*Ecocardiochirugia.*
*Il percorso clinico del paziente con protesi valvolari*
*e valvole artificiali percutanee*
*Milano, 28-29 Ottobre 2010*

# La RM puo' darci qualche elemento in piu' nel sospetto di malfunzionamento protesico ?

Alberto Roghi
Laboratorio di RM Cardiaca
Dipartmento Cardiovascolare A.De Gasperis
A.O.Niguarda Ca'Granda, Milano

| | ECHO | CMR |
|---|---|---|
| Temporal resolution | +++ | + |
| Spatial resolution | ++ | +++ |
| 3D | +++ | +++ |
| 3D angio | - | +++ |
| Flow | ++ | +++ |
| Metal Artifacts | ++ | + |
| Air Artifacts | +++ | - |
| PM | +++ | -+ |
| Arrhythmias | ++ | + |
| Edema/Delay enhanc. | + | +++ |
| Thrombus | + | +++ |
| Vegetations | +++ | + |
| | | |

29 y, ♀

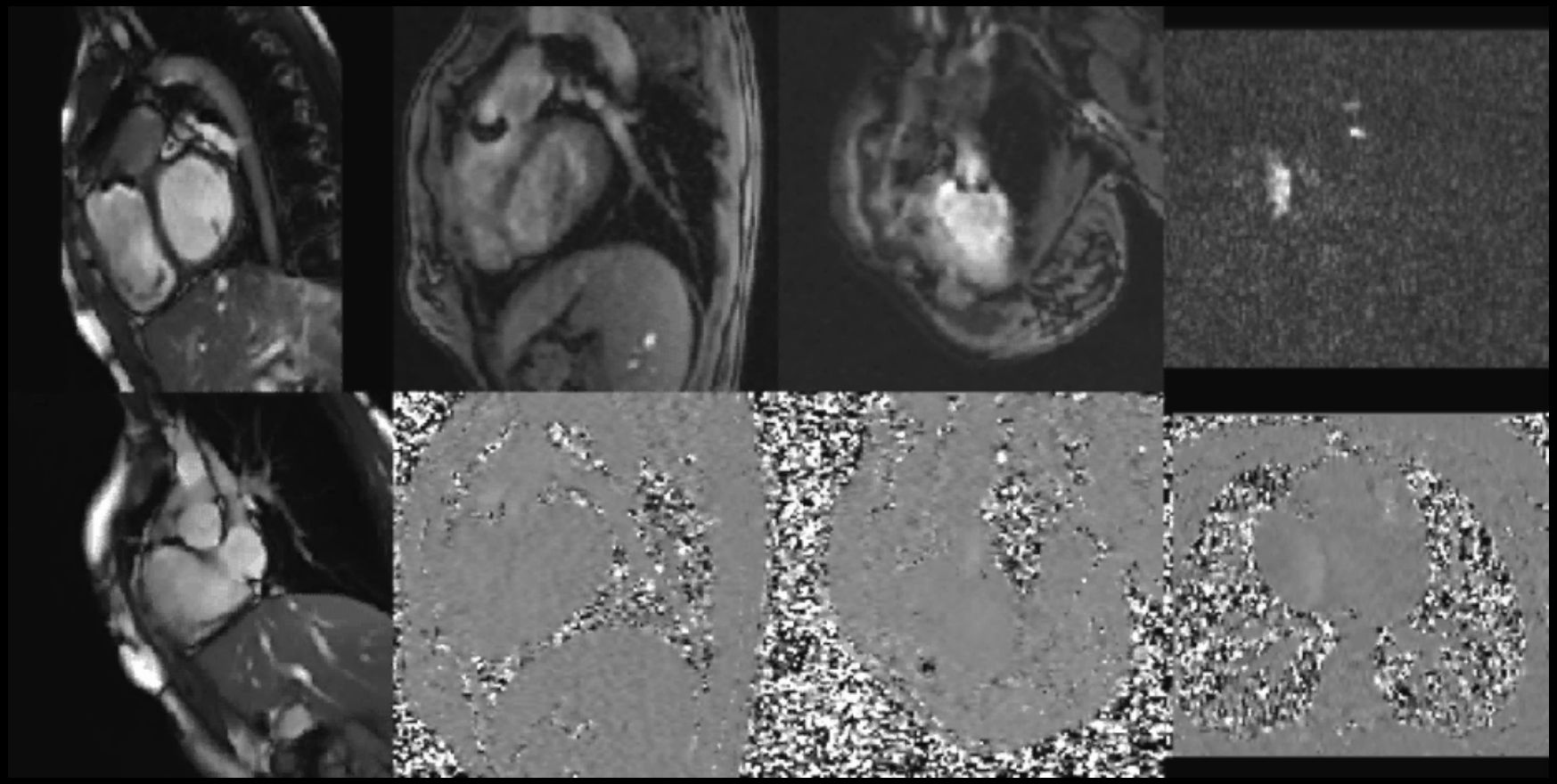
Tetralogy of Fallot

Pulmonic valve Shiley n 19

PTA + stenting RPA, LPA

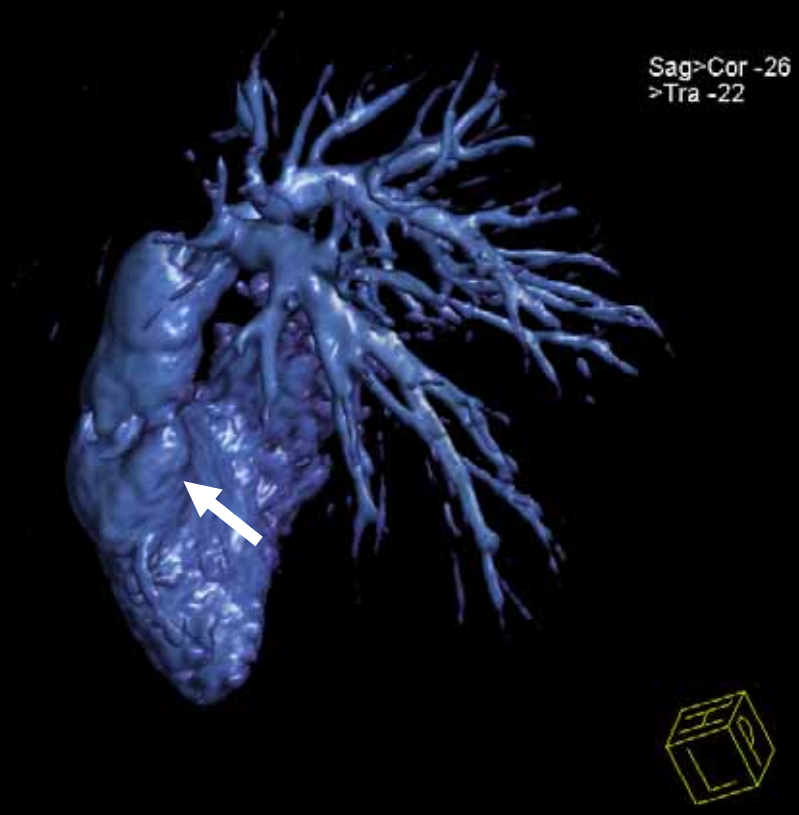
RV dilatation + diffuse hypokinesia

# Tetralogy of Fallot: pulmonary bioprosthesis dehiscence



Pulmonar angiography, 2D  Maximum Intensity Projection reconstruction: posterior pulmonic bioprosthesis dehiscence

