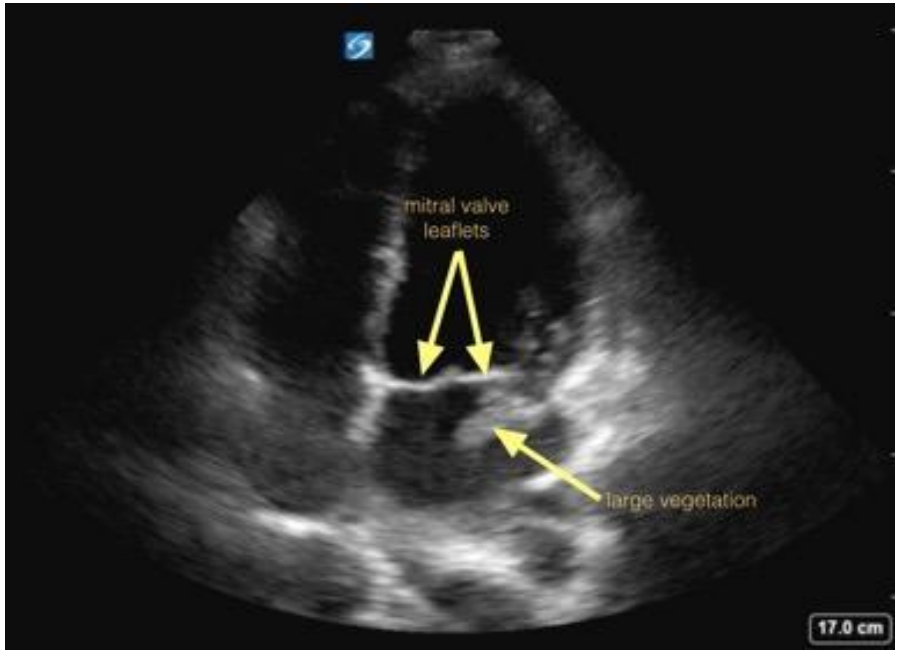
-Thrombus: no enhancement

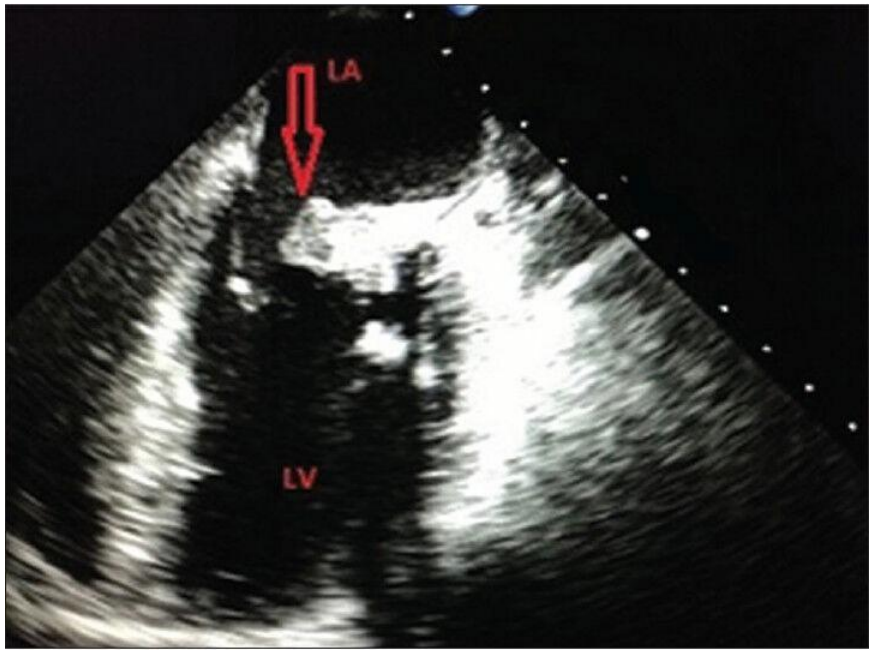


Kirkpatrick et al, 2004

Evidence?

