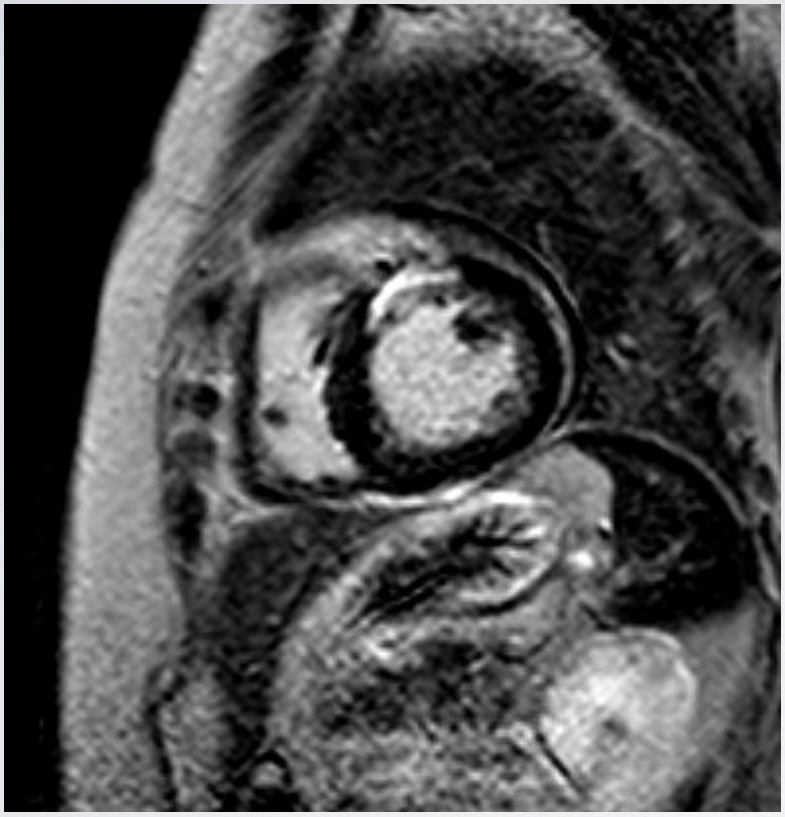
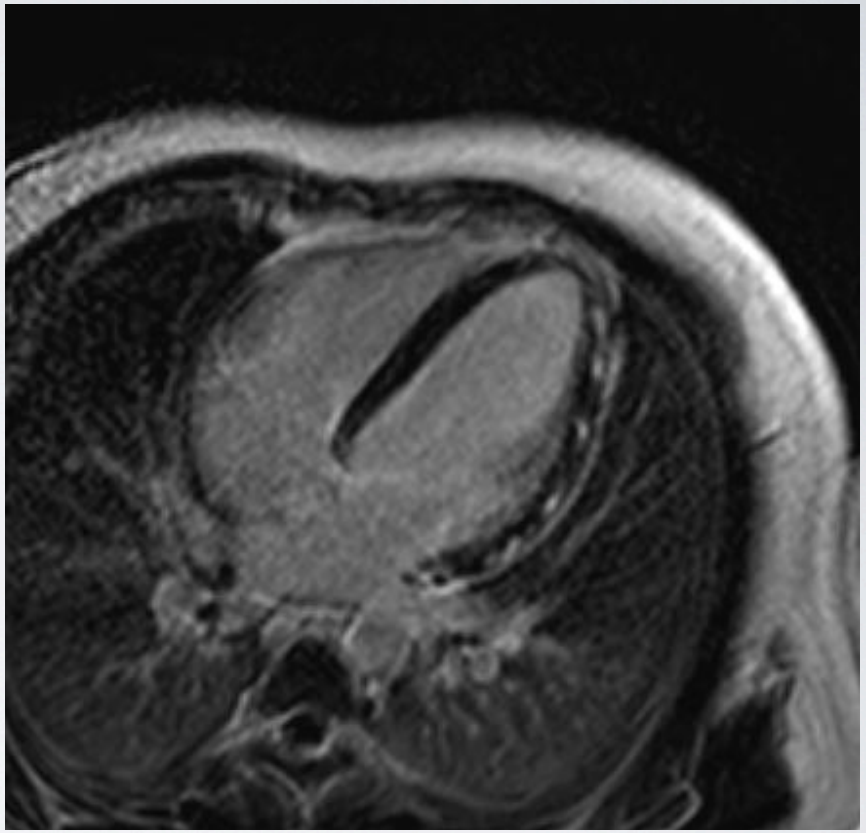
L'IRM CARDIAQUE

Dr P. Leddet
Service de Cardiologie Interventionnelle
CH Haguenau
07 Juin 2013

Quel Nul êtes-vous ?
» Démarrer le test



Infarctus



Myocardite

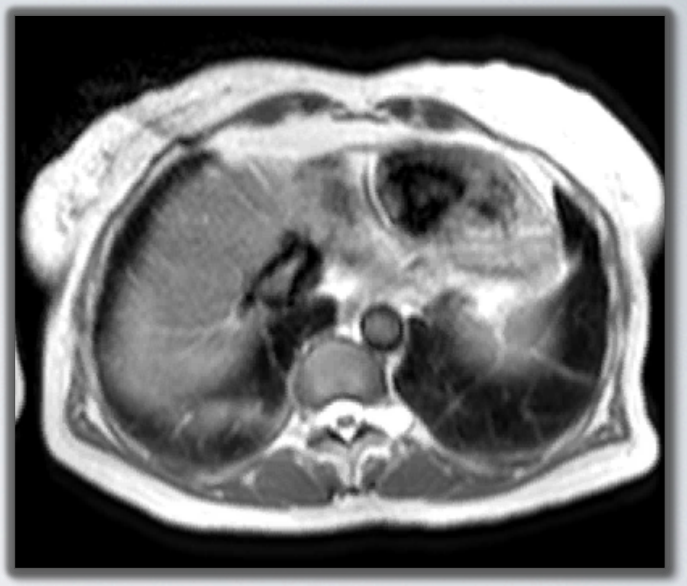
Contre-Indications...

- Absolues:
  - Implants cochléaires, neuro-stimulateurs,
  - Clips d'anévrysmes, KT intra-vasculaires/Swan-Ganz/SEES,
- Relatives:
  - PM et DAI,
  - Corps étrangers métalliques (distance cerveau/coeur/oeil), pompes implantables (chimio, insuline),
  - 3 premiers mois de grossesse.