# Tetralogy of Fallot: pulmonary bioprosthesis dehiscence



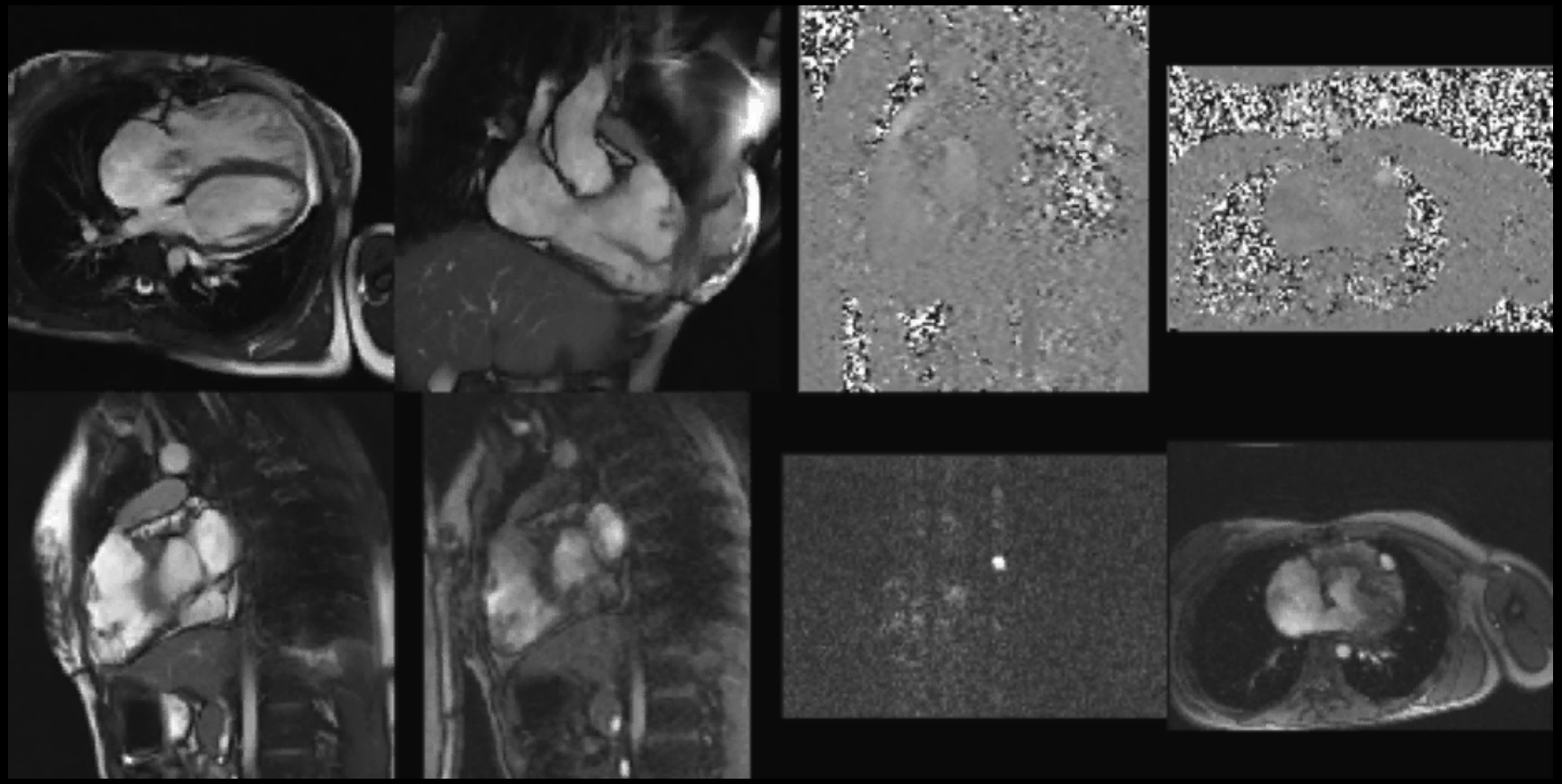
24 y, ♂

Tetralogy of Fallot

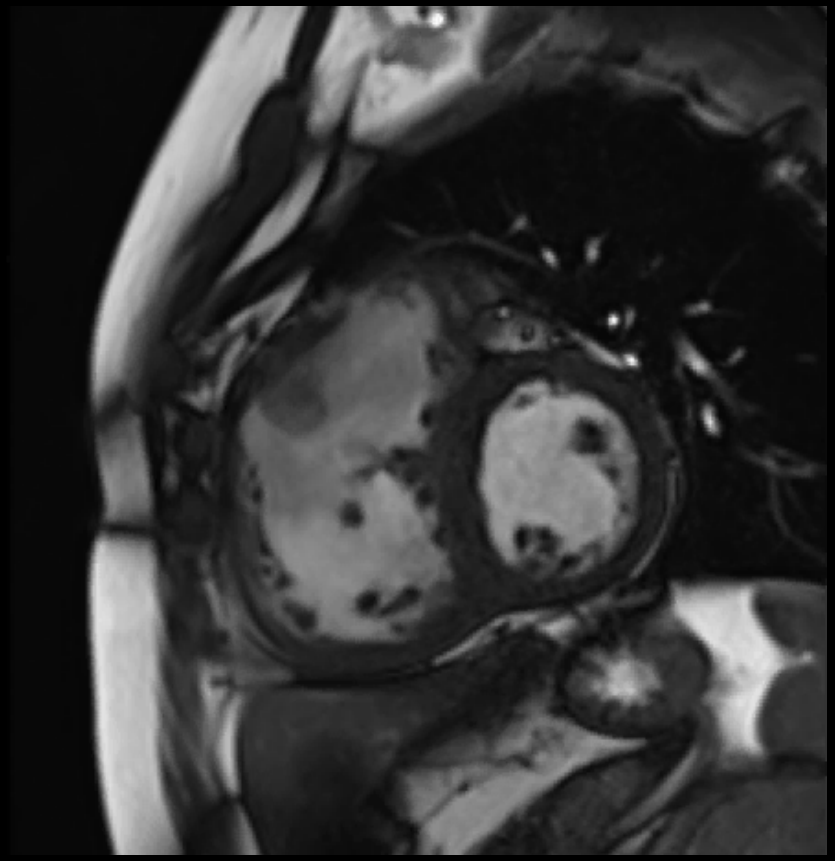
Pulmonary bioprosthesis Matrix

RV hypokinesia, fever, dyspnoea

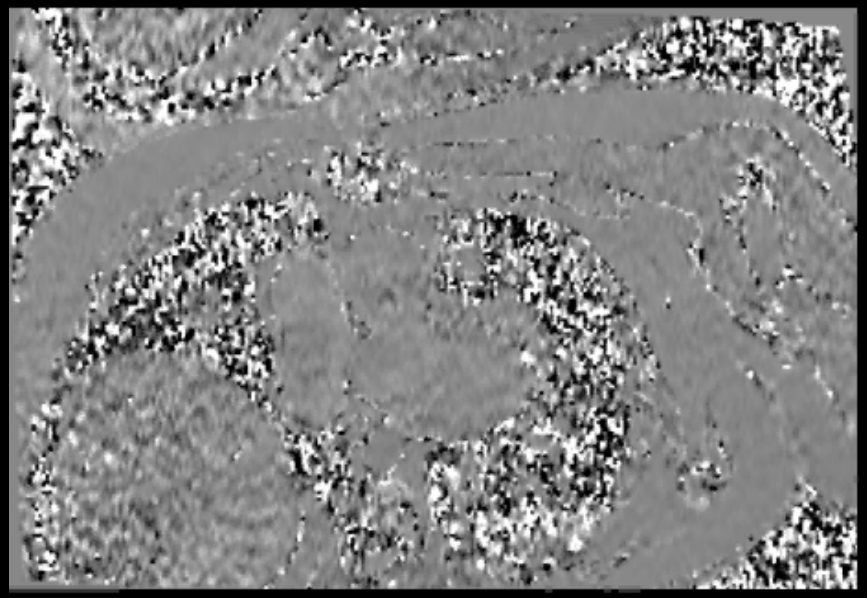
Tetralogy of Fallot: pulmonary  bioprothesis malfunction with acute rejection

