

# Atrioventricular septal defects Dare I say it is not OK

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# What is the difference between **Dare I say** and **I dare say** ?

"I dare say" is a statement, and it can be a complete sentence.

« I dare say that if I had read the invitation for this meeting correctly, I would have declined to give this talk».



**Dare he say my title  
is not OK ?**

# What is the difference between **Dare I say** and **I dare say** ?

"Dare I say" is a question and needs more context.

**Surgeon before entering the OR** - Do you think closing the cleft is a bad idea?

**Cardiologist on his way to swimming pool** - I dare say!

*It means Yes, 100%, totally. It's OK but sounds old-fashioned and British.*

*You could also say:*

**Surgeon before entering the OR** - What do you think of closing the cleft ?

**Cardiologist on his way for a coffee break after morning round-** Well, I dare say it is the worst decision you can take in the OR today.

The other one:

**Cardiologist who interrupted lunch with the dean to look at TEE loops** - Dare I say that closing the cleft was a bad idea?

**Surgeon (who just asked before entering the OR to be polite)** - No, you'd better dare not say that before having seen the valve function when the anesthesiologist will have correctly (if I dare) managed preload and LV function.

## My senior surgeons



Régis Gaudin  
(Very compliant surgeon)

Olivier Raisky  
(Head of Cardiac surgery)

Tomorrow morning, I do the arterial switch because I have to go to the swimming pool to relax at 11 am. You do the regurgitant AVSD in the 4 kg baby who had recent bronchiolitis and cannot be weaned from ventilator

# Re-repair after primary AVSD surgery (1)

**Proportion of reinterventions on Left AVV** ~15% of patients require future left atrioventricular valve (LAVV) repair

3 to 5% reoperations for subaortic obstruction

5% pace-maker implantation

anecdotal reoperations for RAVV dysfunction

## **Burden of reoperations**

LAVV repair in 85% of cases during 1<sup>st</sup> reoperation

A third of LAVV repair will require a re-repair

LAVV replacement in ~40% during 2<sup>nd</sup> reoperation

# Re-repair after primary AVSD surgery (2)

## **Causes for reinterventions after AVSD repair**

- unintentional technical inadequacy
- remnant morphological LAVV anomalies that remained untouched or unrecognized at the time of the primary repair

## **Prevention of residual lesion**

- optimizing repair in « classical forms »
- increased attention for additional anatomical features of the LAVV at the time of primary repair

# Risk factors for reintervention or suboptimal results

## Reinterventions

- absence of trisomy 21,
- significant preoperative LAVV regurgitation,
- more-than-moderate residual postoperative LAVVR,
- absent or incomplete cleft closure
- severely dysplastic or double-orifice LAVV.

## Anticipated suboptimal results

- Impossibility to completely close the cleft
- Aberrant subvalvular apparatus
- Double-orifice LAVV or dysplastic leaflets
- Asymmetric superior bridging leaflet
- Additional cleft

Michielon G, et al. Left atrioventricular valve incompetence after repair of common atrioventricular canal defects. *Ann Thorac Surg* 1995;60:S604–9.

Murashita T, et al. Left atrioventricular valve regurgitation after repair of incomplete atrioventricular septal defect. *Ann Thorac Surg* 2004;77:2157–62.

Minich LL, et al. Partial and transitional atrioventricular septal defect outcomes. *Ann Thorac Surg* 2010;89:530–6.

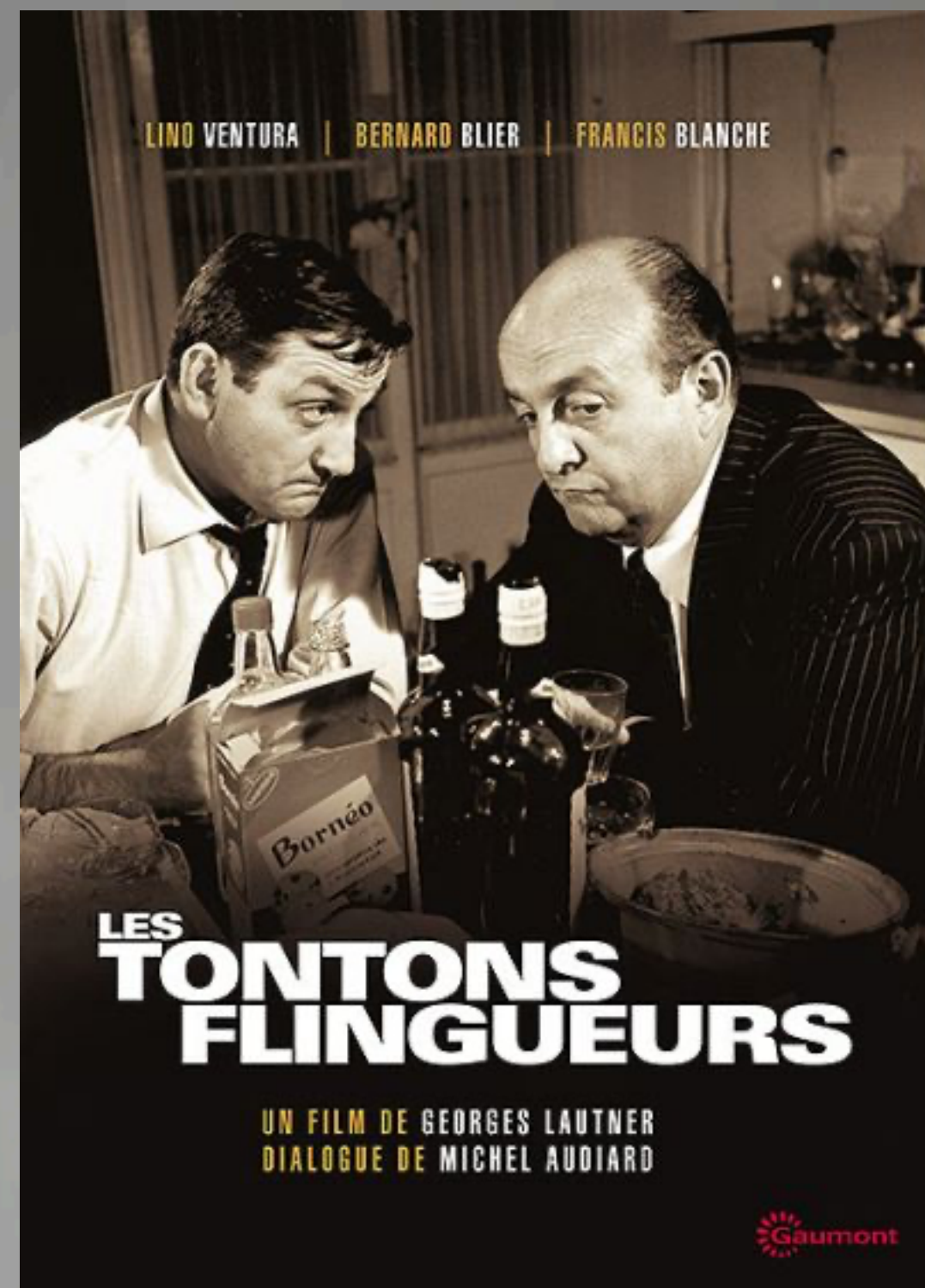
Hooehenkerk GJ, et al. Results of surgical repair of atrioventricular septal defect with double-orifice left atrioventricular valve. *J Thorac Cardiovasc Surg* 2009;138:1167–71.



Do you need to know to decide ?

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The more you know, the more you dare®