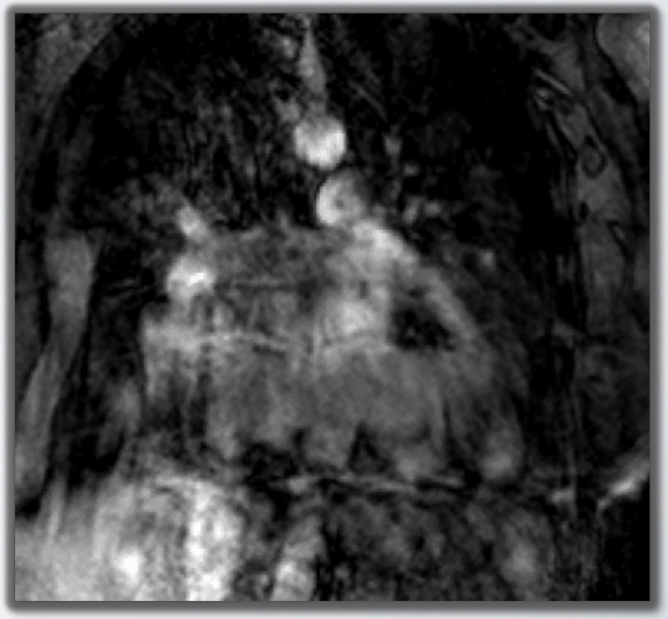
… et non CI

- Valves cardiaques,
- Coils d'embolisation/filtres/stents,
- Systèmes d'occlusion CIA/CIV/CA,
- Prothèses orthopédiques,
- Fils de sternotomie.

Résultats décevants

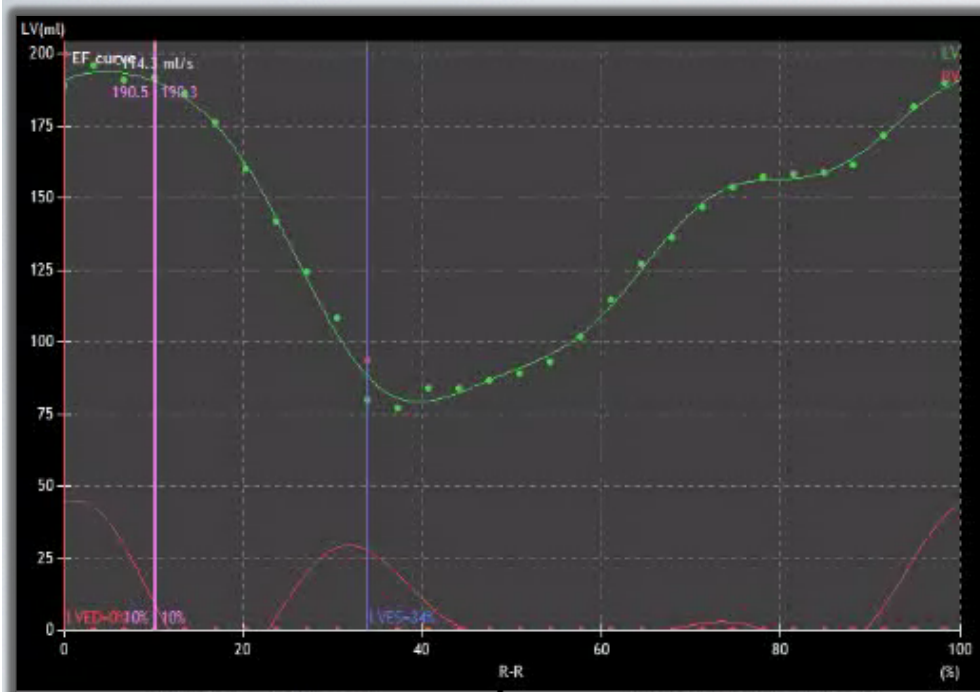


- ACFA, extrasystolie,
- Apnées impossibles (IRA, emphysème...),
- Claustrophobie sévère,
- Obésité sévère.



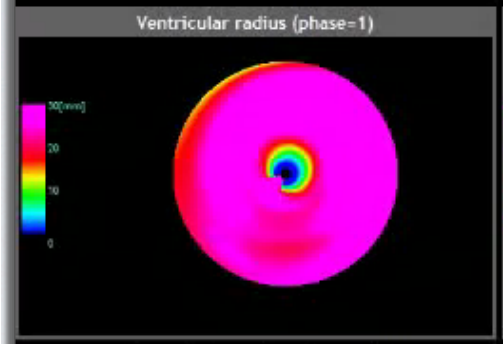
Cardiopathie ischémique

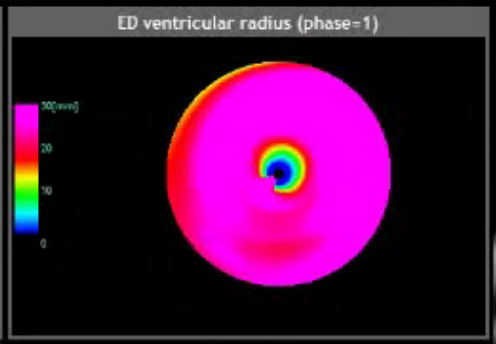
- Analyse morphologique,
- Analyse cinétique, FEVG,
- Défauts de perfusion et territoire (+/- IRM de stress),
- Complications (anévrysme ventriculaire, thrombus),
- Oedème,
- Viabilité.

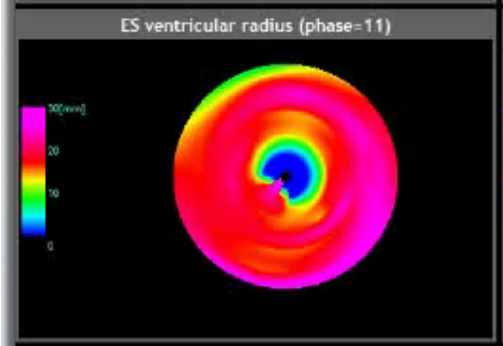


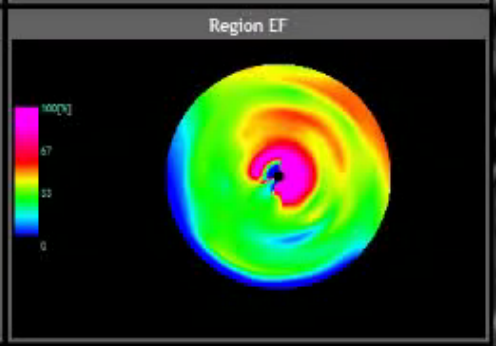
	LV	RV
EDV	189.2 ml	200.0 ml
ESV	80.2 ml	93.8 ml
EDVI	96.0 ml/m²	101.5 ml/m²
ESVI	40.7 ml/m²	47.6 ml/m²
SV	109.0 ml	106.2 ml
CO	6.1 l/min	5.9 l/min
CI	3.10 l/min/m²	3.02 l/min/m²
PFR	---- EDV/s	
TPF	---- ms	
EF	57.6 %	53.1 %