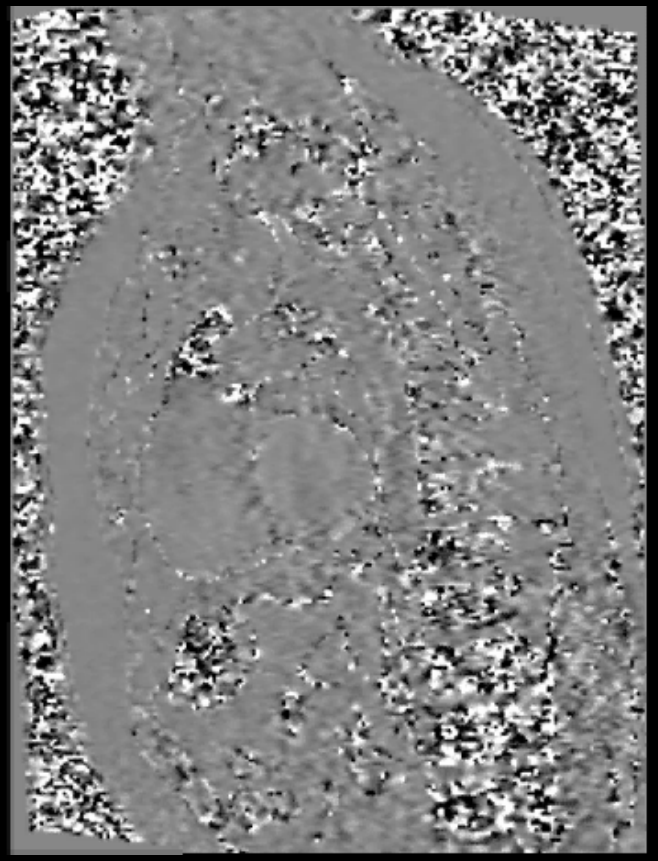


Tetralogy of Fallot: pulmonary bioprothesis malfunction with acute rejection

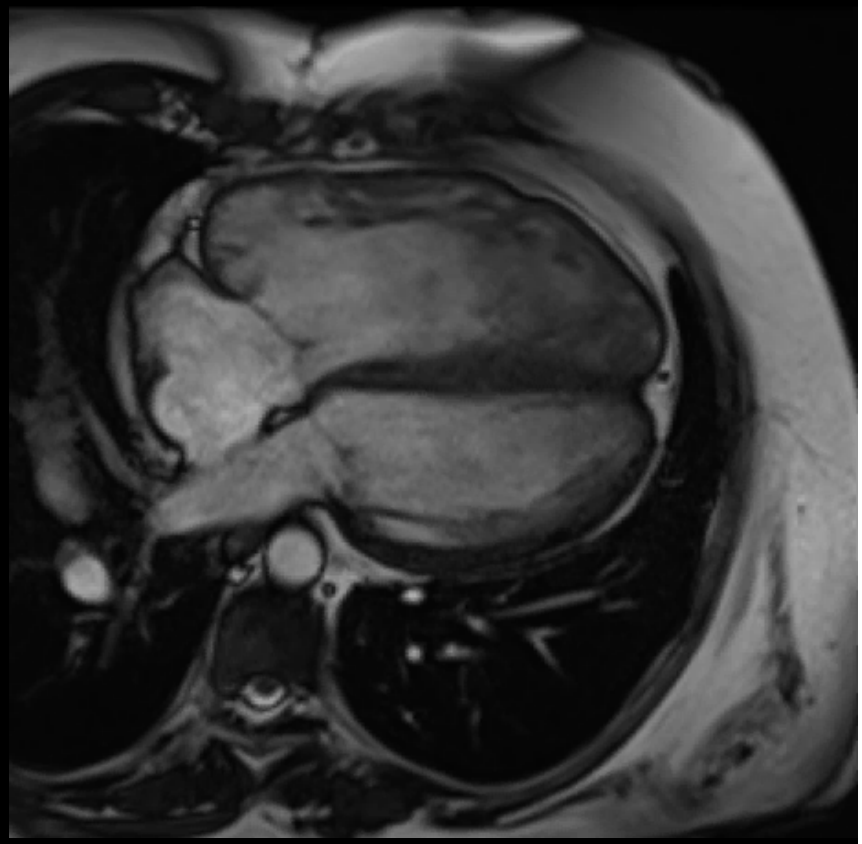


Tetralogy of Fallot: pulmonary  bioprothesis malfunction with acute rejection



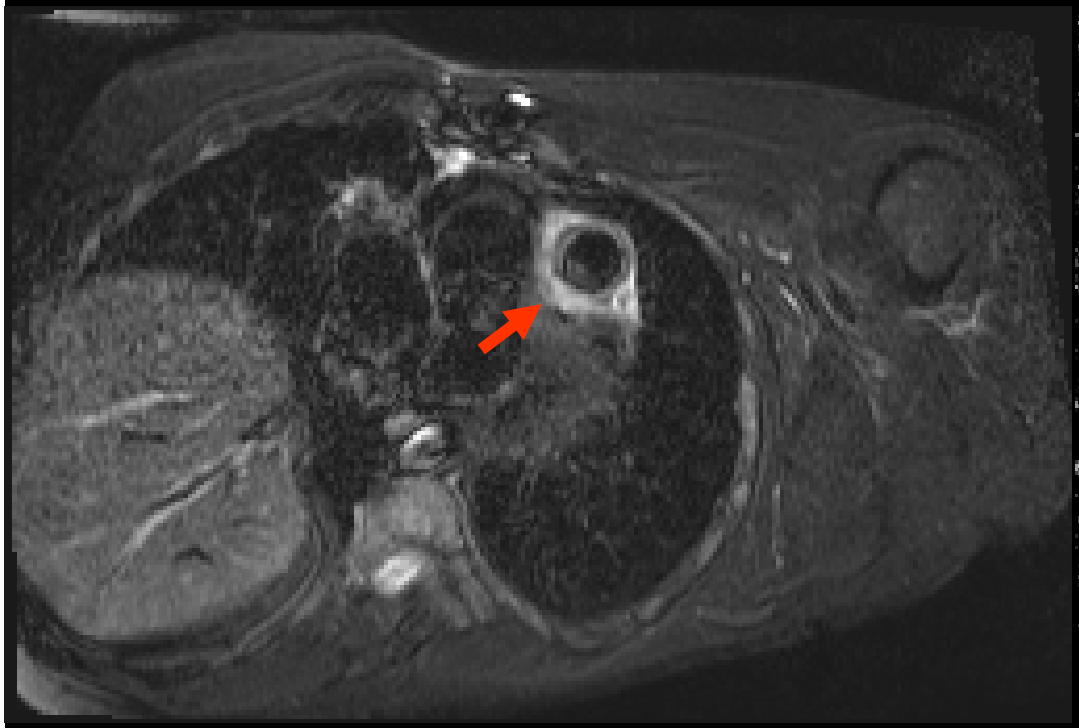