Vegetation:

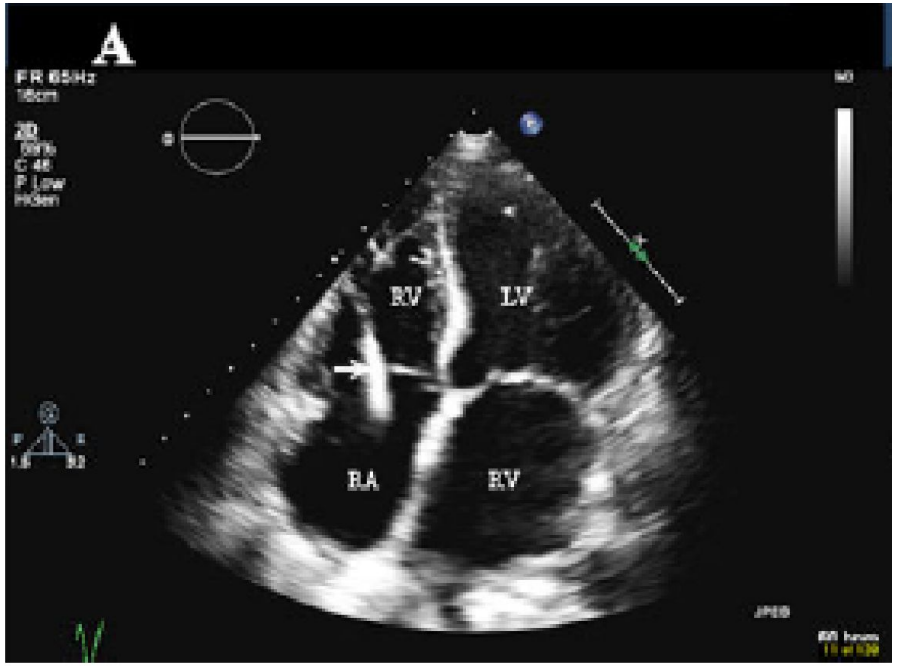




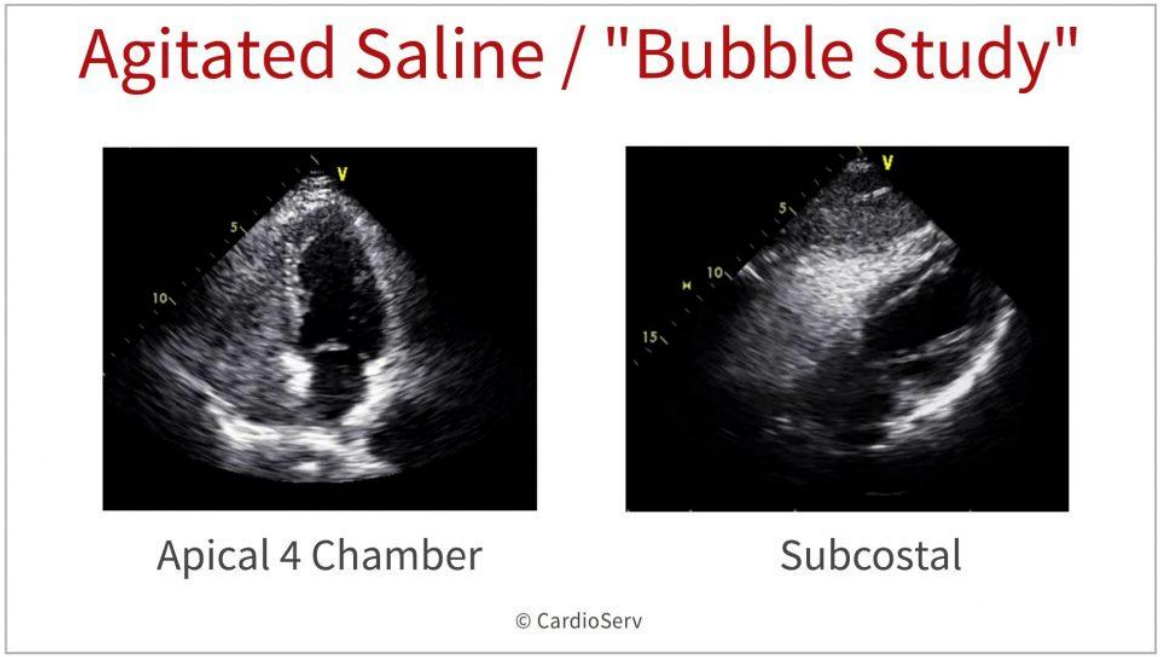
https://www.acep.org/how-we-serve/sections/emergency-ultrasound/news/march-2017/cases-that-count-29-year-old-male-with-fever/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4183899/