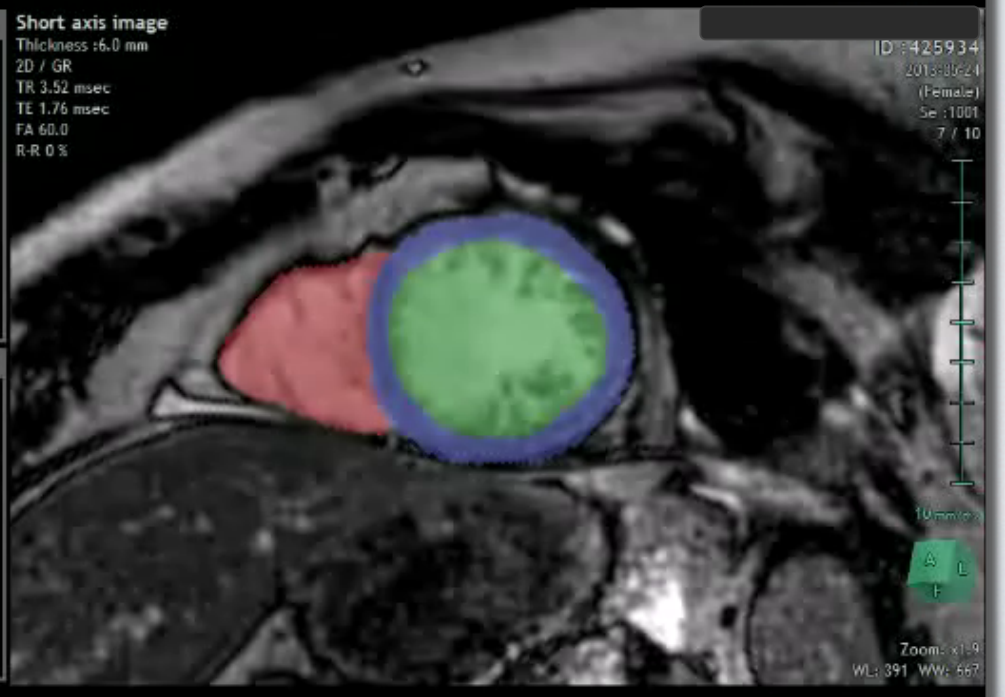
Patient height	165.0 cm
Patient weight	90.0 kg
Body surface area	1.97 m²
Heart rate	56.0 bpm
Myocardial mass	114.2 g