Tetralogy of Fallot: pulmonary bioprothesis malfunction with acute rejection

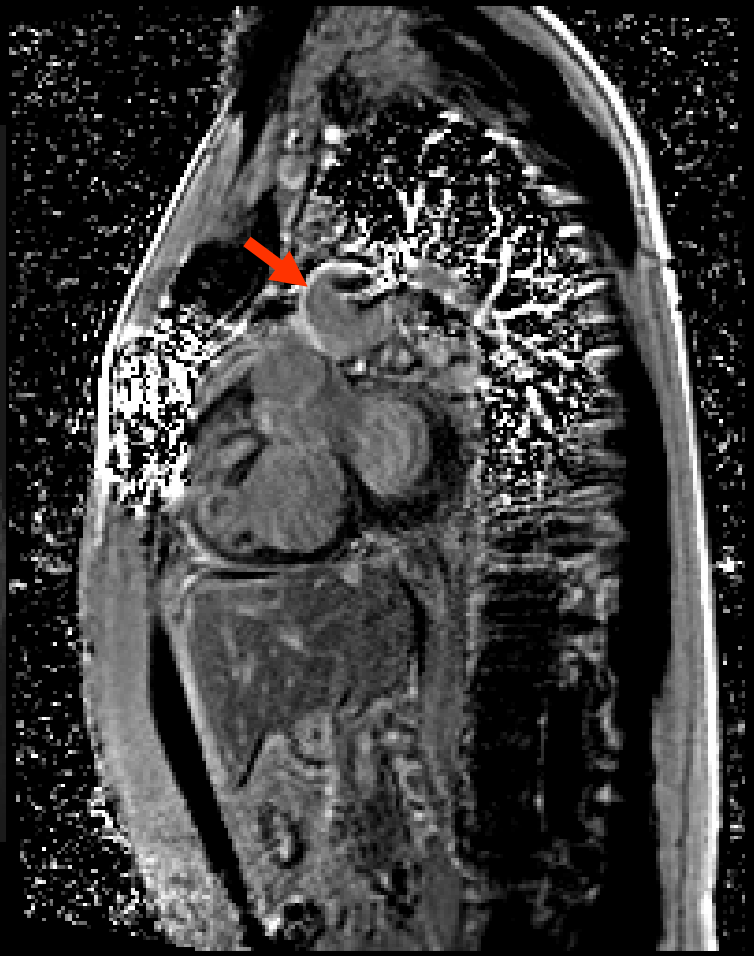


Tetralogy of Fallot: pulmonary bioprothesis malfunction with acute rejection

STIR = perivascular flogosis



DE = pulmonic wall enhancement



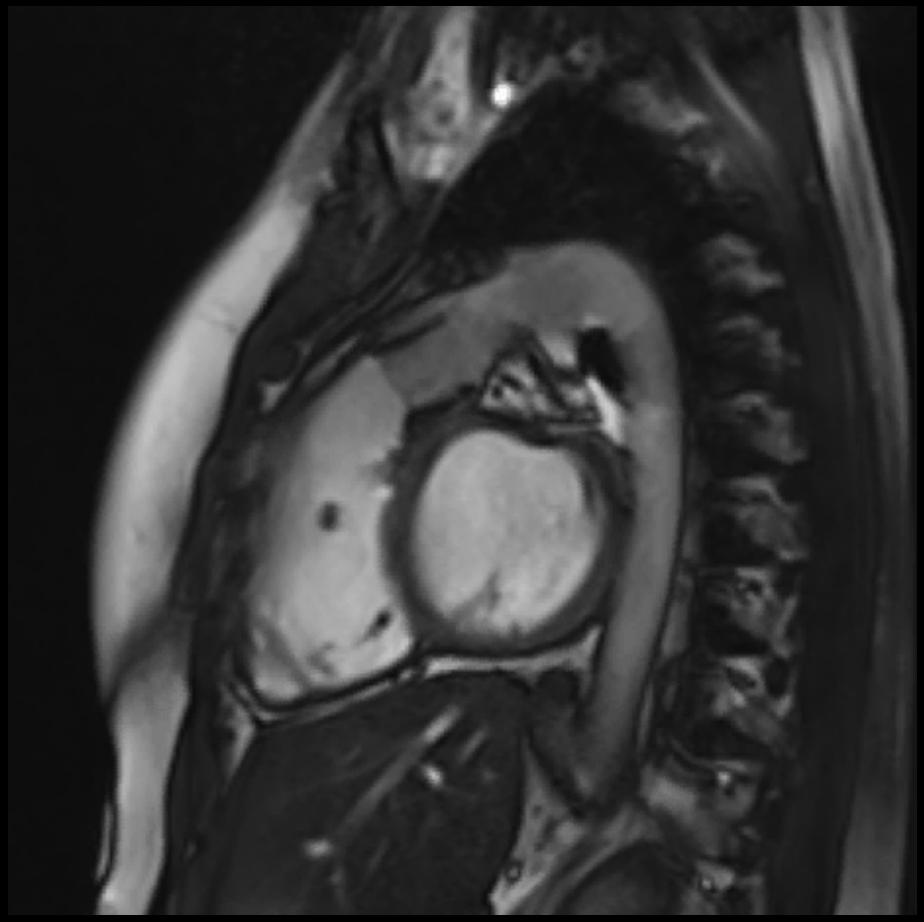
30 y, ♀