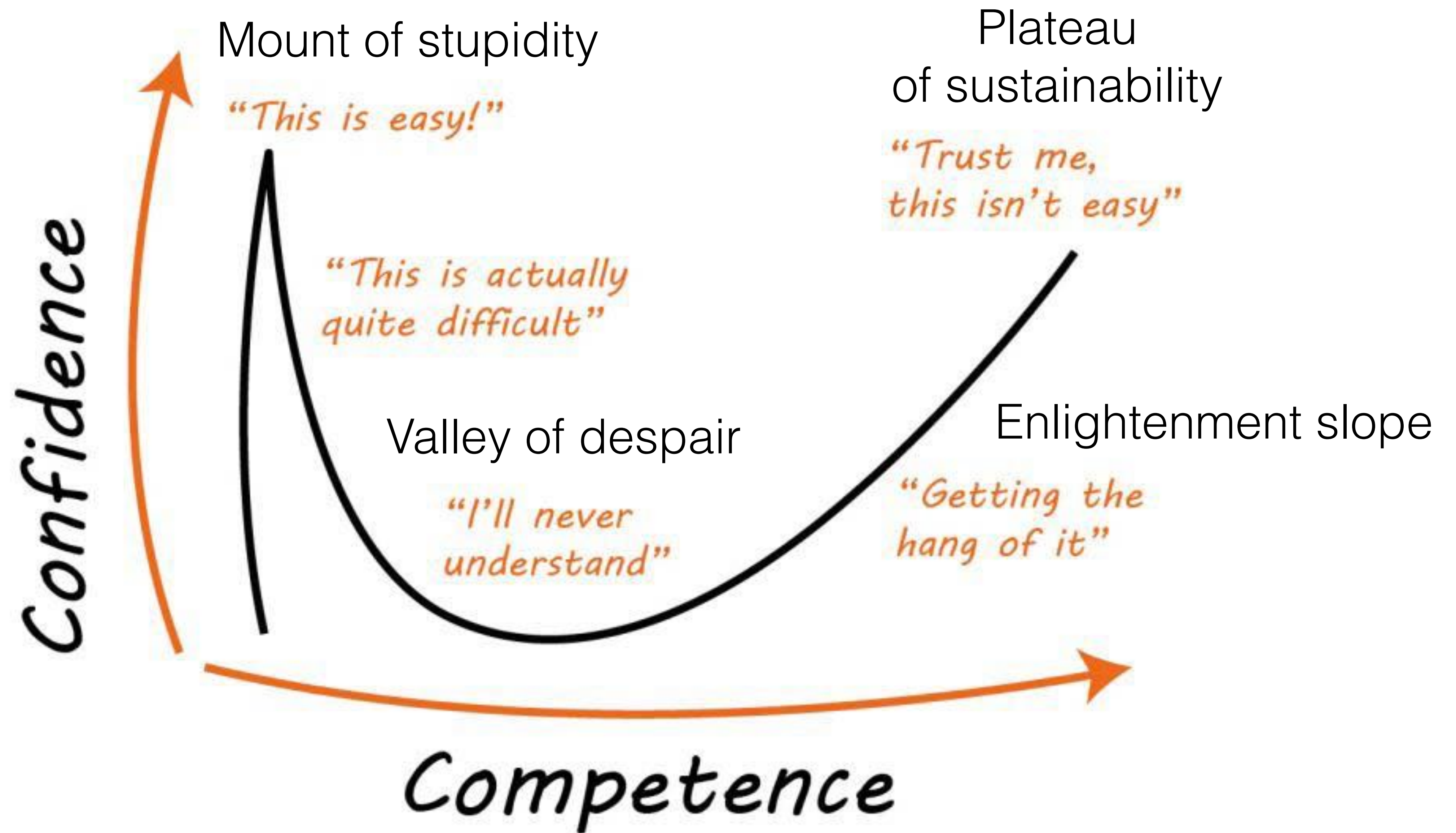


Idiots dare everything and it's it their main phenotypic trait

## Donald Trump is bolder than many doctors

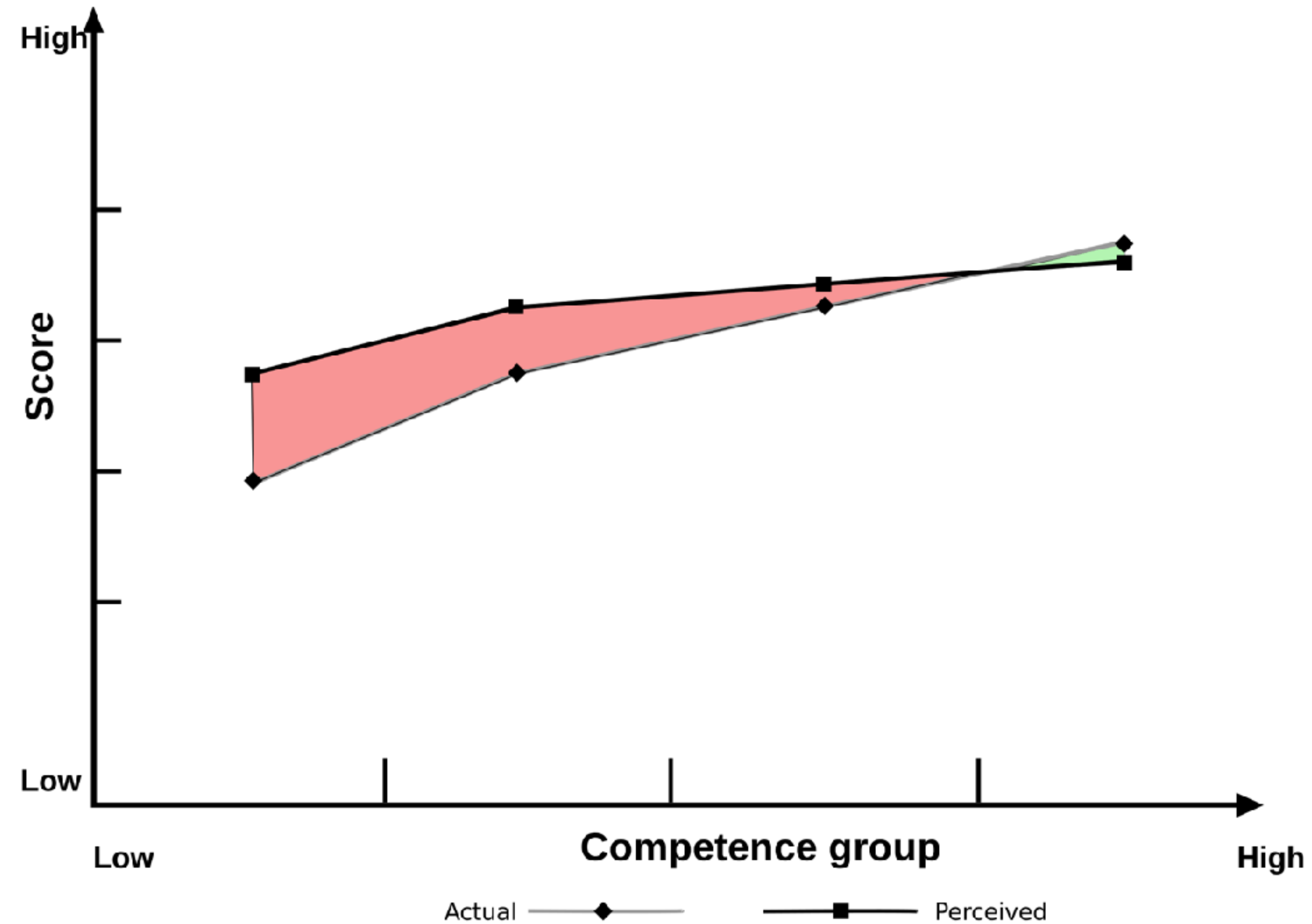


President Donald Trump took to the White House briefing room and encouraged his top health officials **to study the injection of bleach into the human body as a means of fighting Covid.** *It was a watershed moment, soon to become iconic in the annals of presidential briefings. It arguably changed the course of political history.*



Dunning-Kruger effect is that you can realize that you are not competent enough only after having acquired competency for the task

# Dunning-Kruger Effect



Relation between average self-perceived performance and average actual performance on a college exam.

[1] The red area shows the tendency of low performers to overestimate their abilities.

Nevertheless, low performers' self-assessment is lower than that of high performers.



**A person's intelligence is measured by the amount of uncertainty he/she is able to withstand. *Emmanuel Kant***

# Trust is necessary



**Pascal Vouhé**

« You can do better ».

Believing that it can be better is to predict that the result will be better and this should be related to shared knowledge.

The diagnosis and the decision should converge to the final idea that the result will be OK.

It should also be attractive or feasible.

But evaluating the risk is a problem here: we always overestimate the risk associated with our actions compared to the risk of our non action.

# Trust & Procrastination



When it is not OK, we know that what will happen after going back on pump will depend on what will be done by the surgeon.

As we do not know (and he neither) what he will do, we cannot know what will happen.