Foreign Objects: Intracardiac Devices and Bubbles

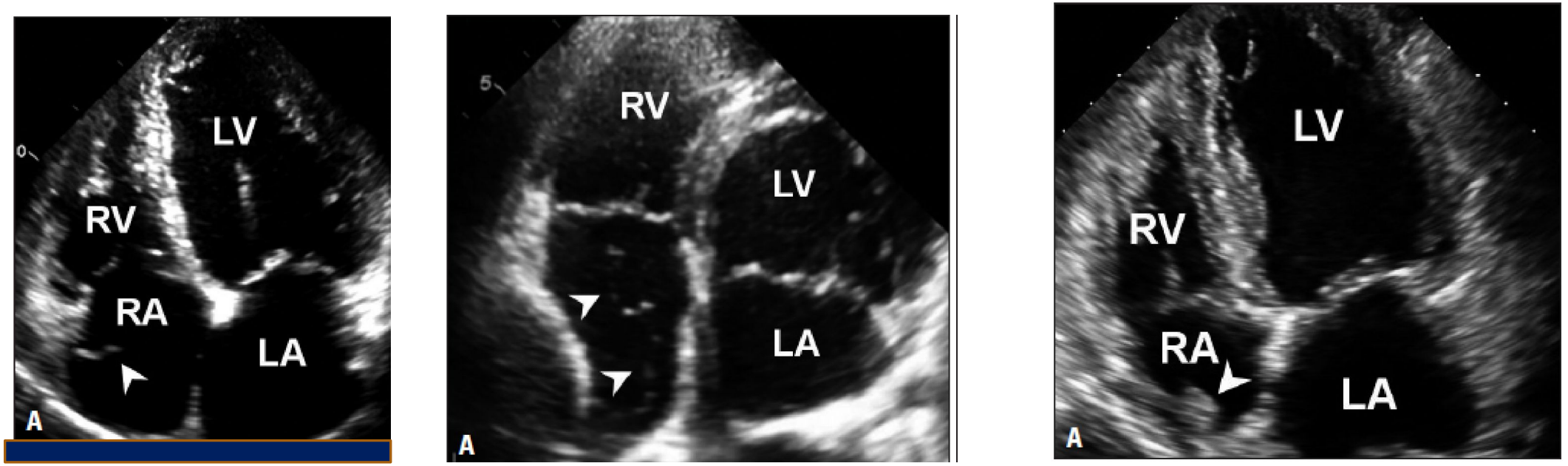


https://onlinelibrary.wiley.com/doi/pdf/10.1111/echo.12483



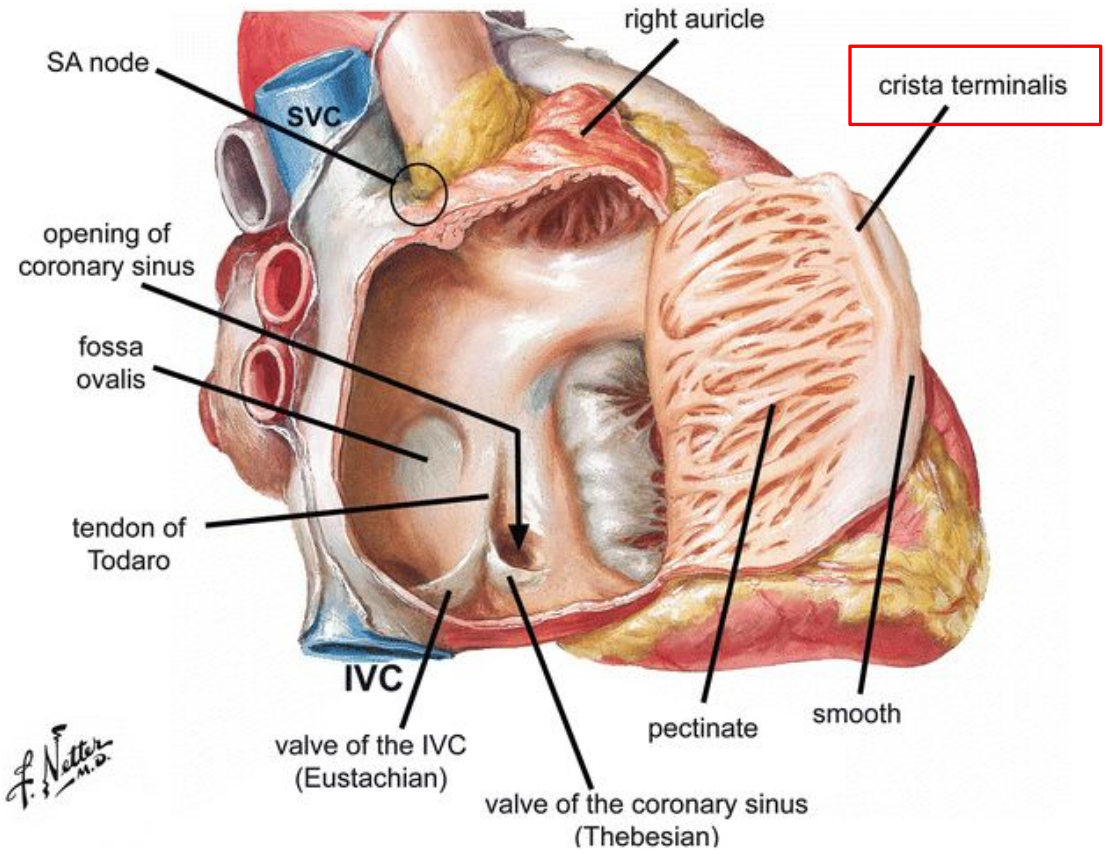
https://www.cardioserv.net/indications-echo-bubble-study/