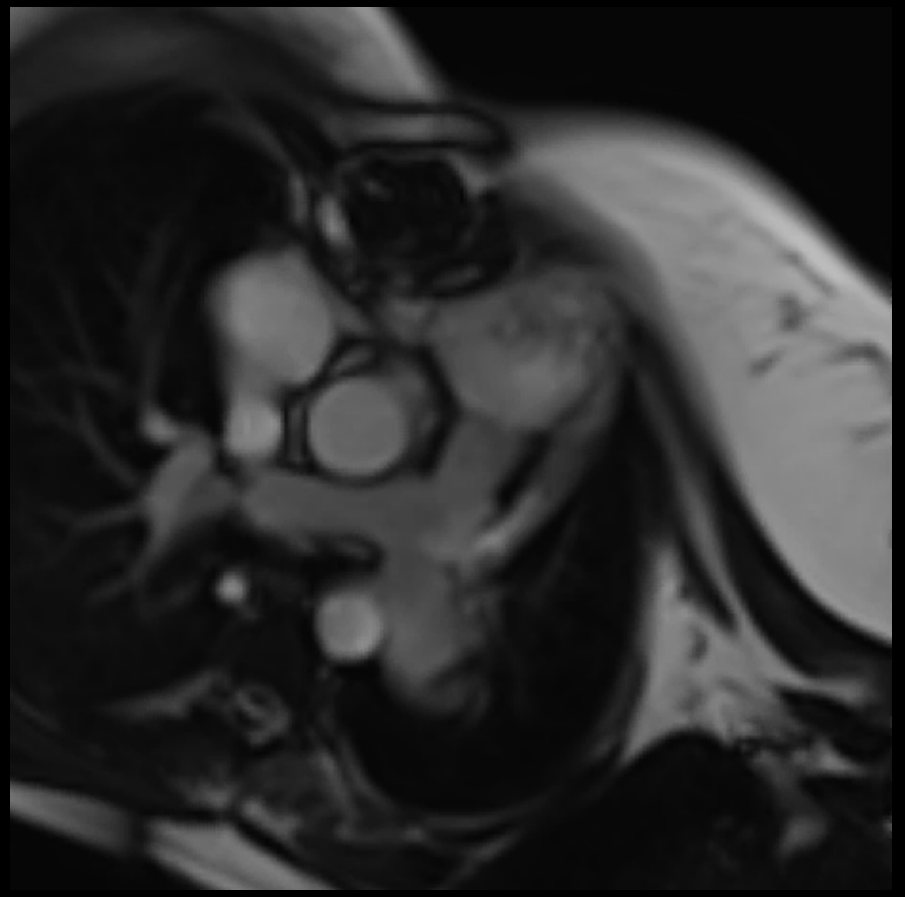
Tetralogy of Fallot

Pulmonary bioprosthesis

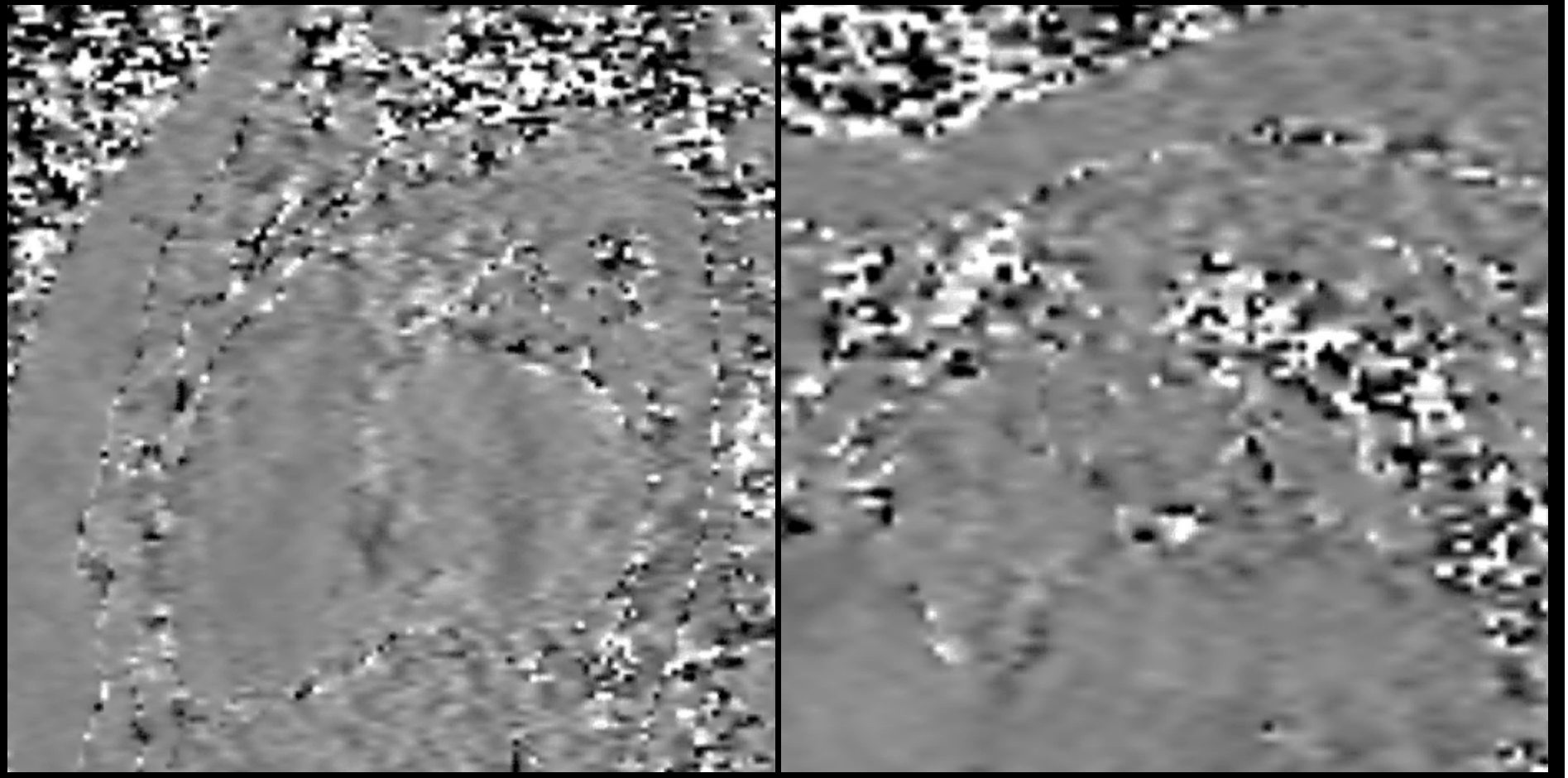
ECHO: suspected leakage

# Pulmonary para-prosthesic leakage





# Pulmonary para-prosthesic leakage



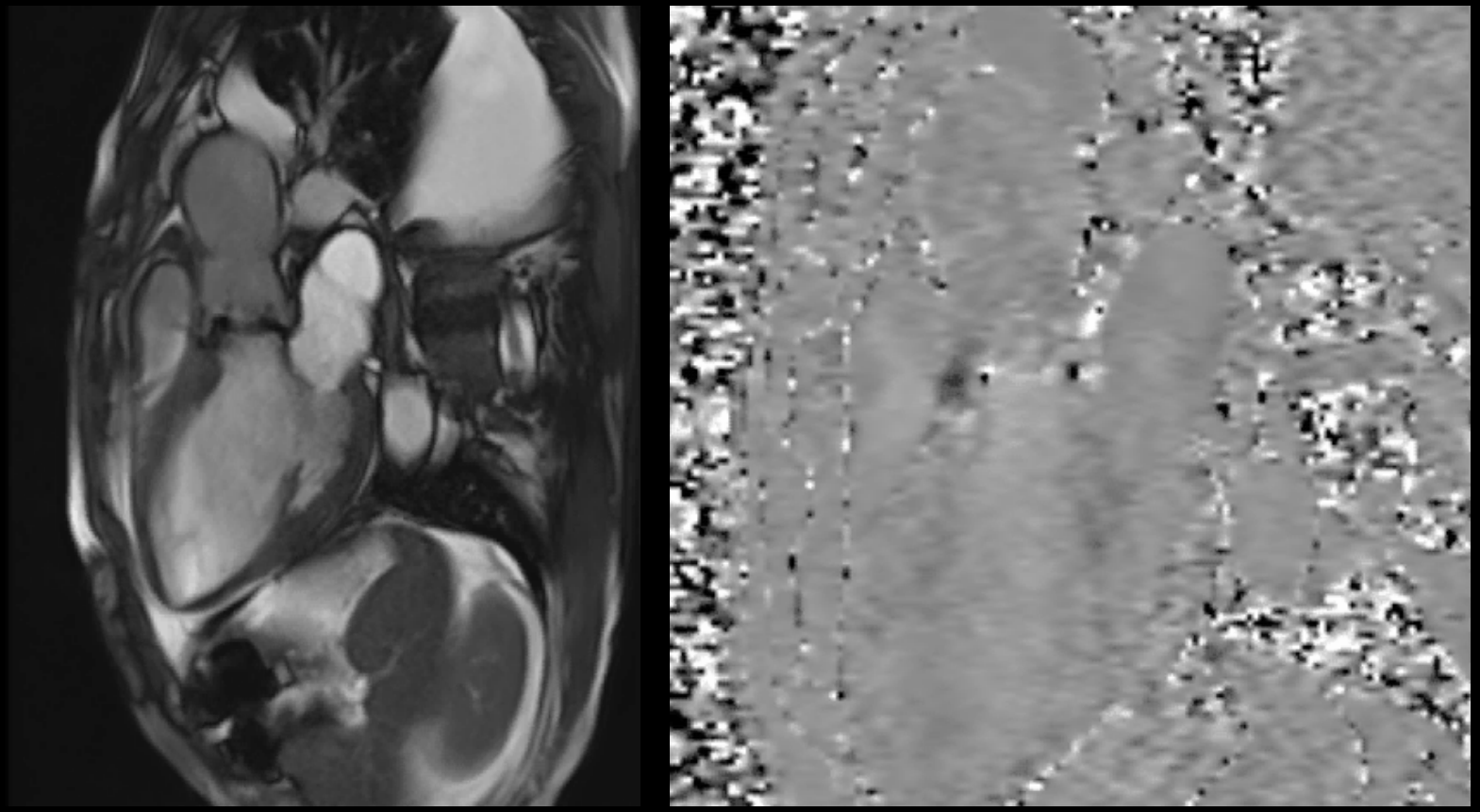
# 3D angiography, paraprosthesic leakage