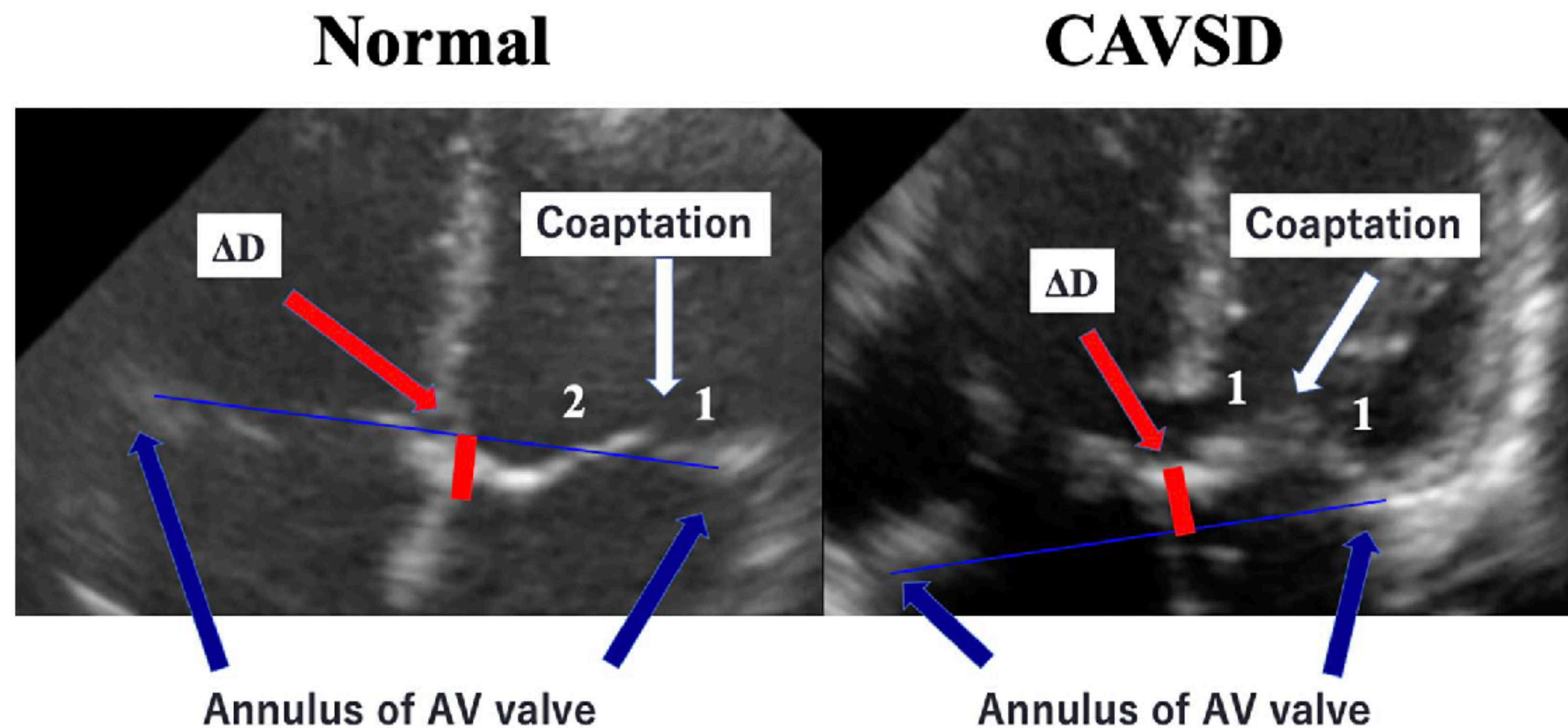
Then, we wait to see what happens by doing nothing to be able to decide to do something that may have unexpected consequences ....



# Is there a little bit of knowledge ?

## Mechanisms of coaptation after repair

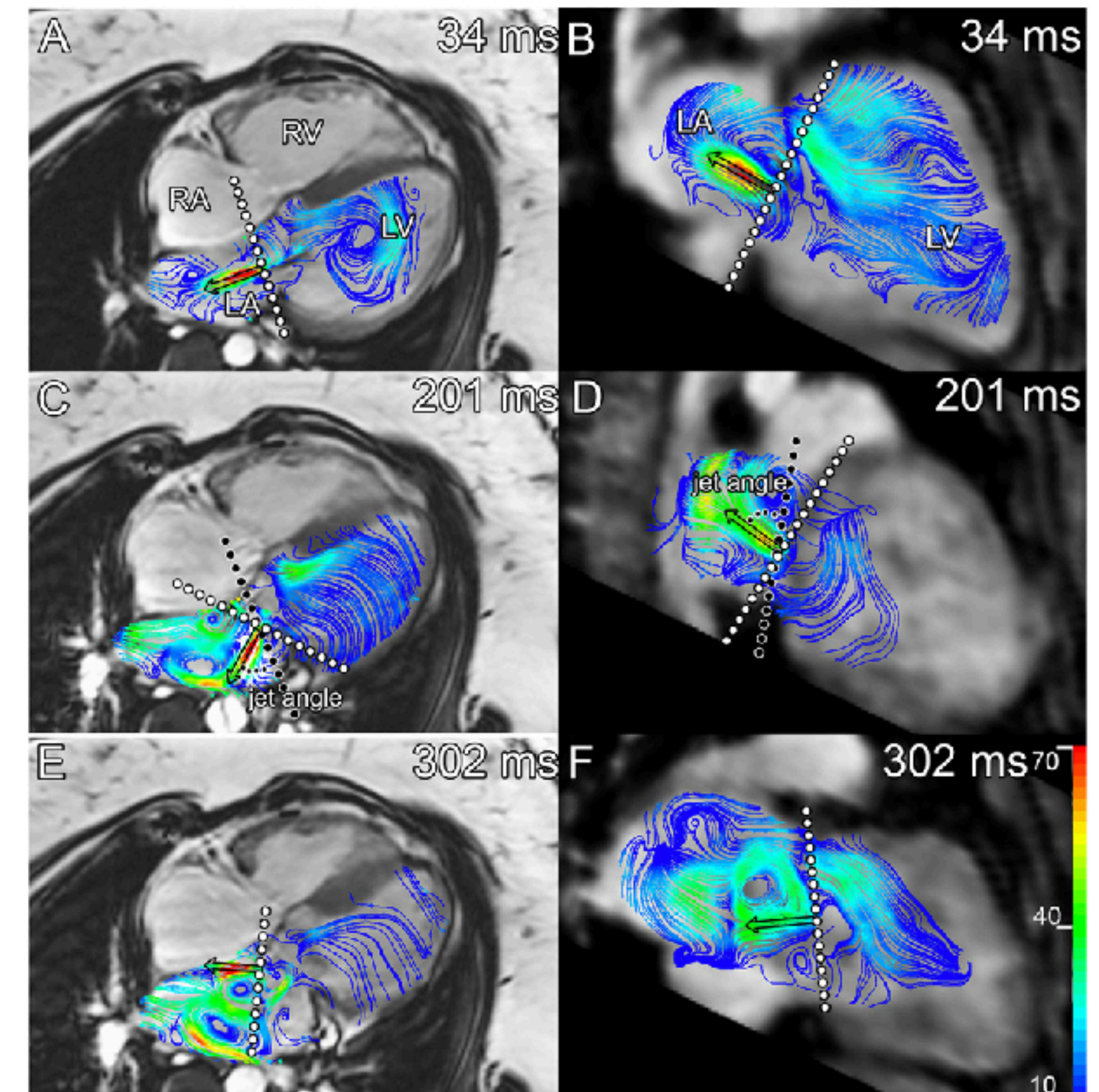
- the role of the bridging leaflets is minimal
- the size of the mural leaflet and papillary muscle position is controversial
- displacement to the apex of the coaptation point is debated...



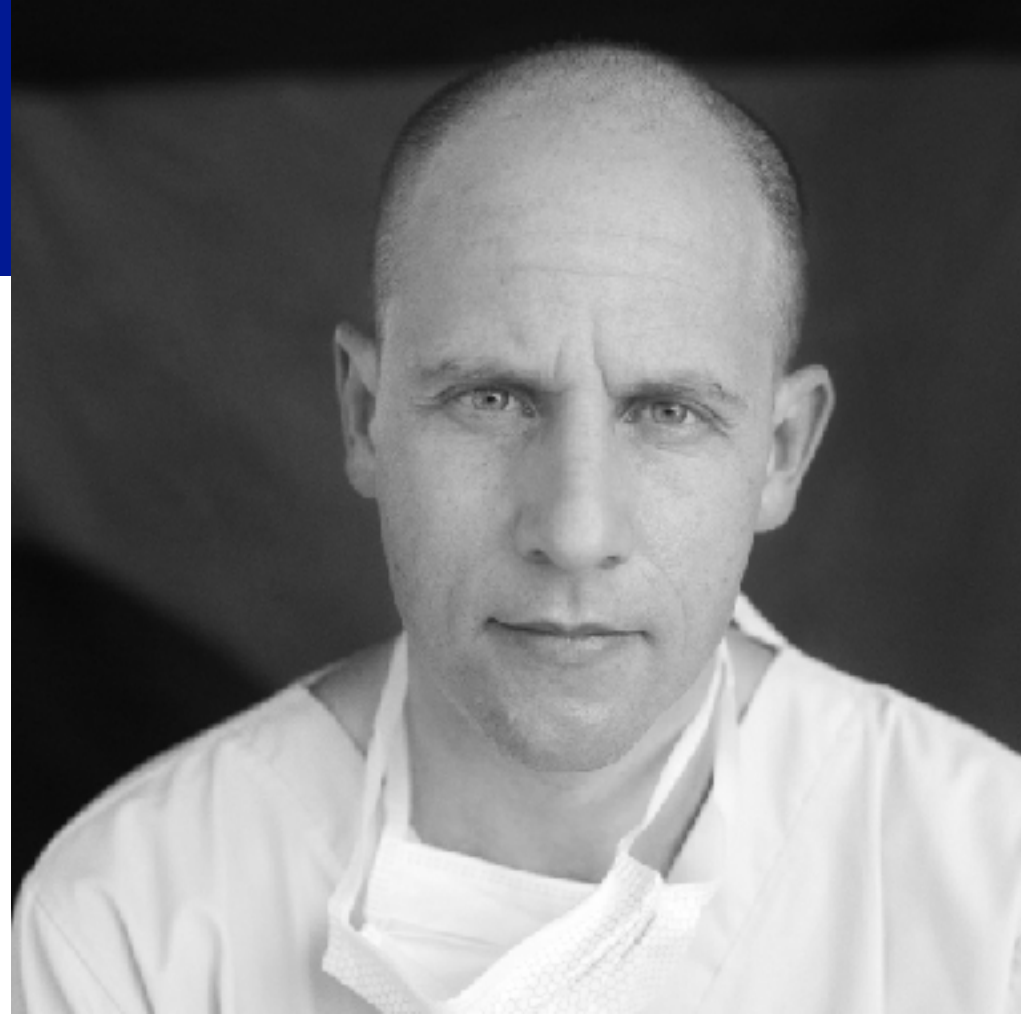
# Is there a little bit of knowledge ?

