

SOUNDWAVES OF SURVIVAL ECHO IN THE PERI-ARREST PATIENT



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1

No disclosures

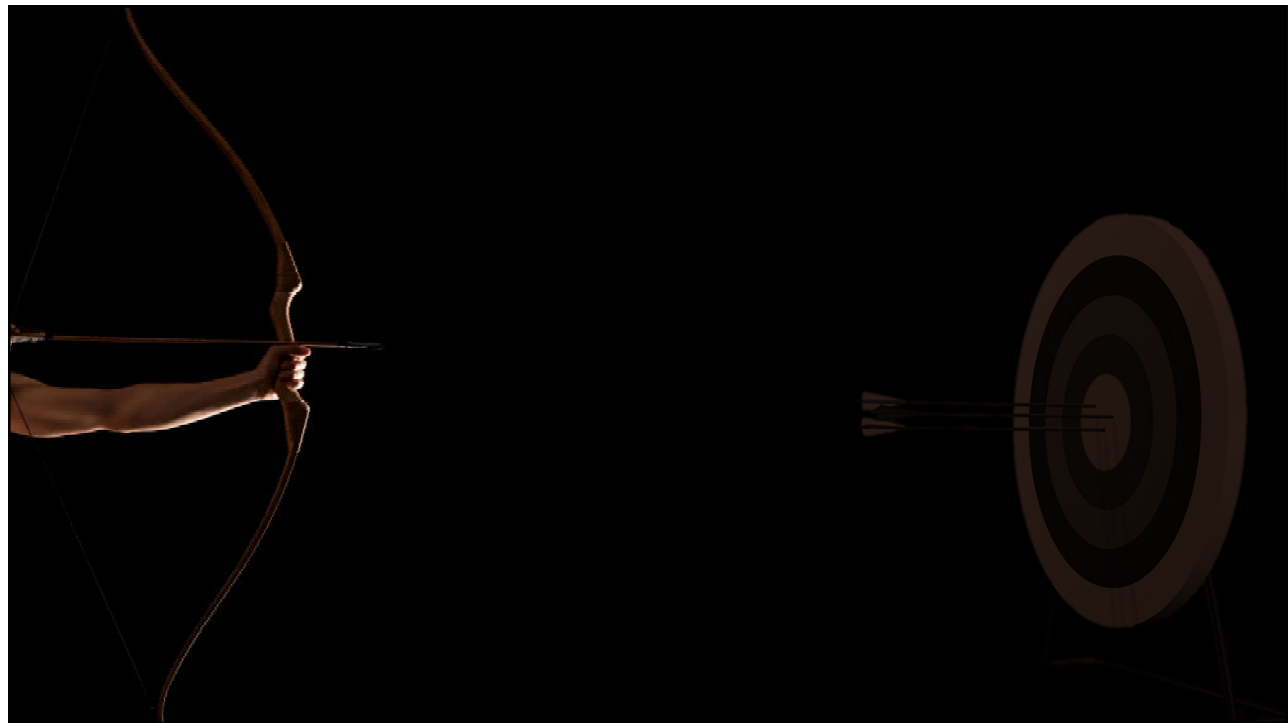
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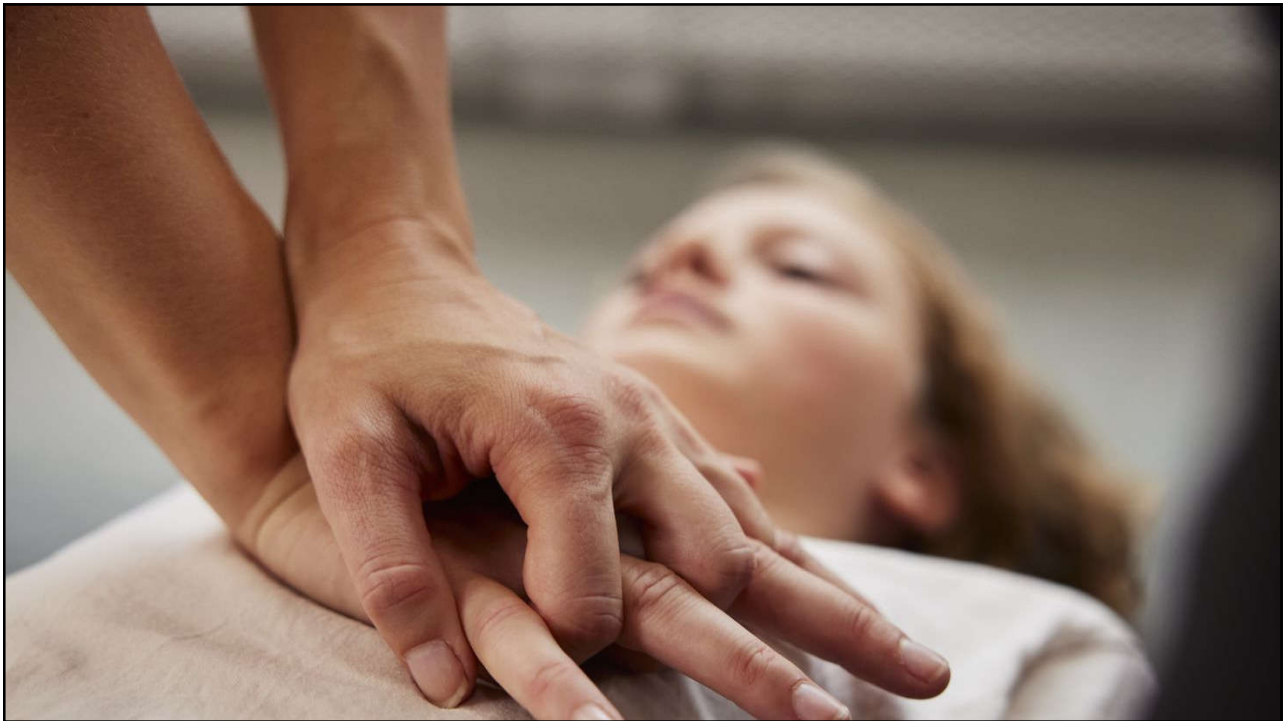
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- Pseudo PEA. Rx w small epi, no CPR
- Tamponade , only one you don't call till after you remove fluid
- PE – TPA, thrombectomy
- V fib- instead of epi too much, shock

6



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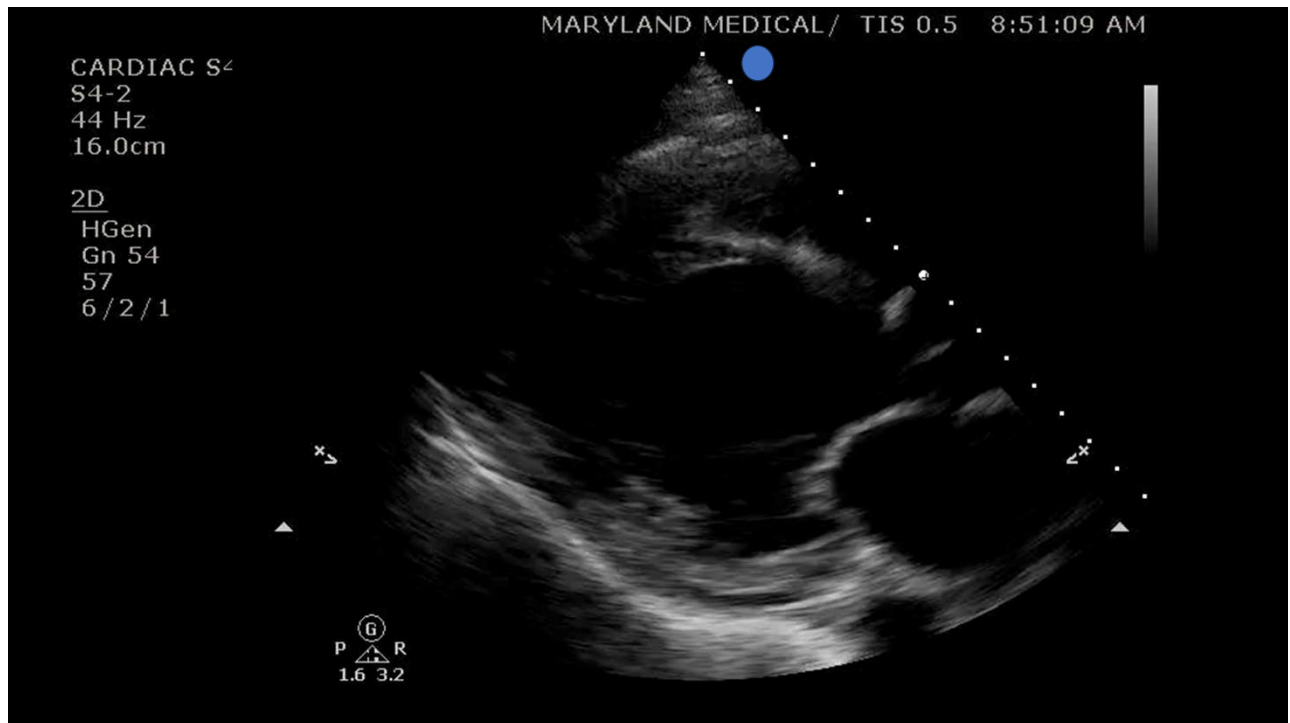
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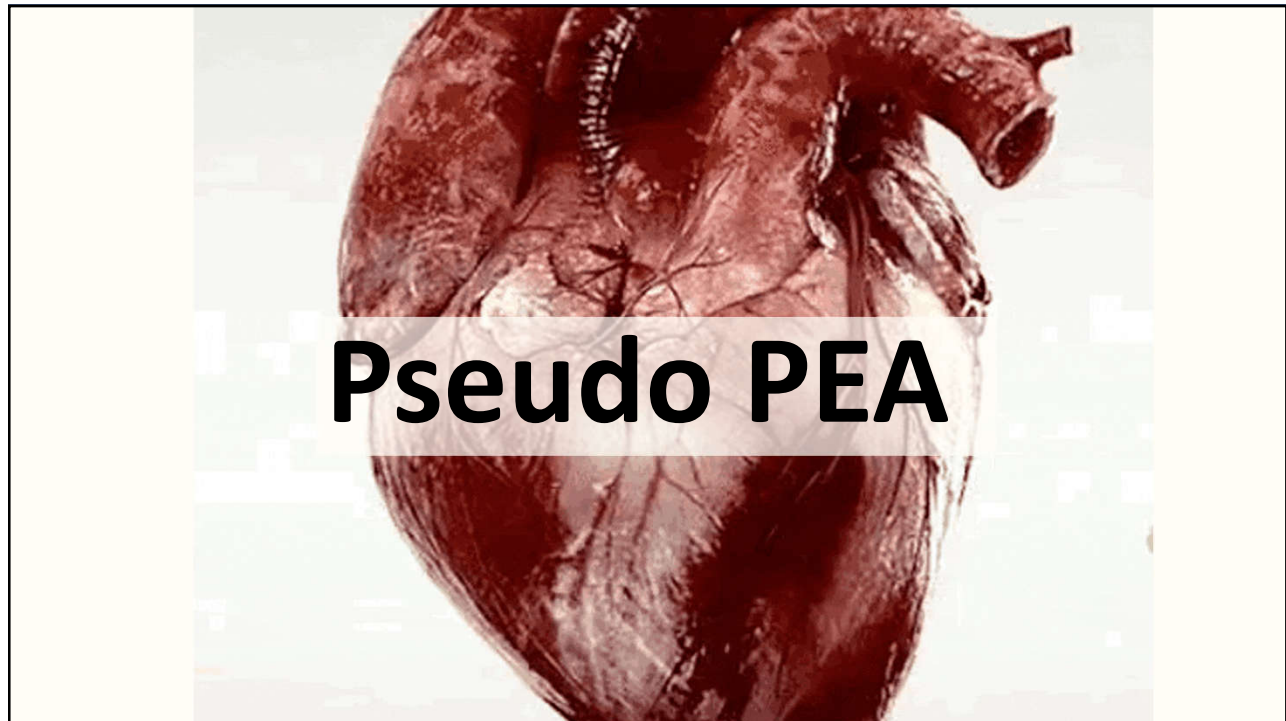
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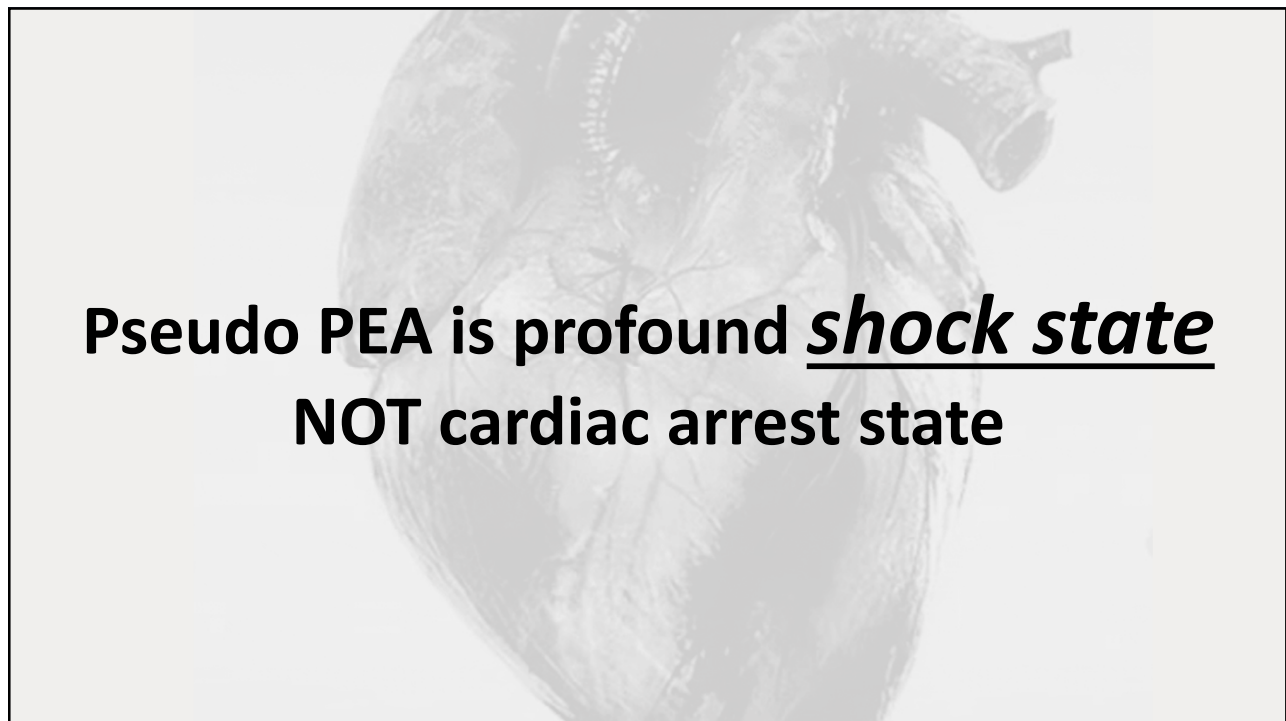
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Resuscitation

Volume 173, April 2022, Pages 156-165



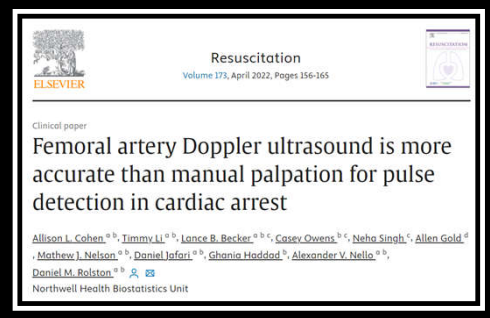
Clinical paper

Femoral artery Doppler ultrasound is more accurate than manual palpation for pulse detection in cardiac arrest

[Allison L. Cohen](#)^{a,b}, [Timmy Li](#)^{a,b}, [Lance B. Becker](#)^{a,b,c}, [Casey Owens](#)^{b,c}, [Neha Singh](#)^c, [Allen Gold](#)^d,
[Mathew J. Nelson](#)^{a,b}, [Daniel Jafari](#)^{a,b}, [Ghania Haddad](#)^b, [Alexander V. Nello](#)^{a,b},
[Daniel M. Rolston](#)^{a,b}  

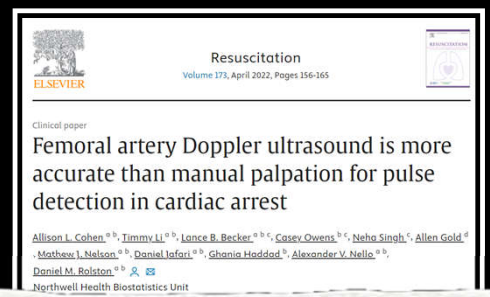
Northwell Health Biostatistics Unit

16



	Sens	Spec	Accuracy
Manual	40	91	54
Doppler	94	98	95

17



“Femoral doppler US has greater accuracy at assessment of any pulse in cardiac arrest”

18



Resuscitation
Volume 37, Issue 3, June 1998, Pages 173-175

Competence of health professionals to check the carotid pulse

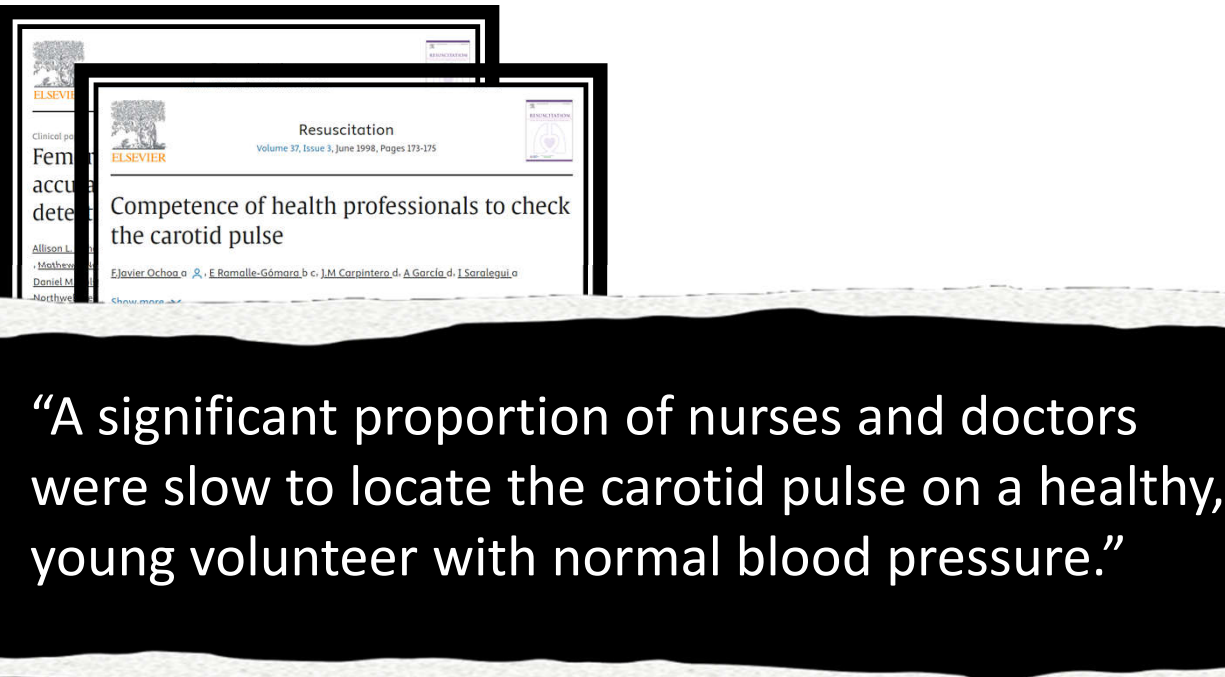
E.Javier Ochoa ^a, E. Ramalle-Gómara ^{b c}, J.M Carpintero ^d, A García ^d, I Saralegui ^a

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[https://doi.org/10.1016/S0300-9572\(98\)00055-0](https://doi.org/10.1016/S0300-9572(98)00055-0) [Get rights and content !\[\]\(59a6d1a83fdb24579739802677391c72_img.jpg\)](#)


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Resuscitation
Volume 37, Issue 3, June 1998, Pages 173-175

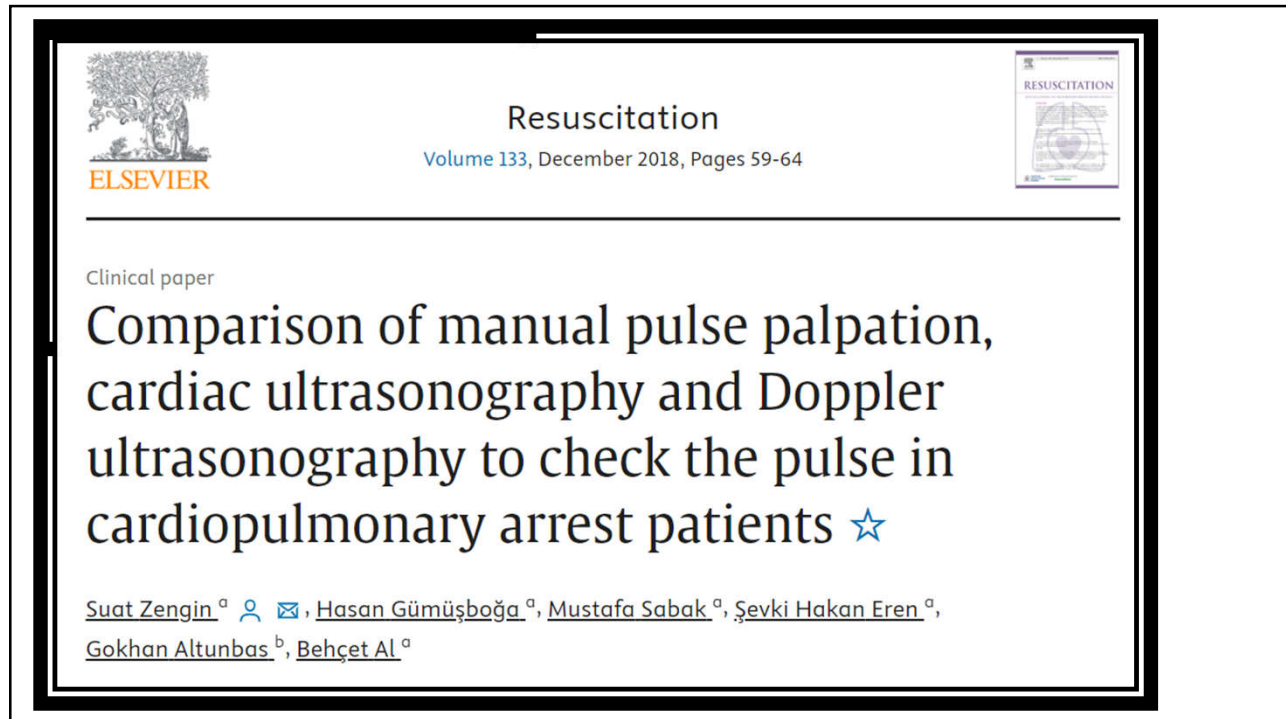
Competence of health professionals to check the carotid pulse

E.Javier Ochoa ^a, E. Ramalle-Gómara ^{b c}, J.M Carpintero ^d, A García ^d, I Saralegui ^a

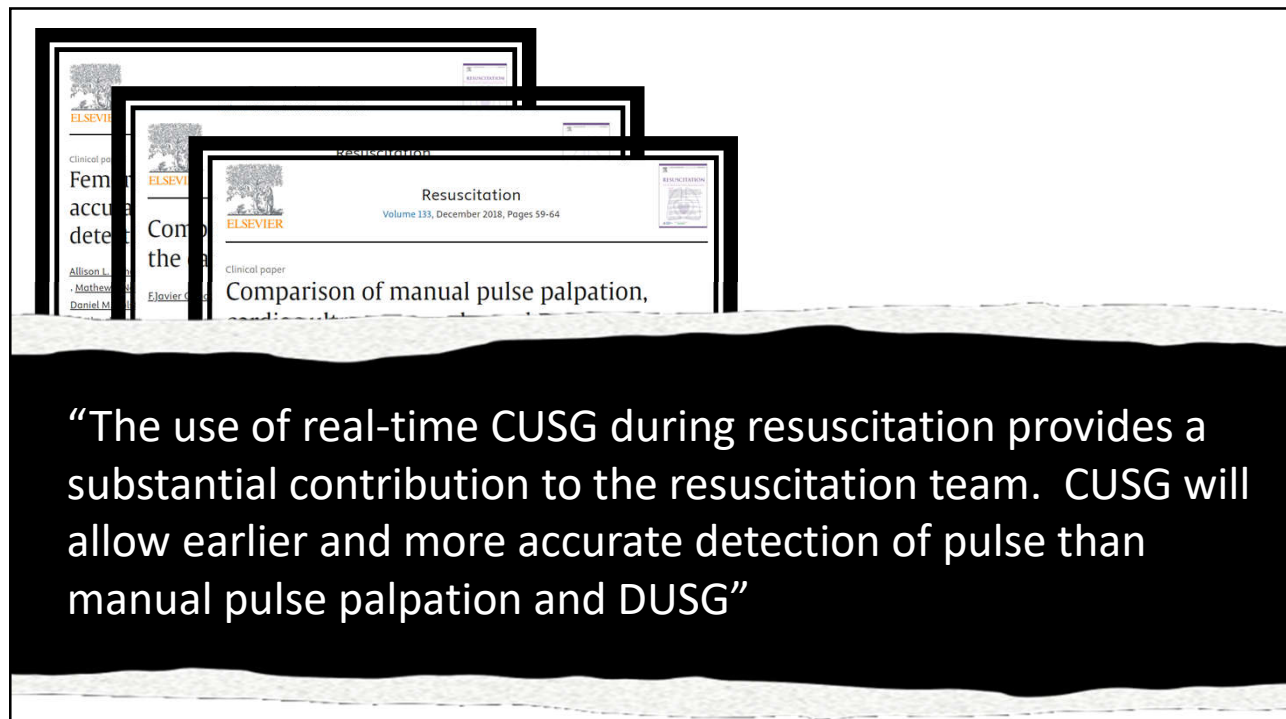
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“A significant proportion of nurses and doctors were slow to locate the carotid pulse on a healthy, young volunteer with normal blood pressure.”