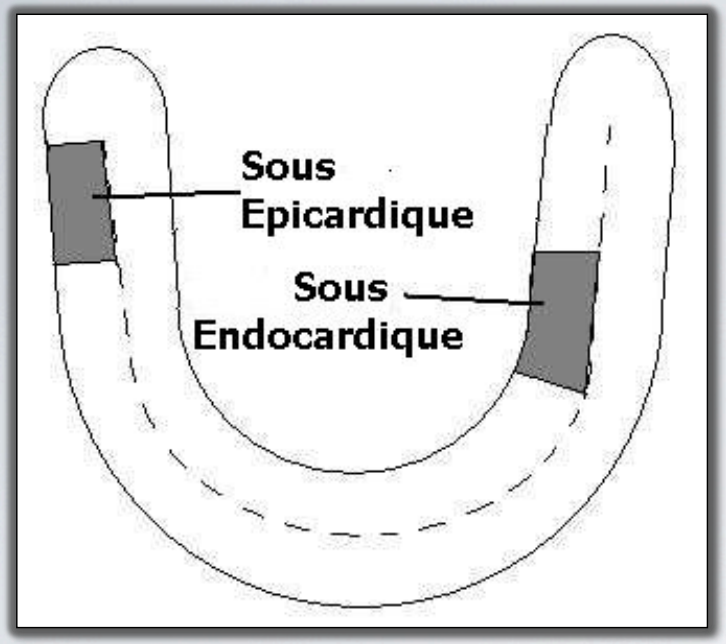




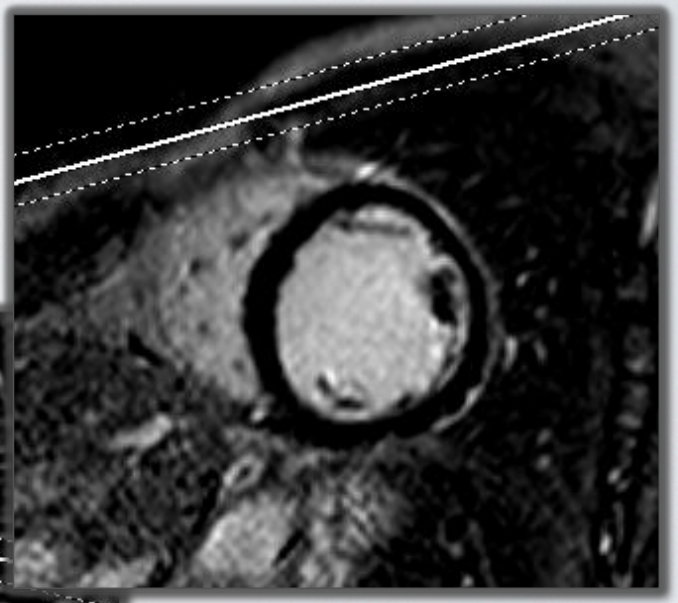


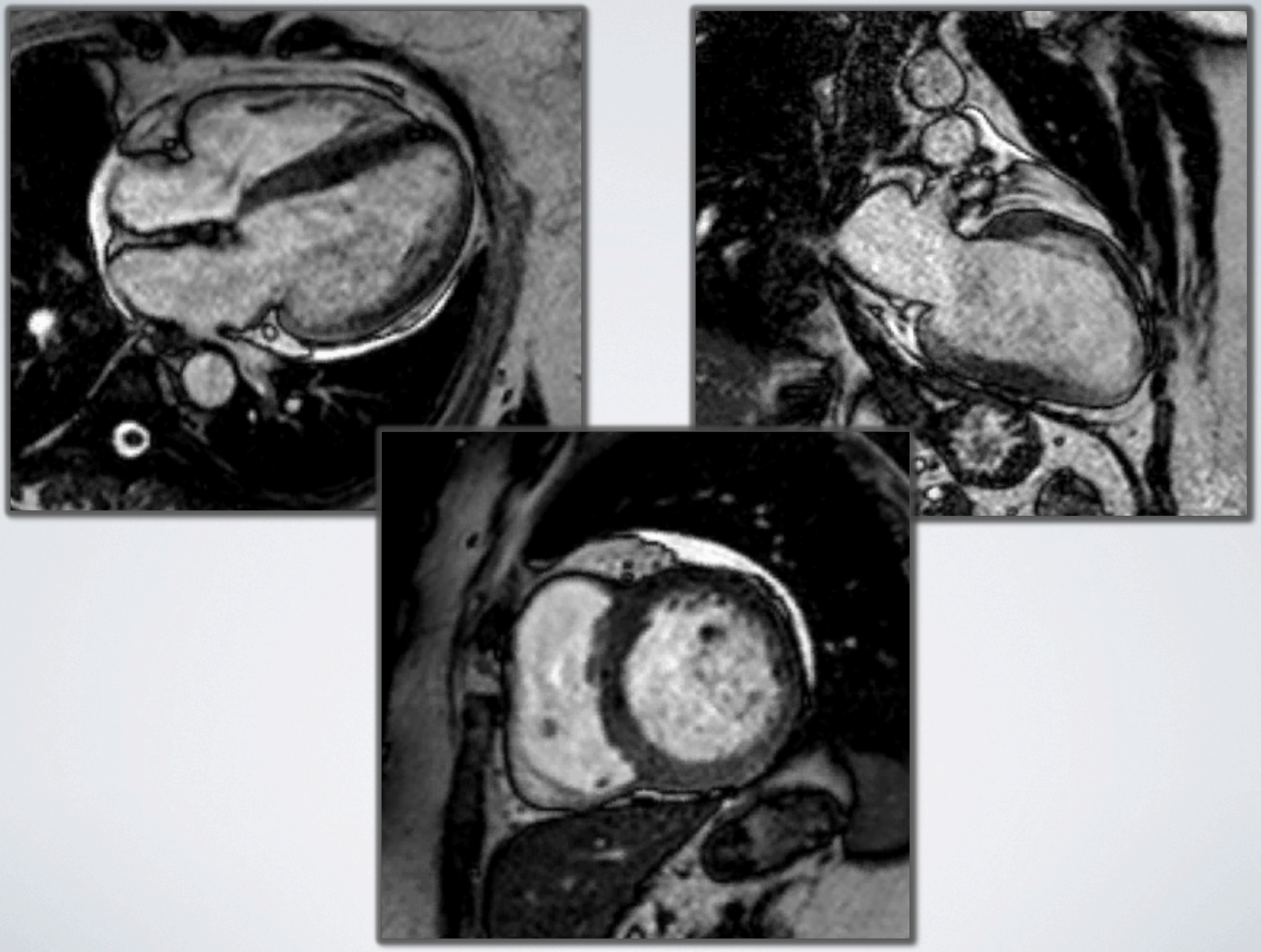


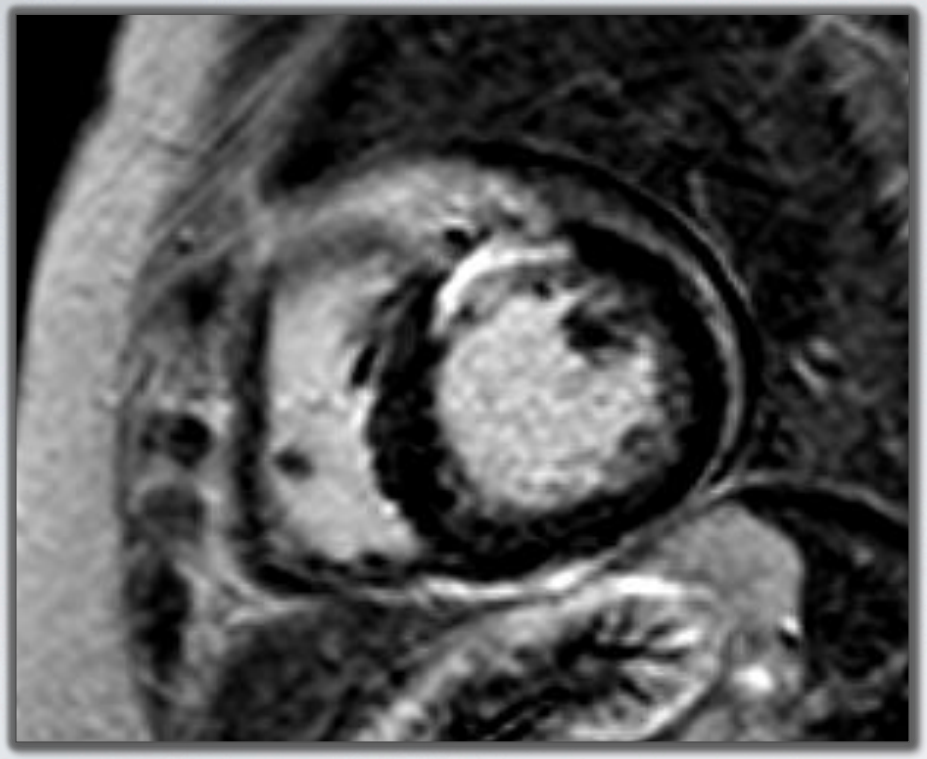




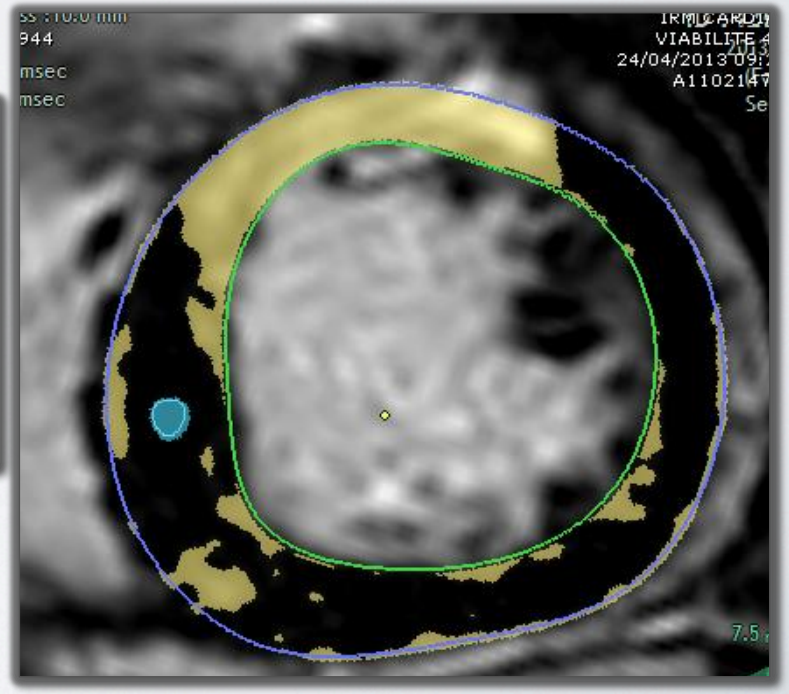
Etude de la Viabilité

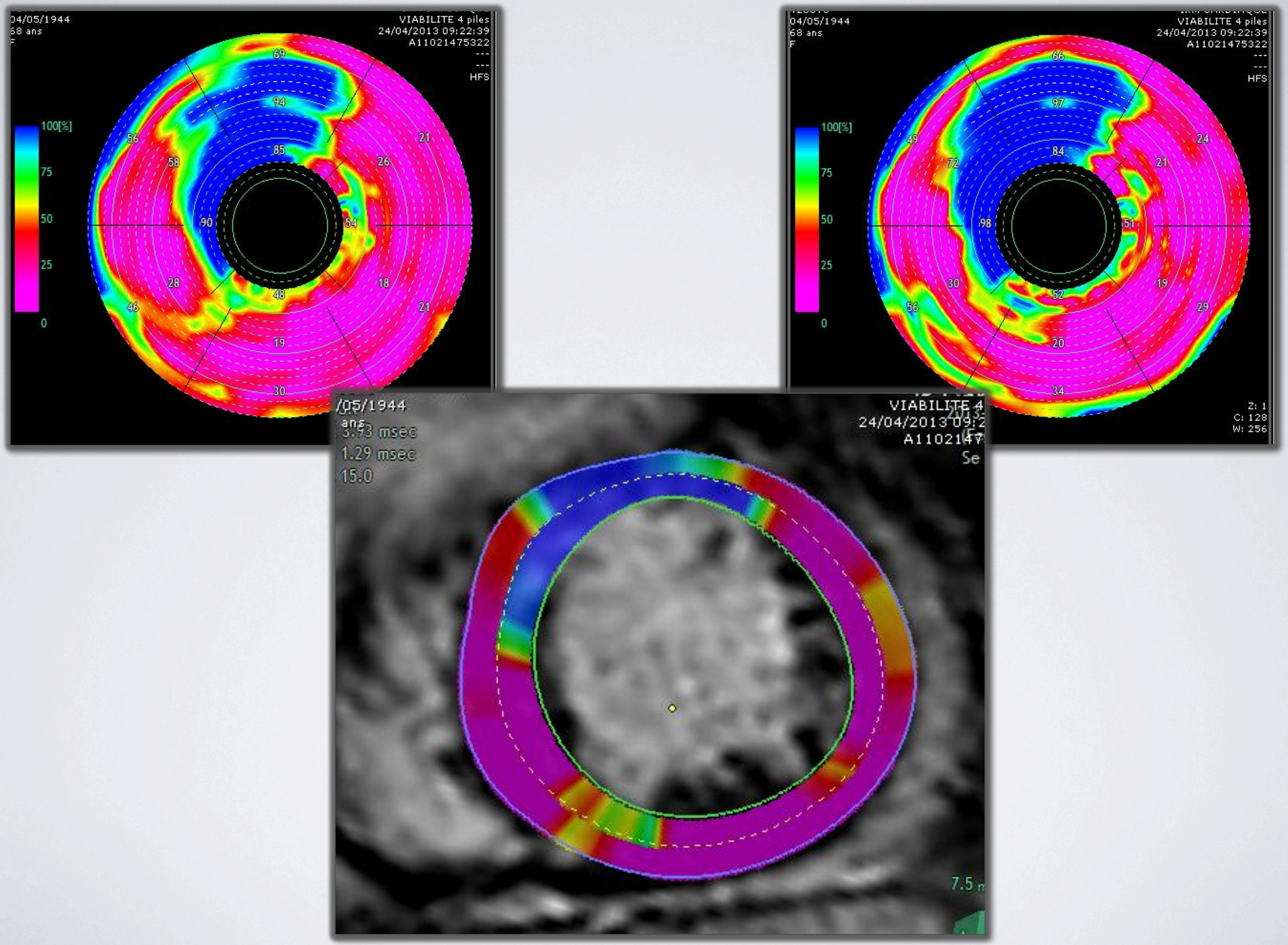






Subendo cardial
- Subendocardial infarction
- Transmural infarction


944
msec
msec
VIABILITE
24/04/2013