## Limitations of qualitative and quantitative assessment of LAVV with echocardiography

- multiple, dynamic and eccentric regurgitant jets
- non-circular cross-sectional shape ...



# When I dare say it is not OK ?



- 1-Data in advance
- 2-Tactical scheme and organization
- 3-Follow the predefined procedure
- 4-Anticipate adverse events and adapt to unexpected findings

# When is it easy to dare say it is not OK ?

1-« good » ventricles functions -Discuss

## 2-**VSDs**

-small close to the patch (aortic or posterior) NO

-somewhere else or with high right ventricular pressure YES

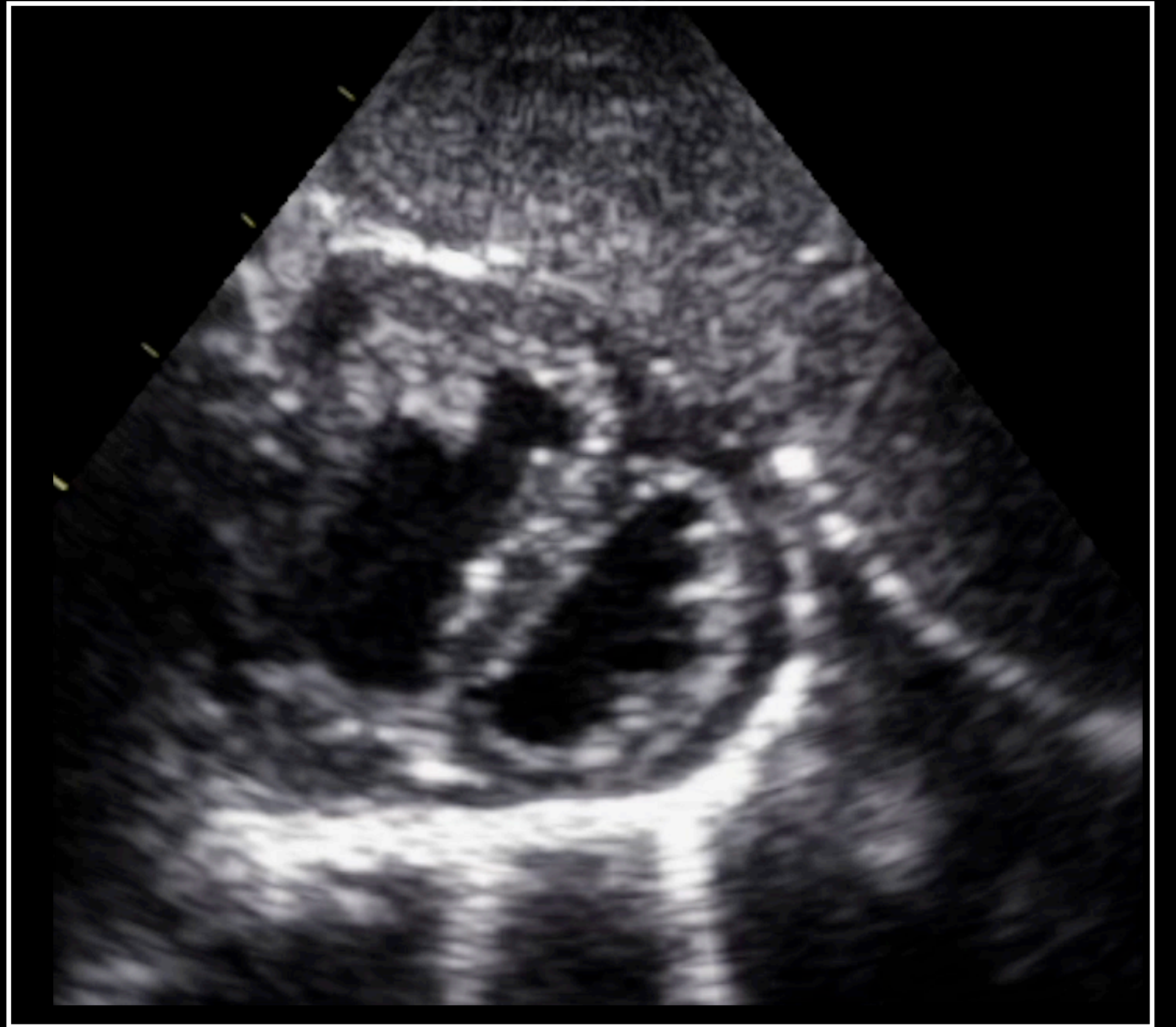
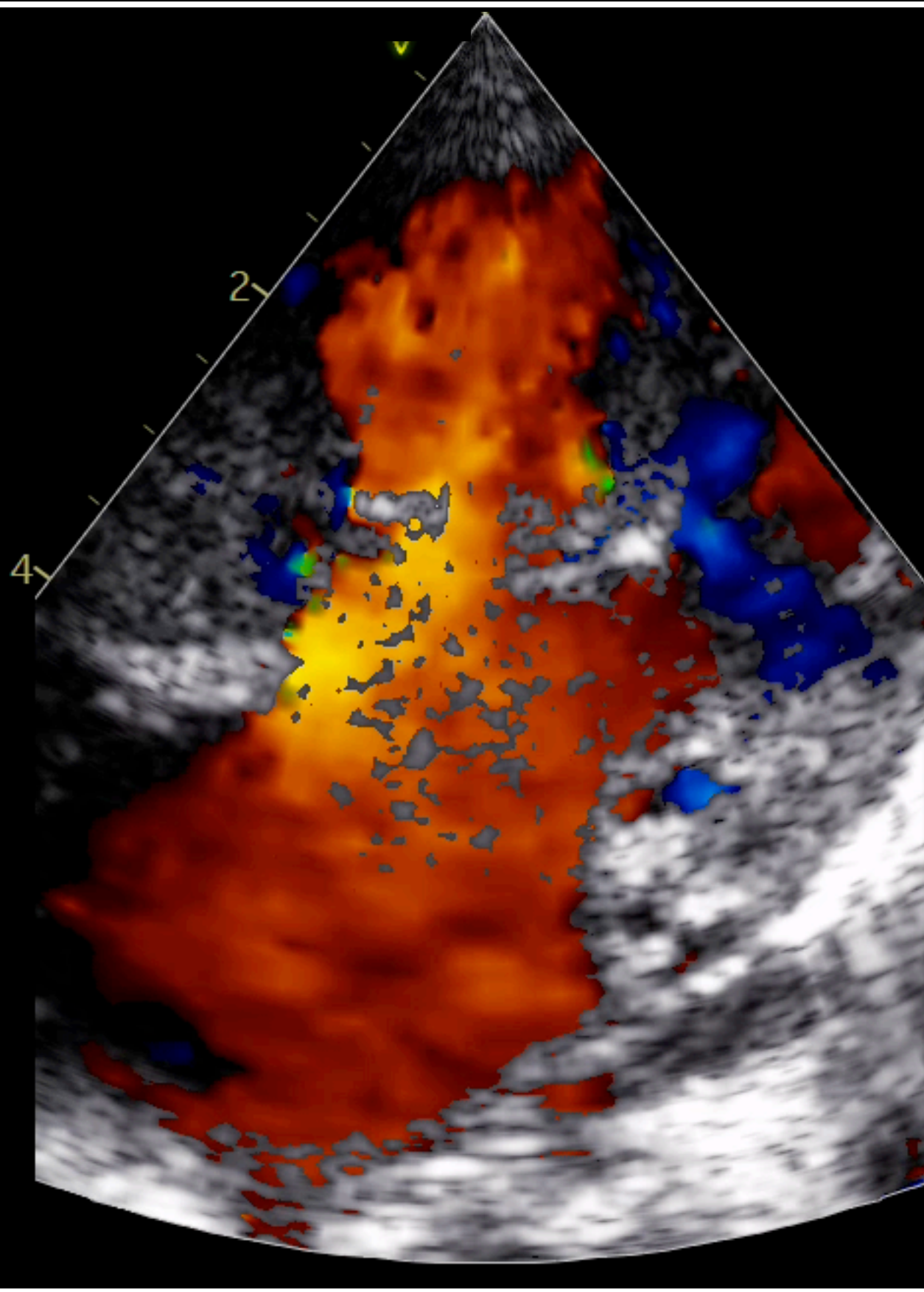
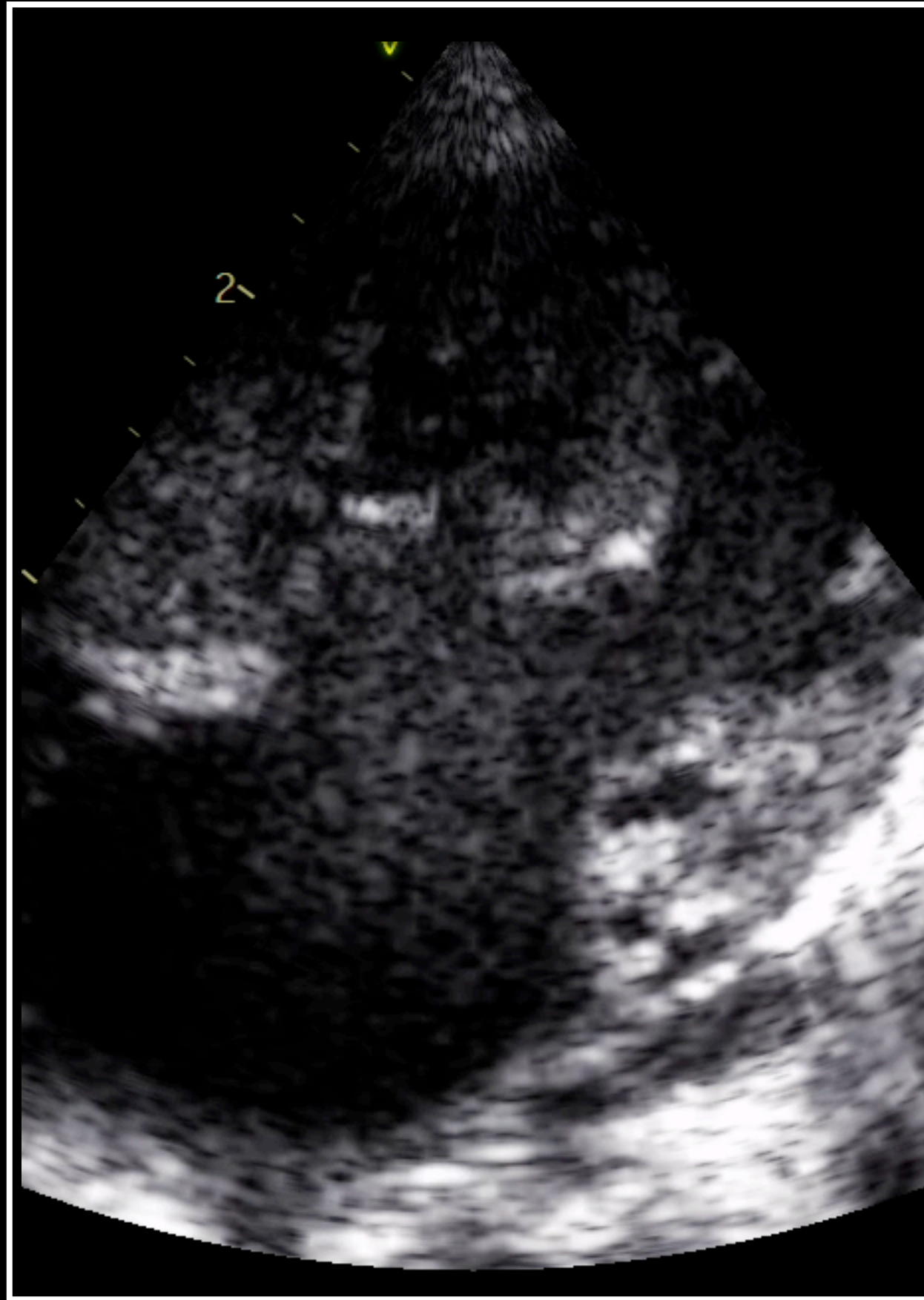
## 3-**Subaortic obstruction**