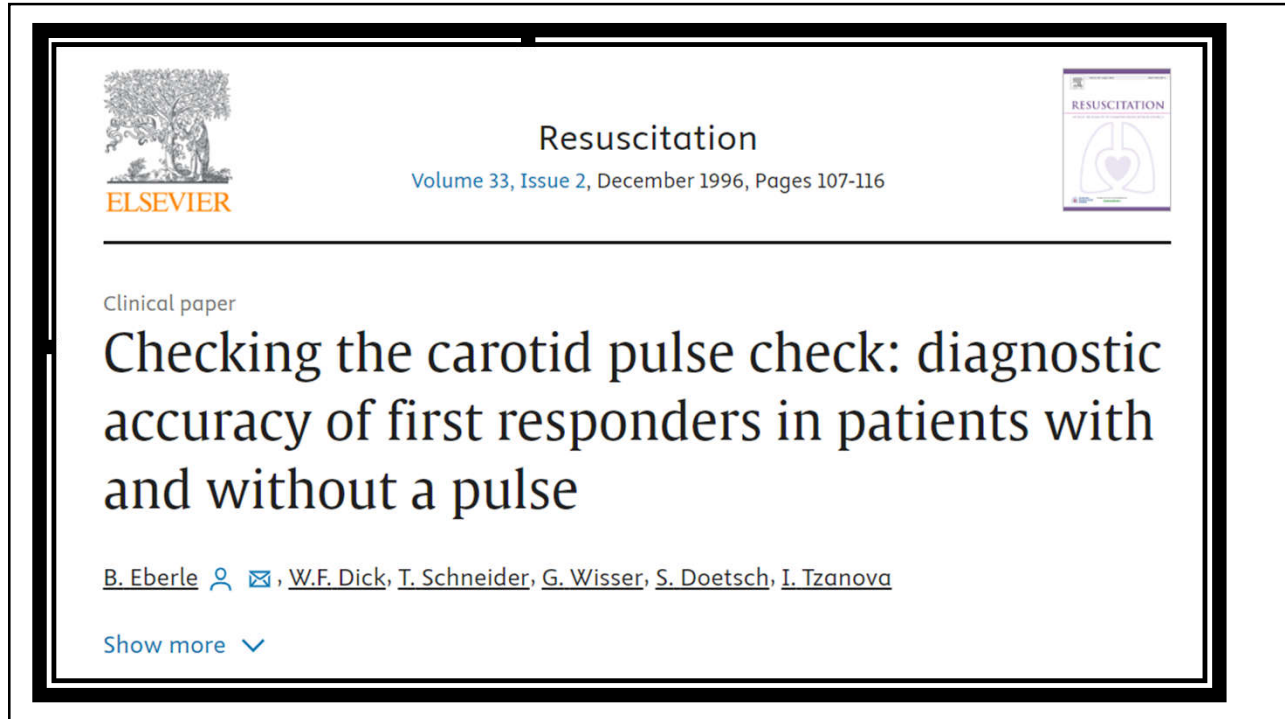
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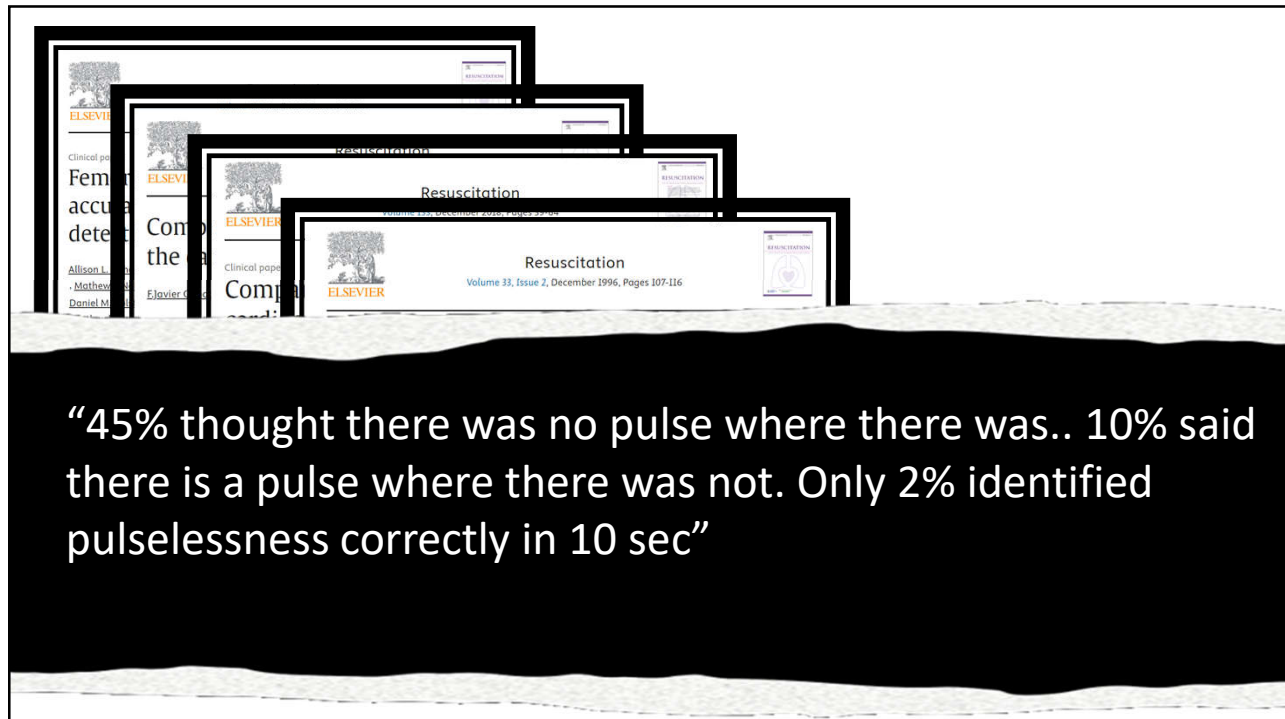
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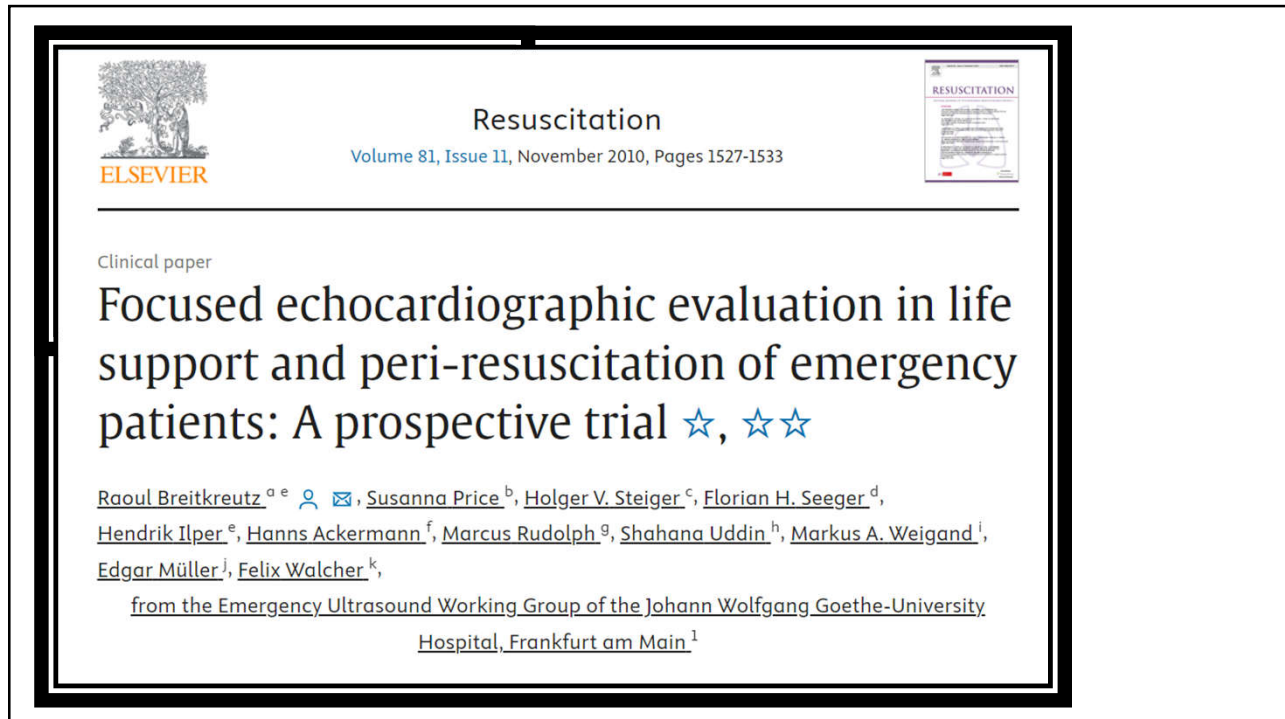
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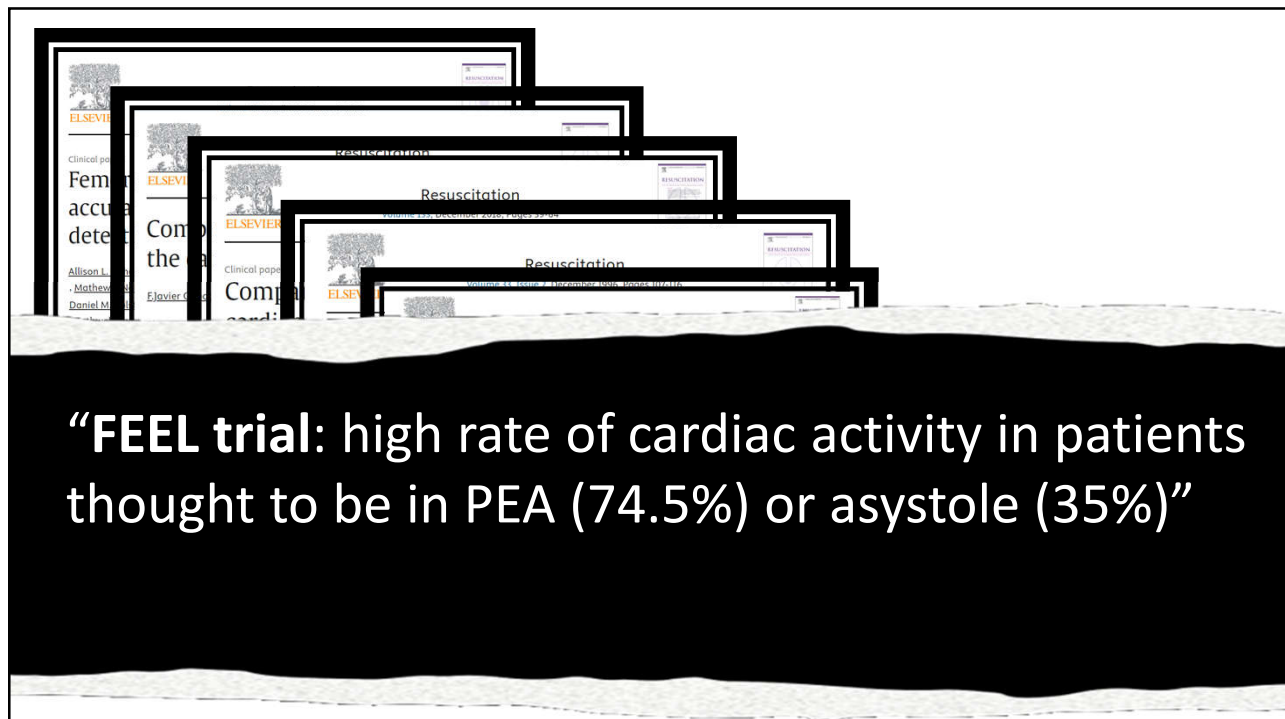
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26

Resuscitation
Volume 109, December 2016, Pages 33-39

Clinical paper

Emergency department point-of-care ultrasound in out-of-hospital and in-ED cardiac arrest ☆

Romolo Gaspari^a, Anthony Weekes^b, Srikar Adhikari^c, Vicki E. Noble^d, Jason T. Nomura^e, Daniel Theodoro^f, Michael Woo^g, Paul Atkinson^h, David Blehar^a, Samuel M. Brownⁱ, Terrell Caffery^j, Emily Douglass^d, Jacqueline Fraser^h, Christine Haines^k, Samuel Lam^l, Michael Lanspaⁱ, Margaret Lewis^b, Otto Liebmann^m, Alexander Limkakengⁿ, Fernando Lopezⁿ, Christopher Raio^k

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“Reason trial: 54% of PEA pt had cardiac activity on initial US...Cardiac activity on ultrasound was the variable most associated with survival following cardiac arrest

29

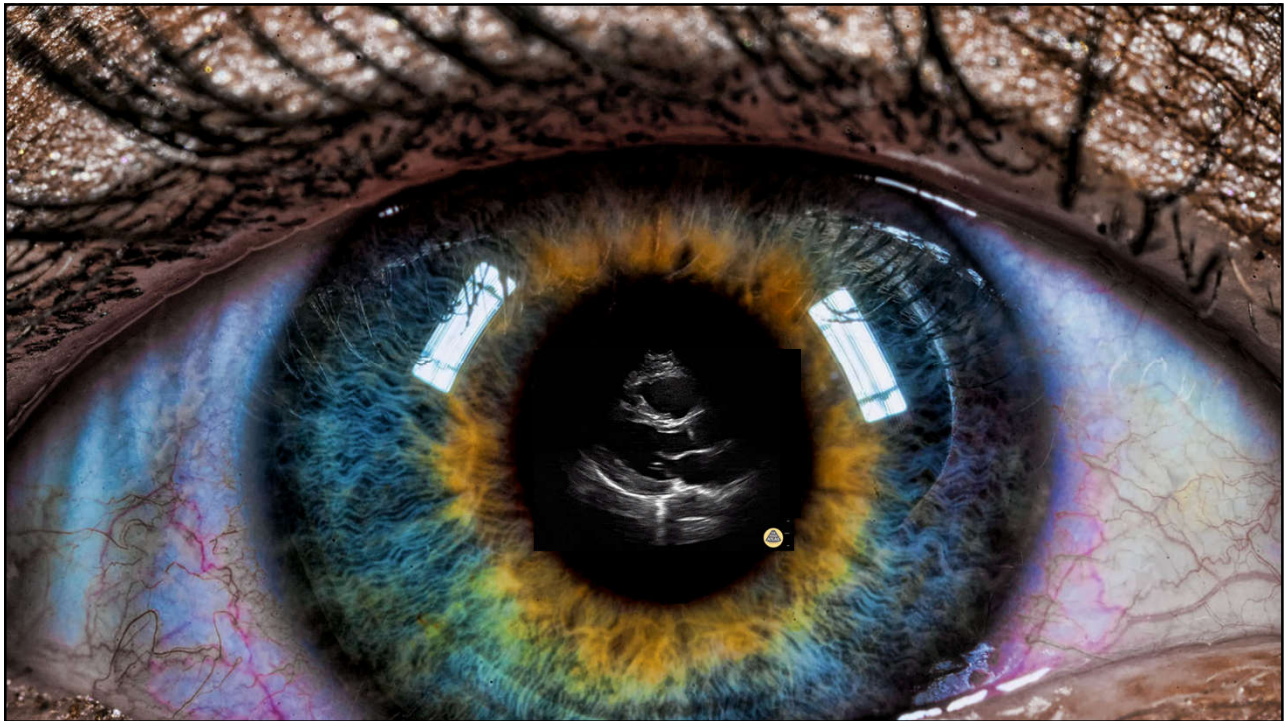
“we SUCK at palpating for a pulse...”

Romola Gäsöhr ¹, Daniel Theodoro ¹, Michael Woo ², Paul Atkinson ³, David Blehar ⁴, Samuel M. Brown ¹, Terrell Coffey ¹, Emily Douglass ⁵, Jacqueline Fraser ⁶, Christine Haines ⁷, Samuel Lam ¹, Michael Lanspa ¹, Margaret Lewis ⁸, Otto Liebmann ⁹, Alexander Limkokeng ¹⁰, Fernando Lopez ¹¹, Christopher Raio ¹

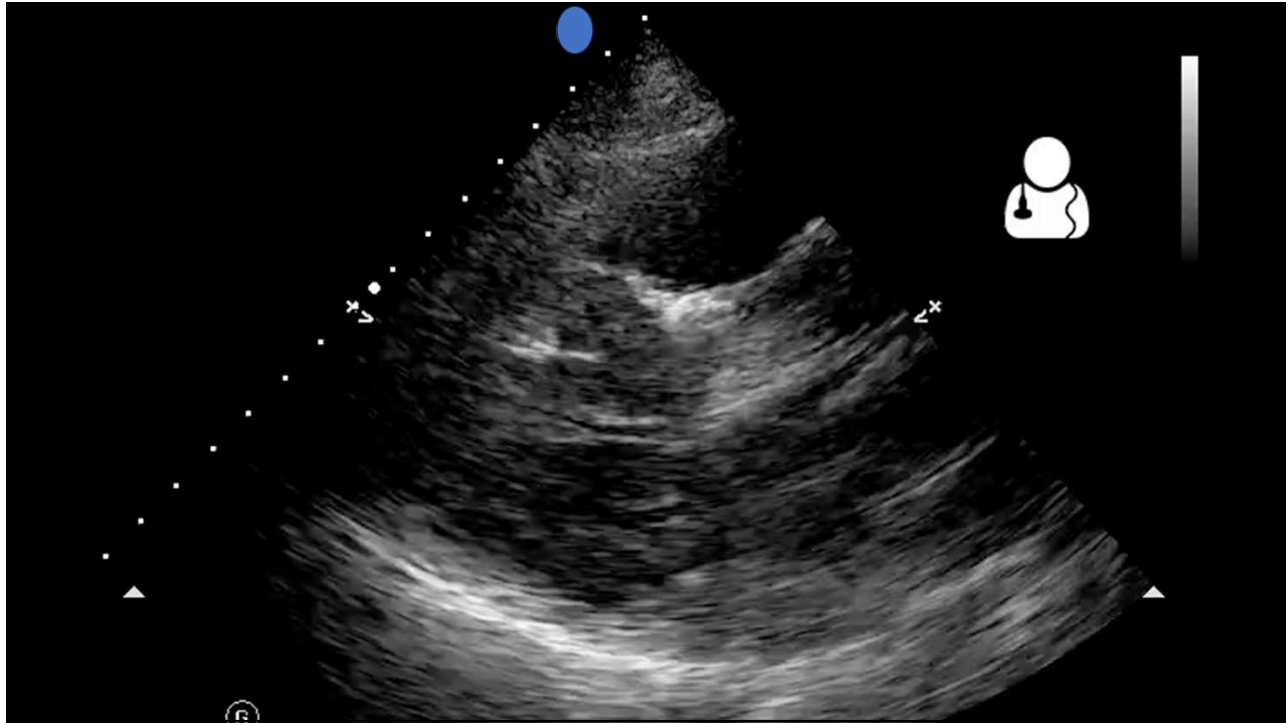
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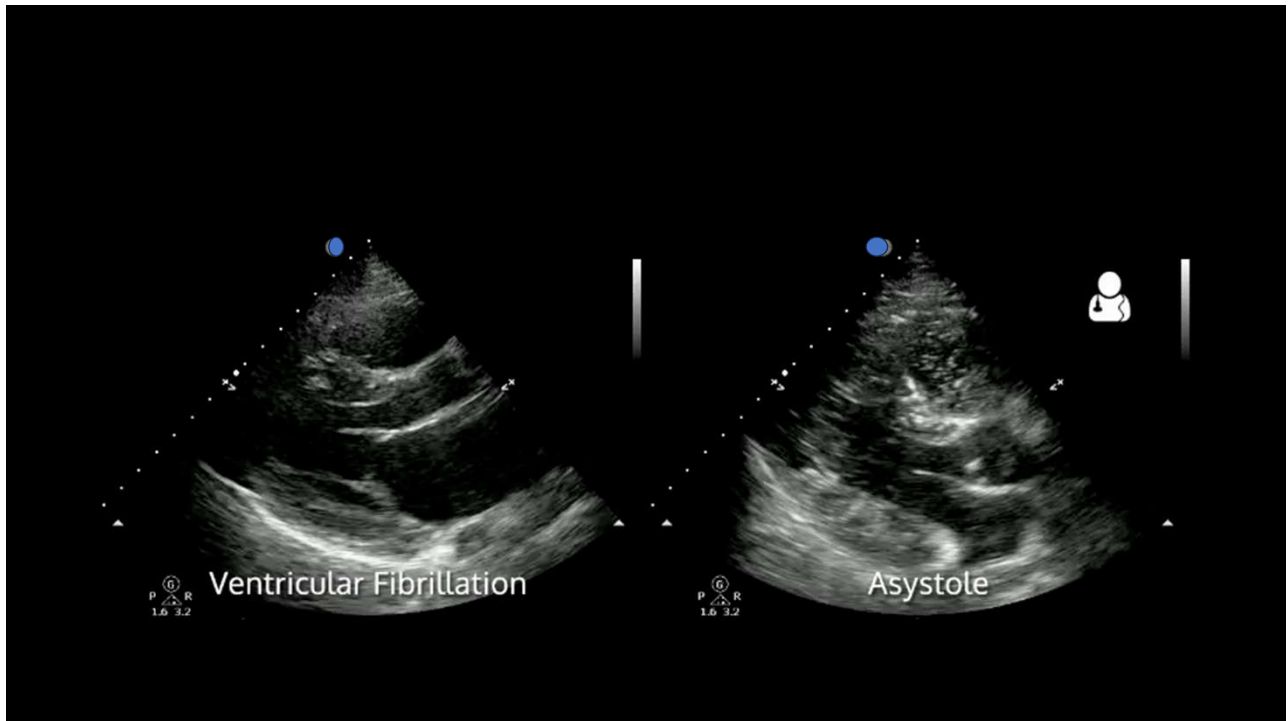
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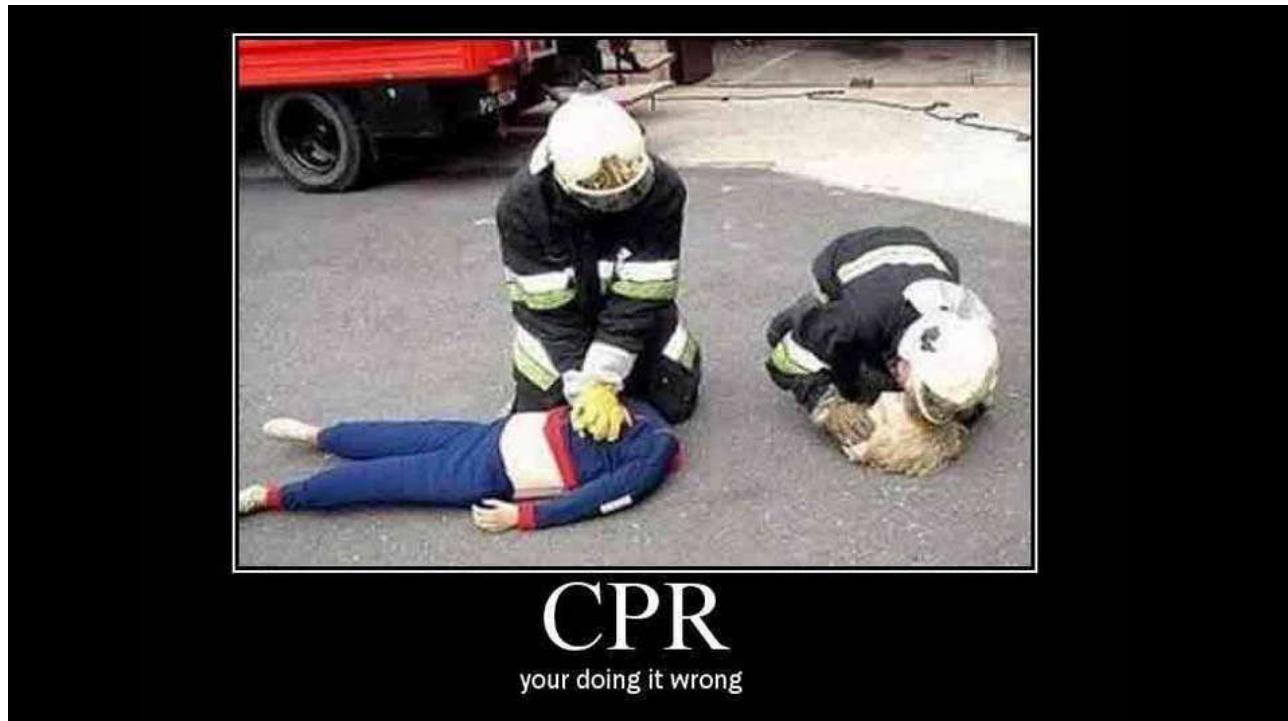


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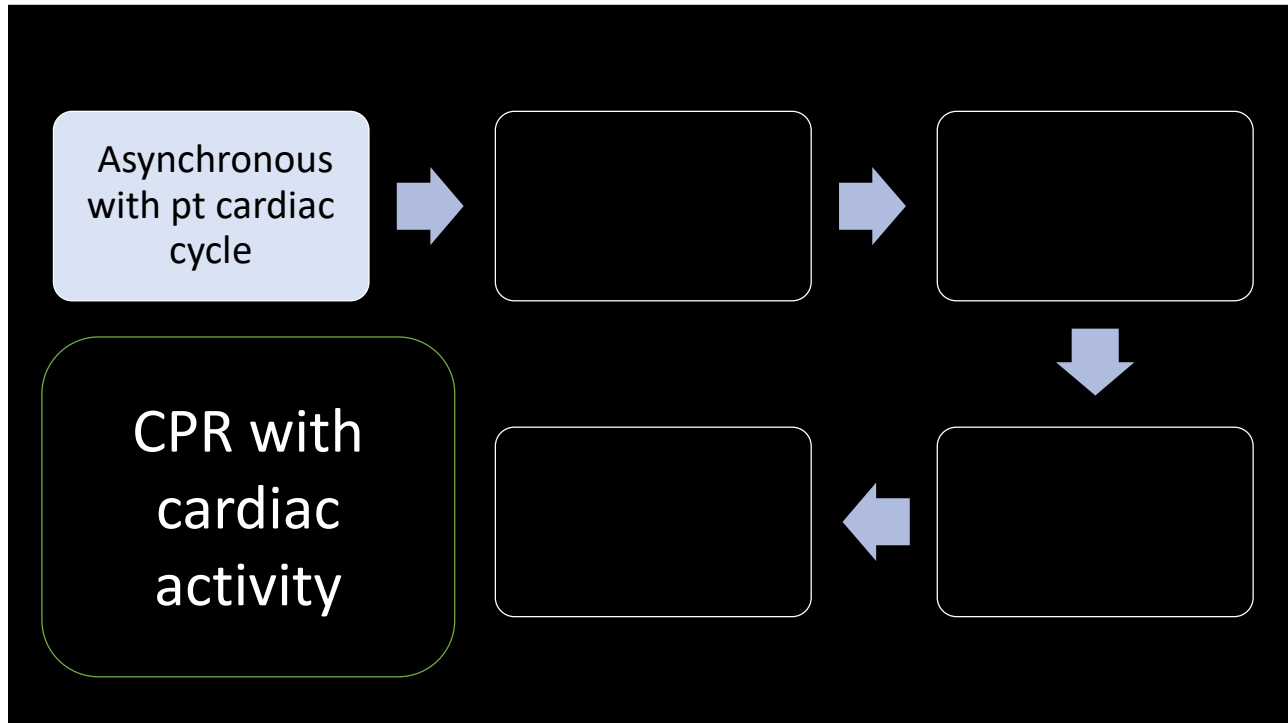
Forget
the
Fingers