70 y ♂

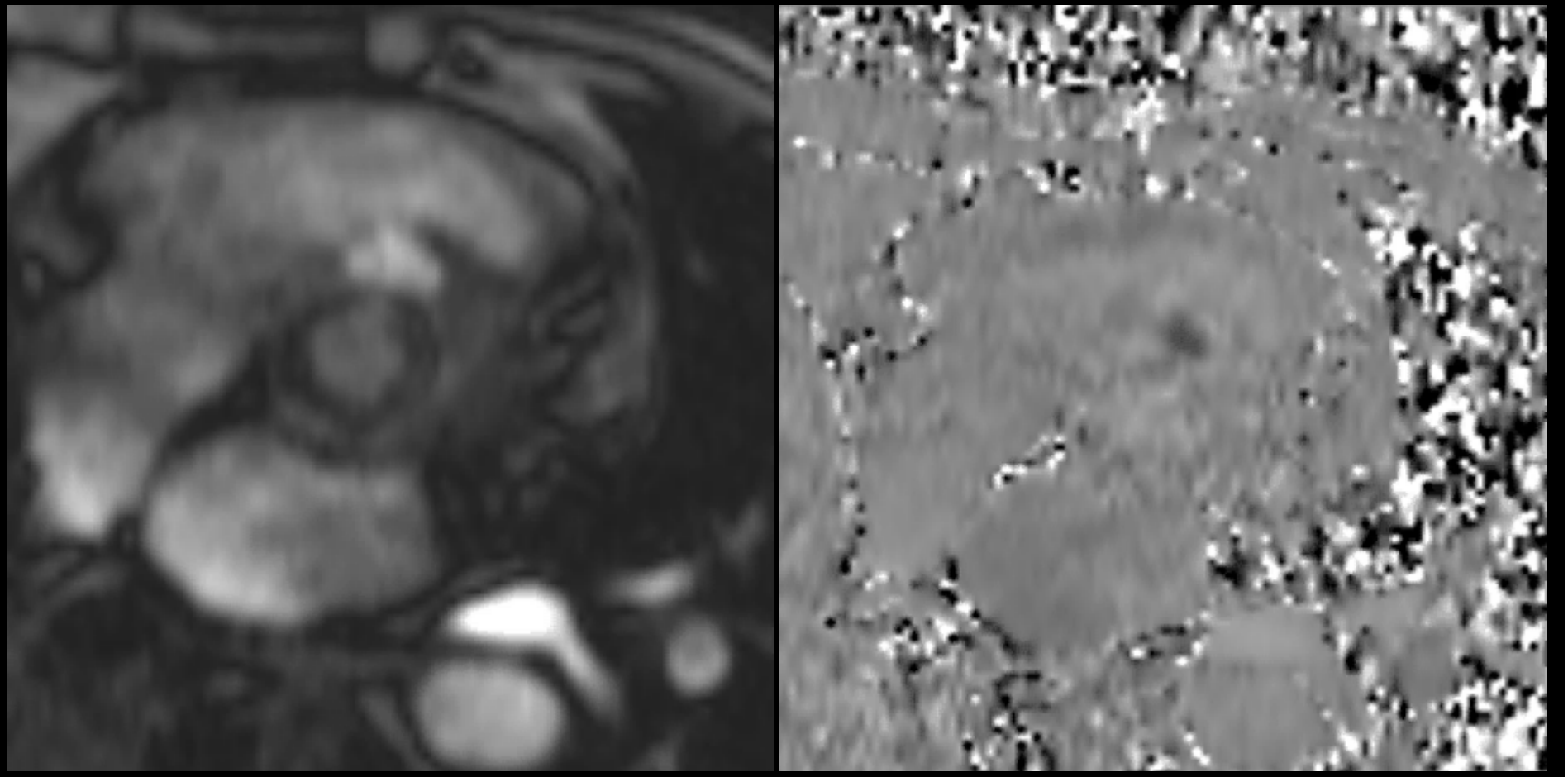
CAD, PTCA RCA

Aortic valve bioprosthesis St Jude 21
+ ISD perimembranosus type

# Aortic bioprosthesis leakage



# Aortic prosthesis leakage

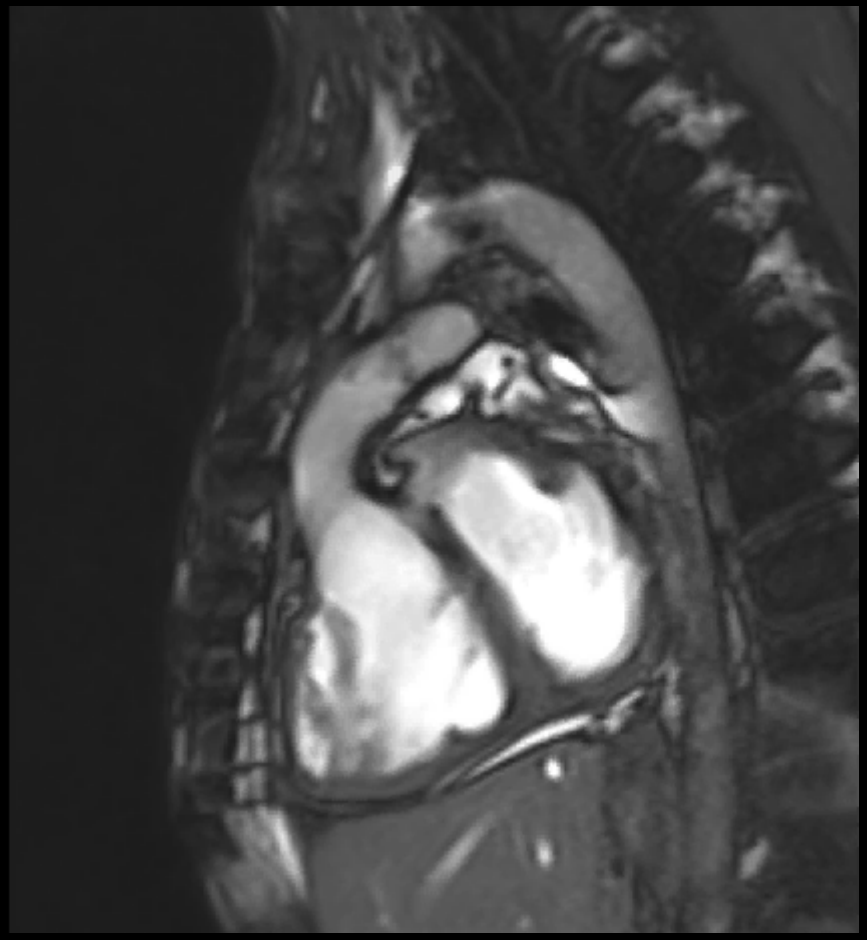


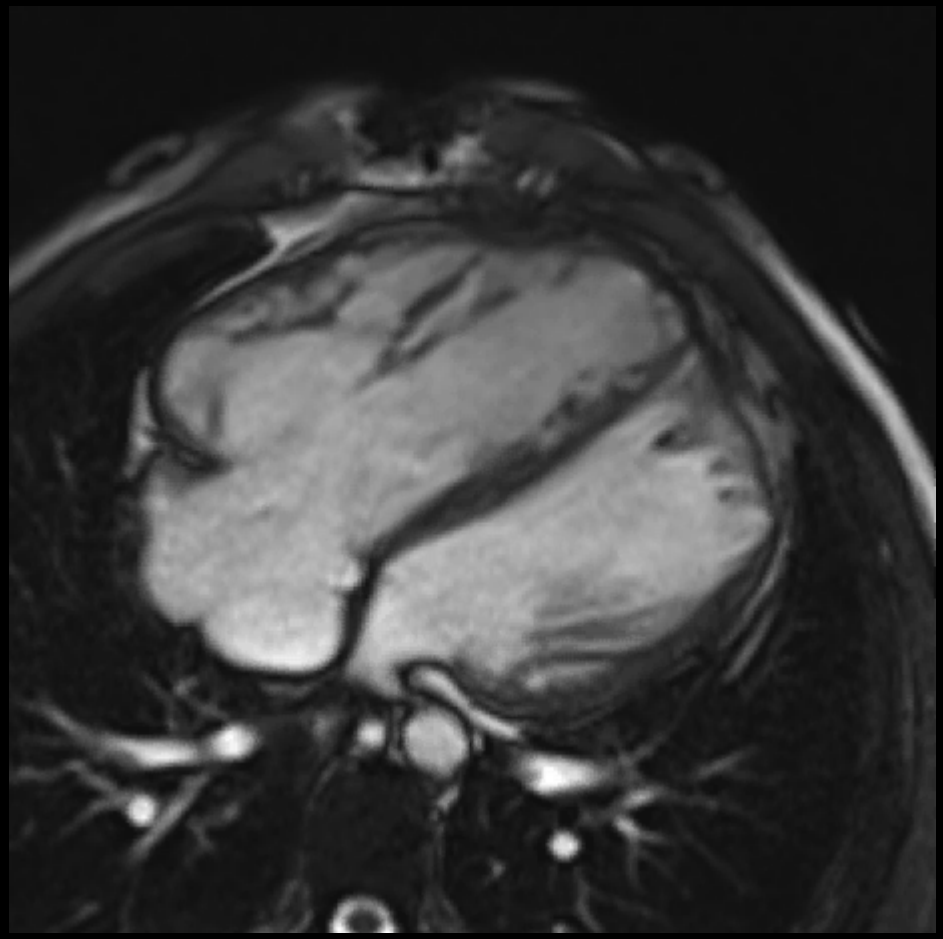
19 y

Double outlet RV :
Rastelli correction with pulmonary bioprosthesis

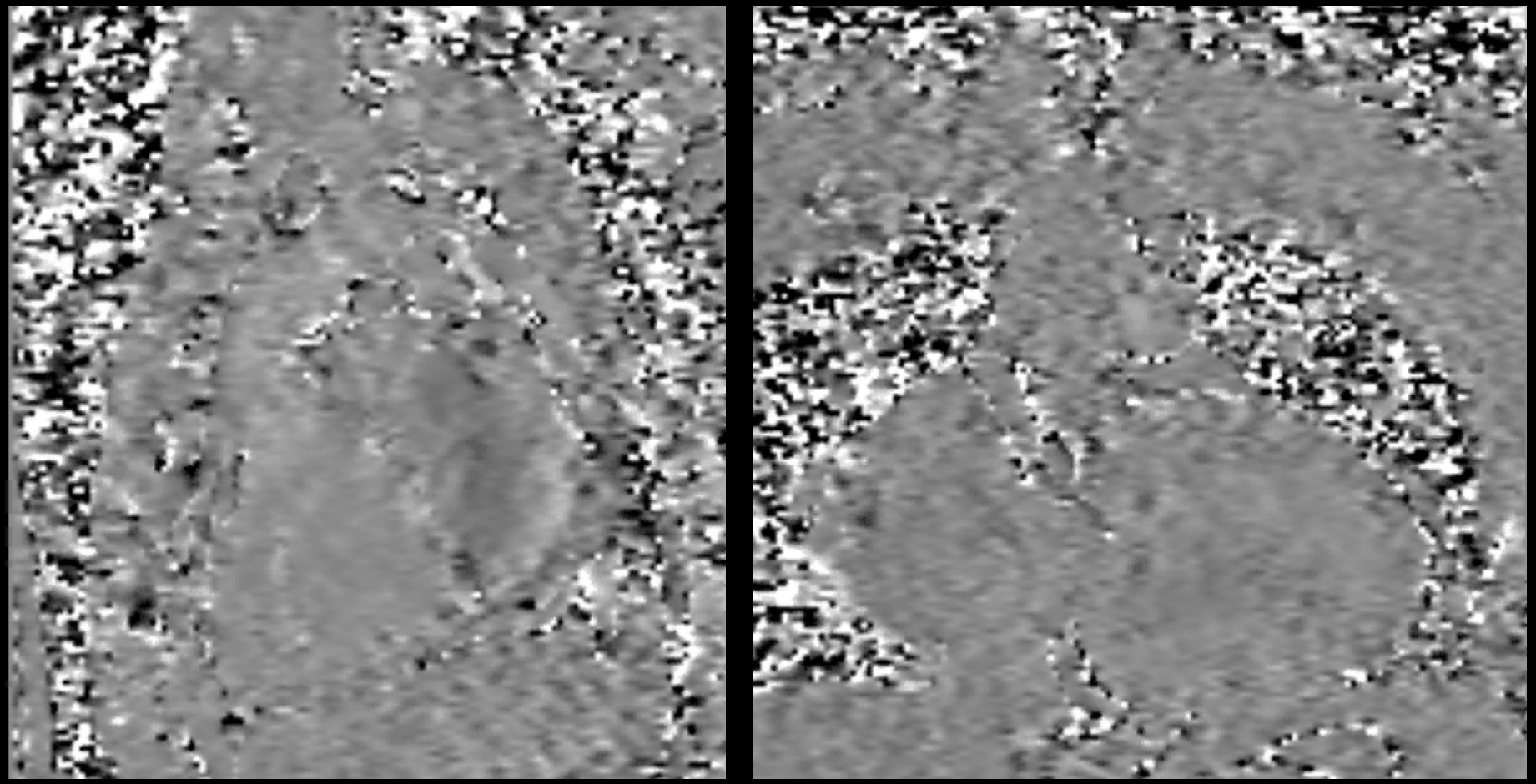
Fever, suspected endocarditis