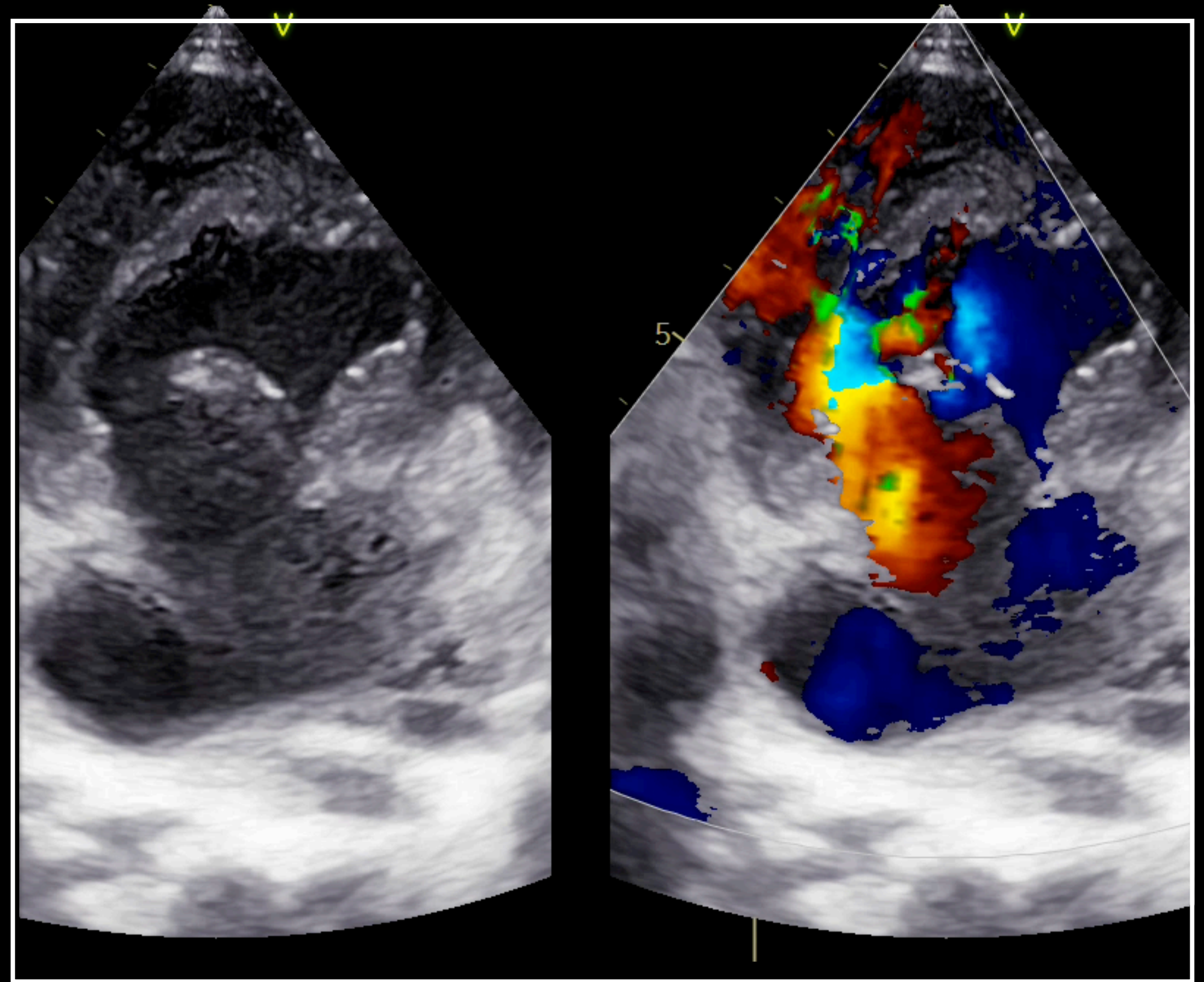
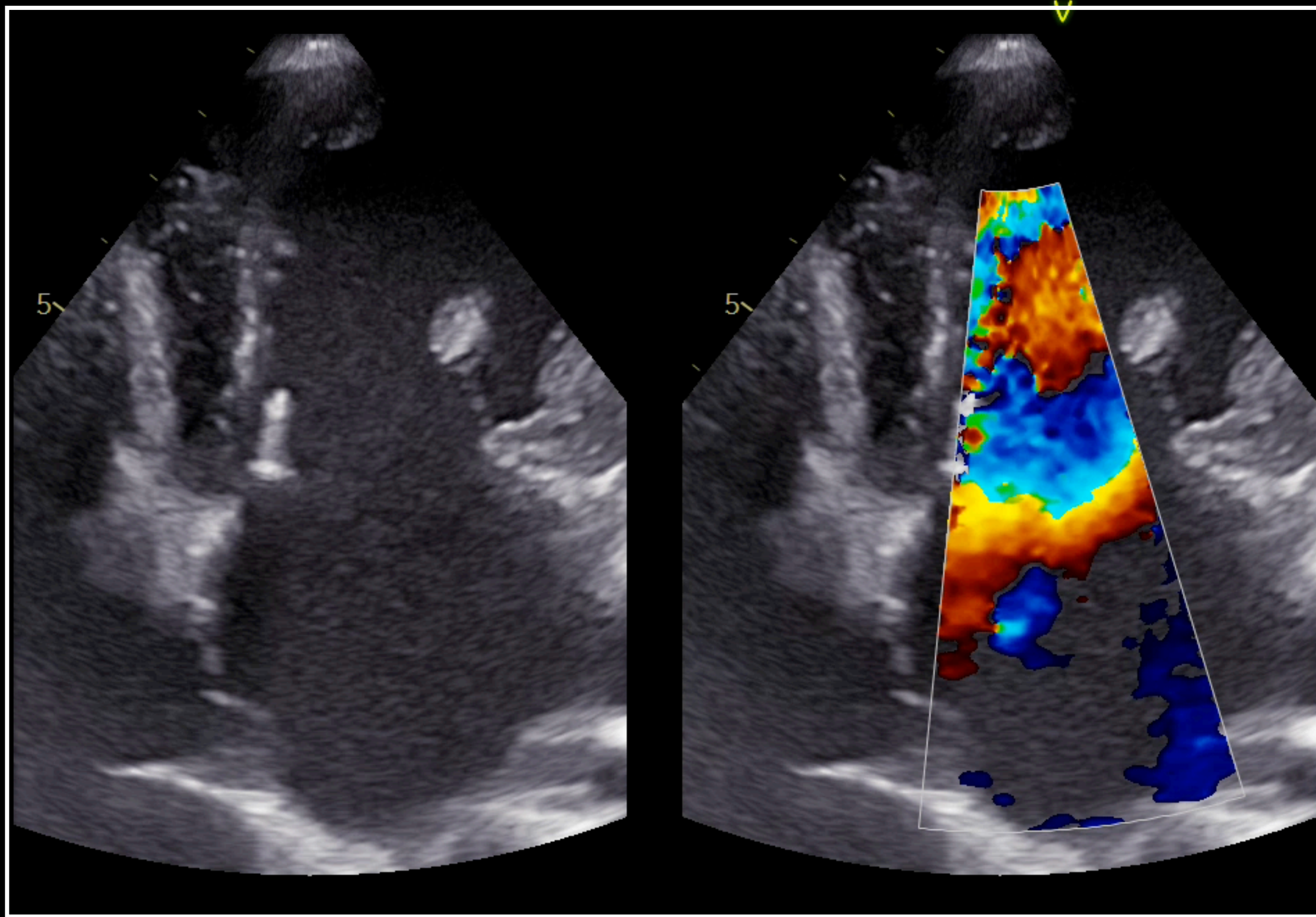
-related to chordae in the LVOTO -YES