35

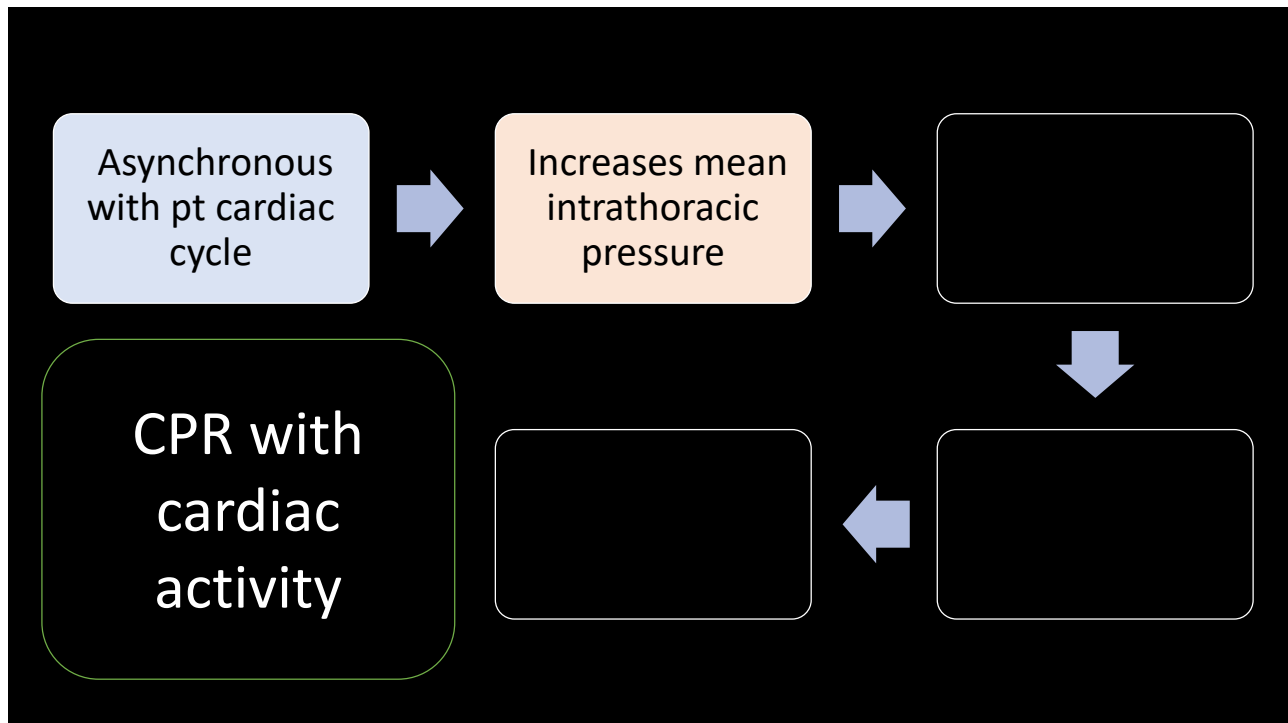


CPR
your doing it wrong

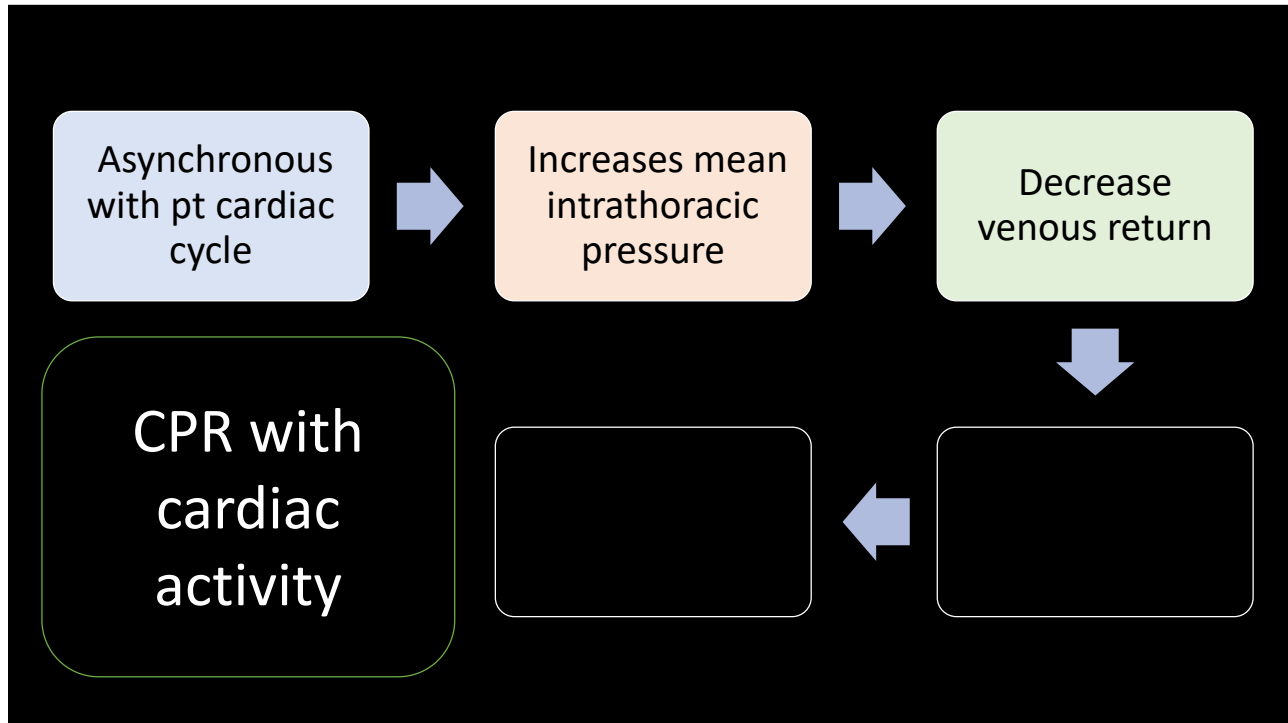
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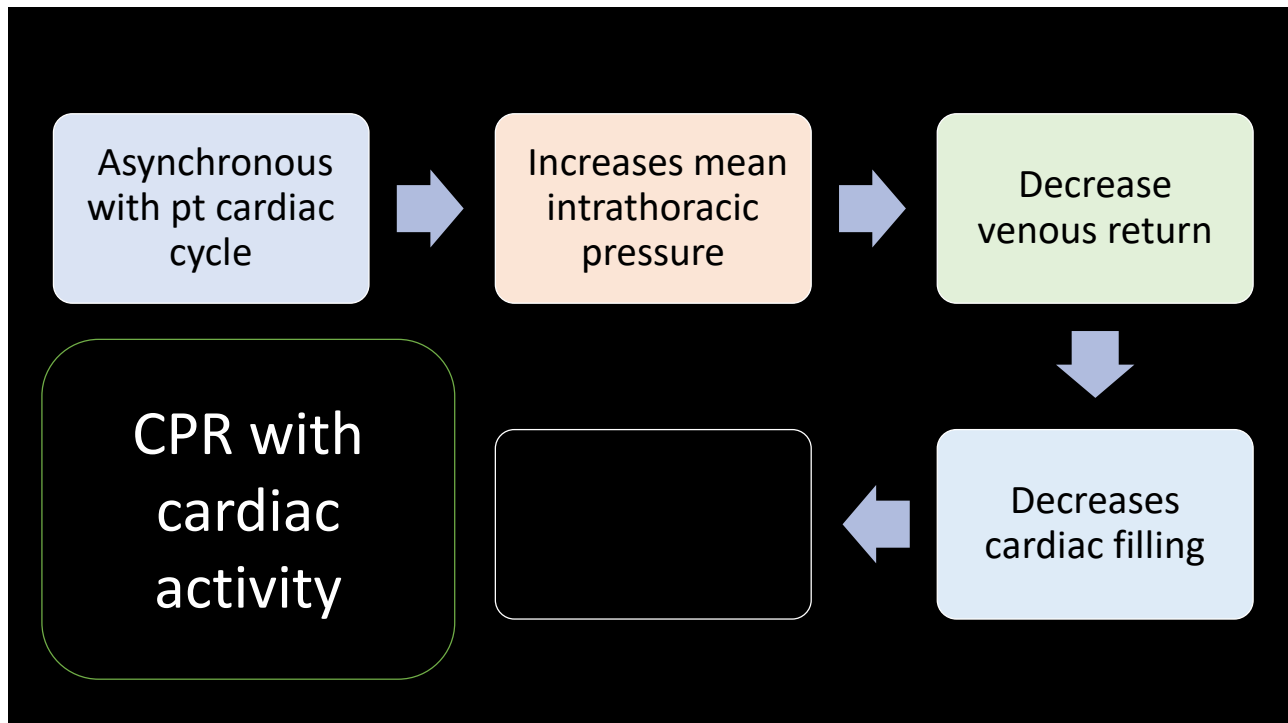
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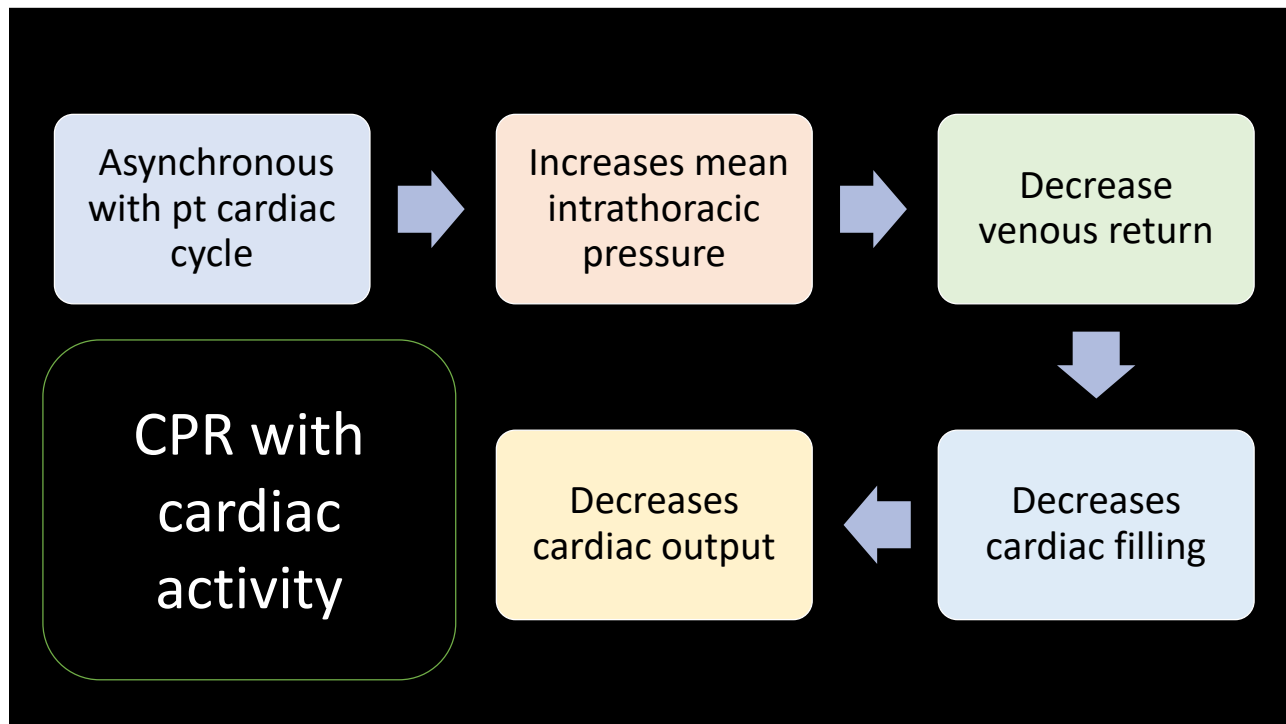
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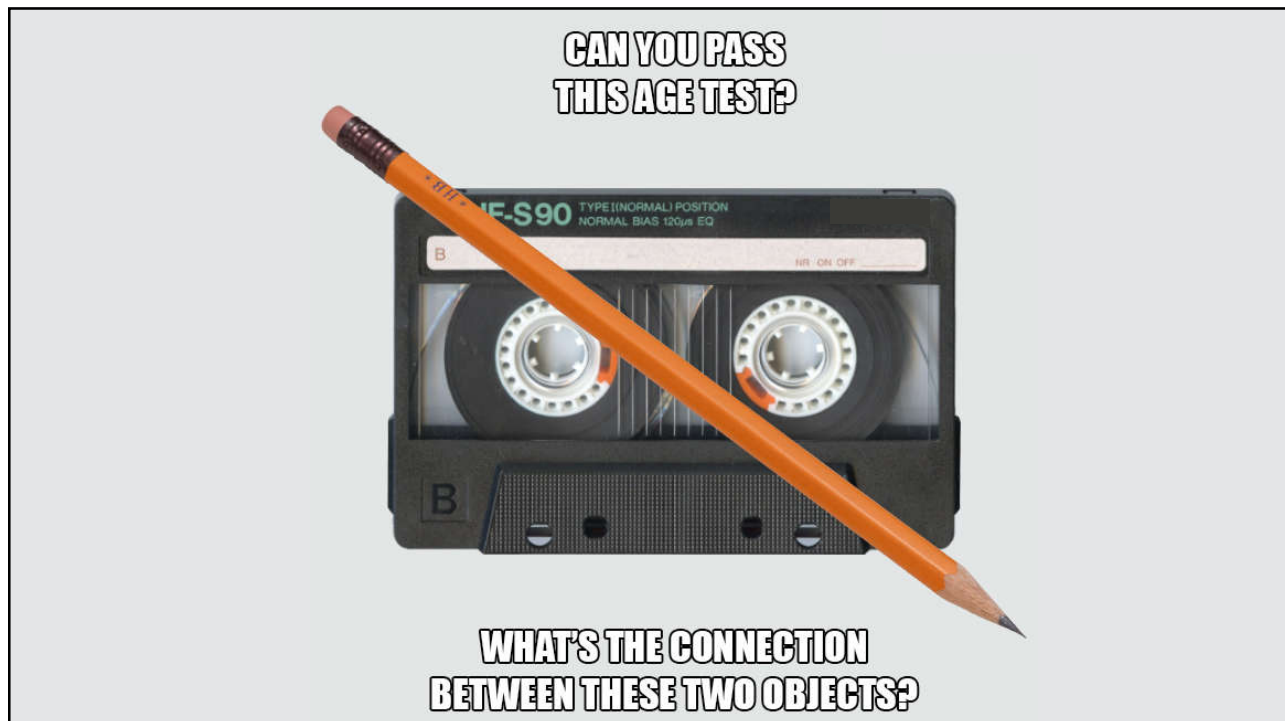
- Pseudopnea is profound shock state NOT cardiac arrest state
- We can't detect a pulse in almost 50%
- What's the harm in CPR, you PREVENT filling of the heart and making things worse
- It will affect your management
- POCUS, doppler, art line, ETCO₂,

42

Other ways to verify CO

- ETCO₂
- Doppler
- Art line

43



44



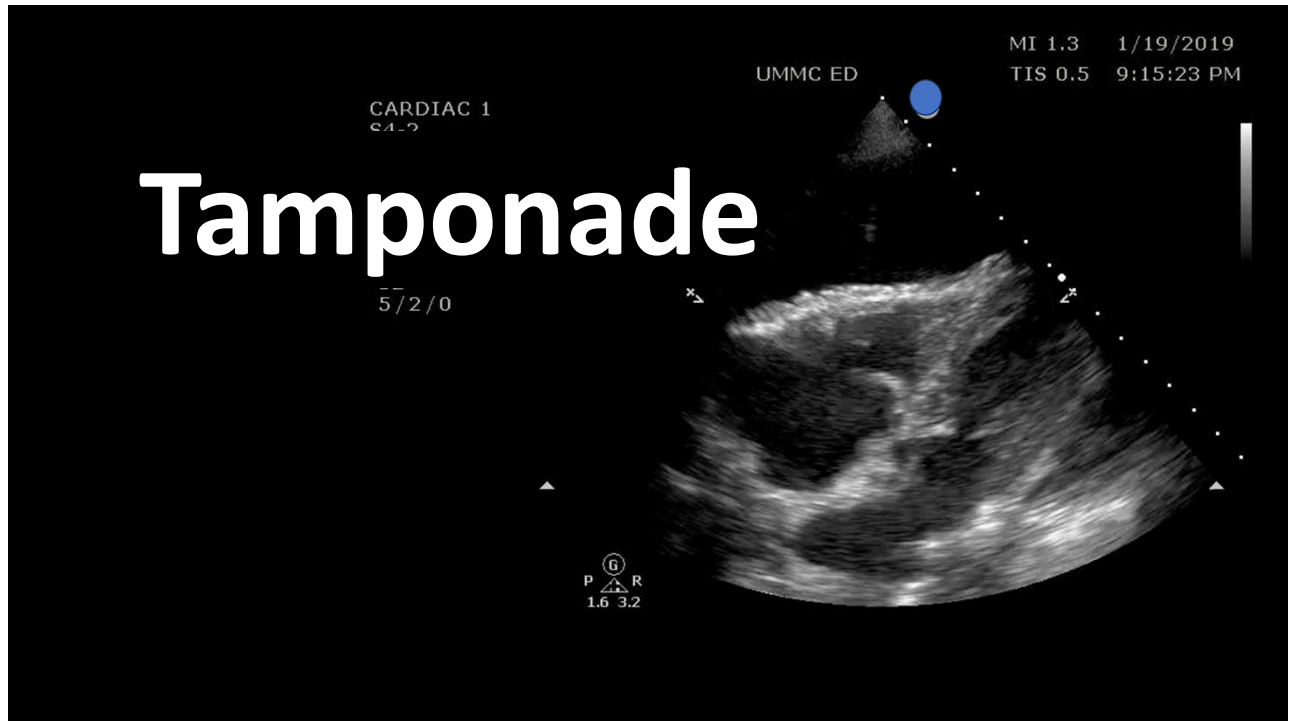
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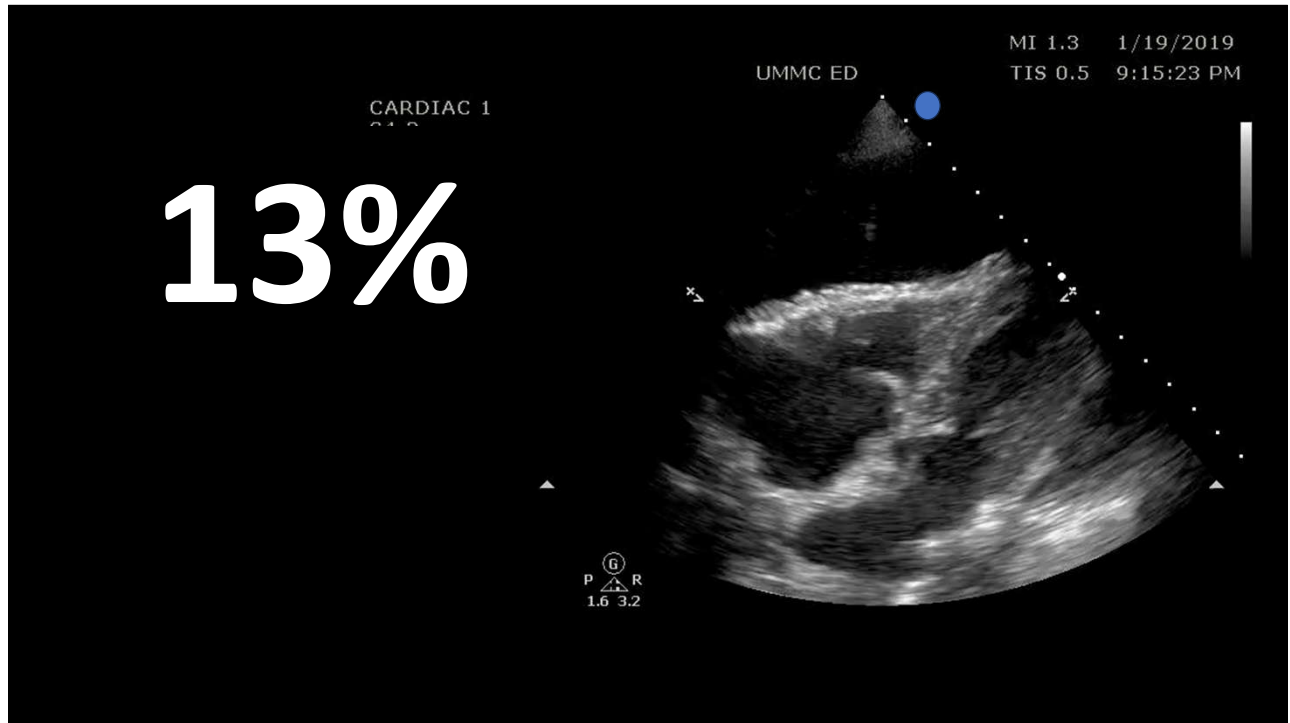
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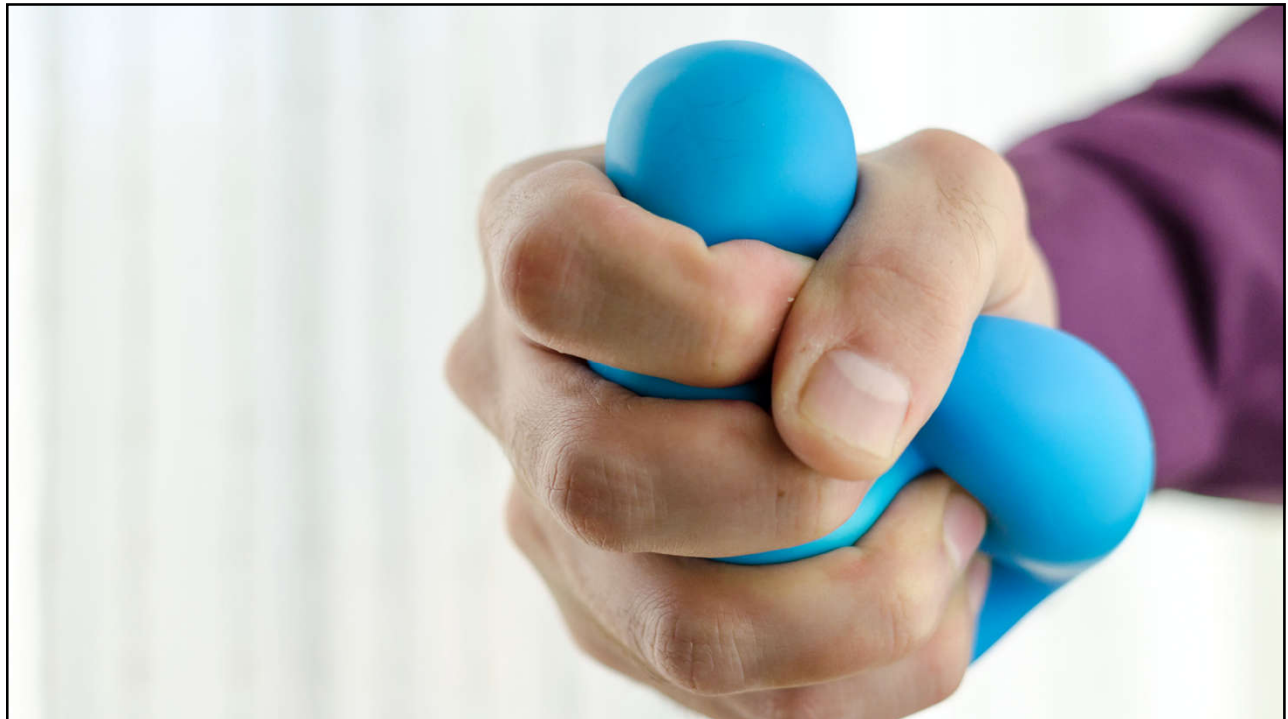
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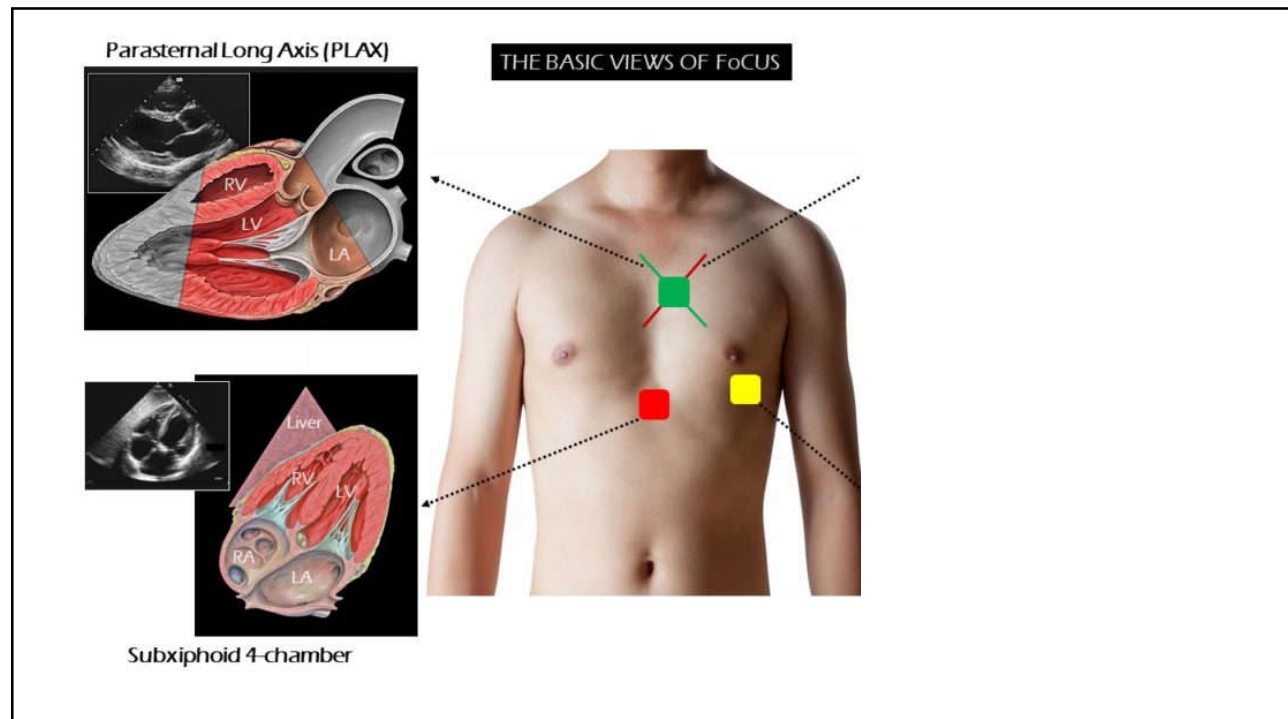


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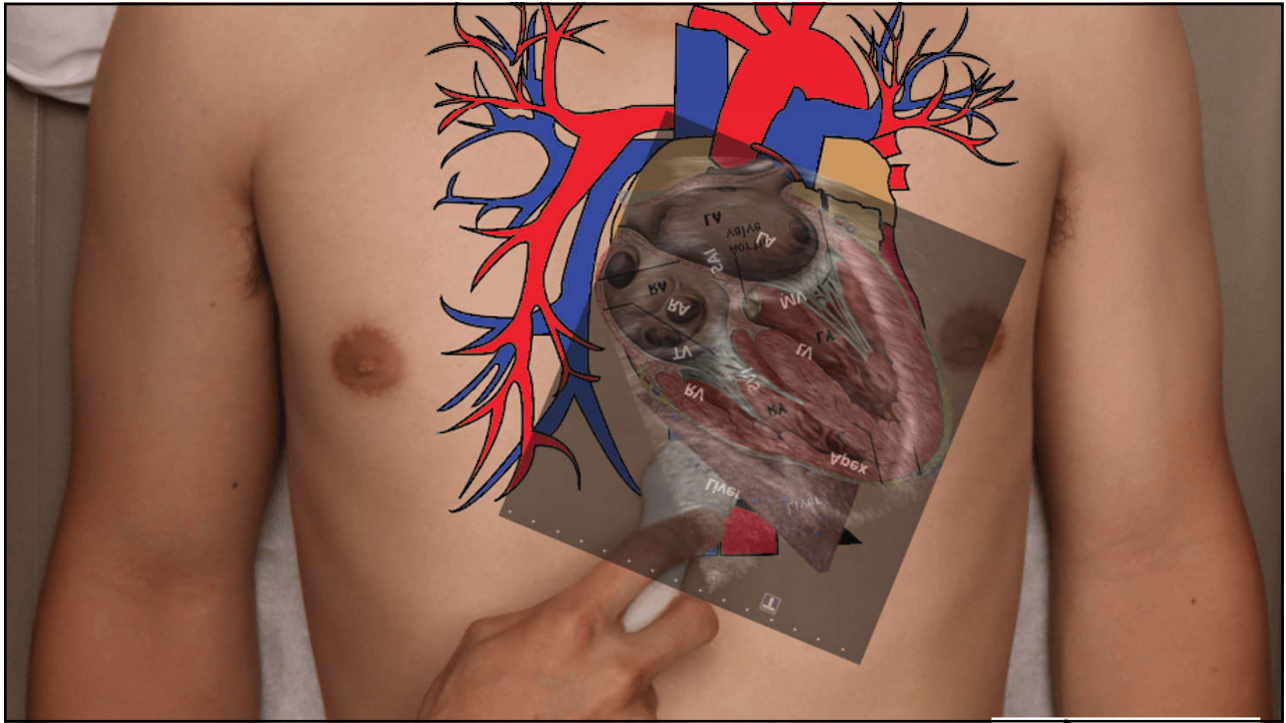
Two questions

- Is it pleural or pericardial?
- Is there tamponade or not?