7.5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04/05/1944
68 ans
F
VIABILITE 4 piles
24/04/2013 09:22:39
A11021475322
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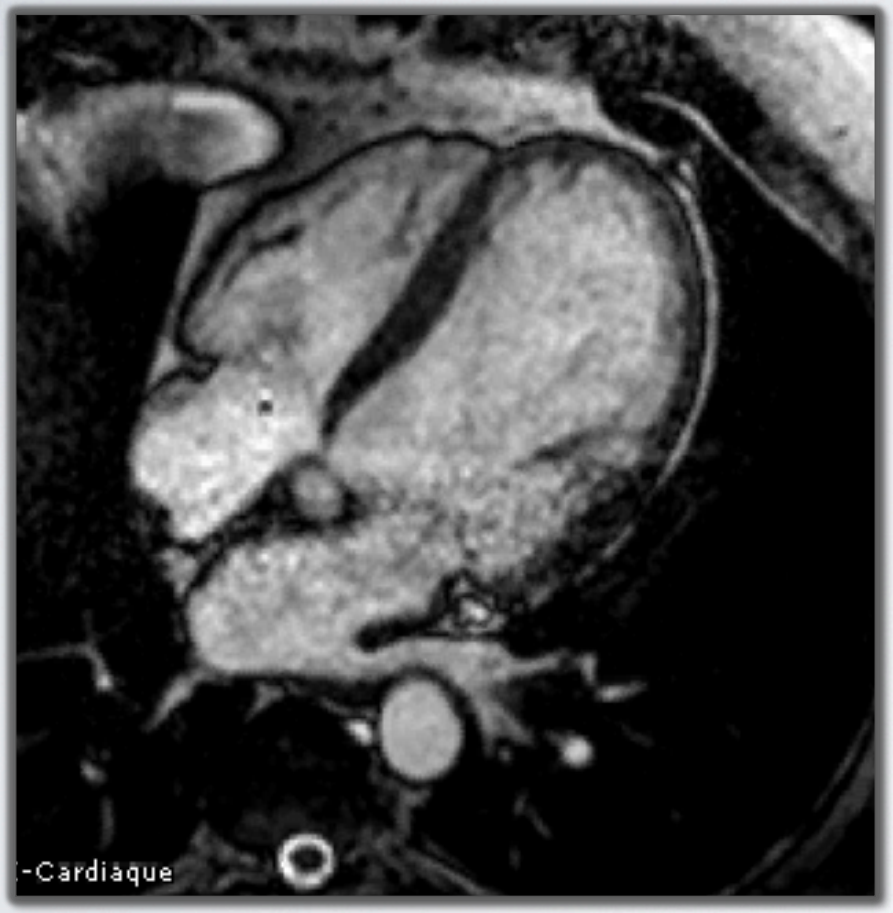
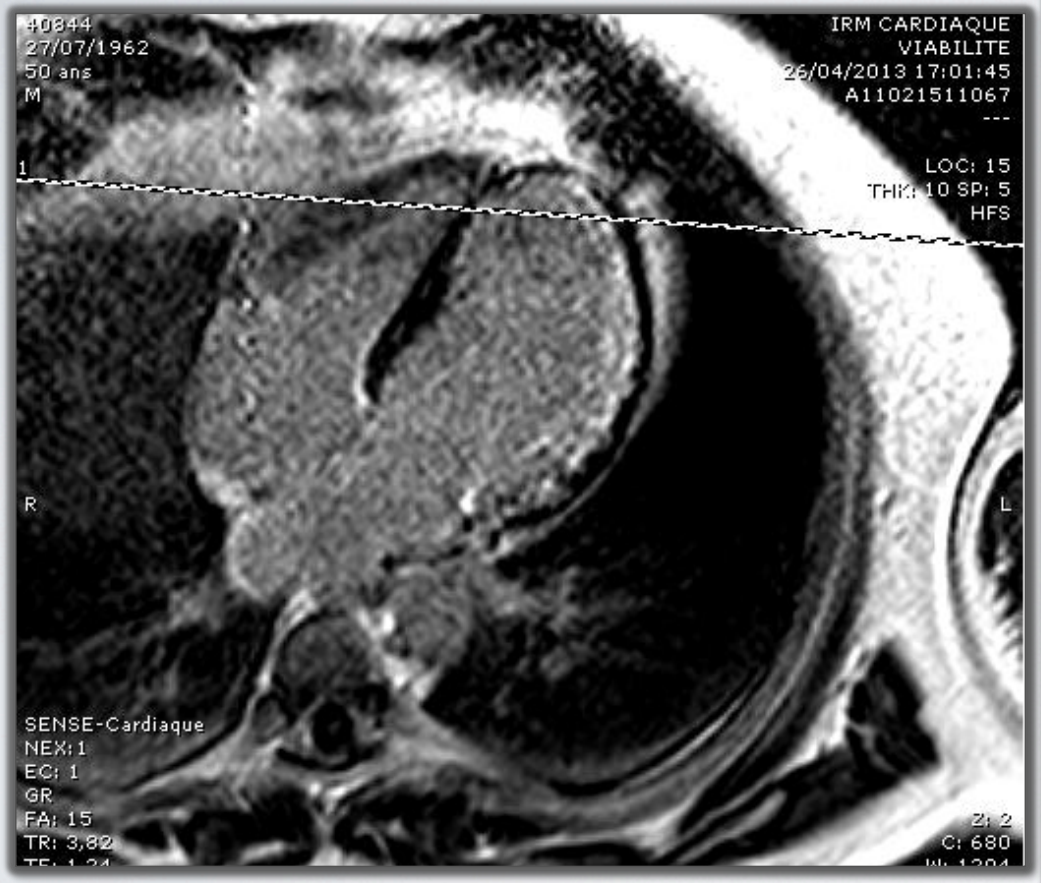

-Cardiaque

AL
SENSE-Cardiaque
NEX: 1
EC: 1
GR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VIABILITE