-related to VSD patch - Difficult

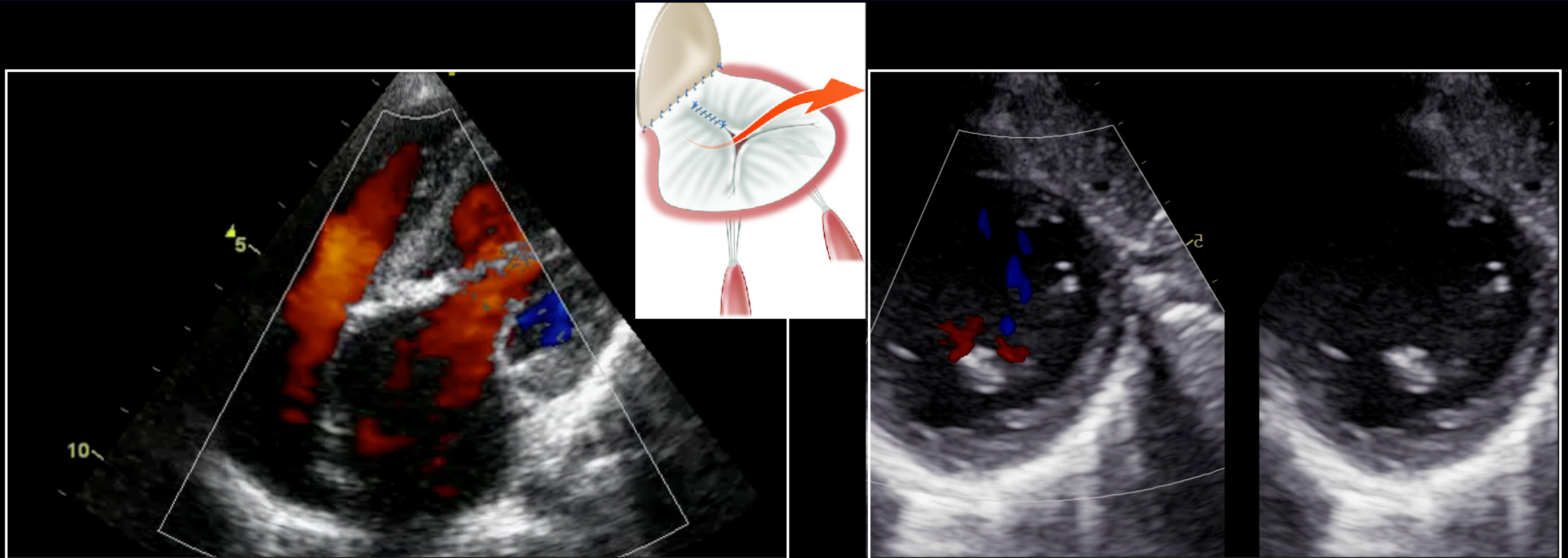
## 4-**AV Block** - NO

## 5-**RAVV insufficiency high grade** - Discuss



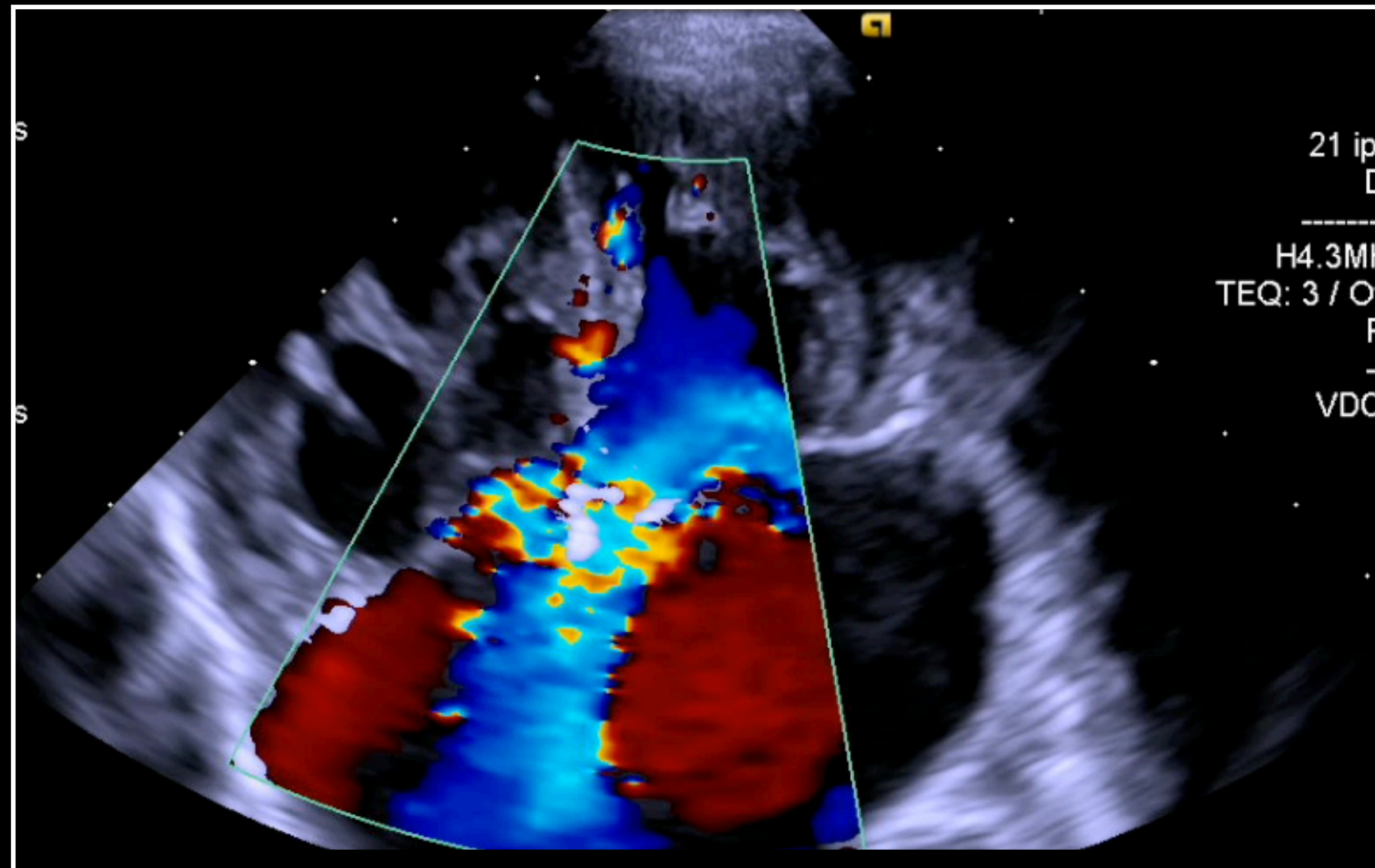


# When is it difficult to dare say it is not