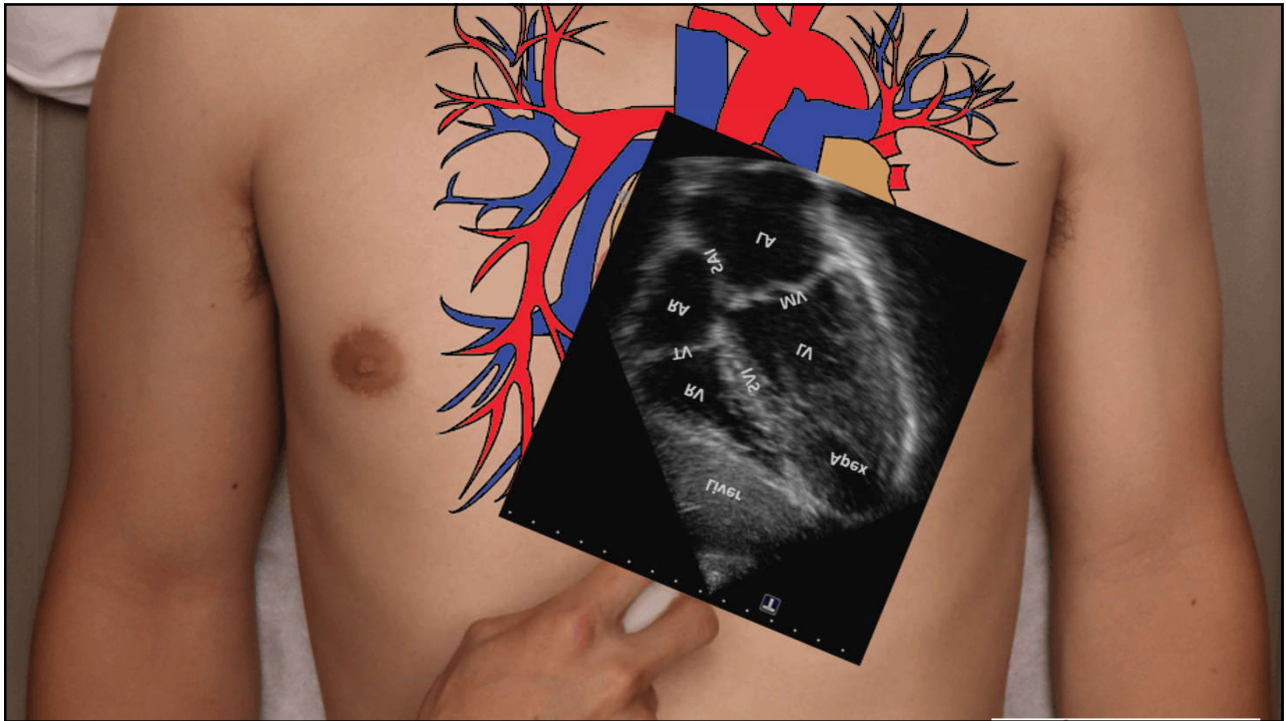
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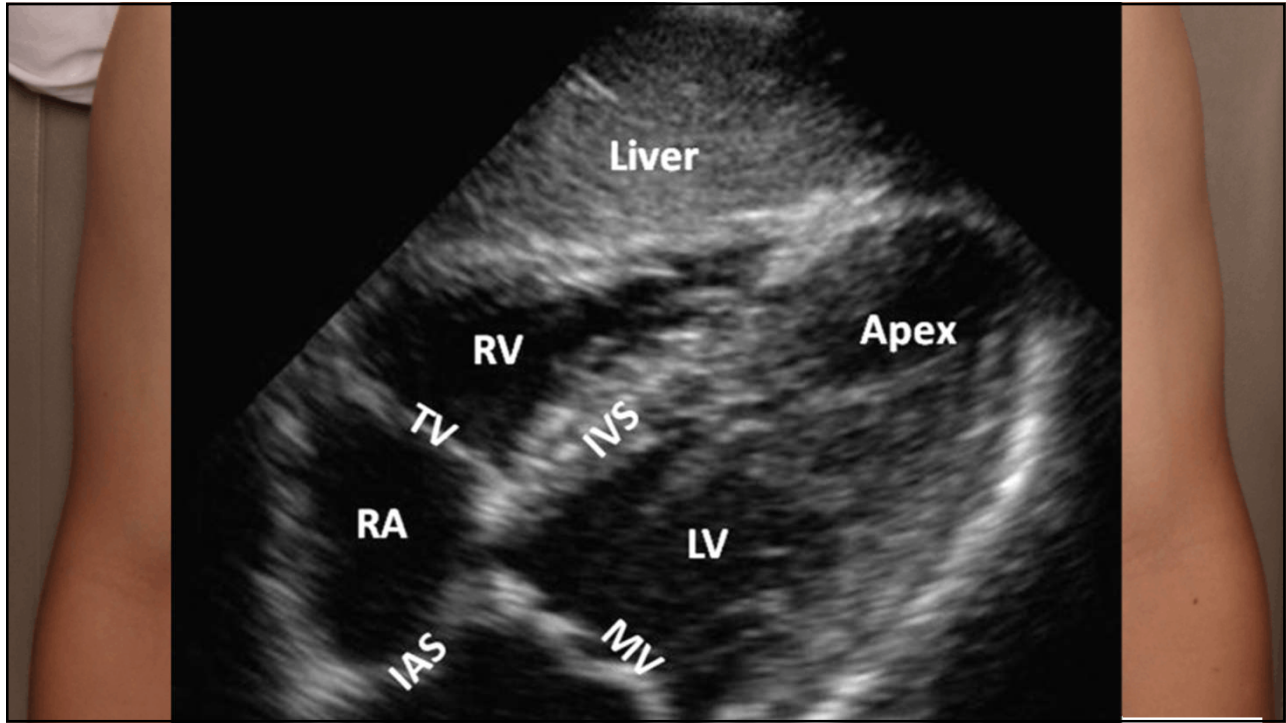
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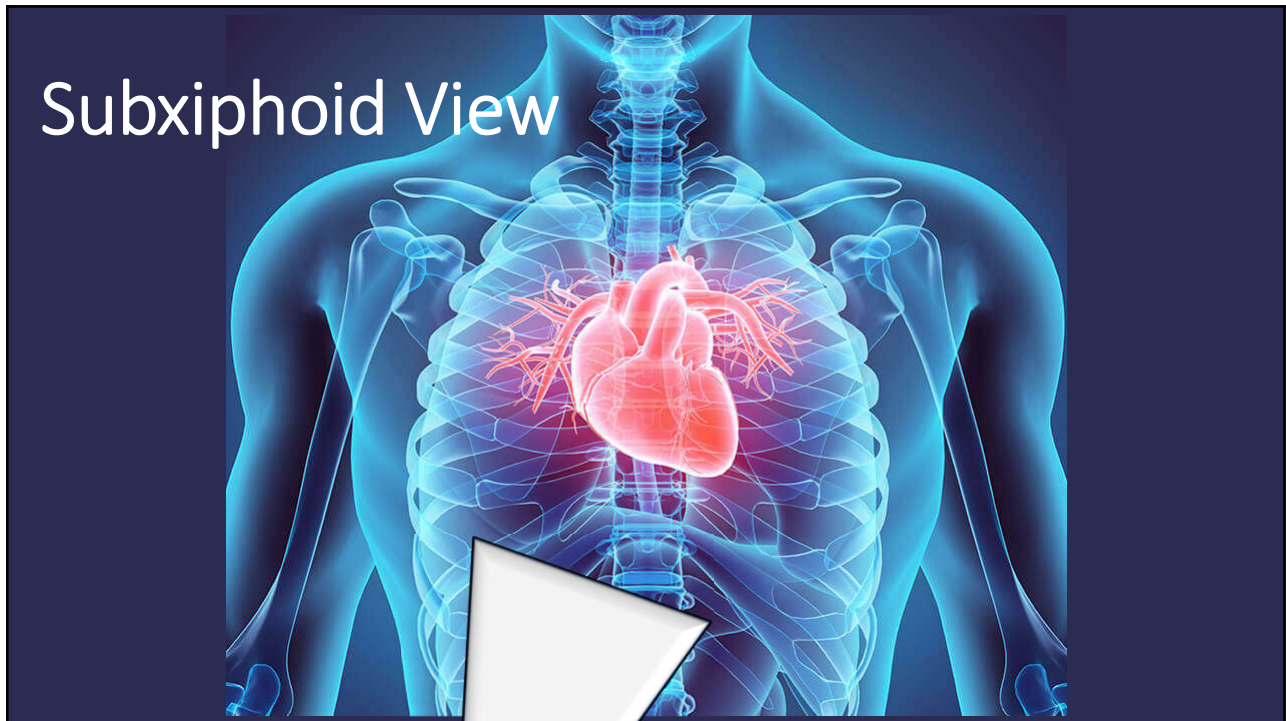
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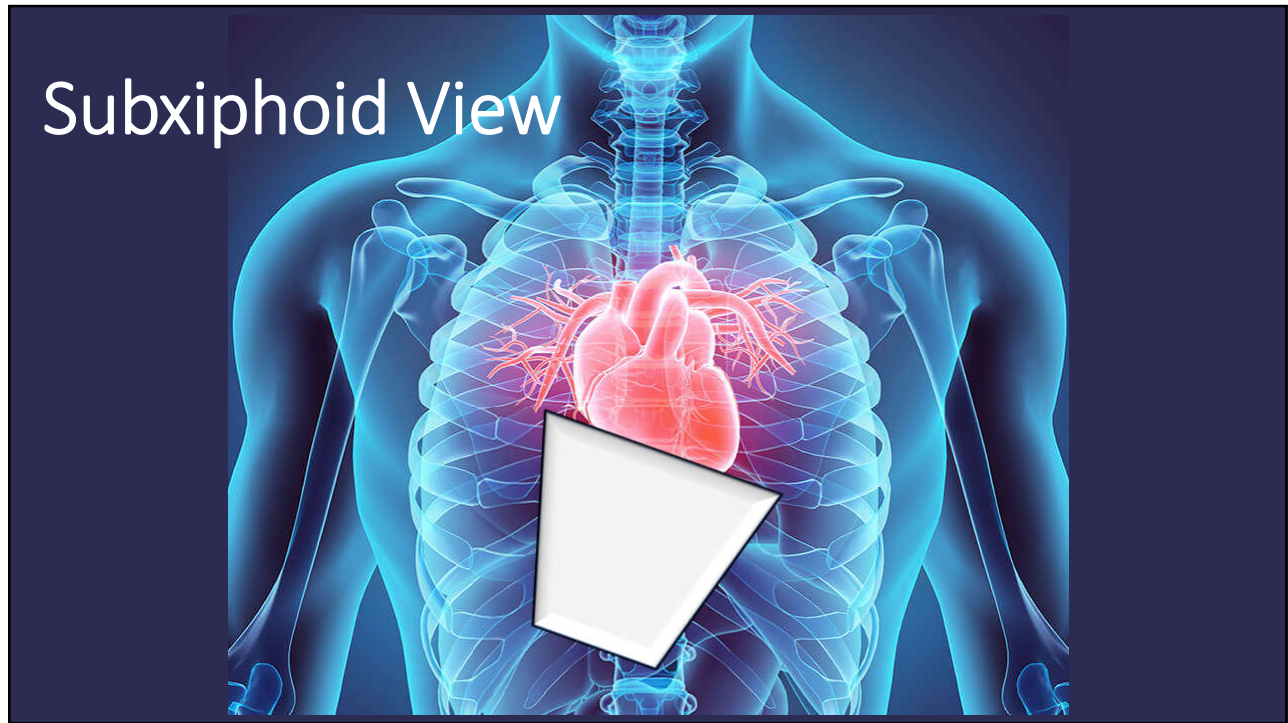
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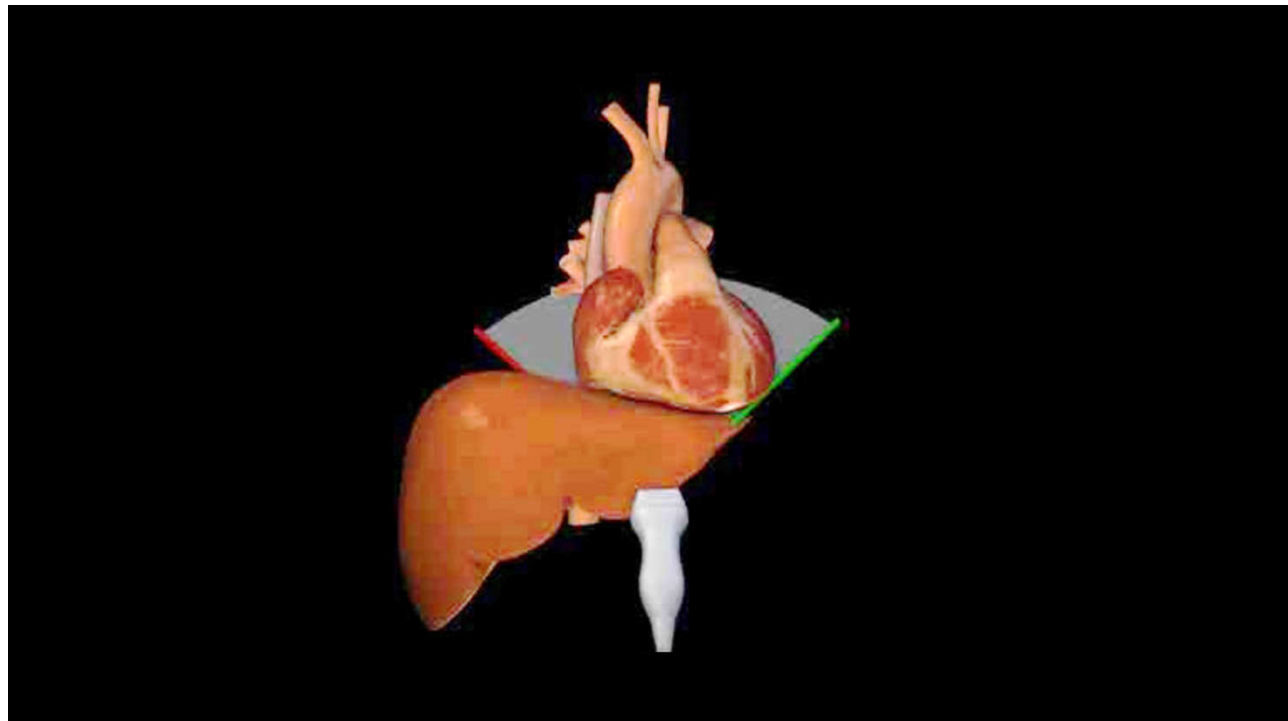
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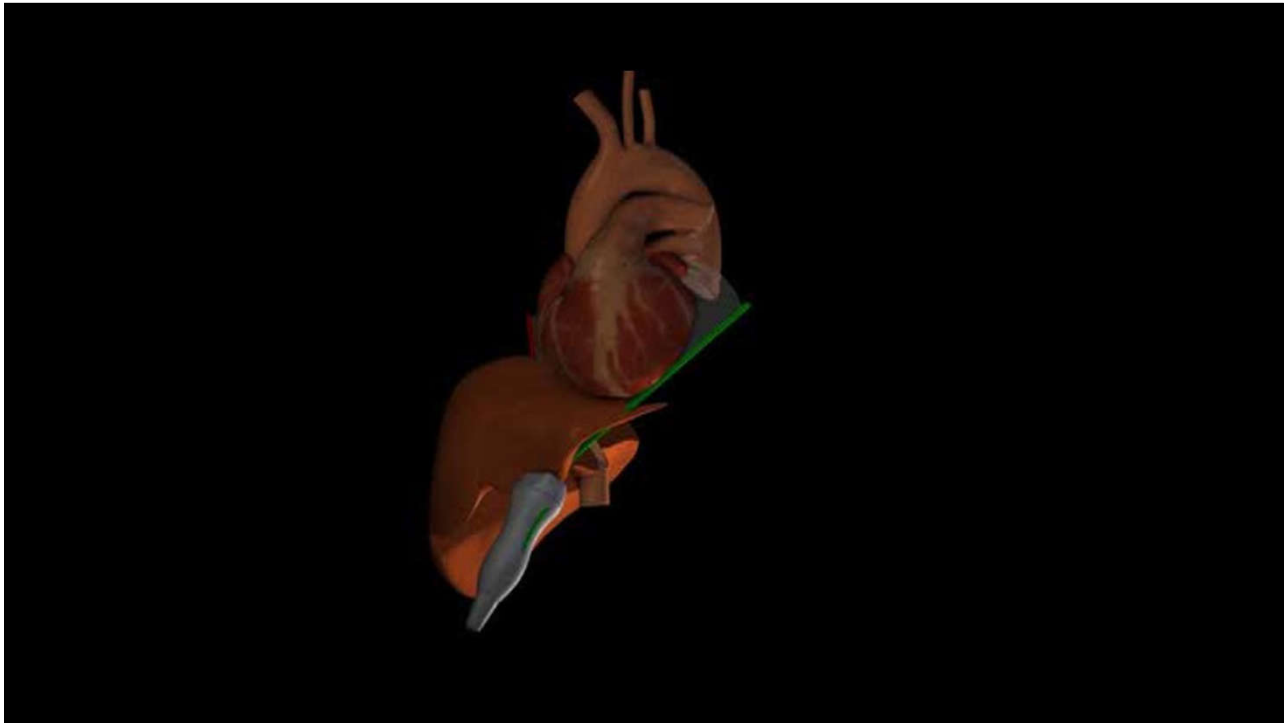
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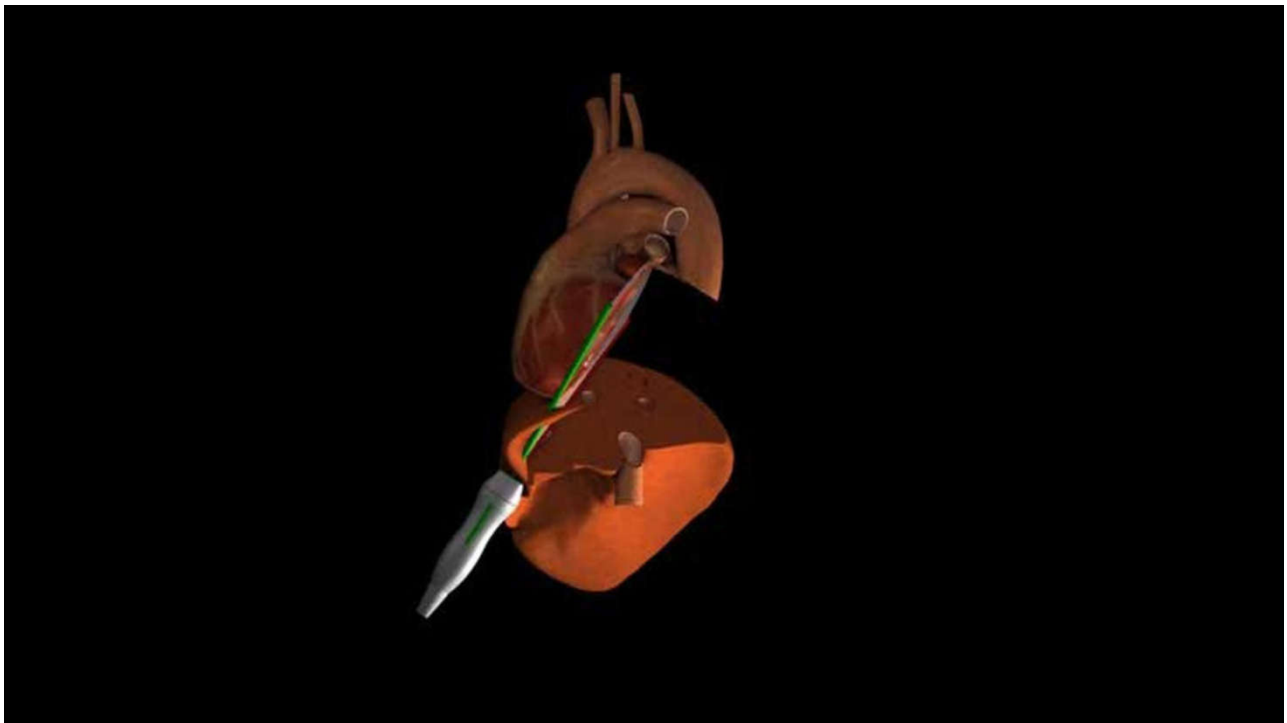
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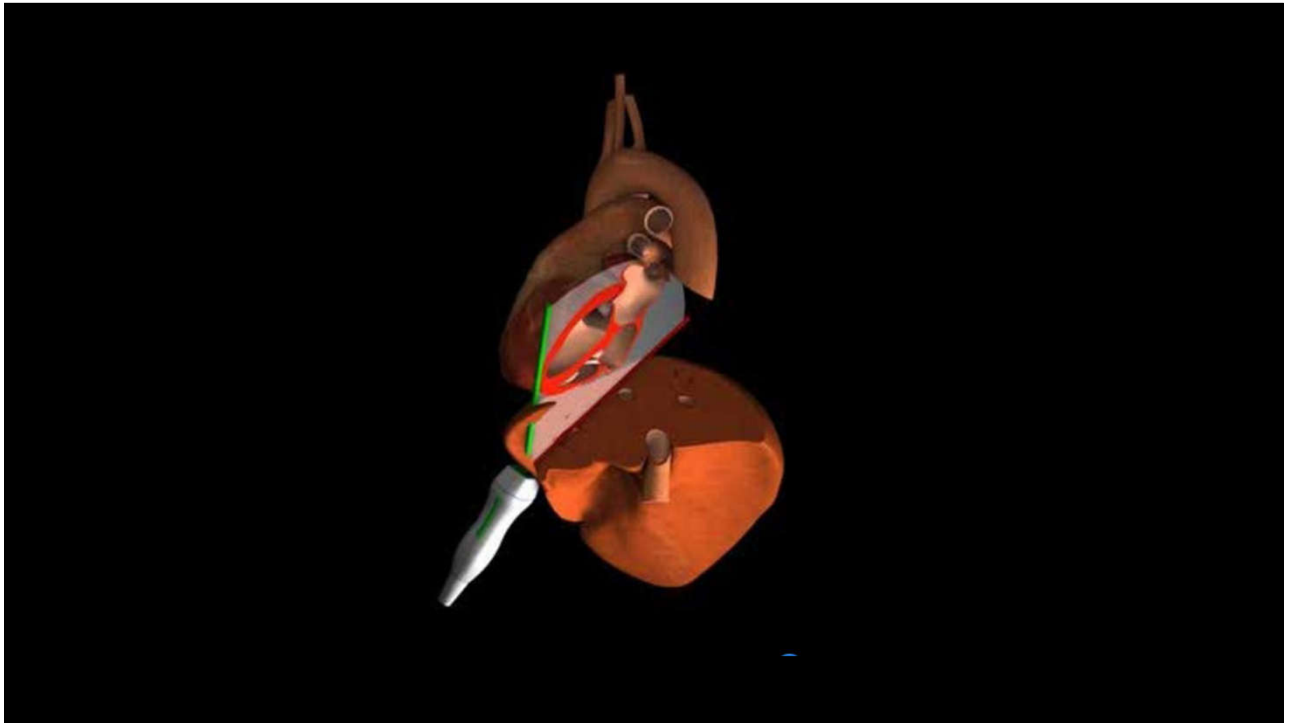
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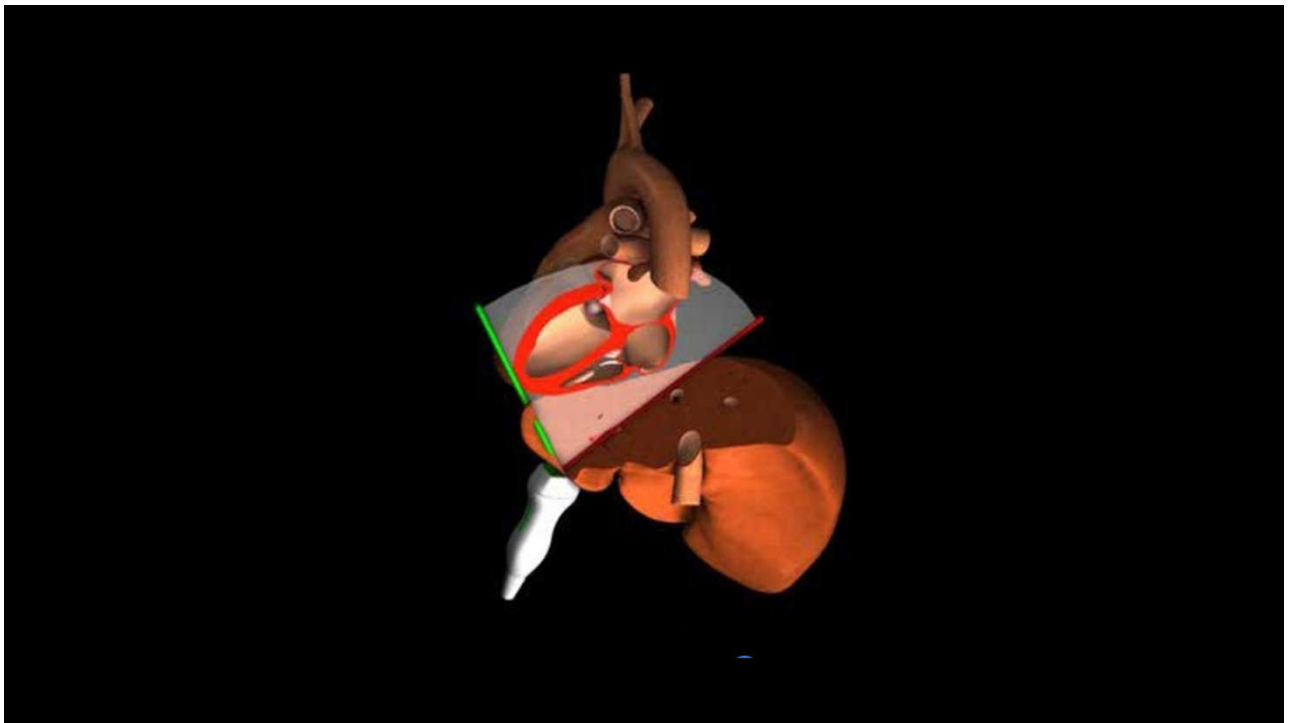
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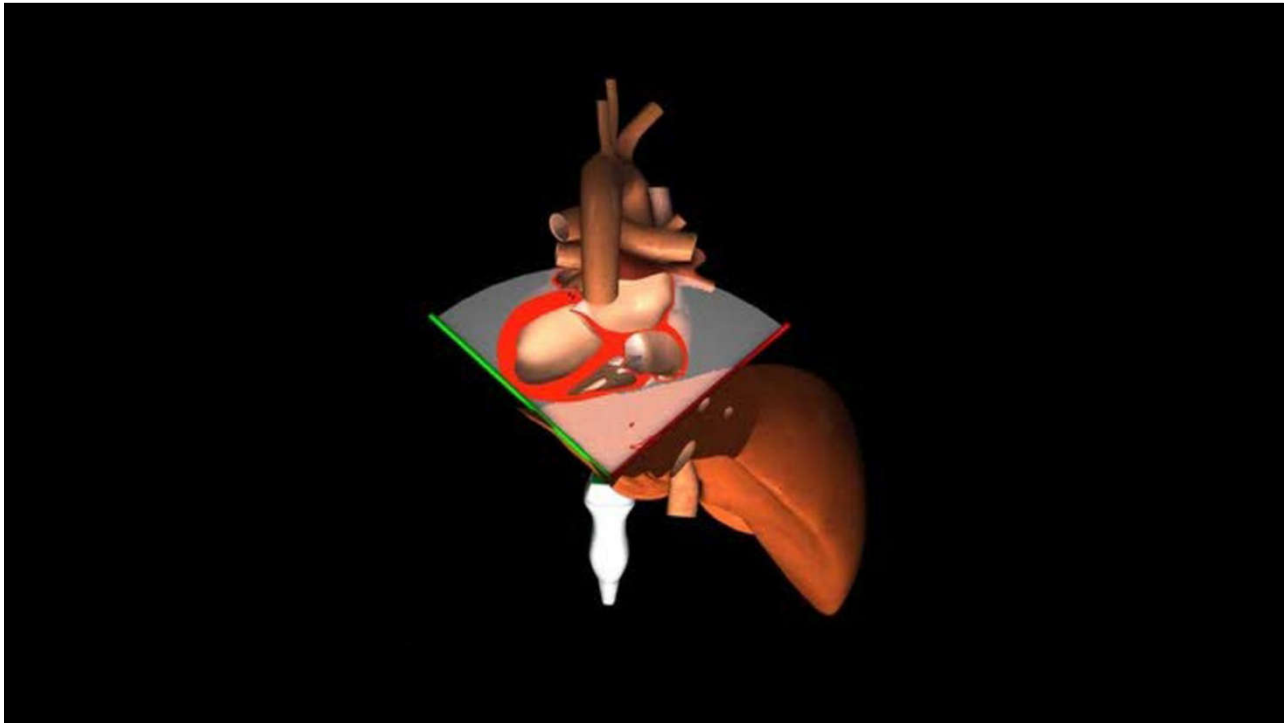
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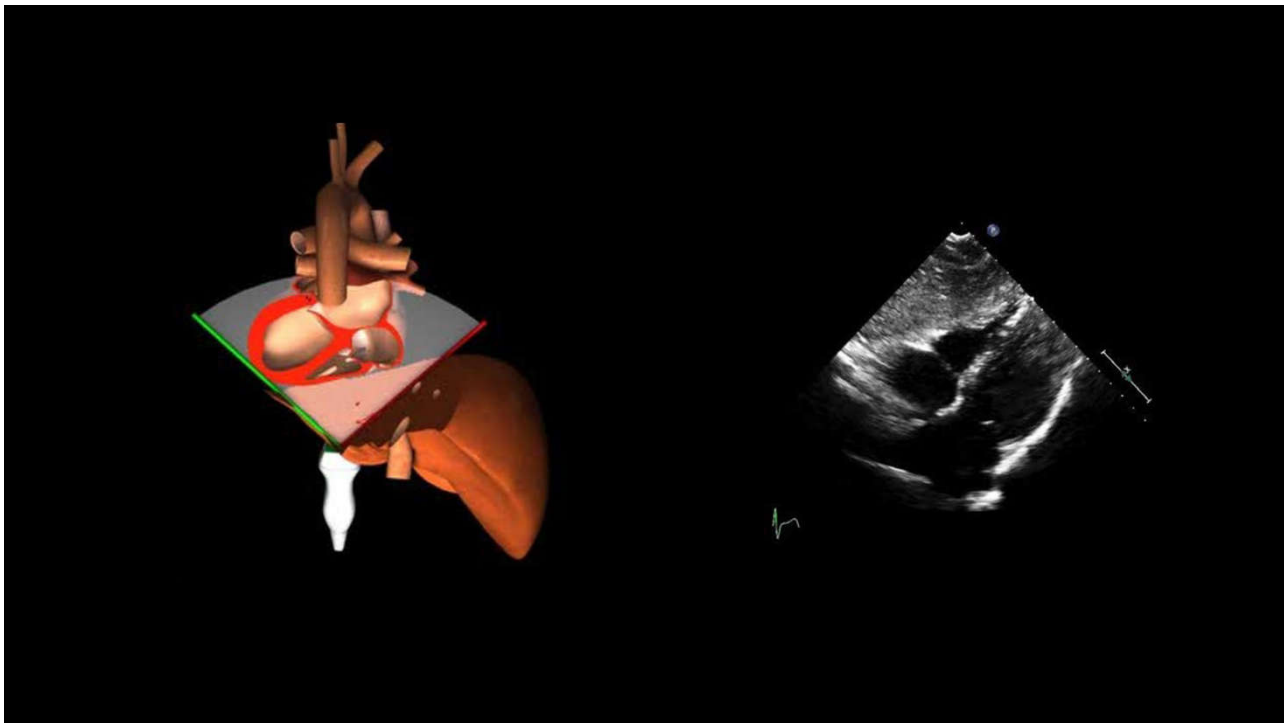
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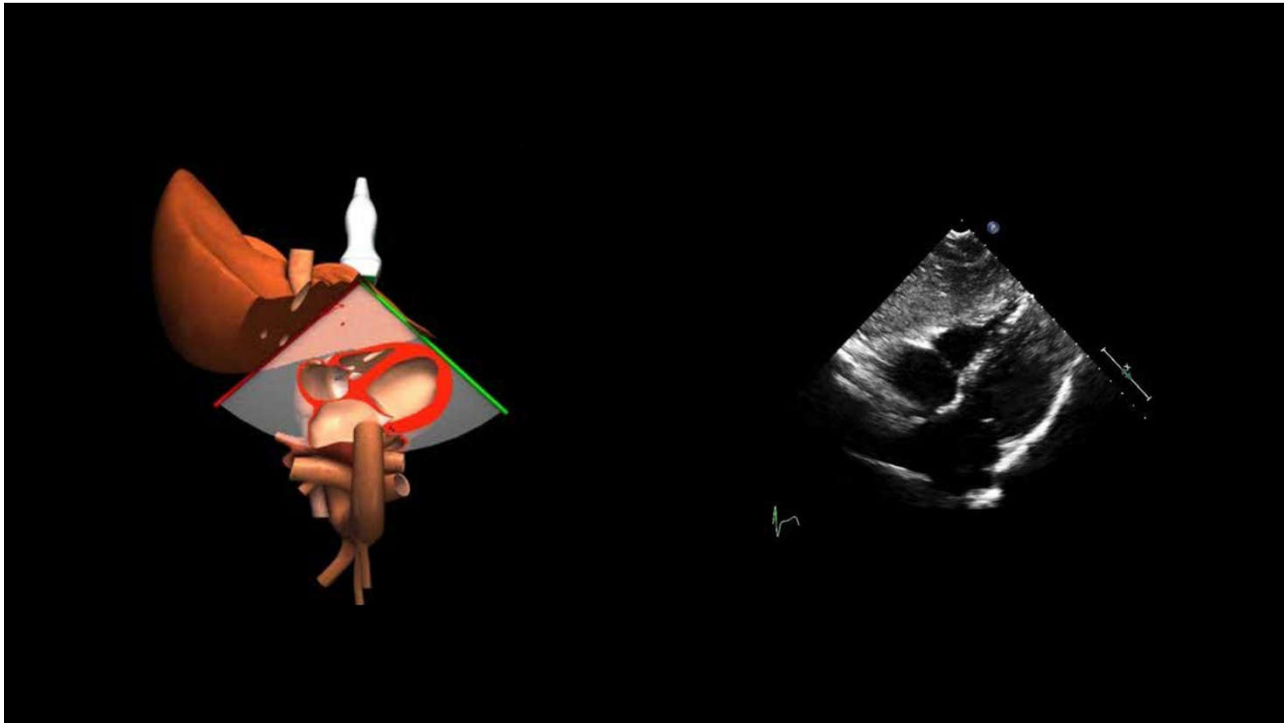