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A11021511067

LOC: 15
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SENSE-Cardiaque
NEX:1
EC: 1
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FA: 15
TR: 3,82
Z: 2
C: 680

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IR
26/04/
E-Cardiaque
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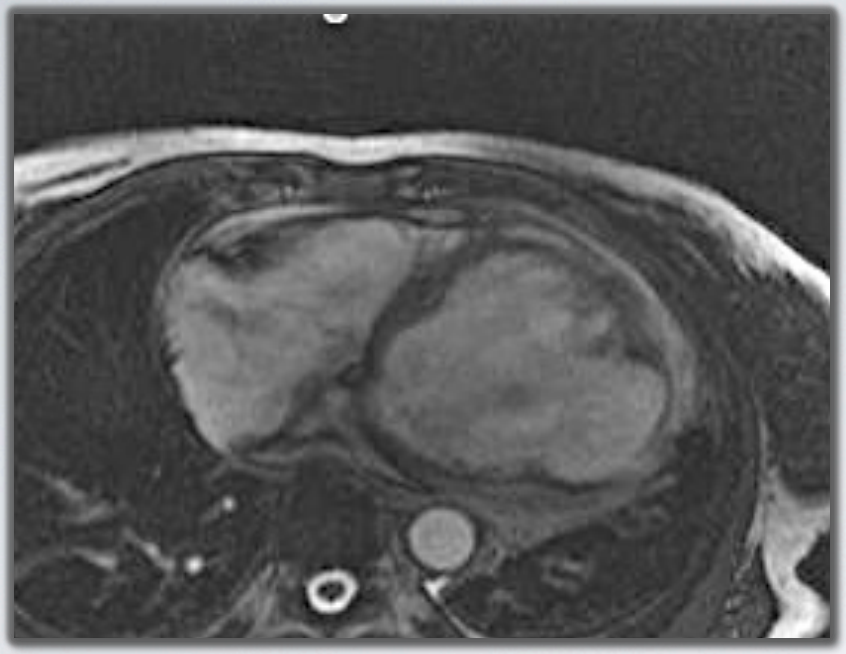