OK ? LAVV regurgitation



**Regurgitation in the apposition zone even small - Yes**

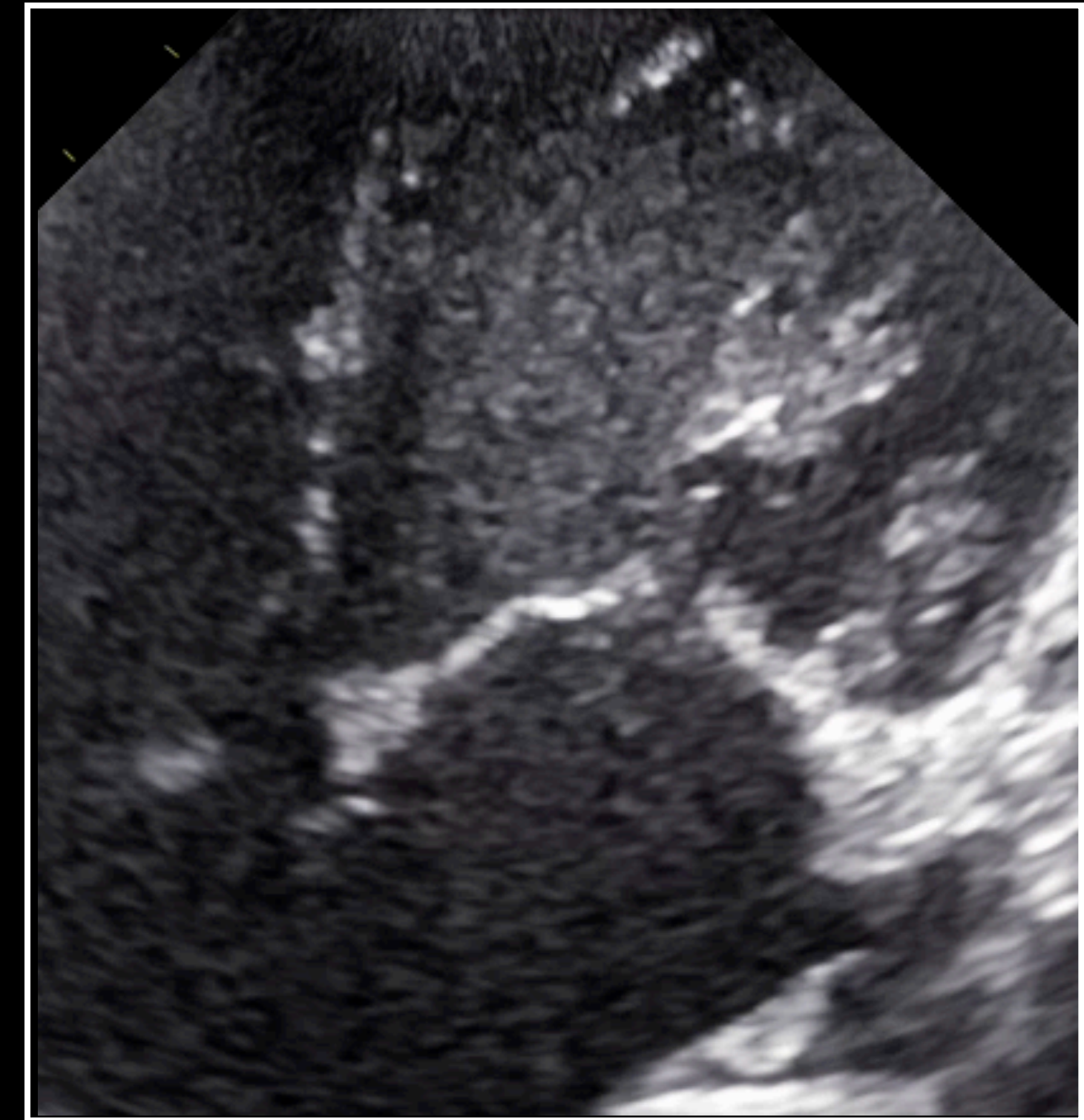
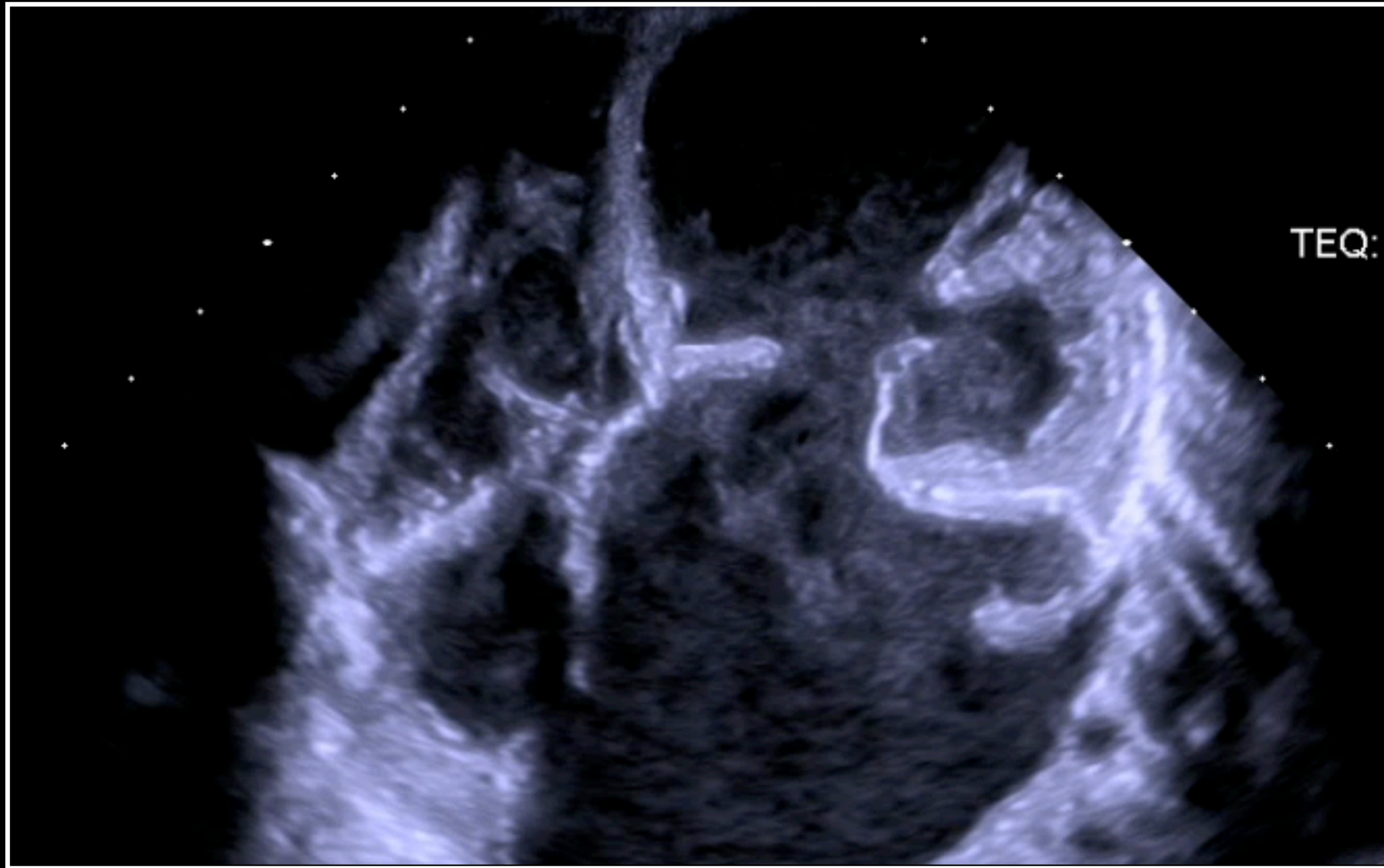
# When is it difficult to dare say it is not OK ? LAVV regurgitation