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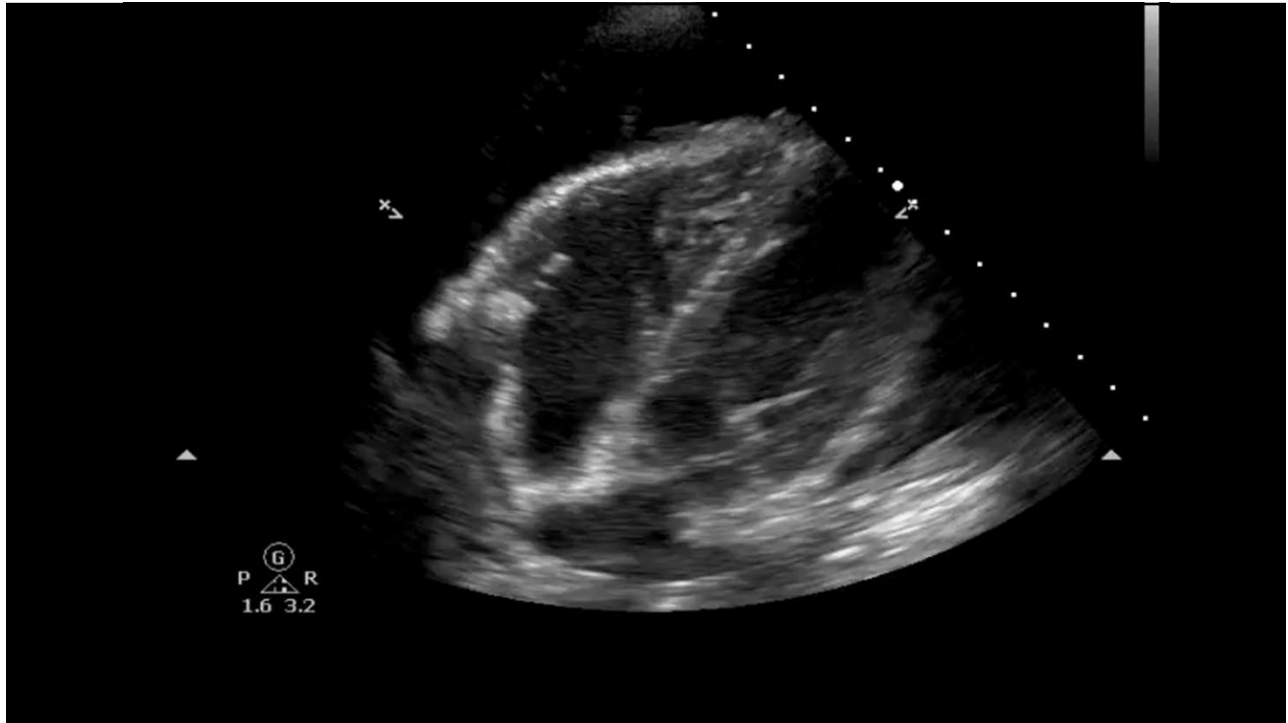
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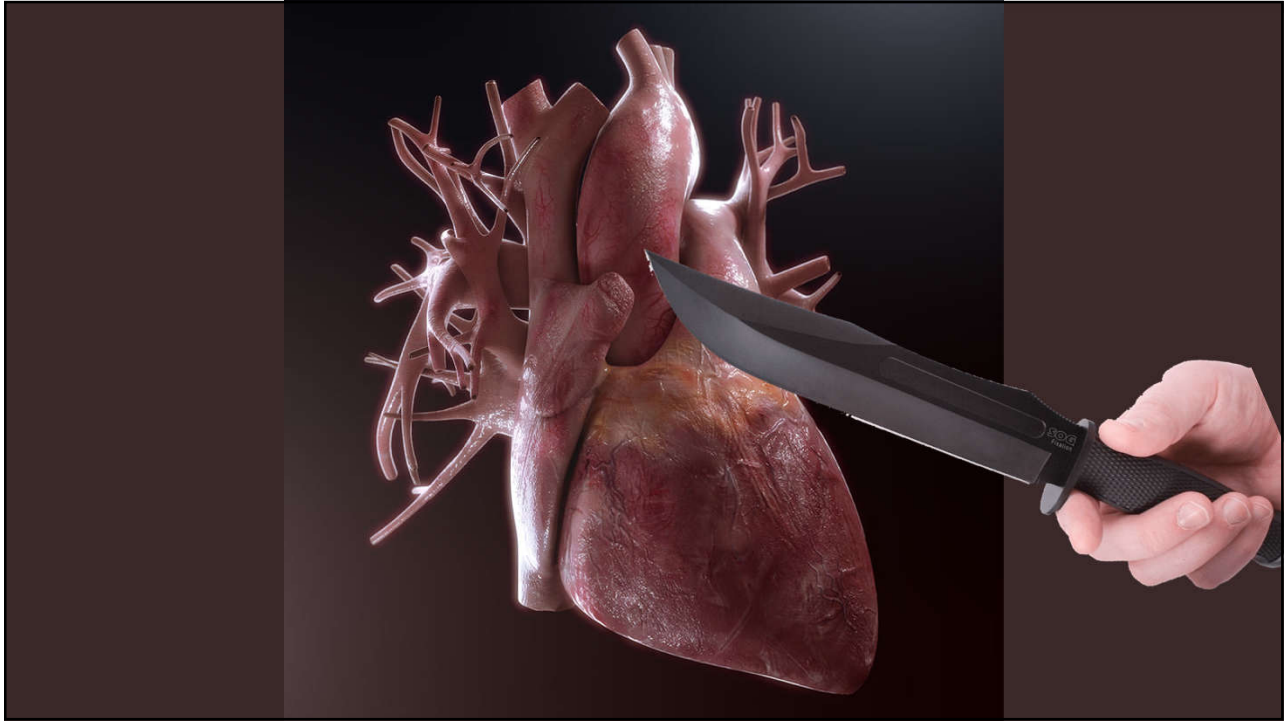
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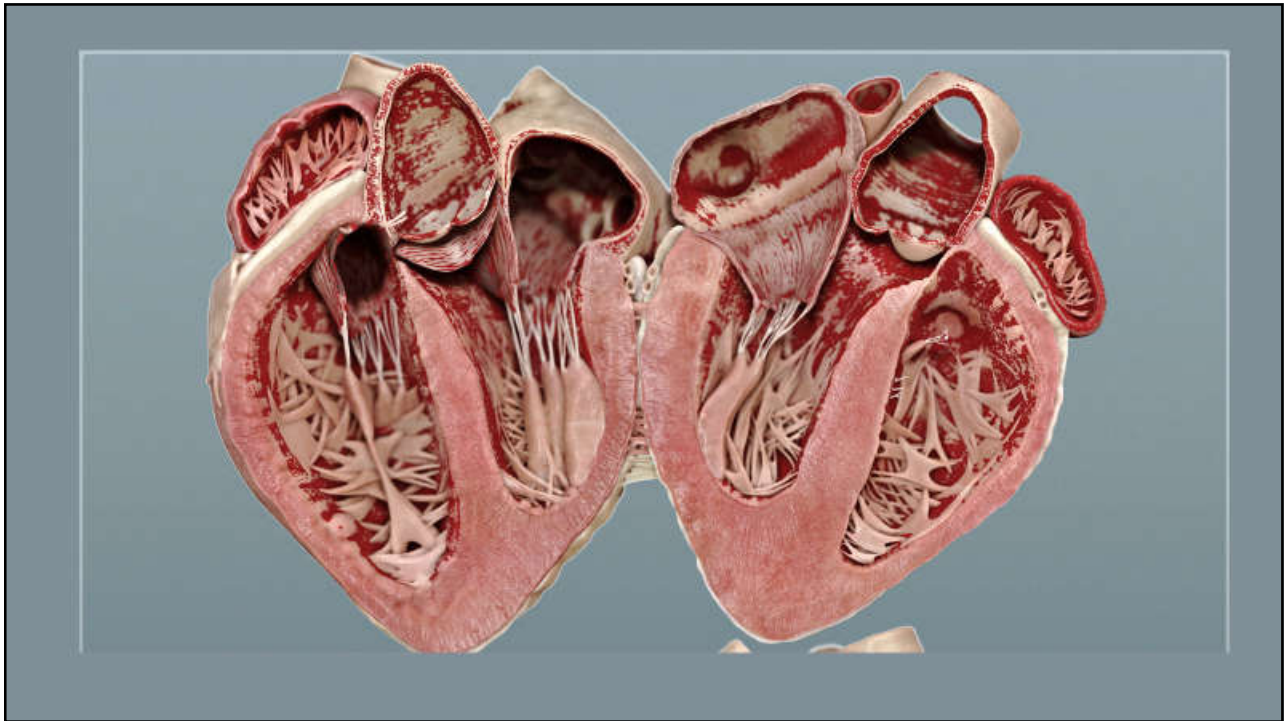
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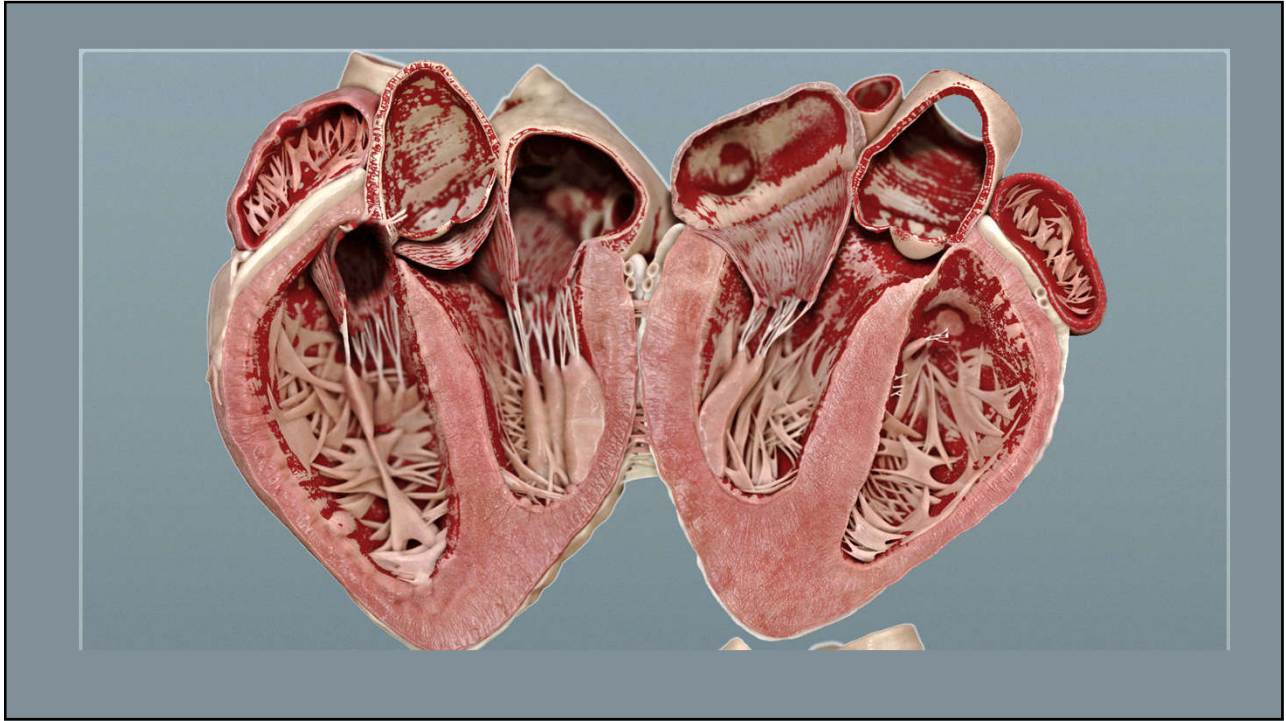
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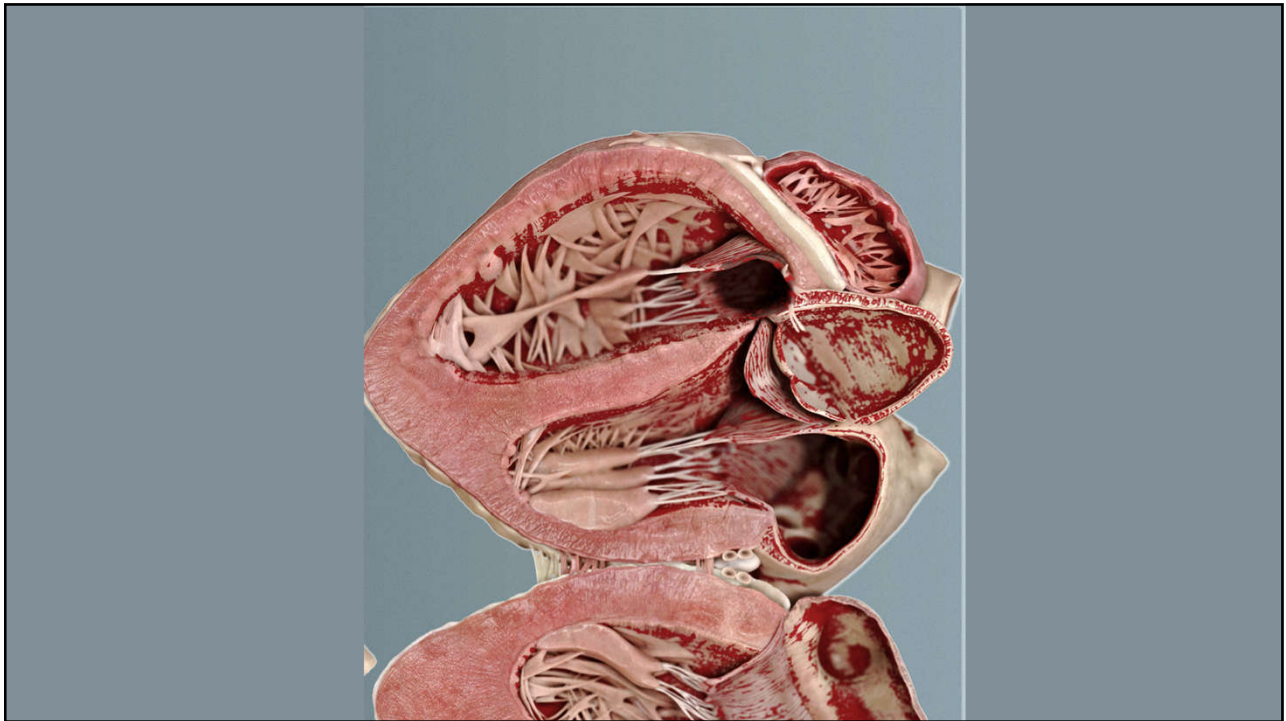
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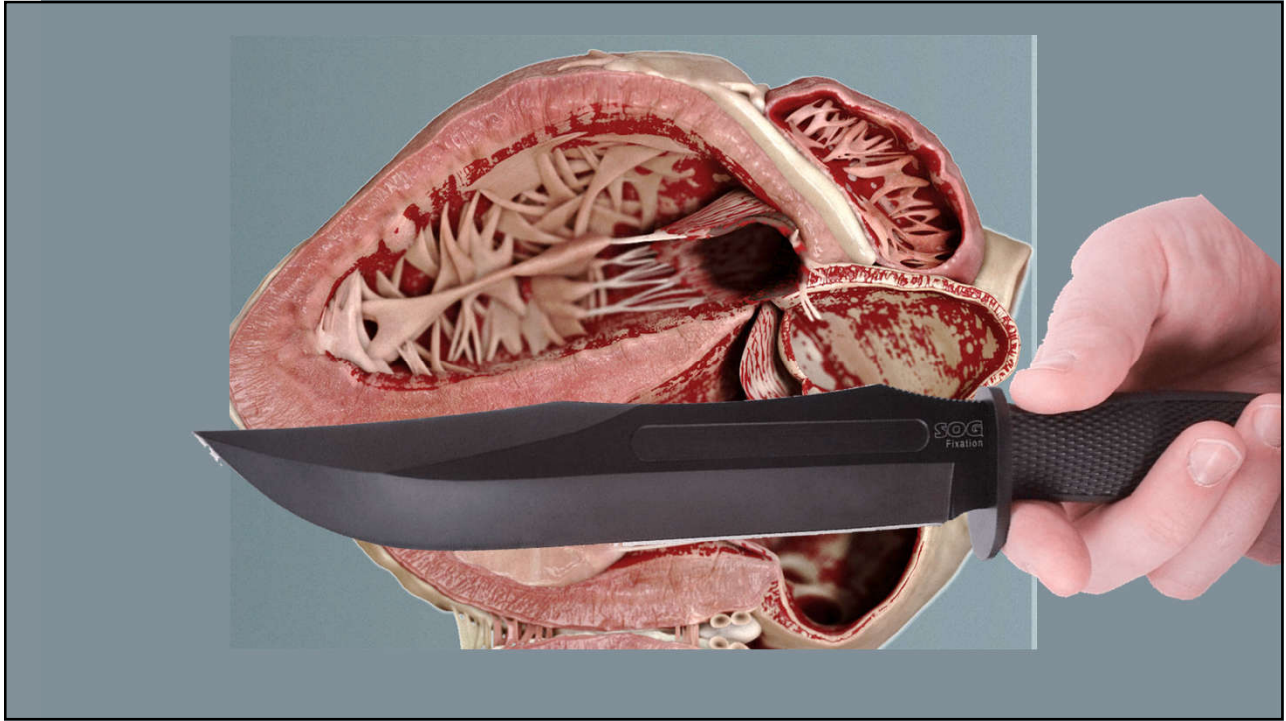
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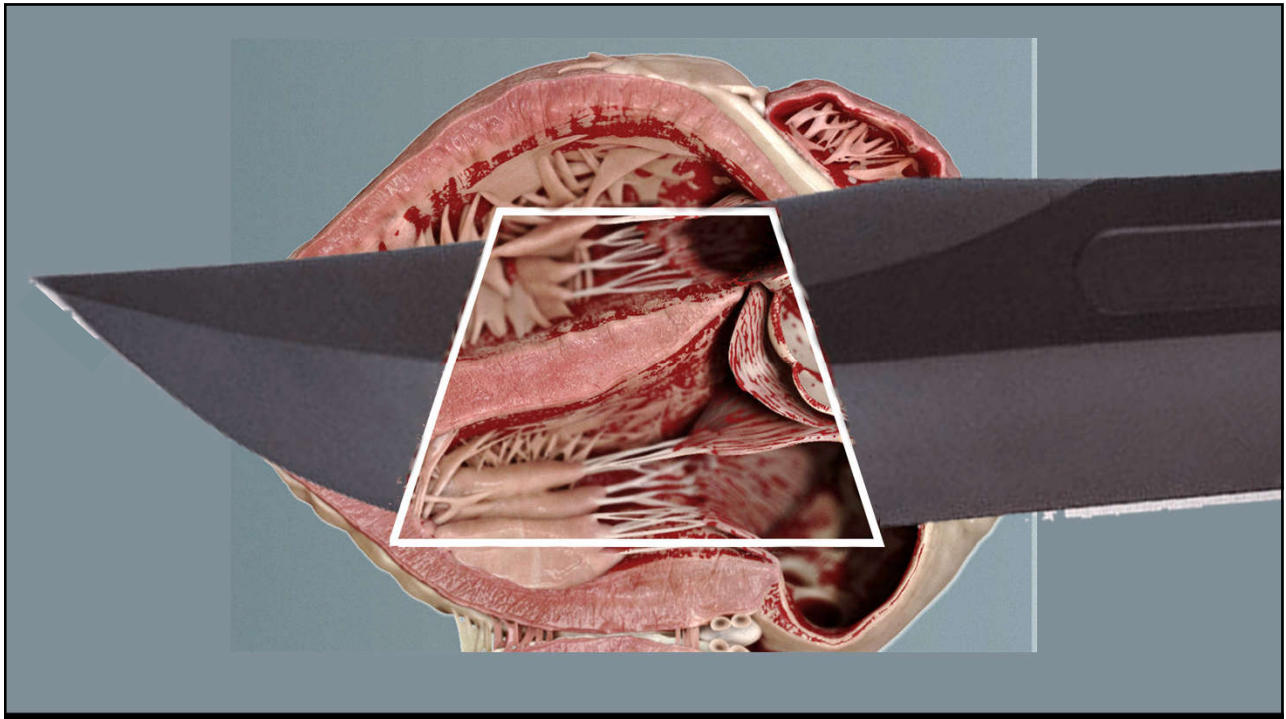
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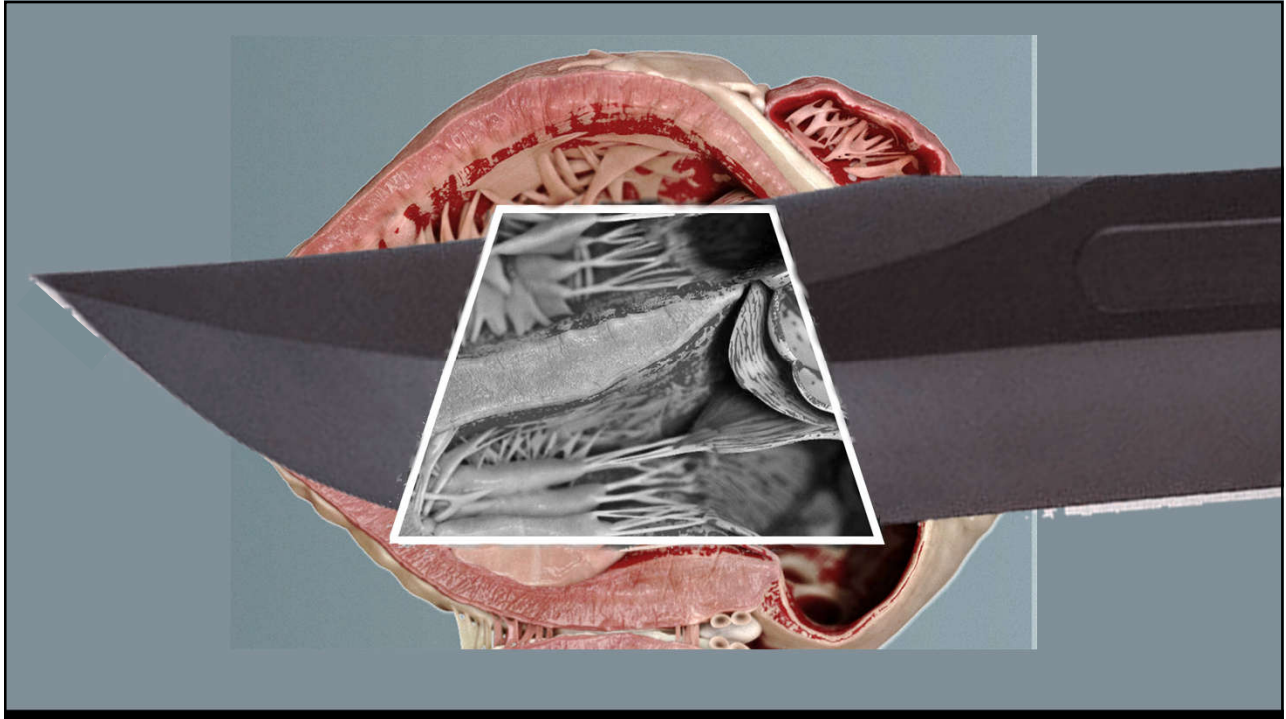
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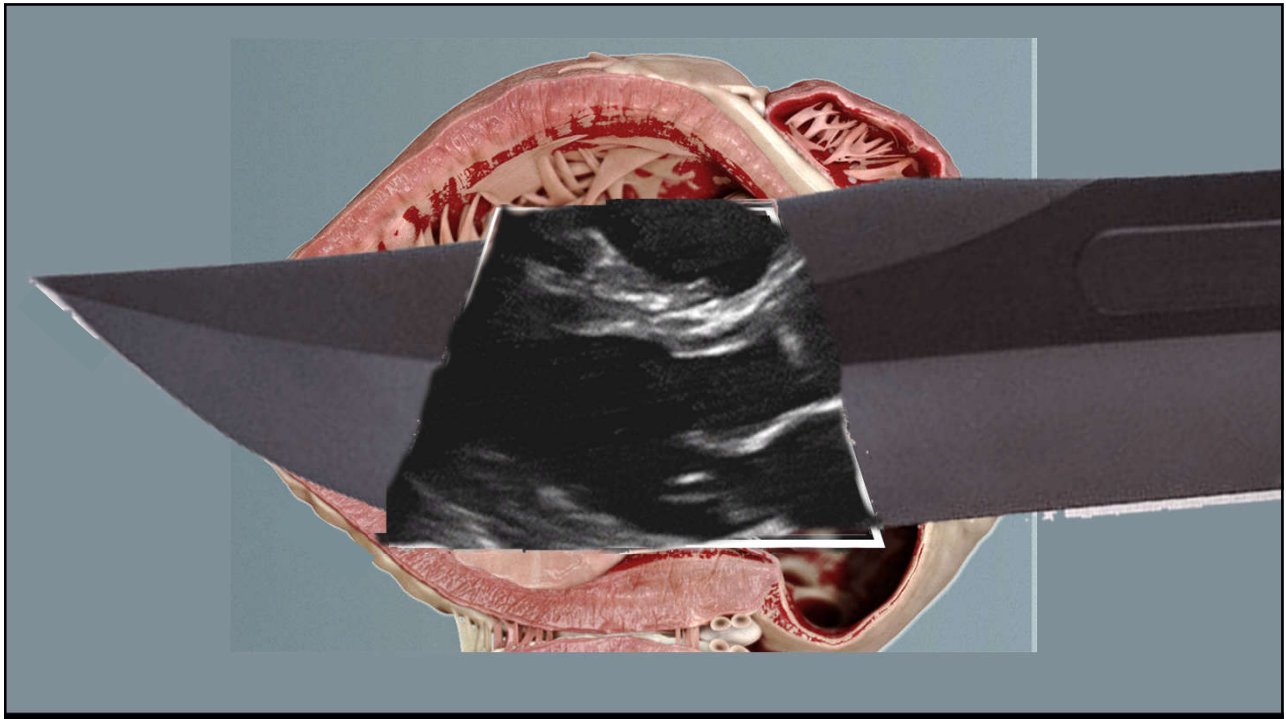
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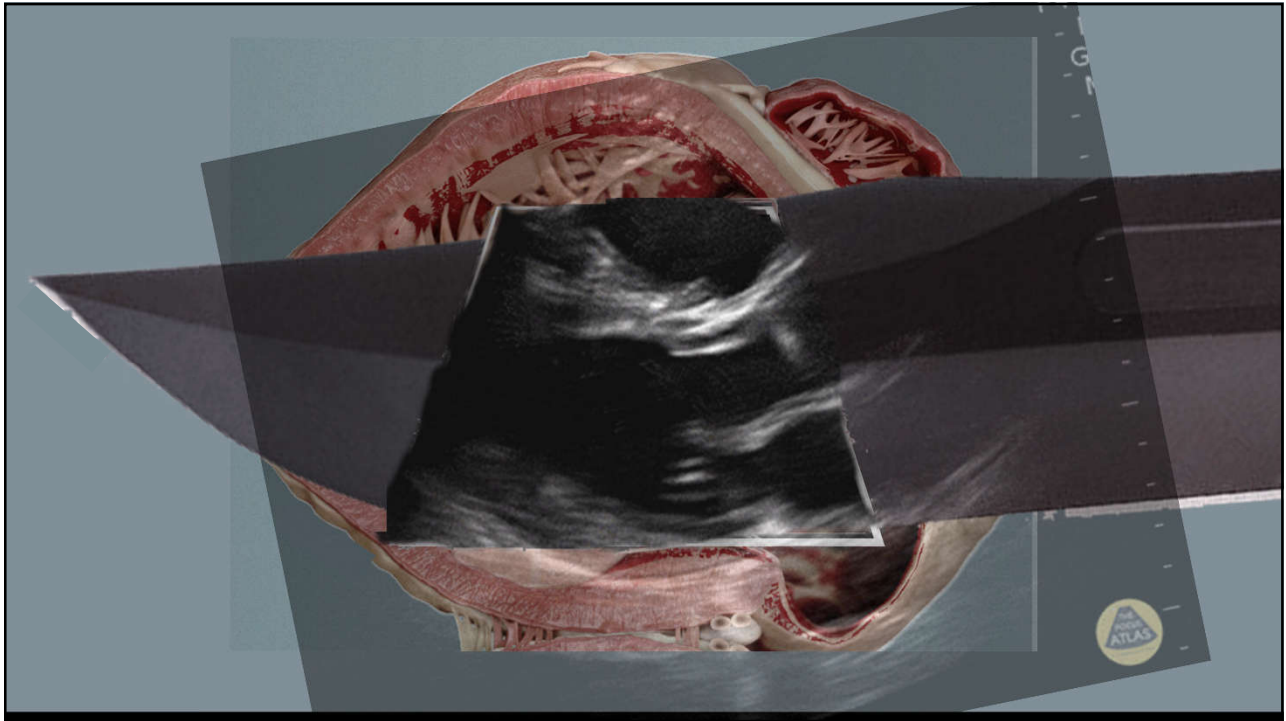
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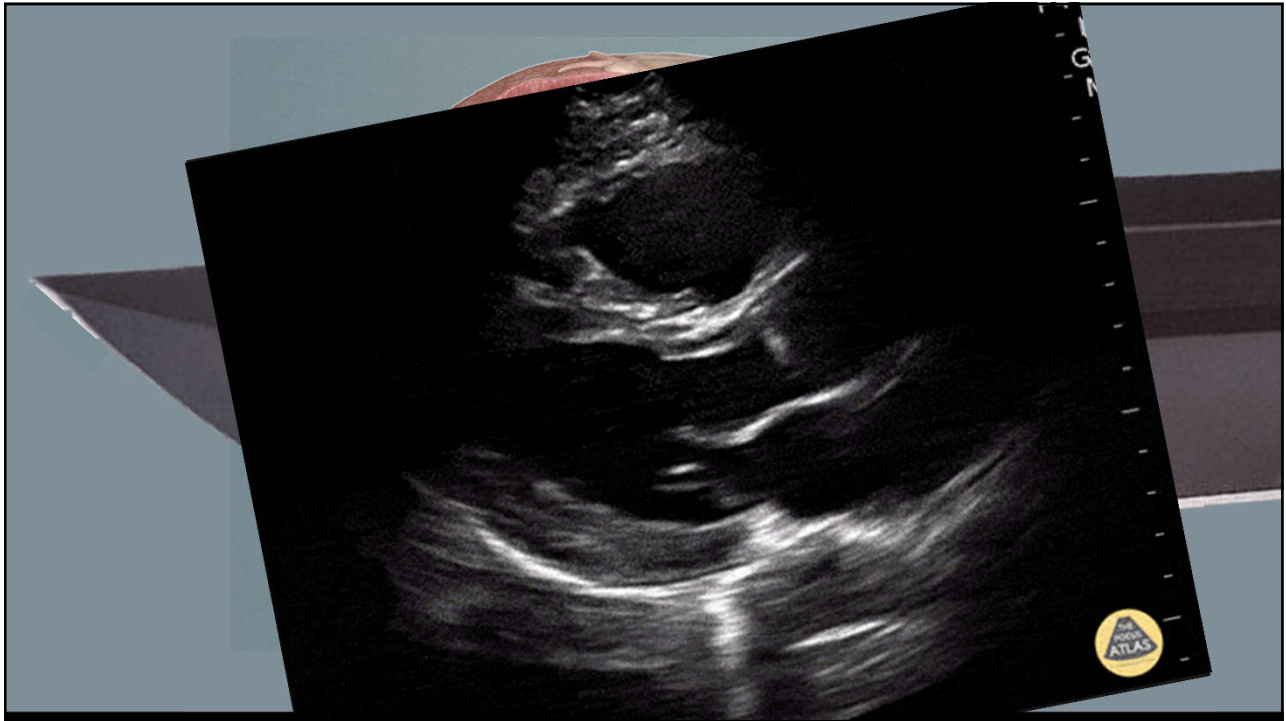