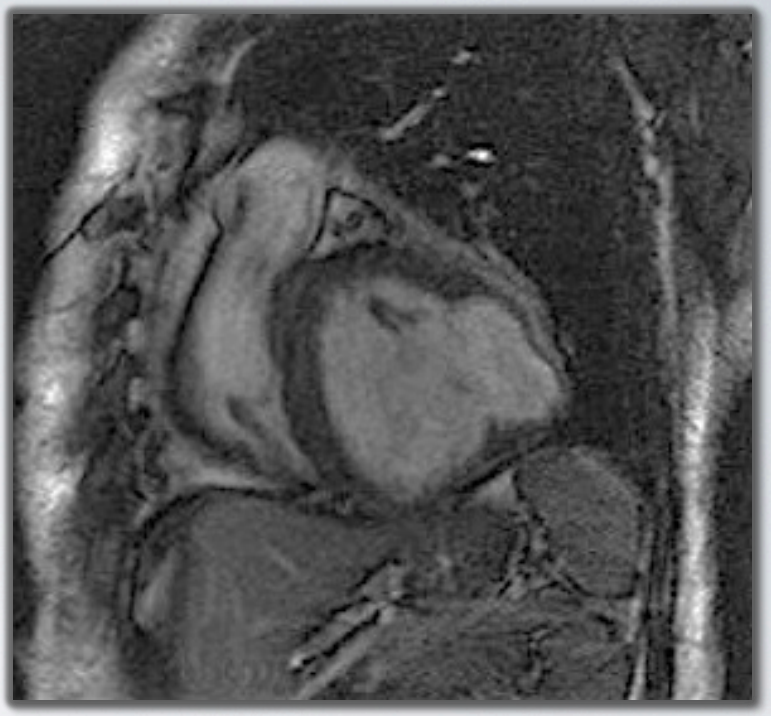

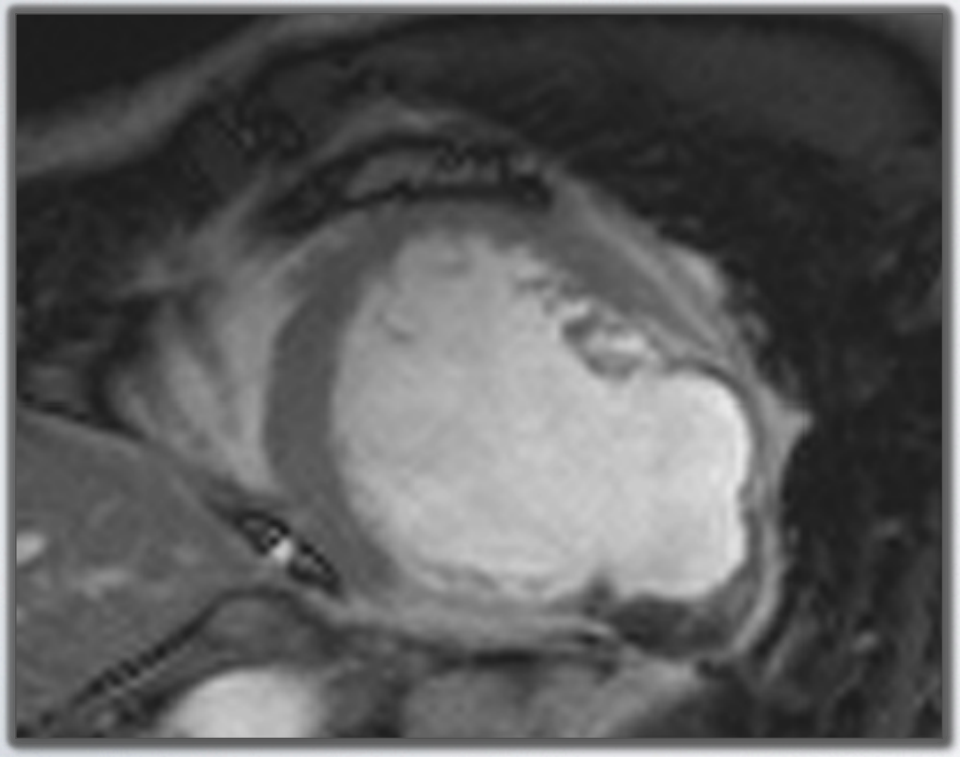

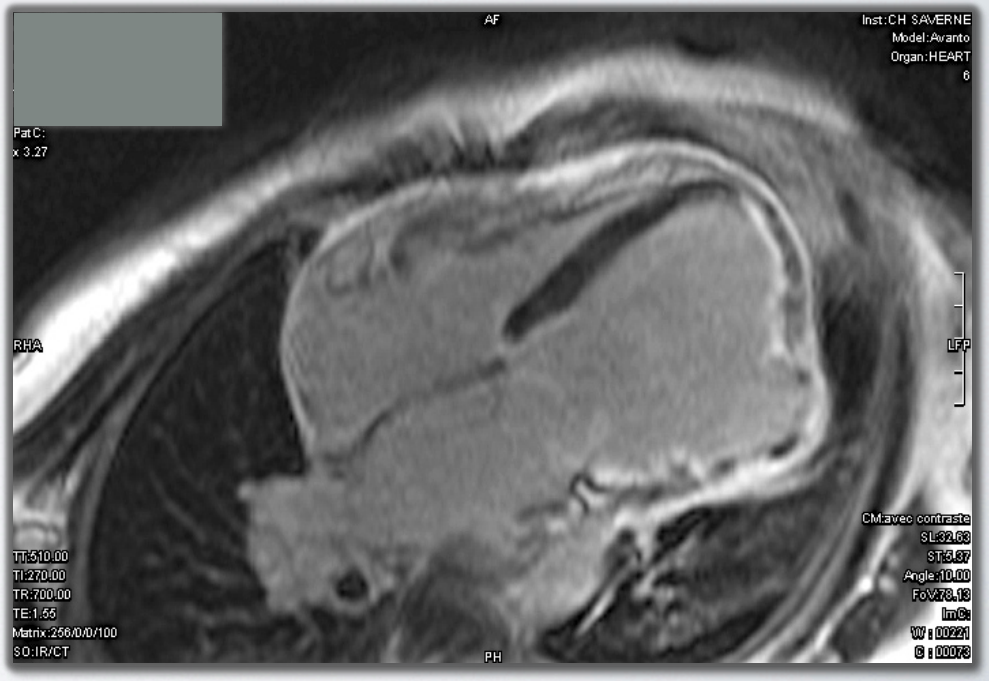
AF
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Model:Avanto
Organ:HEART
6
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x 3.27