Atrial Anatomic Variants:

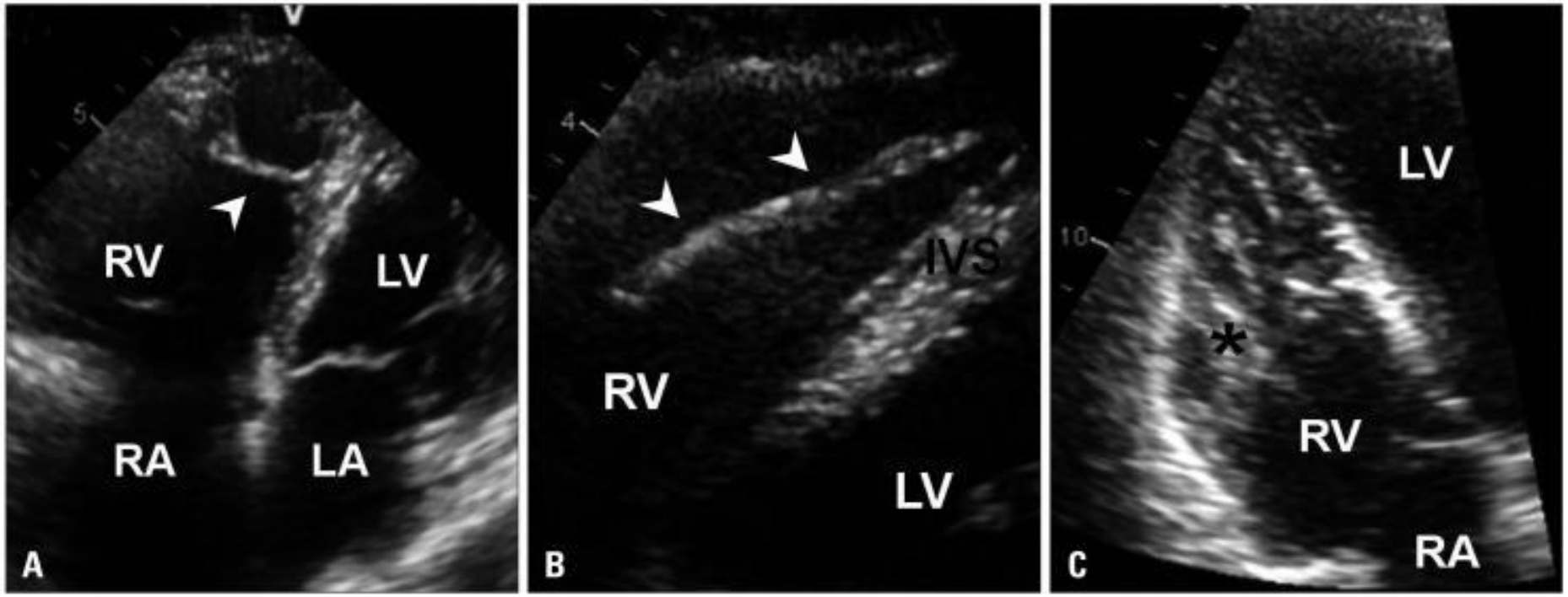


Kim et al, 2013

RA Anatomy:


right auricle
SA node
SVC
crista terminalis
opening of
coronary sinus
fossa
ovalis
tendon of
Todaro
IVC
valve of the IVC
(Eustachian)
pectinate
smooth
valve of the coronary sinus
(Thebesian)

Right Ventricular Anatomic Variants:



Kim et al, 2013

Case Conclusion:

-MRI abdomen with and without contrast performed- more consistent with thrombus without enhancement however original tumor also without enhancement

-Discussion with patient on goals of care with oncology and urology

-Made comfort care, plan to return back to his home country

List of References:

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