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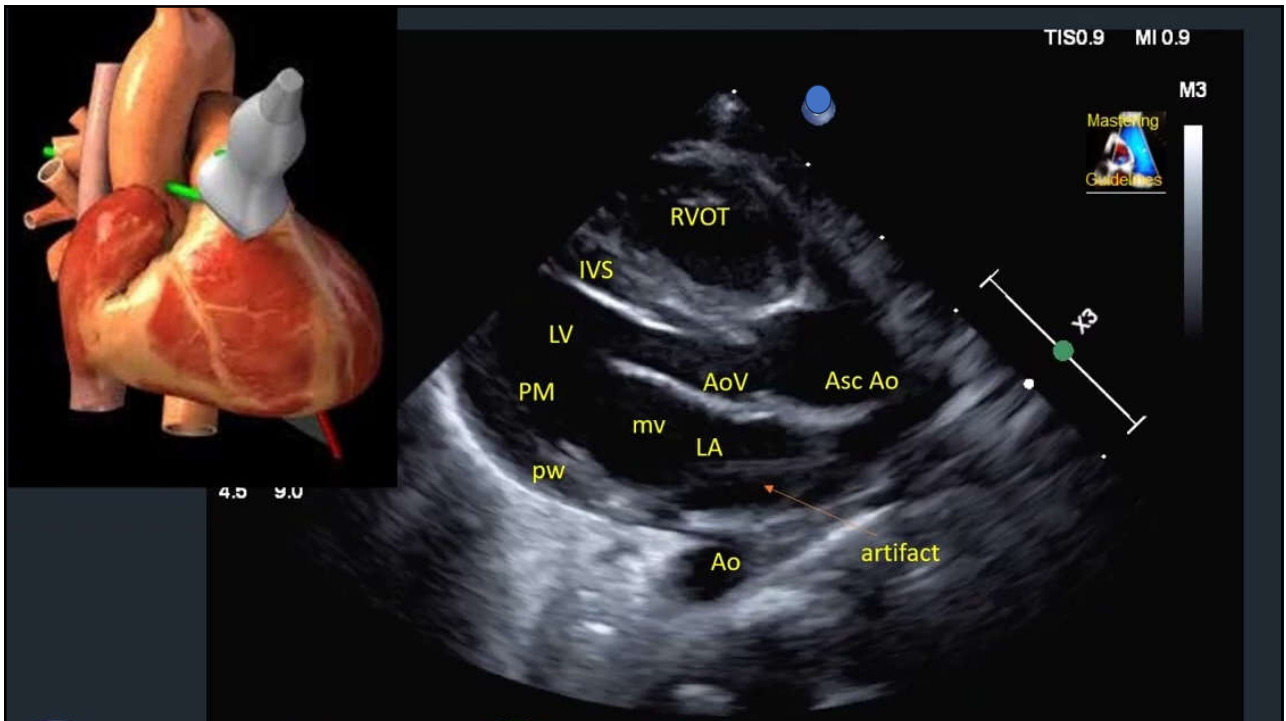
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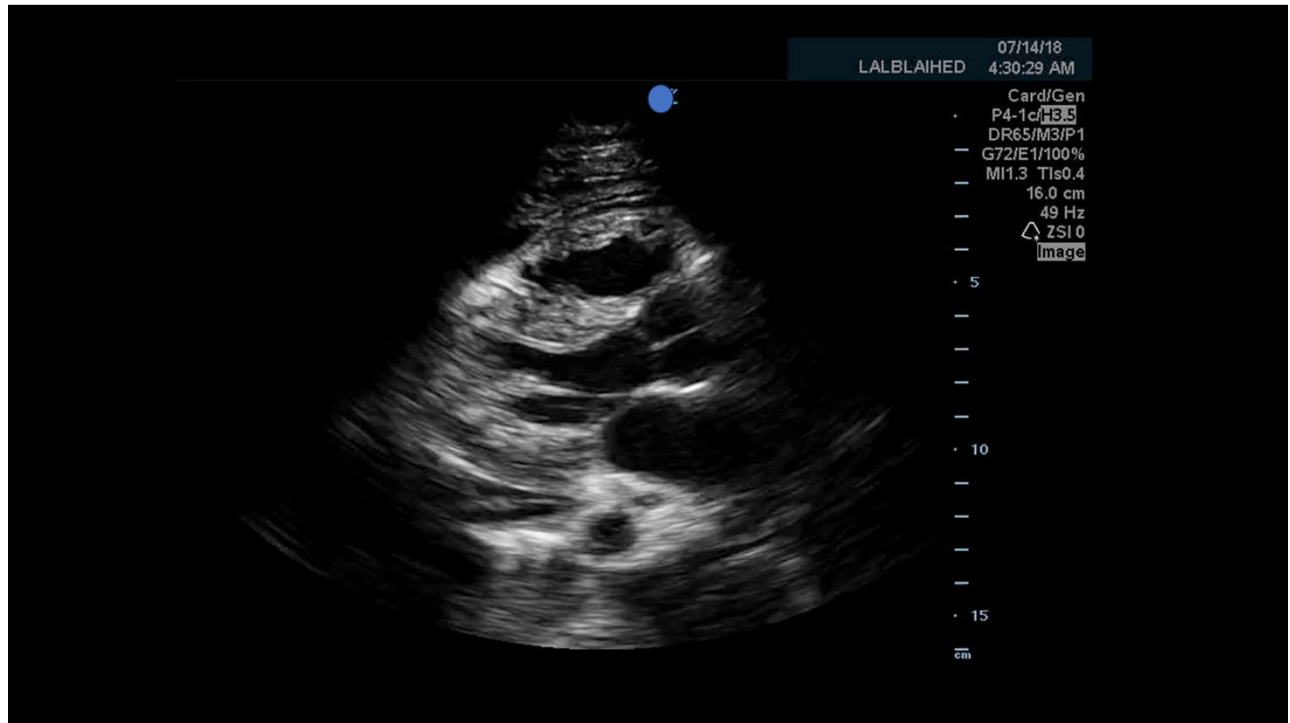
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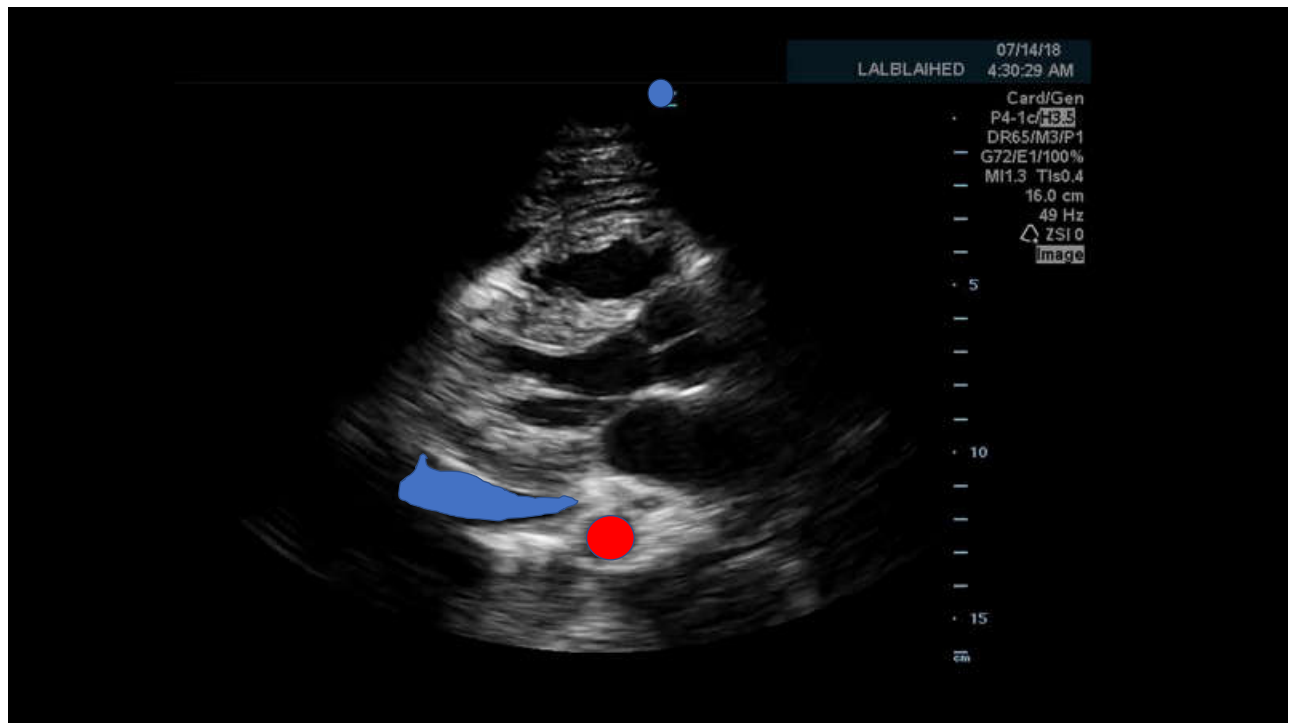
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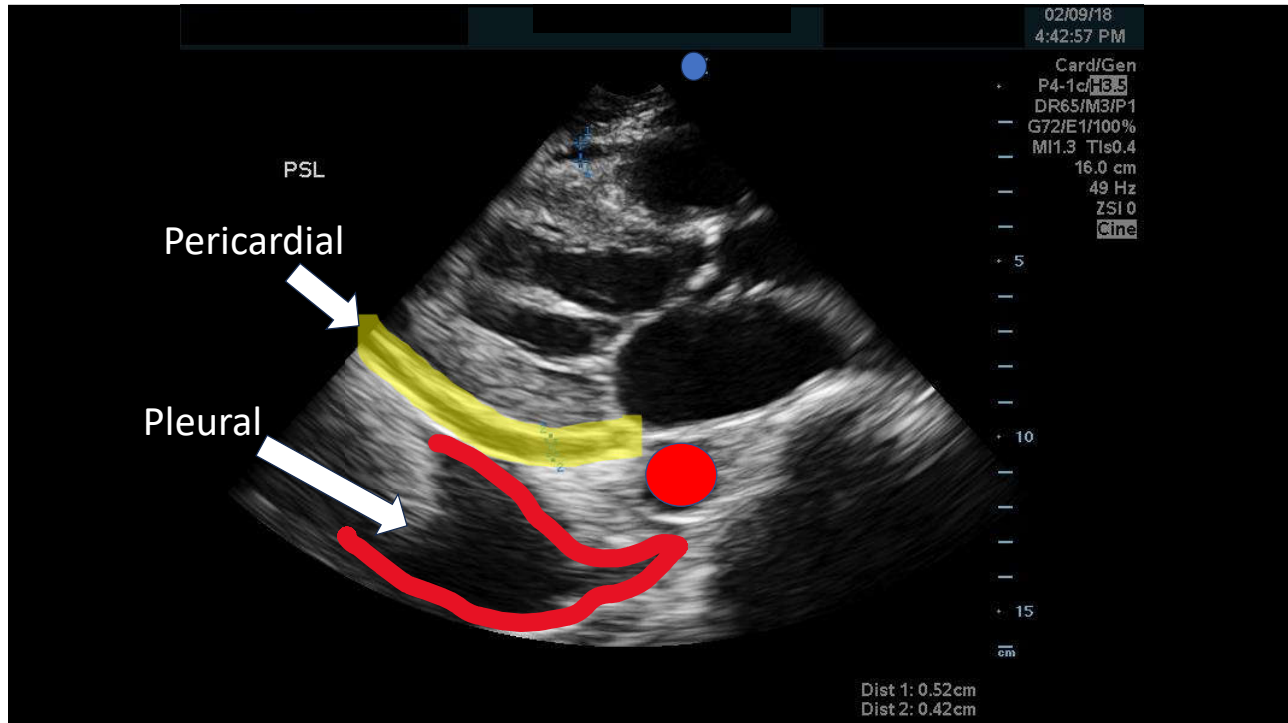
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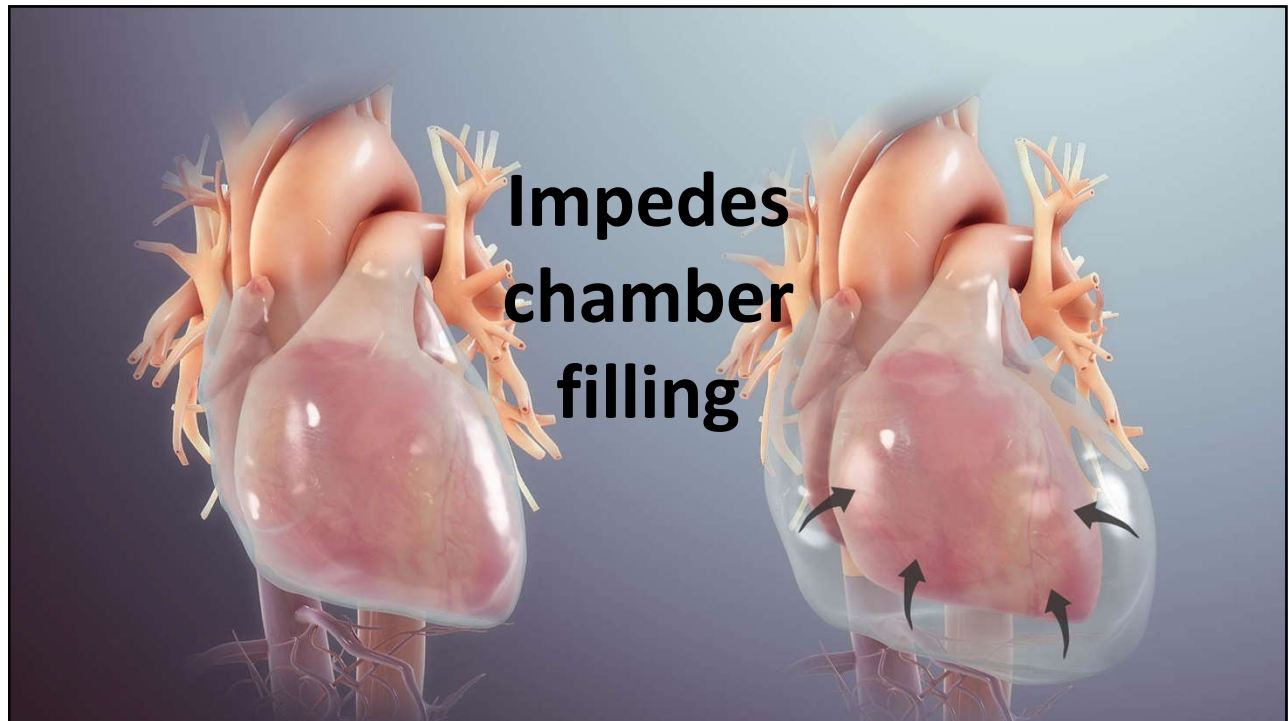
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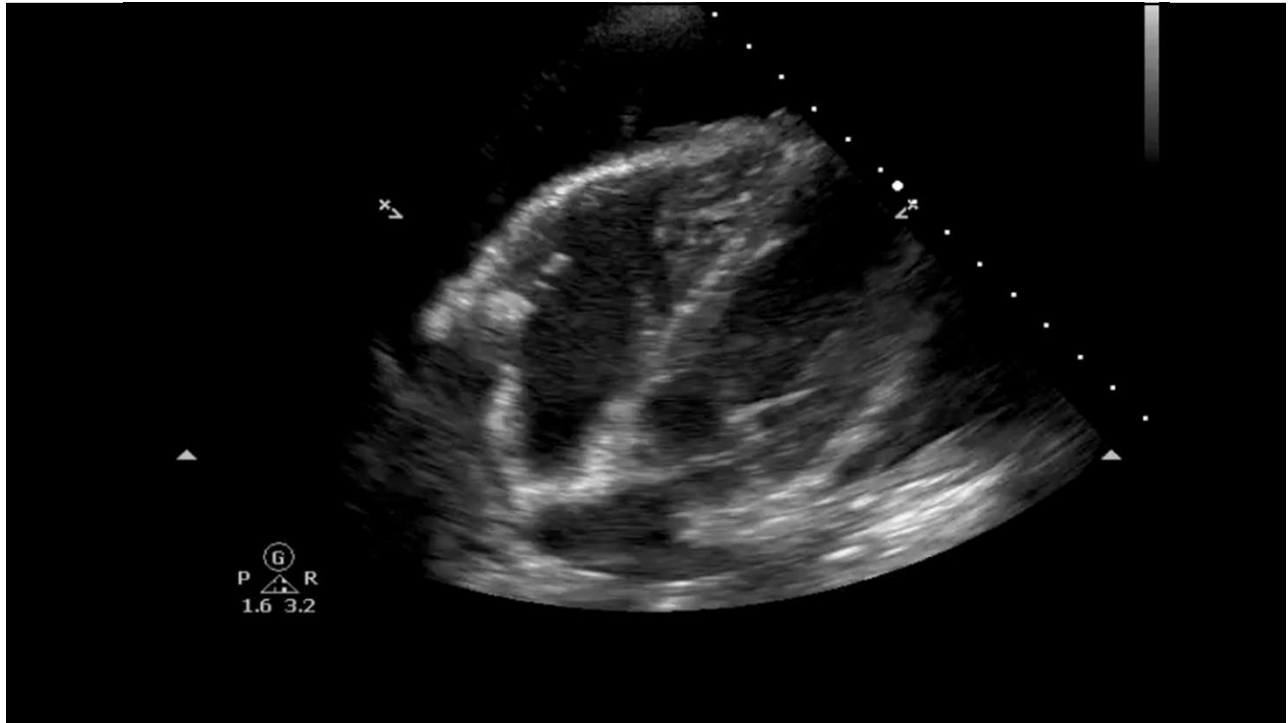
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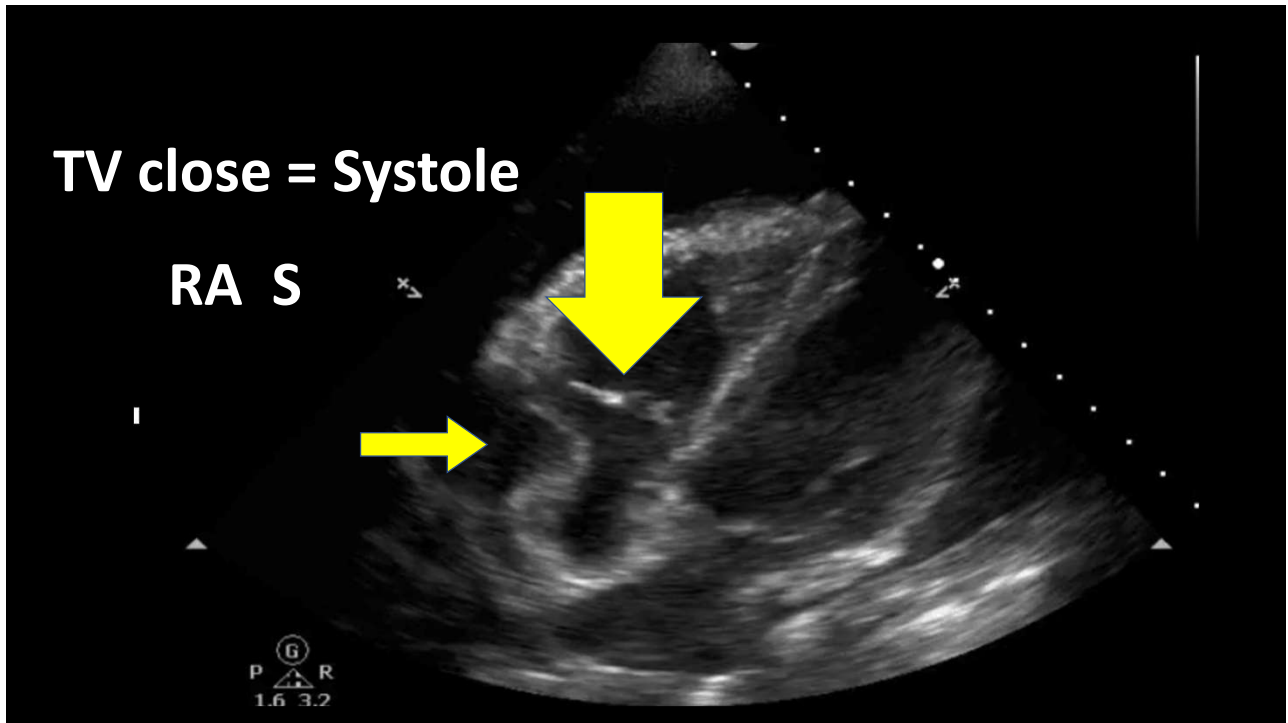
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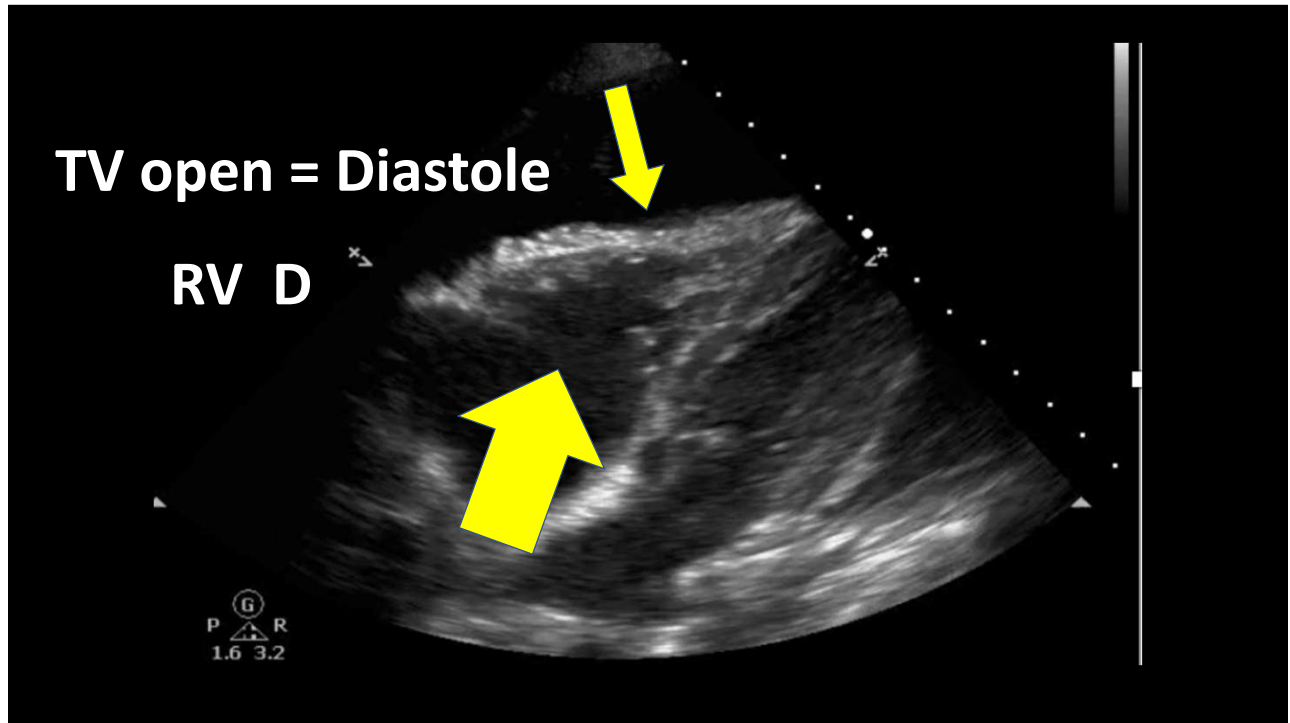
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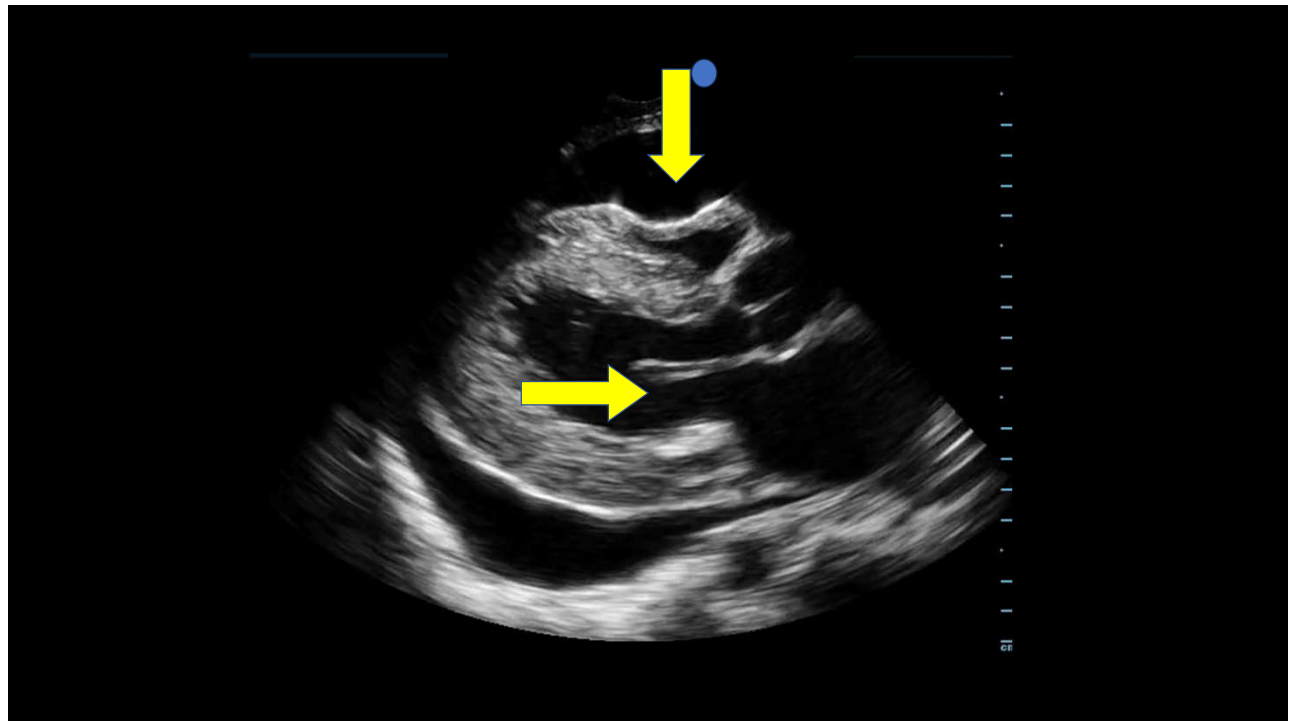
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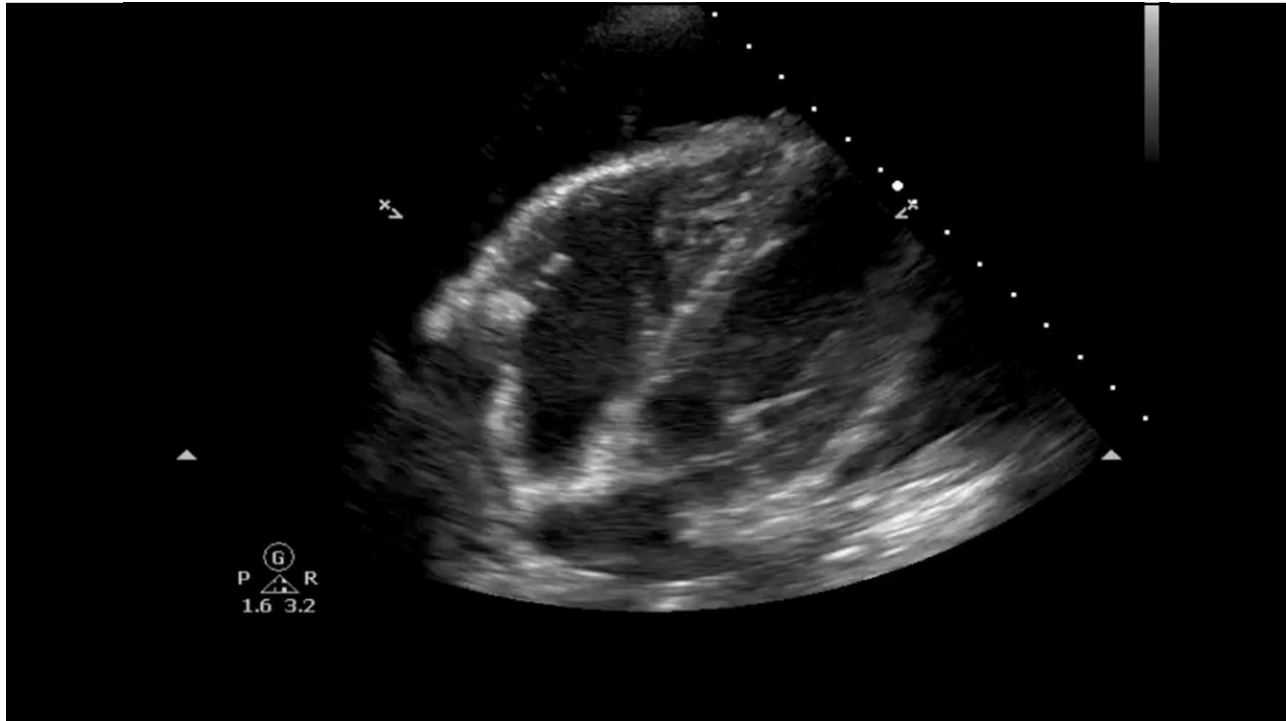
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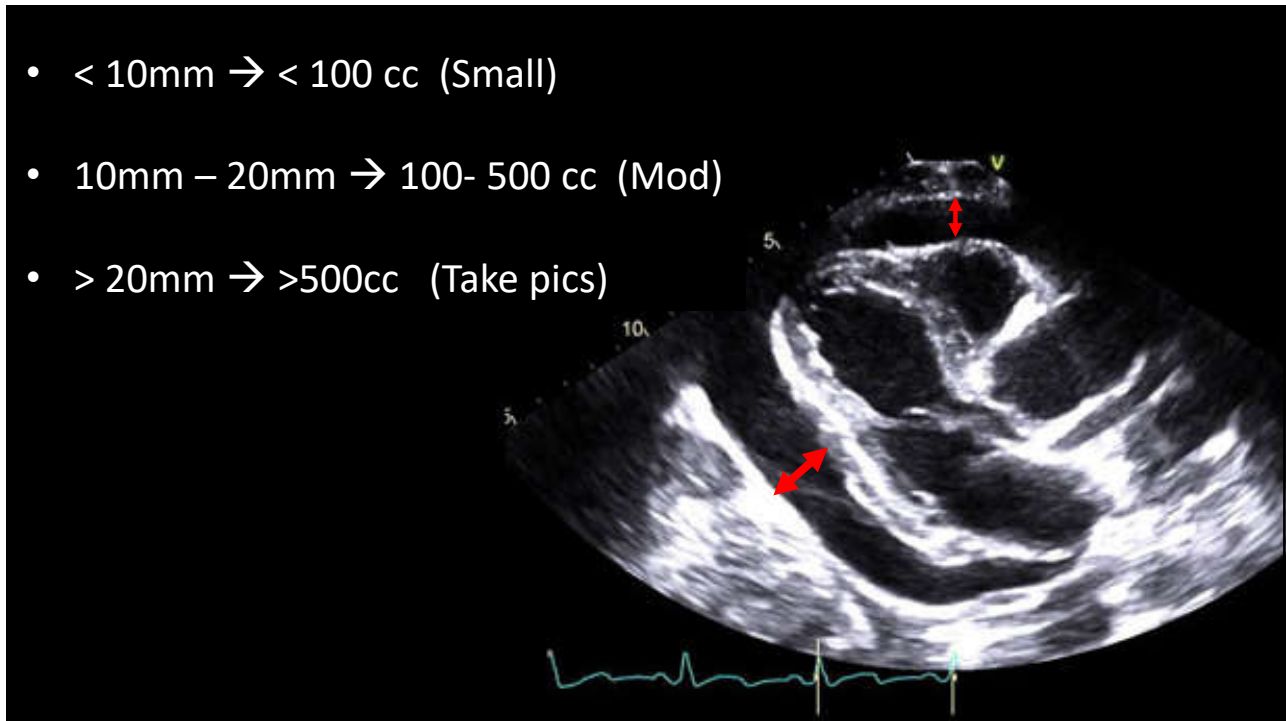