# Pulmonary bioprosthetic malfunction





# Pulmonary bioprosthetic malfunction



24 y ♂

Aortic Stenosis

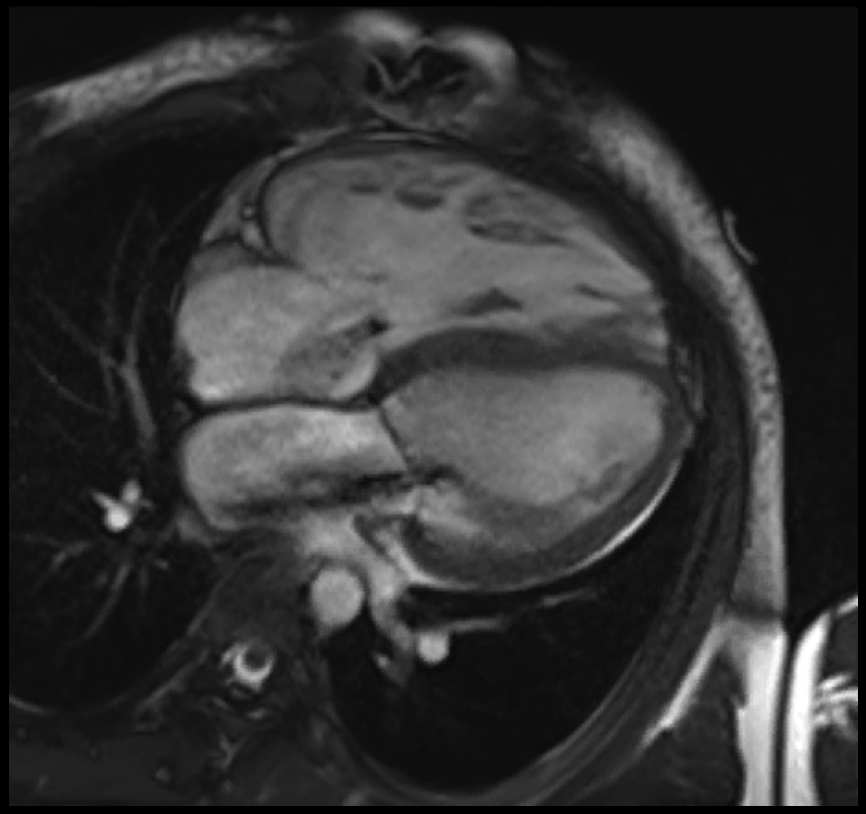
1) Konno correction

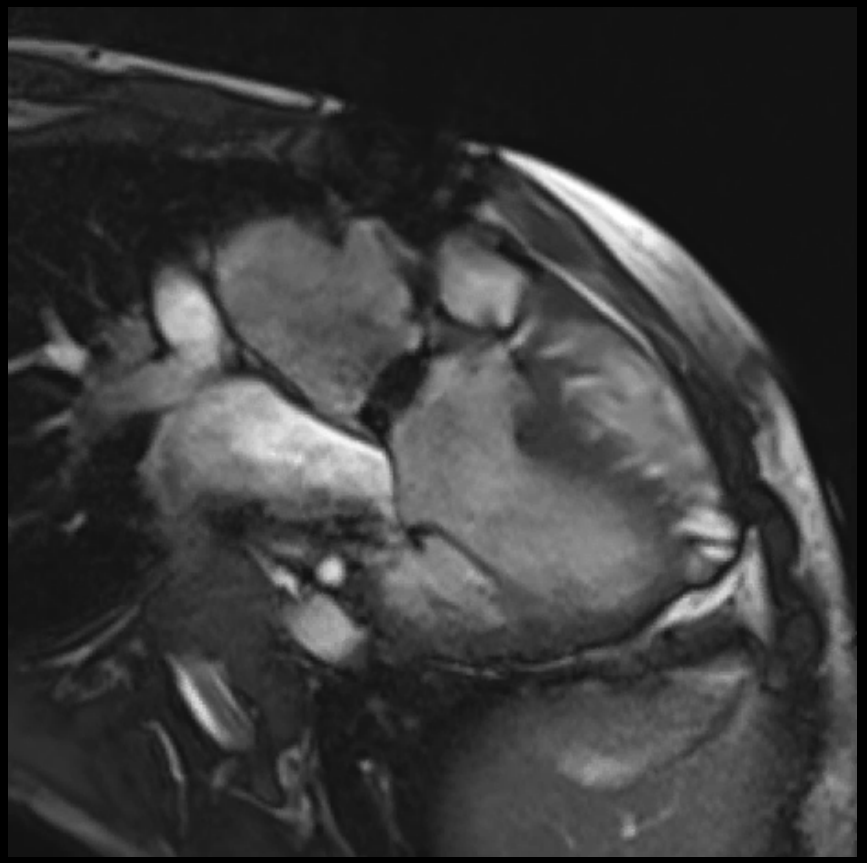
2) Aortic pseudoaneurism with external RVOT obstruction

3) LVOT pseudoaneurism repair, RVOT patch with pulmonary bioprosthesis

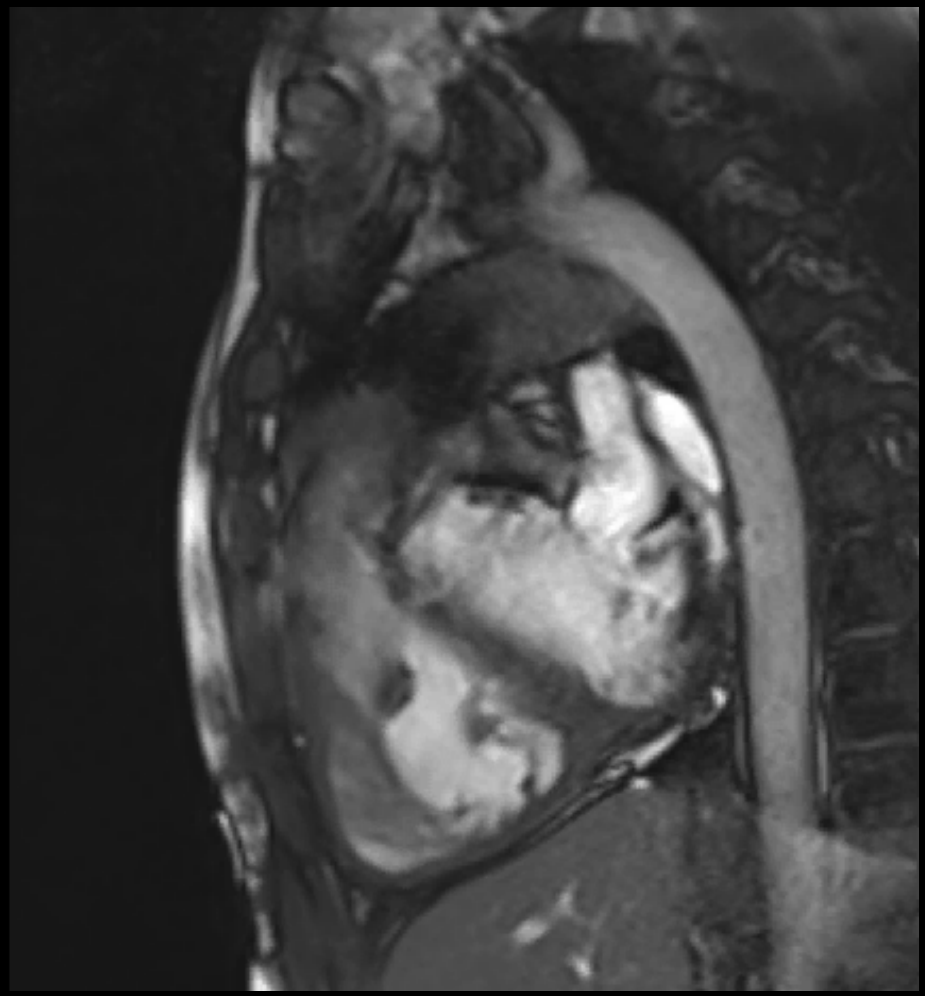
4) Dental abscess, suspected bioprosthesis endocarditis