**Regurgitation in the apposition zone and reopening of the cleft**



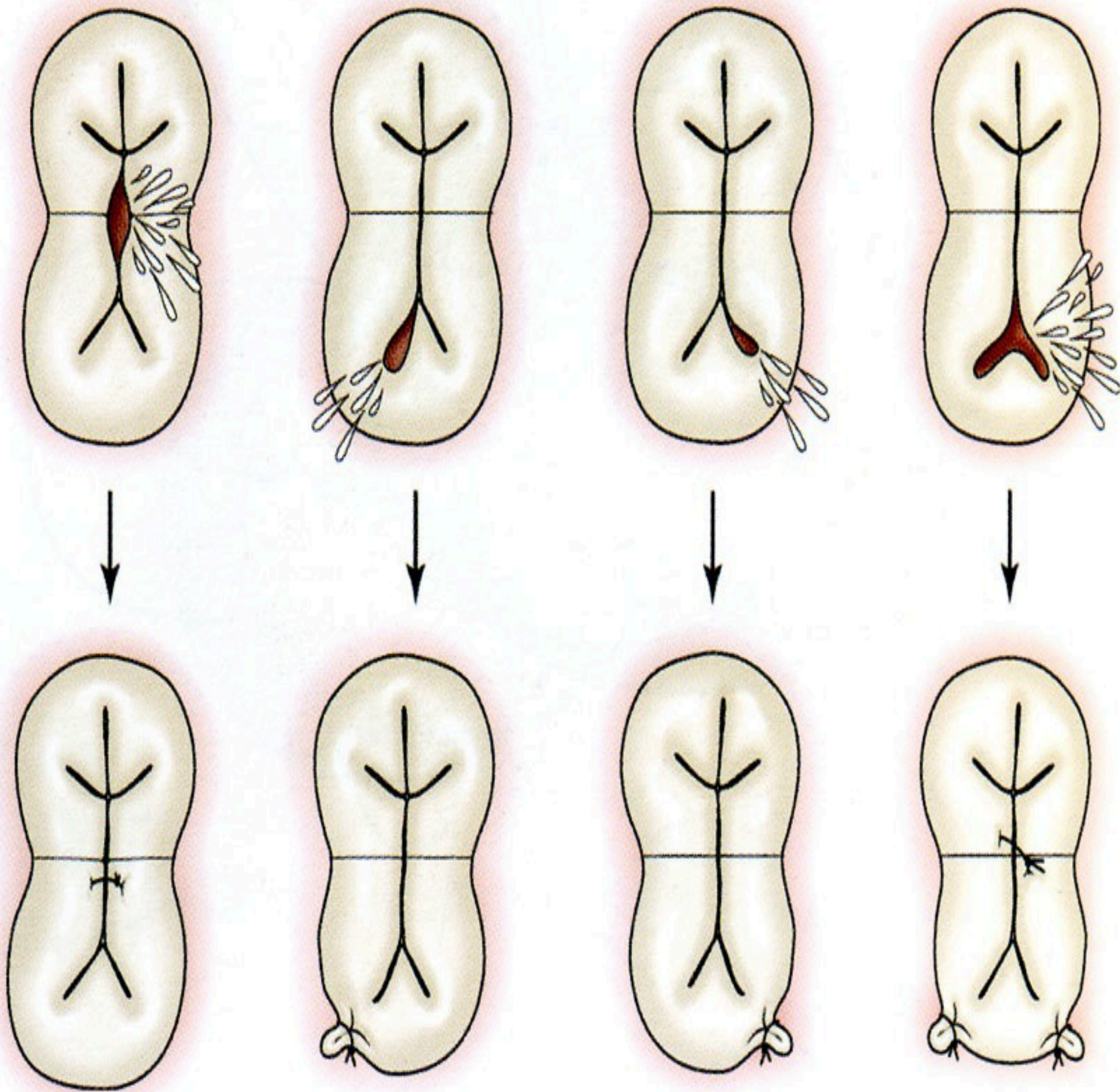
# When is it difficult to dare say it is not OK ? LAVV regurgitation



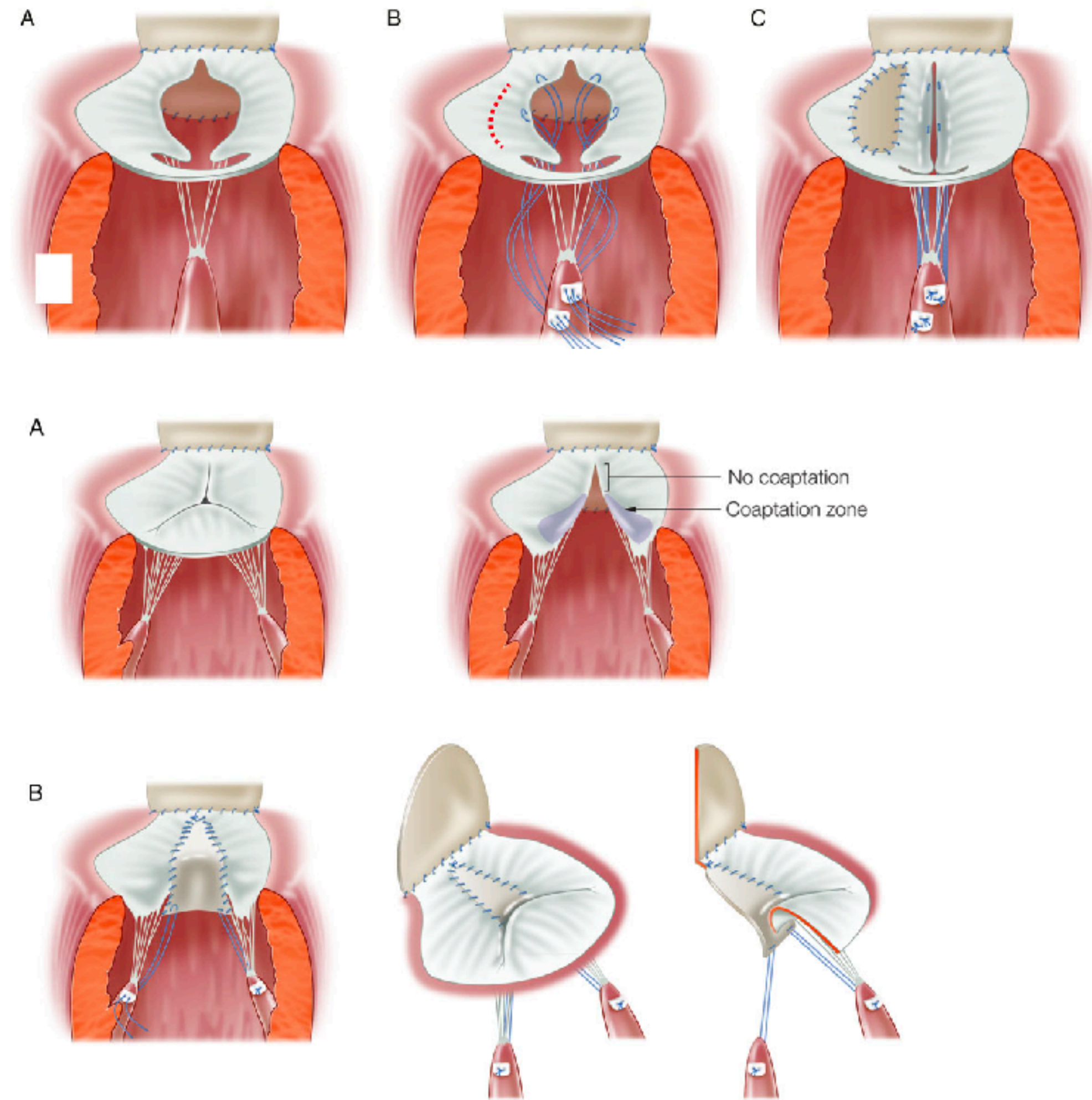
**Regurgitation in the apposition zone - size of the anterior bridging leaflet - Yes**

# When is it difficult to dare say it is not OK ?

## *Previous complex repair*



Annuloplasty/Commisuroplasty



Patch augmentation (cleft or leaflet)

# Dare I say it is not OK ?

**Yes no hesitation** : when surgery has not reach the predefined goals and when diagnosis of the « not OK » problem leads to an attractive and feasible redo

**Yes but** : when the « not OK » problem is due to remnant anomalies (untouched/unrecognized) with hemodynamic consequences

**No** : when residual anomalies are related to untouched/unrcognized anomalies or to technical inadequacy without hemodynamic consequences

**Procrastination** when the « not OK » problem needs complex redo without good estimate of the different risks (going back on pump; success vs. late reoperation; risk of mitral valve replacement)



Collective ignorance is our motivation  
Curiosity is our strength  
Research is our path

Individual experience is the brake  
Indifference is the weakness  
Argument from authority is the threat