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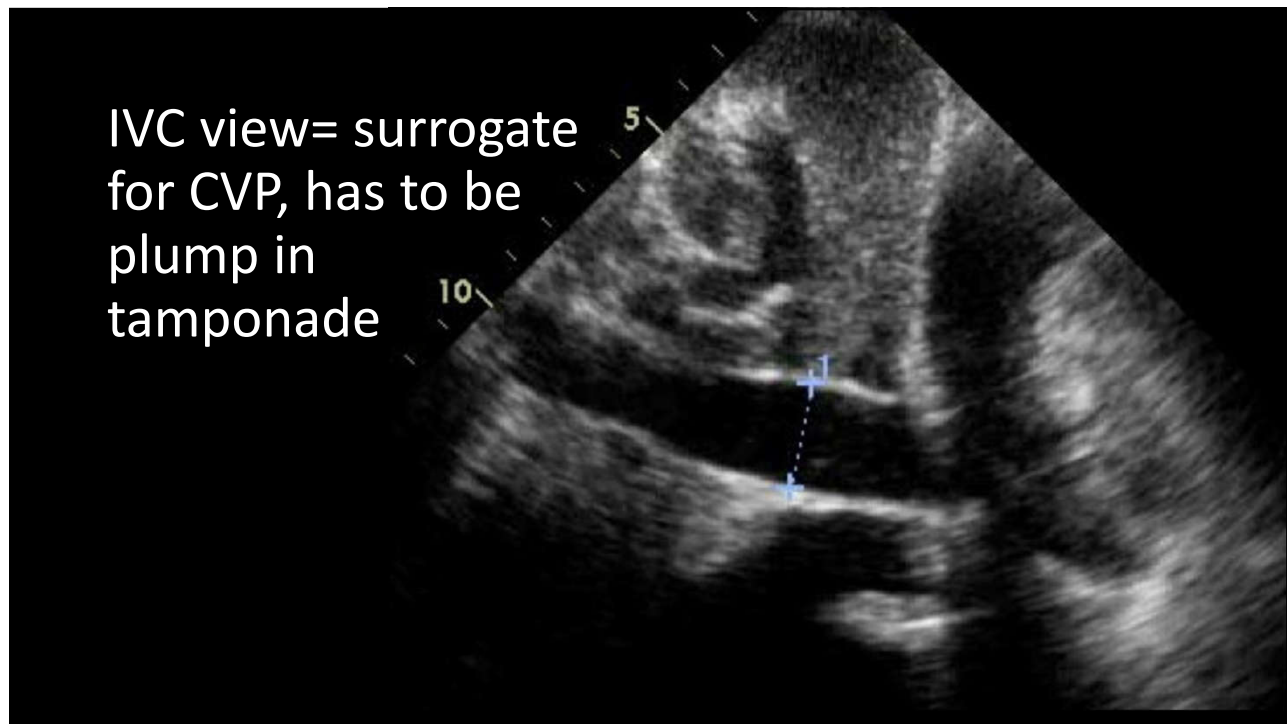