# Konno + pulmonic bioprosthesis malfunction

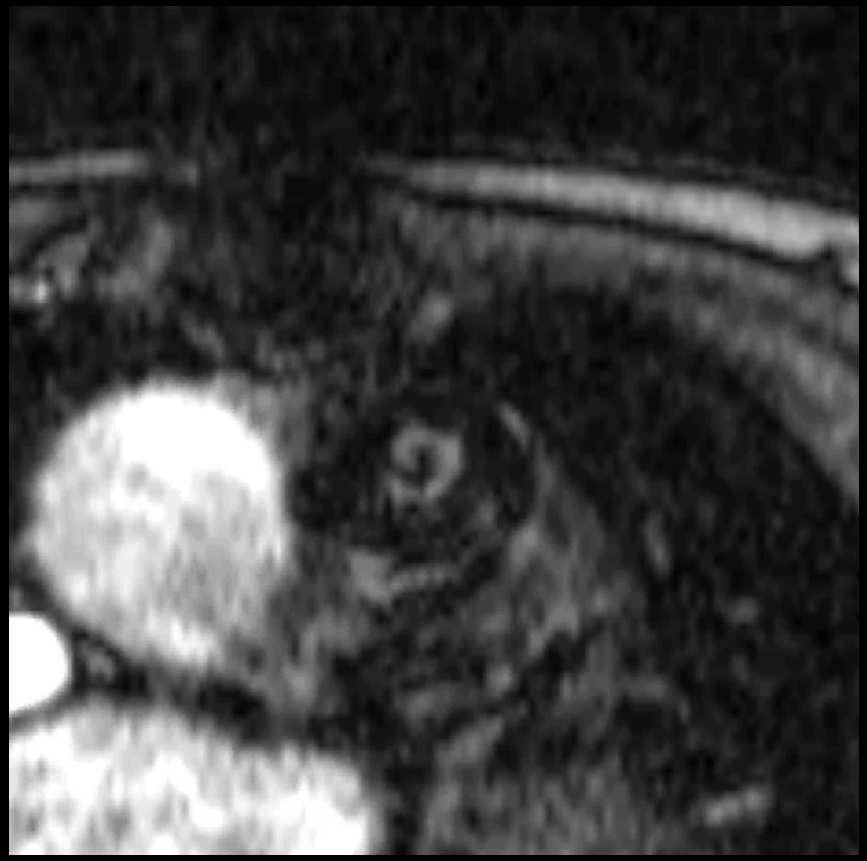


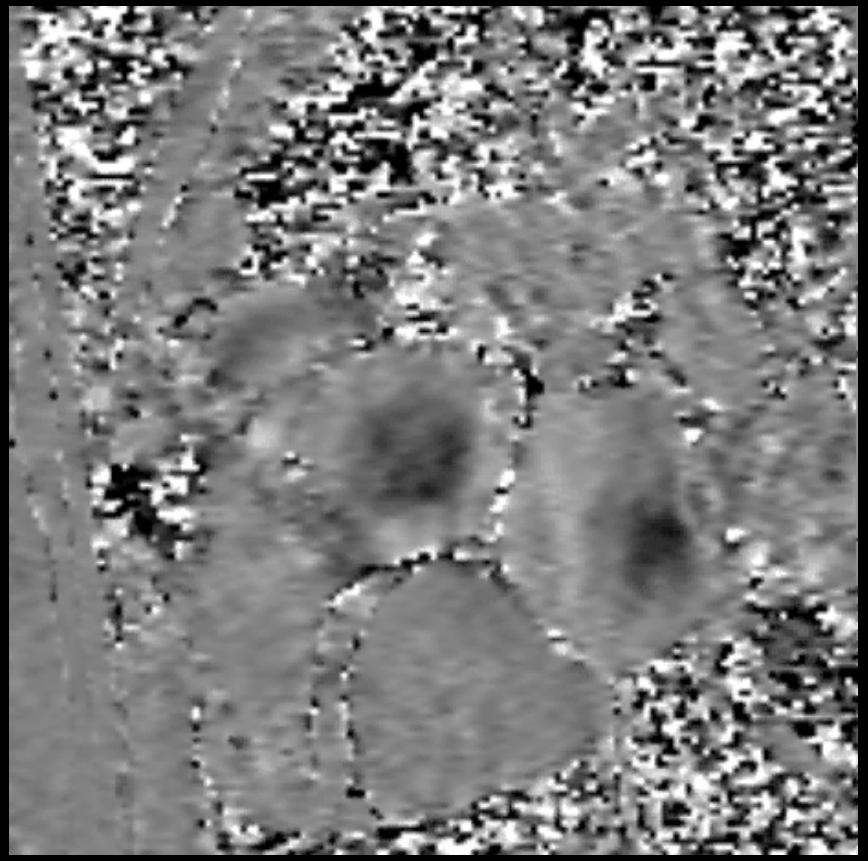


# Konno + pulmonic bioprosthesis malfunction

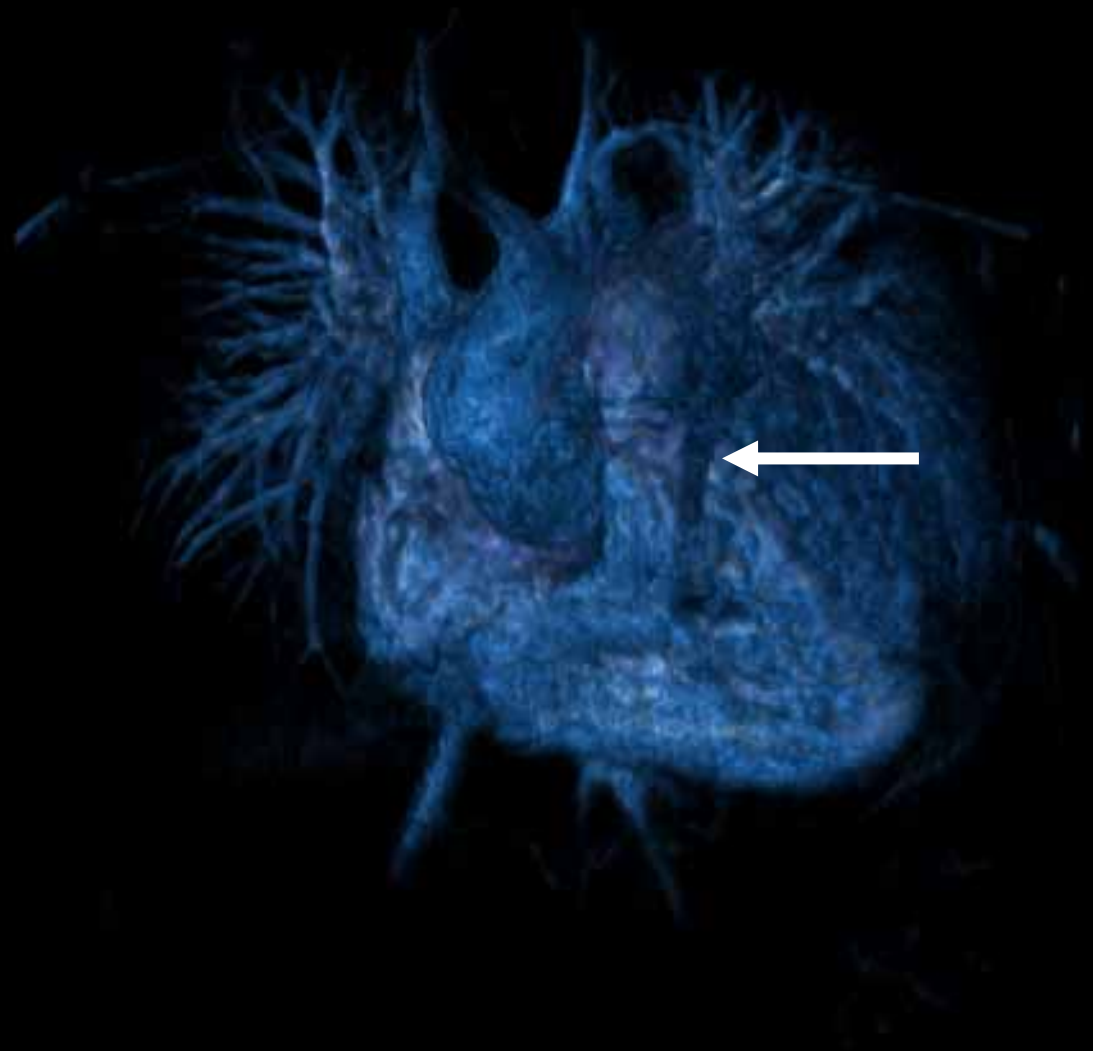


Pulmonary bioprothesis malfunction:
magnitude and phase-contast flow
evaluation of pulmonary and aortic prosthesis

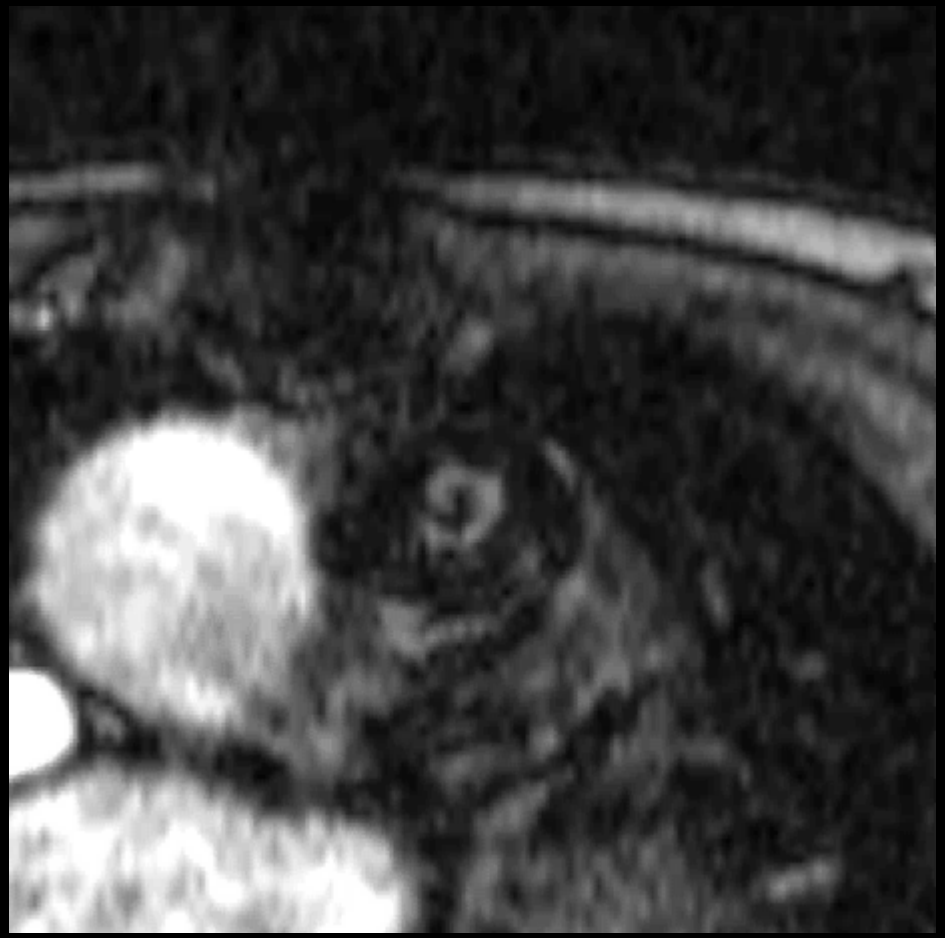




# Pulmonary bioprosthesis malfunction: 3D angiography



# Flow imaging + tissue differentiation with delay enhancement



# Conclusion

- prosthesis malfunction evaluation with CMR is feasible and accurate
- morphology, function and tissue evaluation are strong diagnostic tools
- comprehensive evaluation of complex congenital heart diseases for surgical planning
- 3D angiography is useful for great vessels evaluation
- PM, arrhythmias and claustrophobia are still a problem