89

- $< 10\text{mm} \rightarrow < 100 \text{ cc}$ (Small)
- $10\text{mm} - 20\text{mm} \rightarrow 100- 500 \text{ cc}$ (Mod)
- $> 20\text{mm} \rightarrow >500\text{cc}$ (Take pics)



90



91


A common pitfall in the management of cardiac tamponade is delaying pericardiocentesis until the patient becomes hemodynamically unstable






92



93

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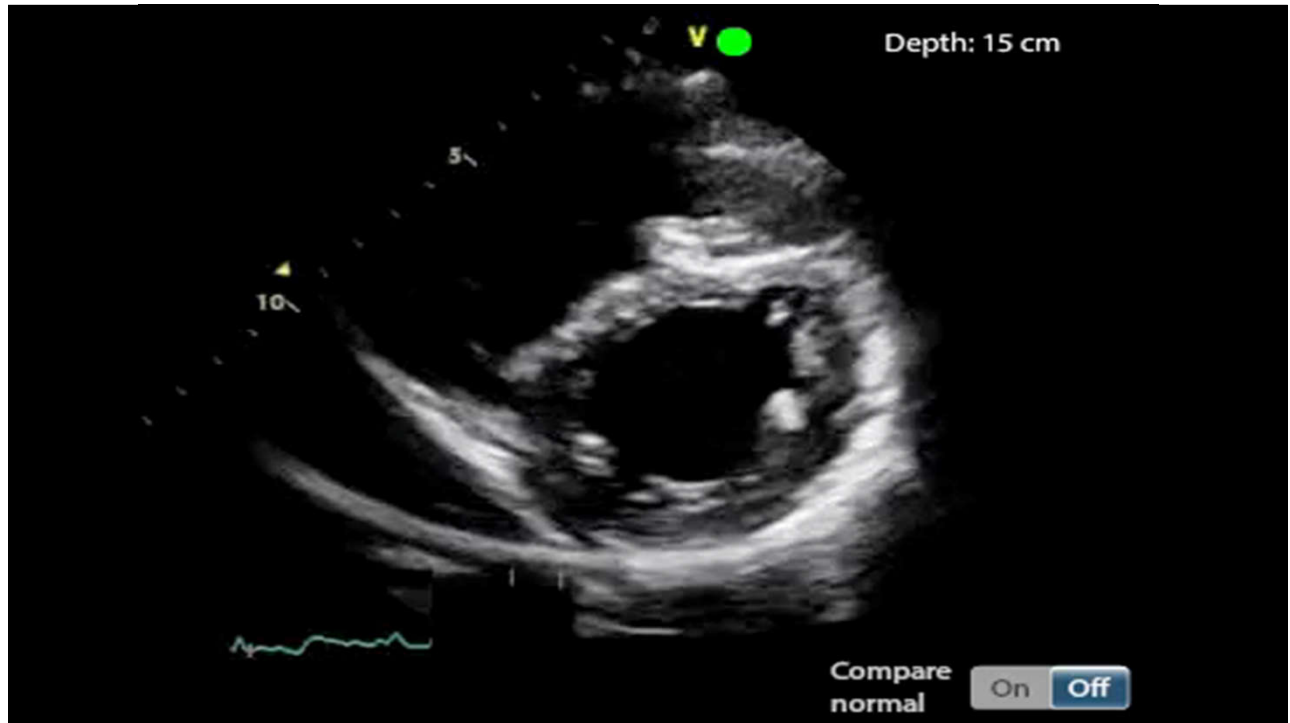
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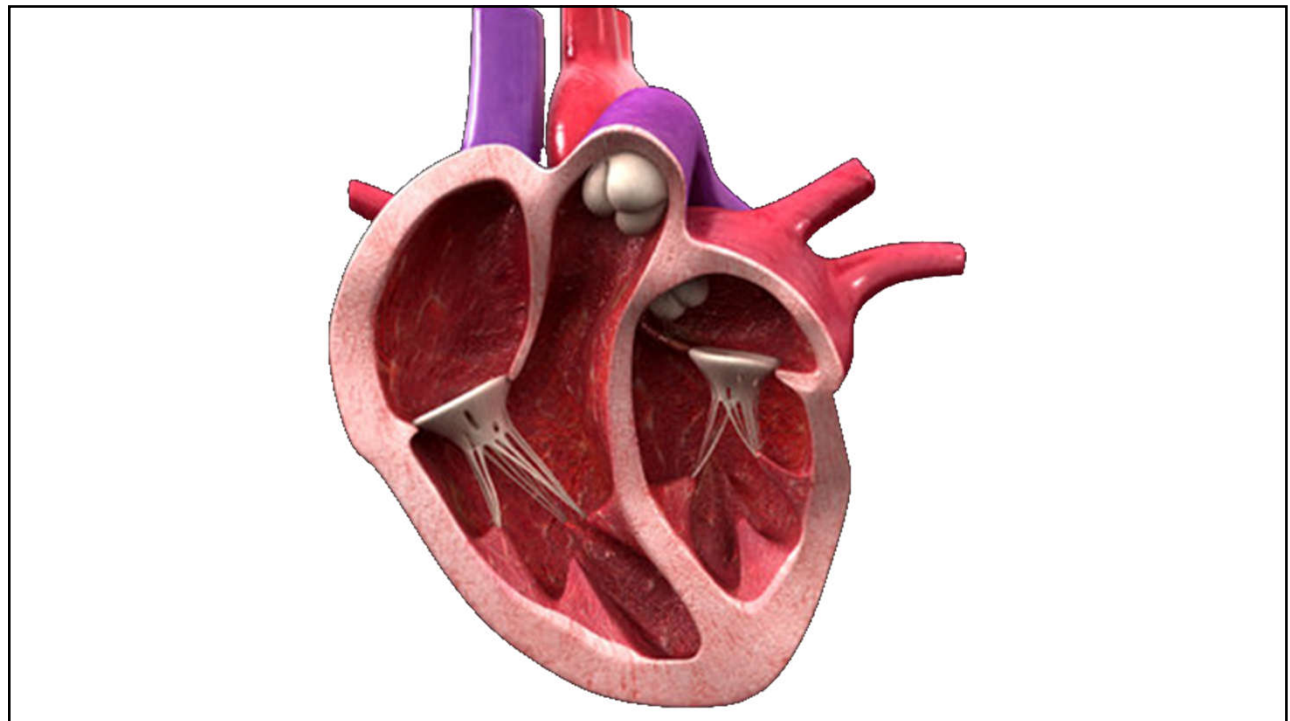
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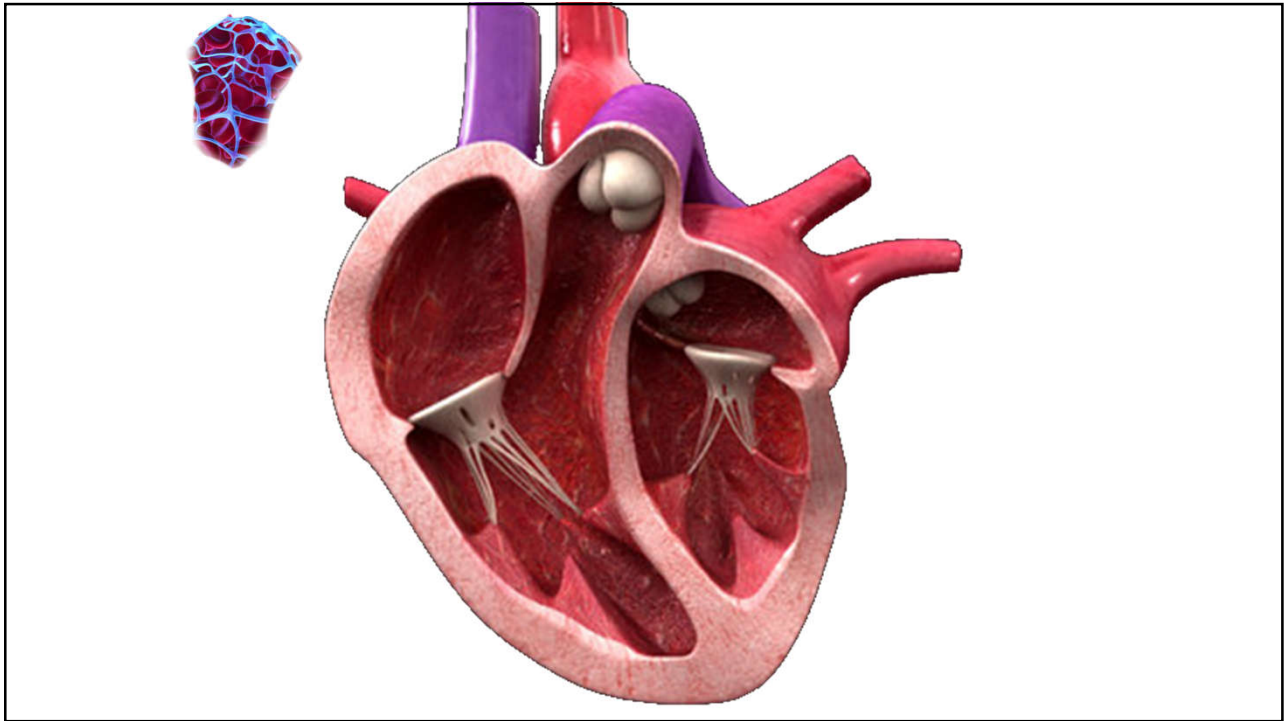
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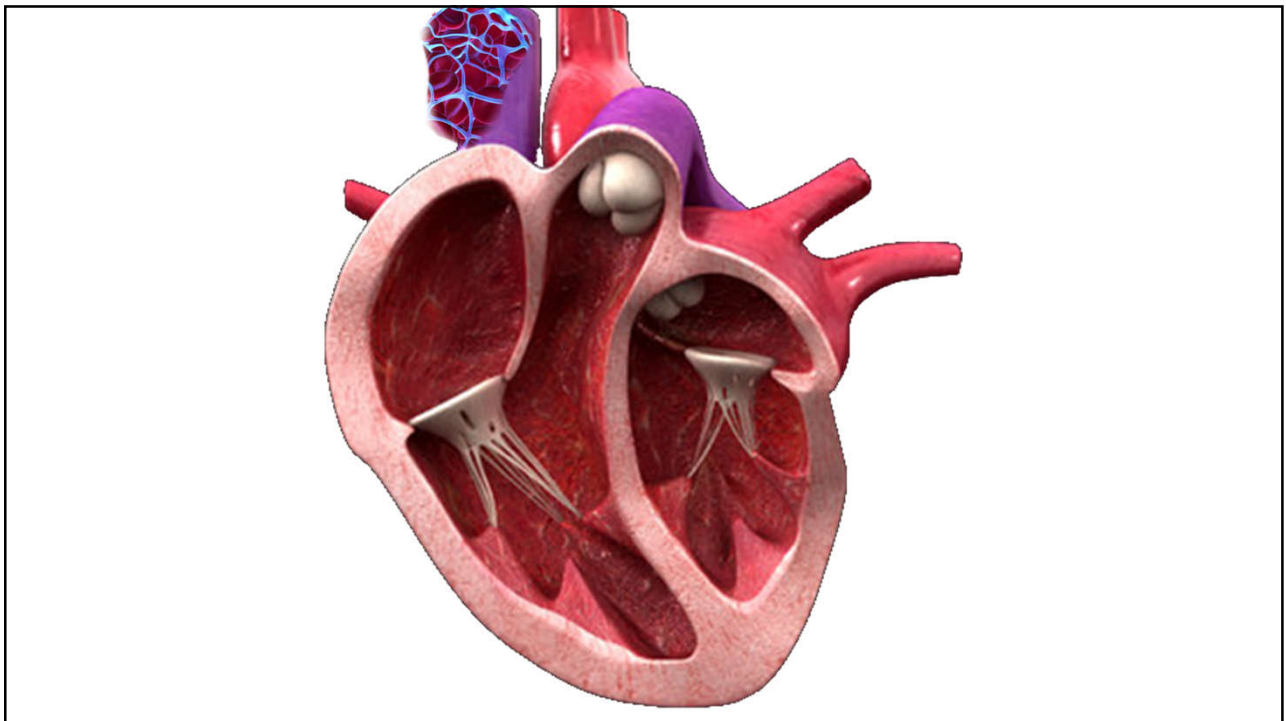
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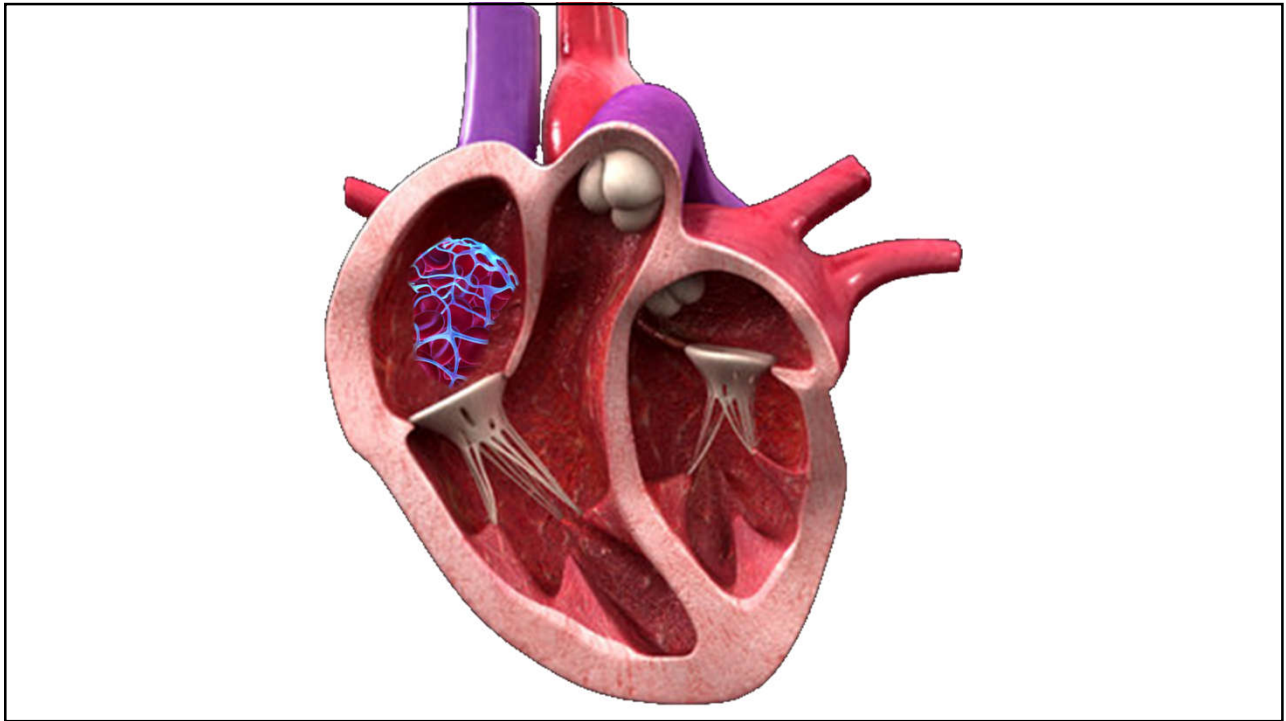
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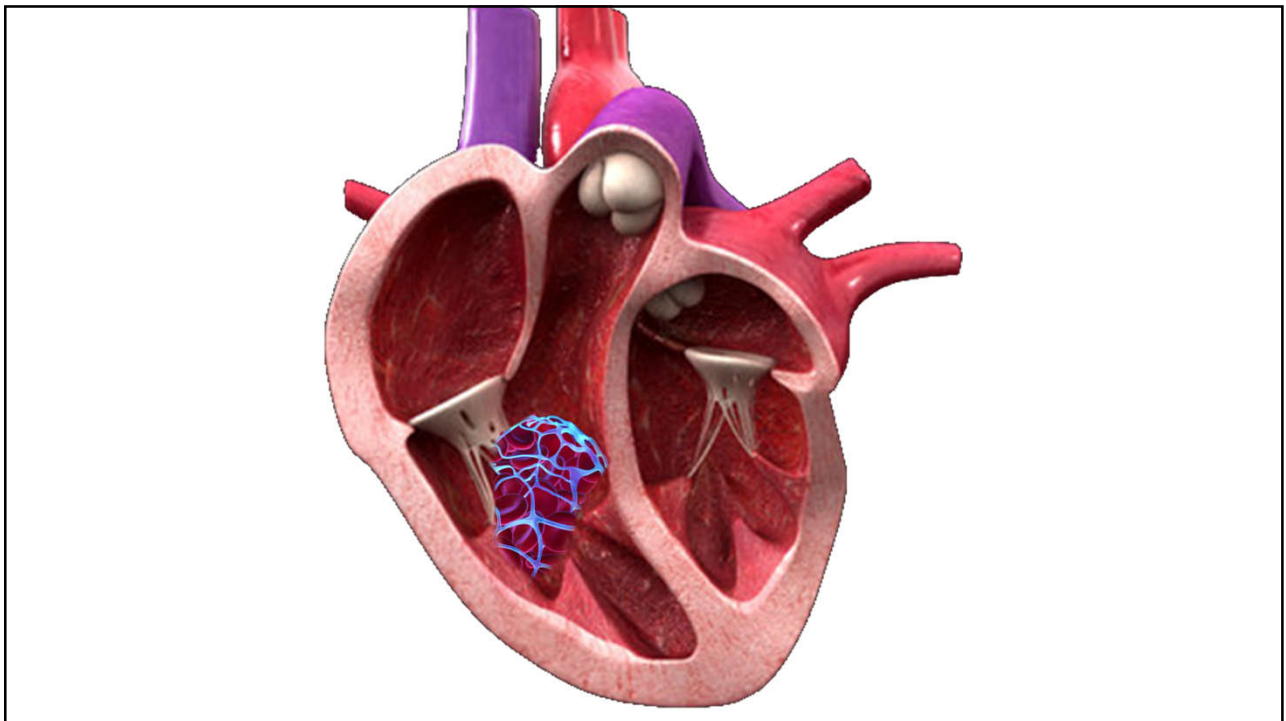
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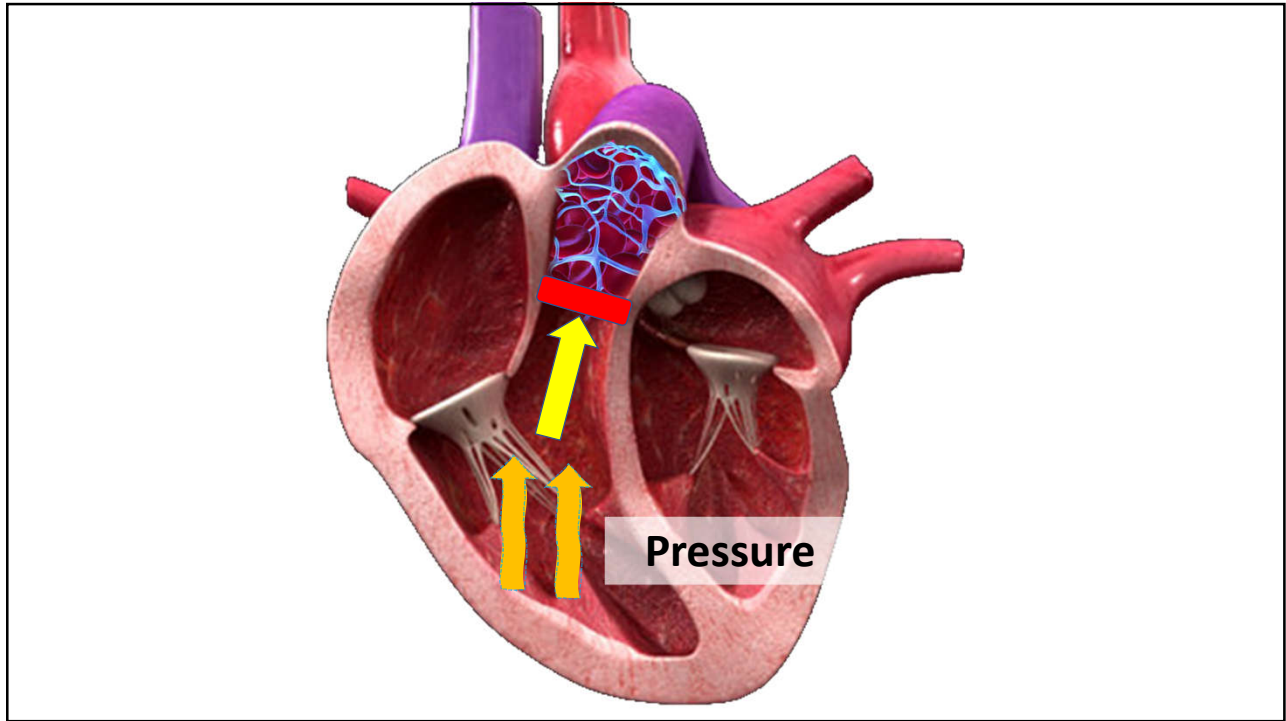
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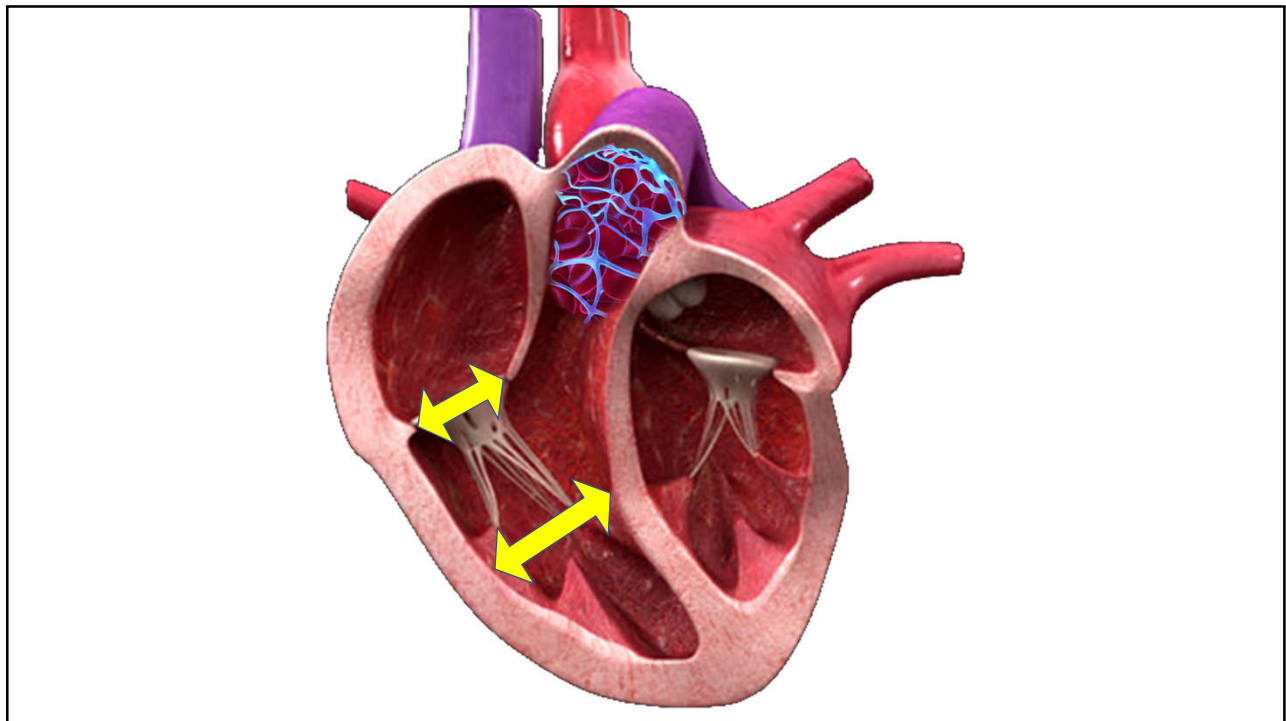
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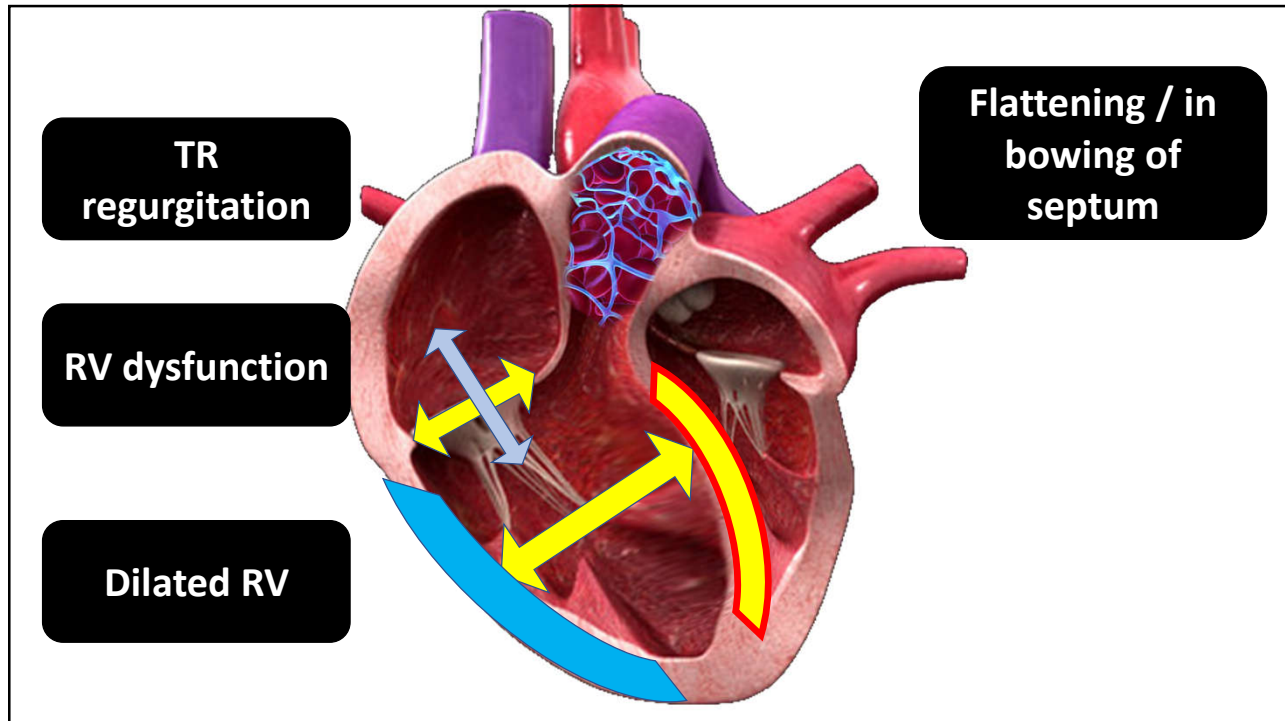
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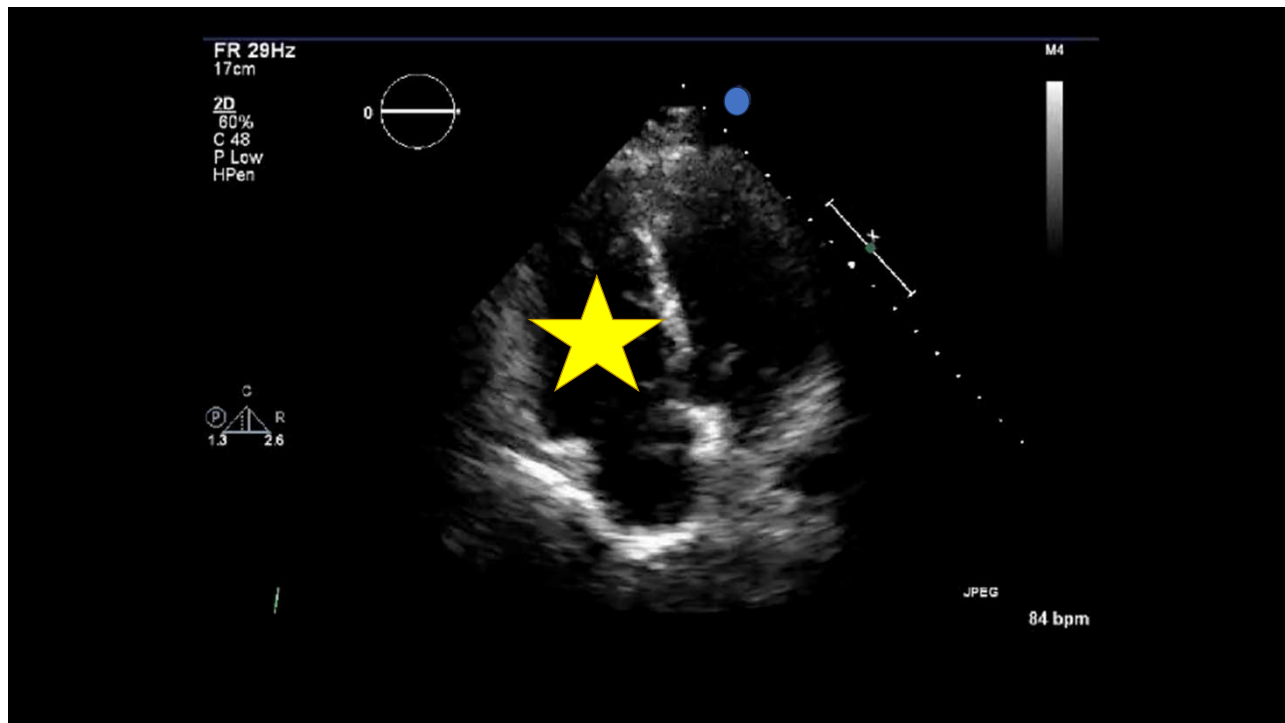
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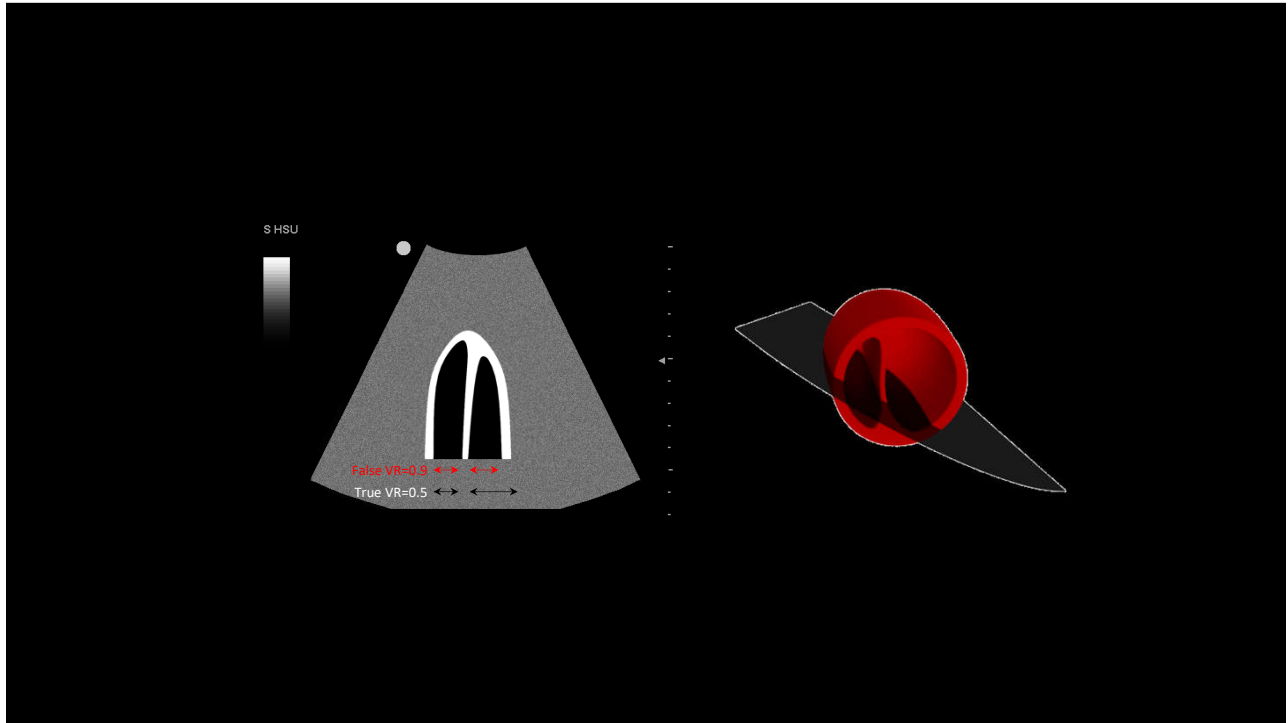
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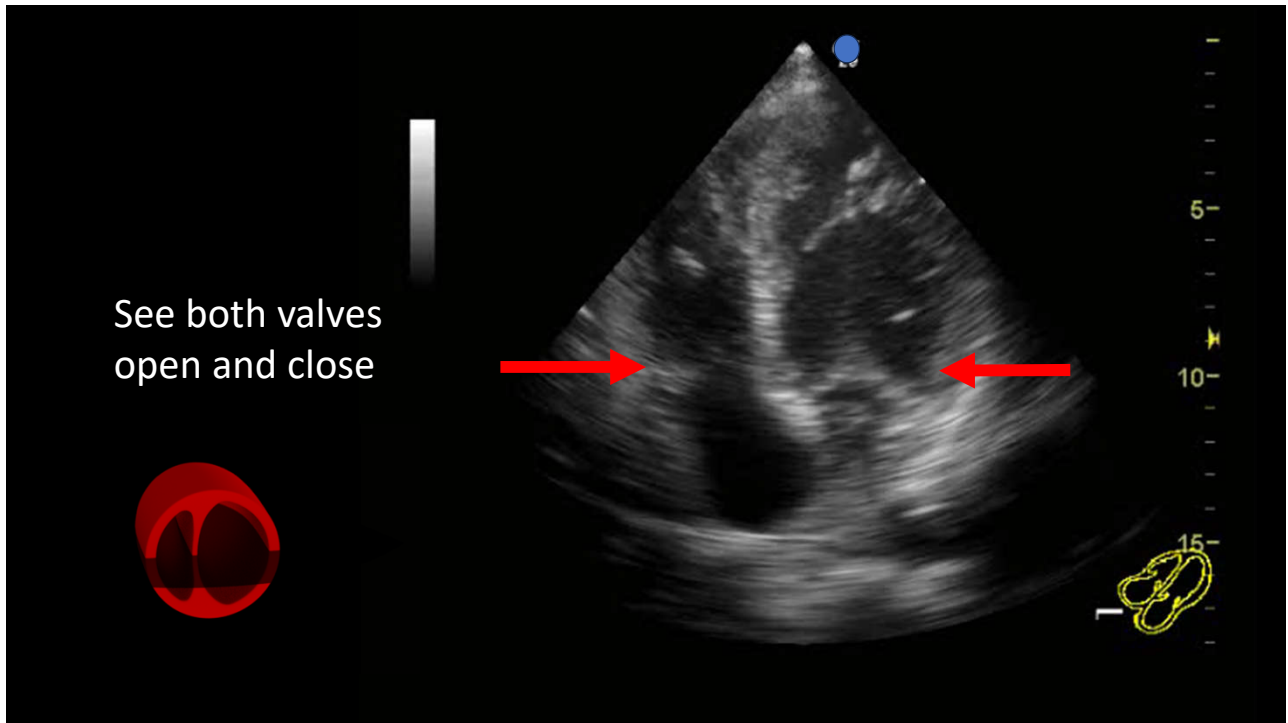
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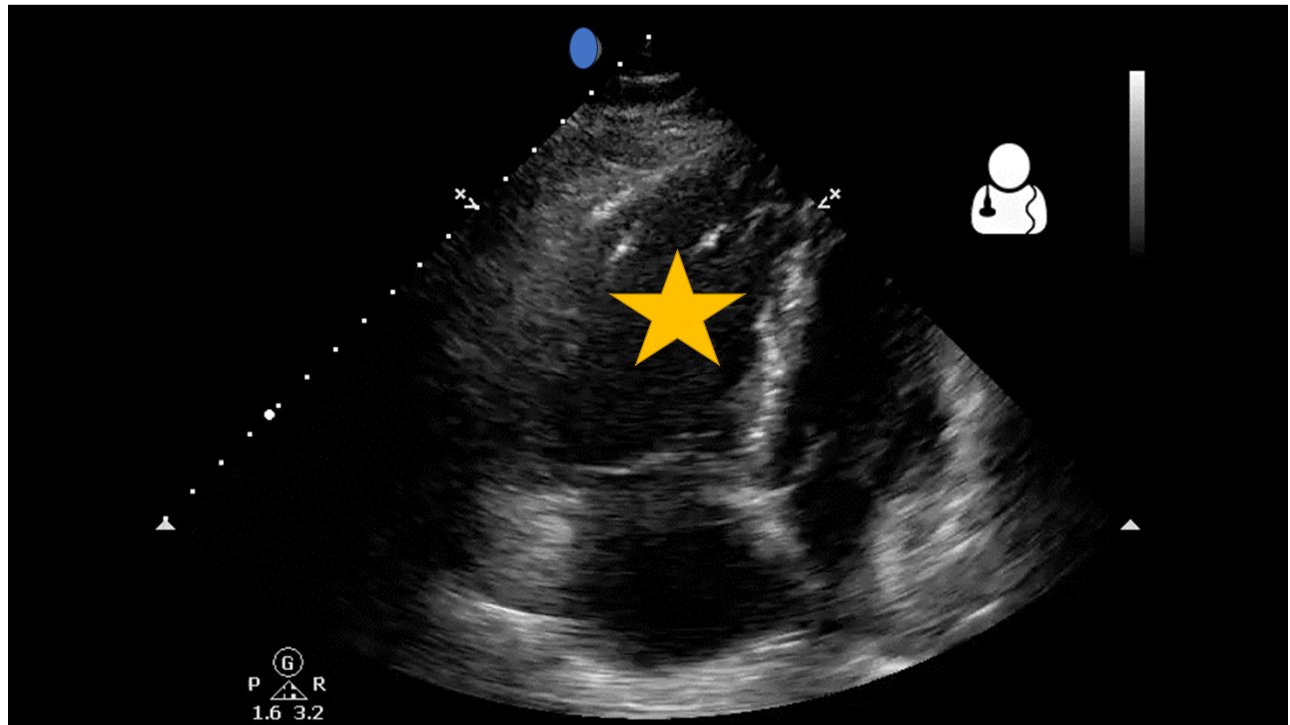
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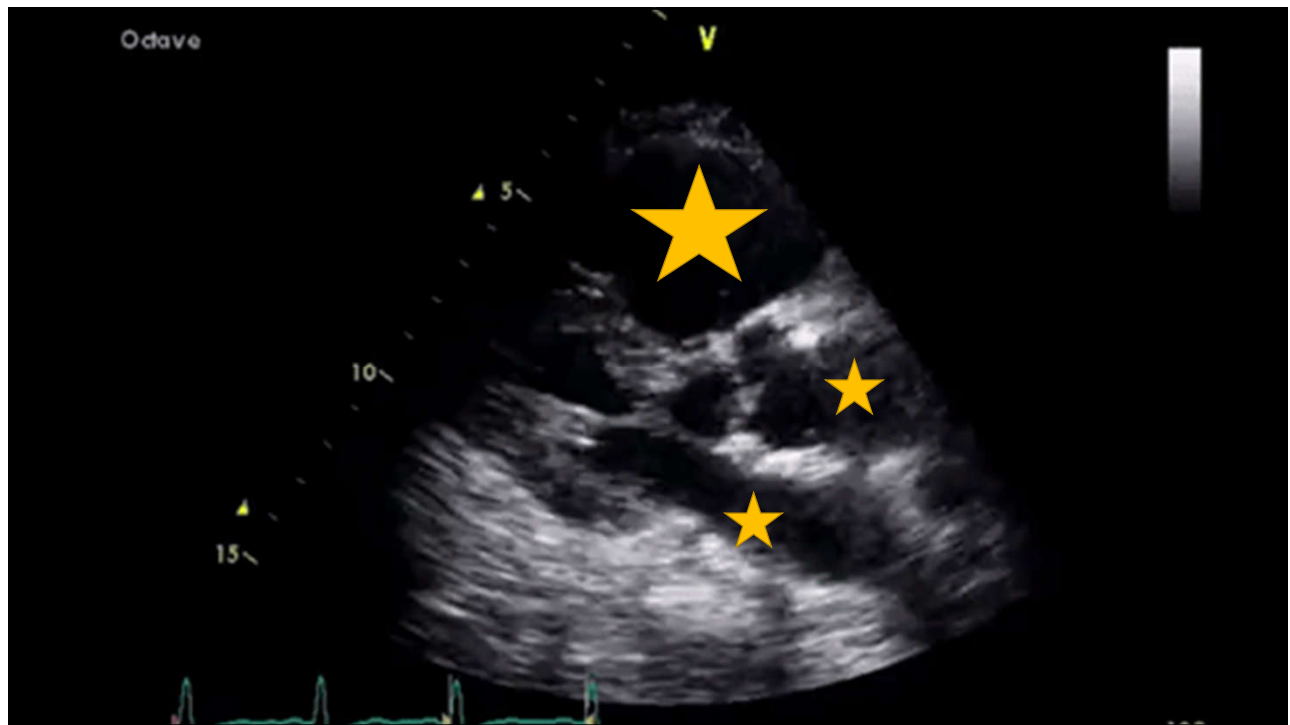
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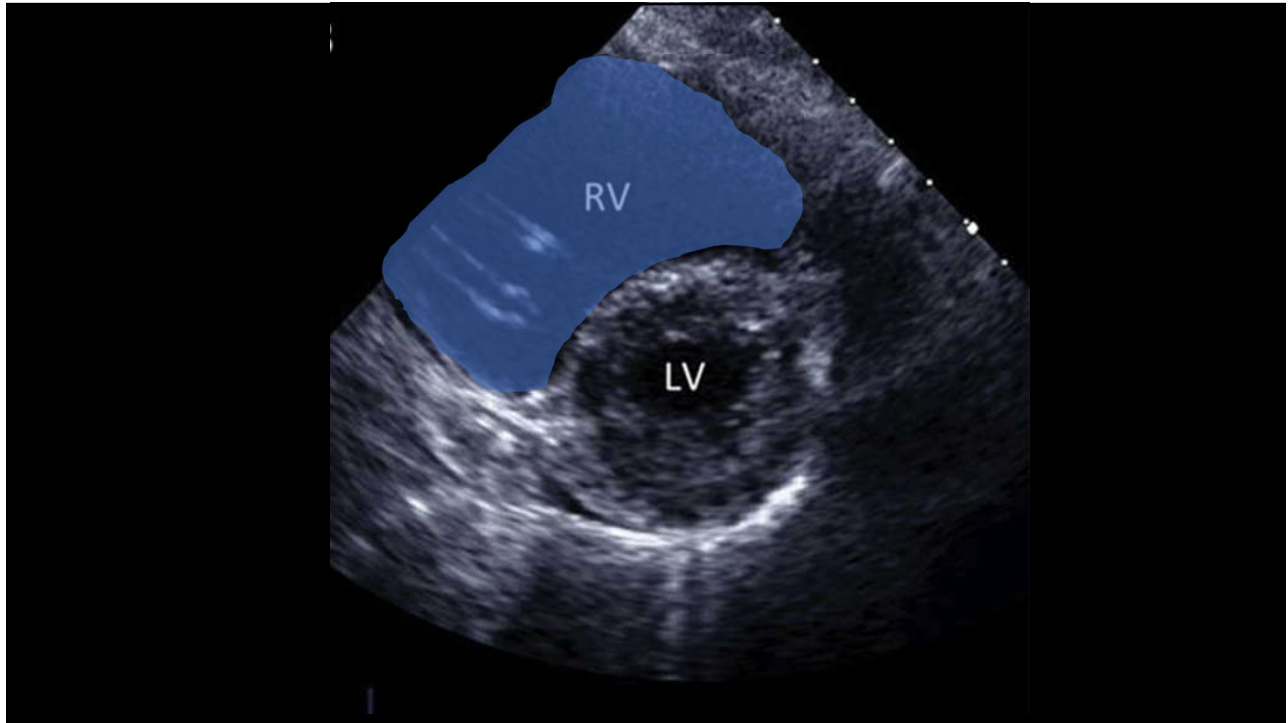
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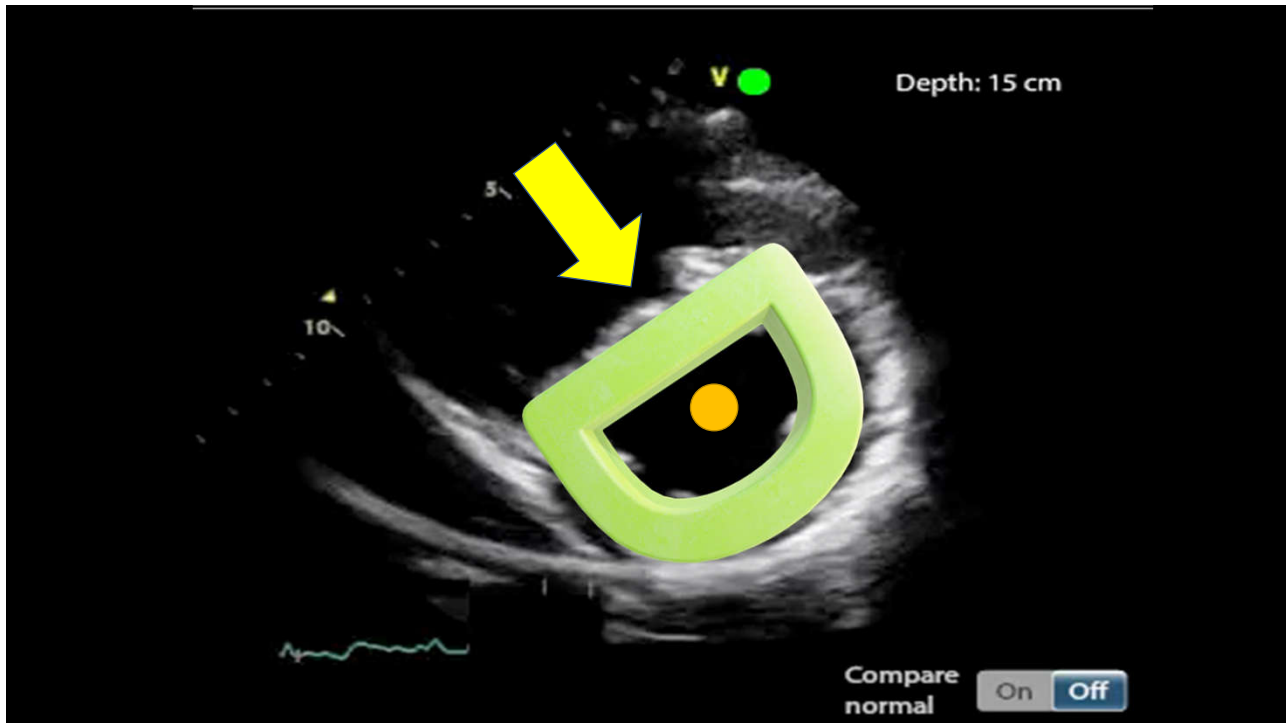
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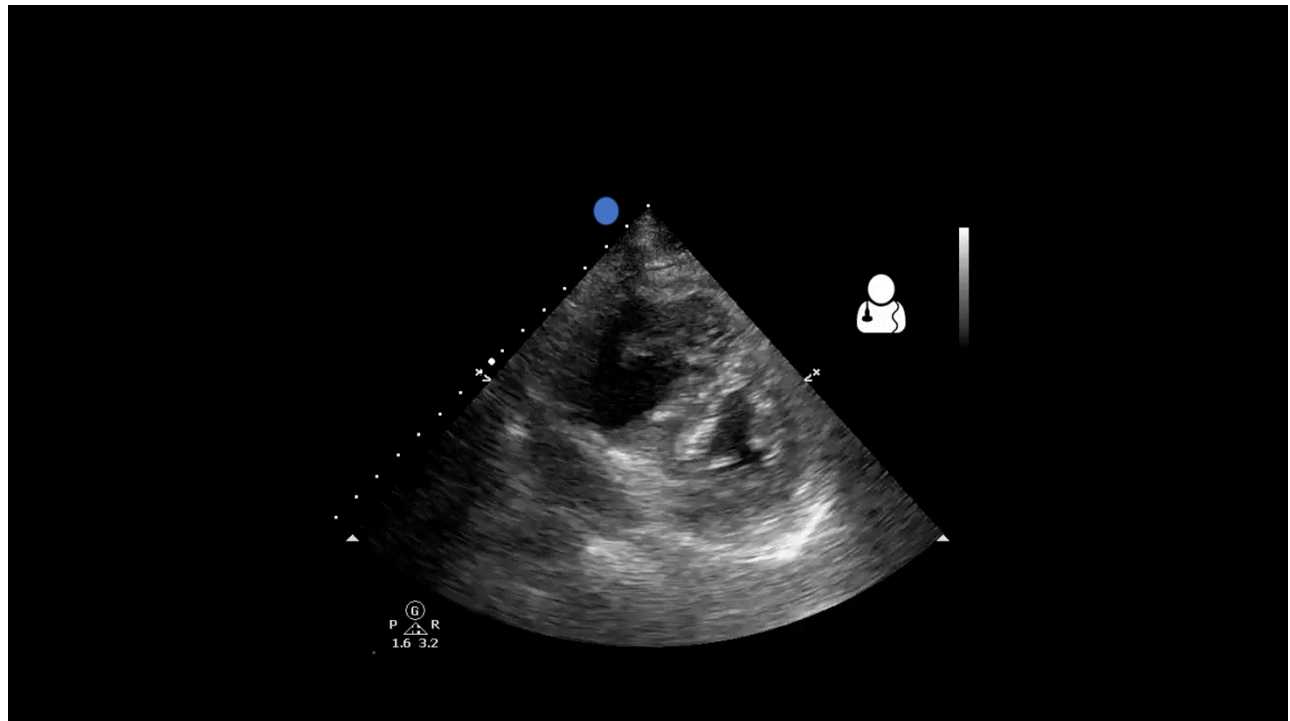
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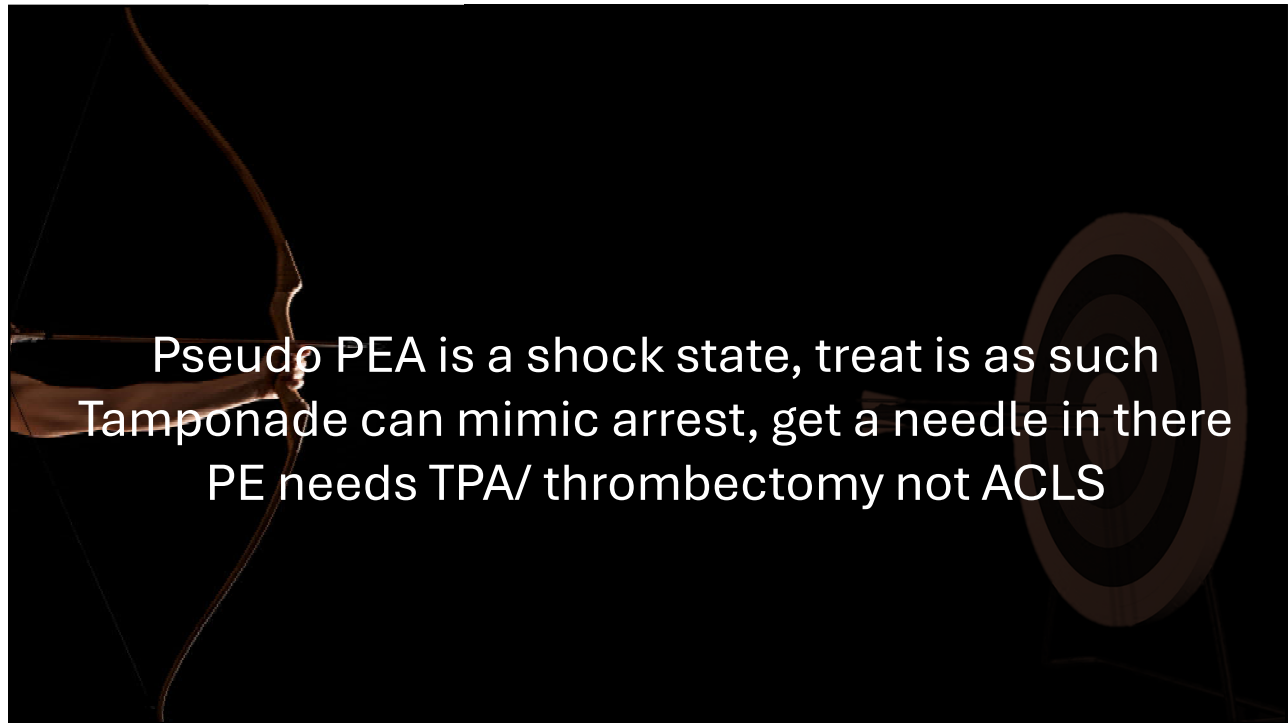
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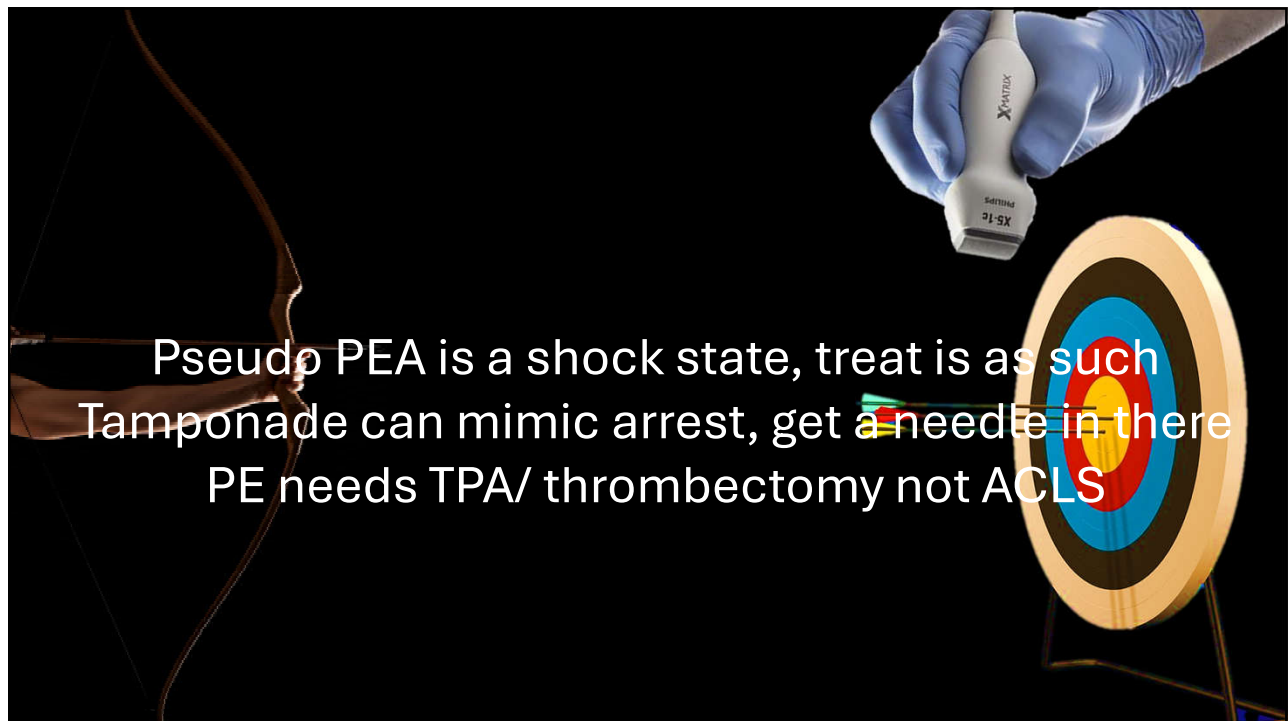
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