RHA
LFP
CM:avec contraste
SL:32.63
ST:5.37
Angle:10.00
FoV:78.13
ImG:
W : 00221
C : 00073
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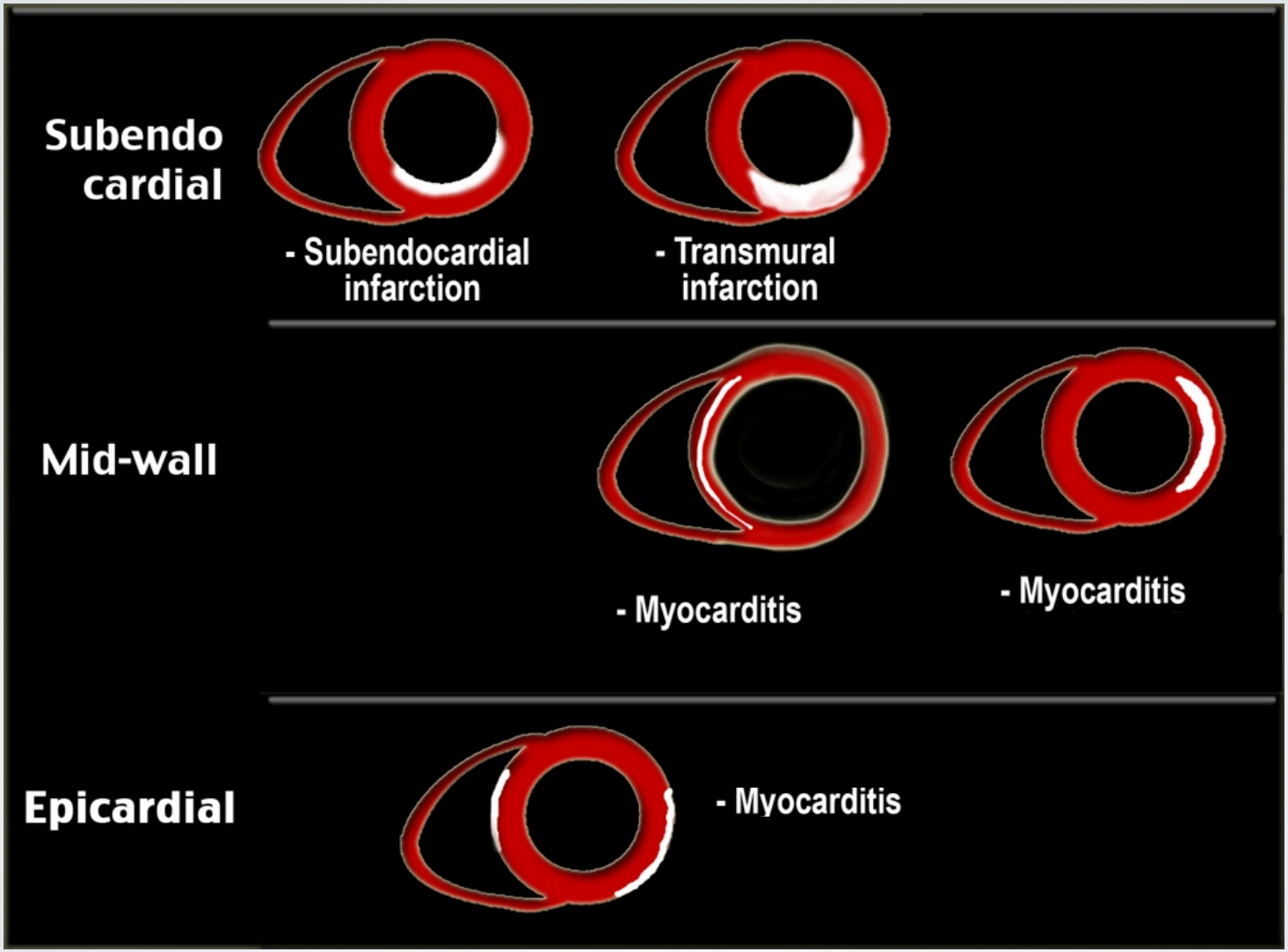
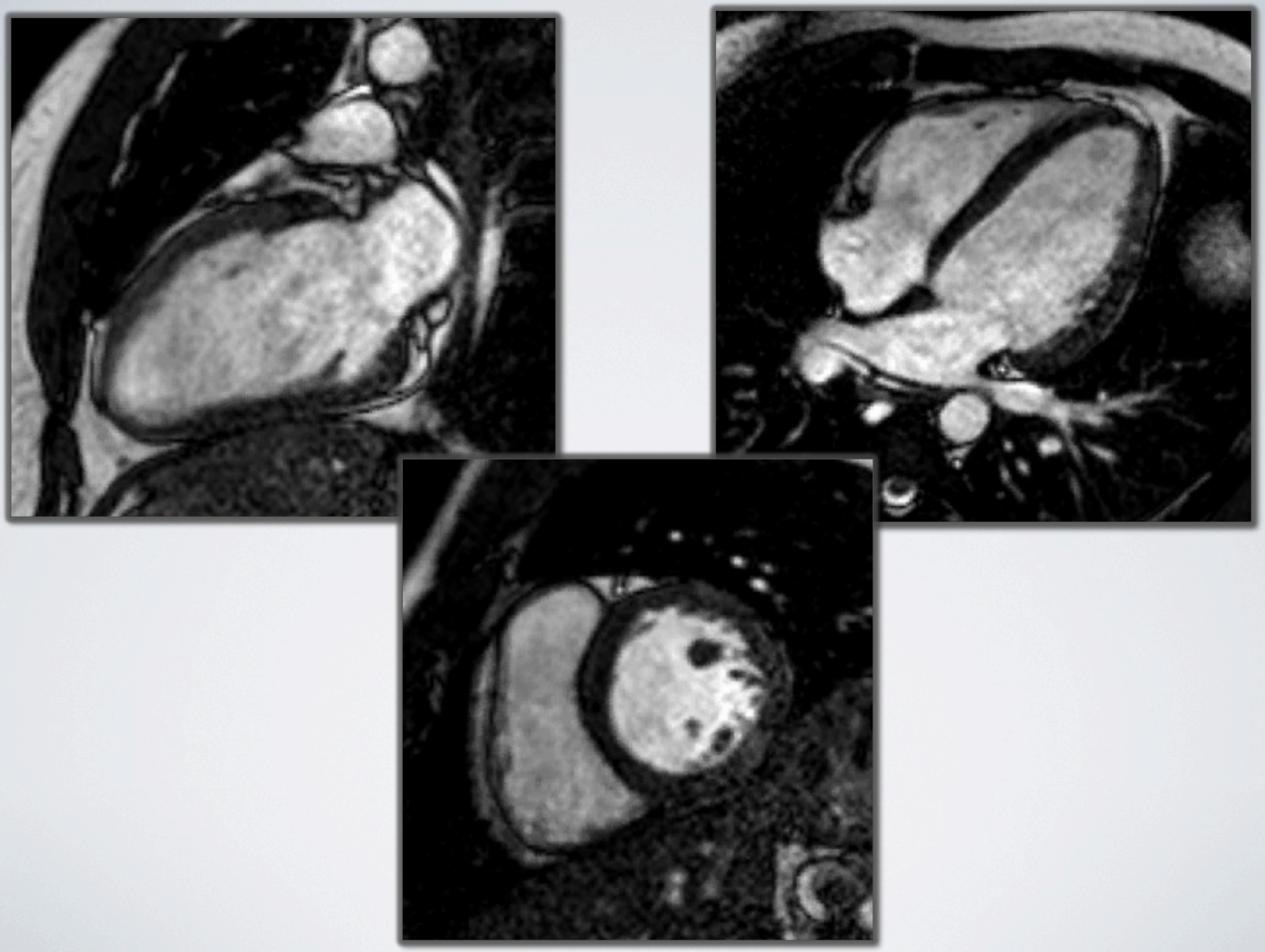
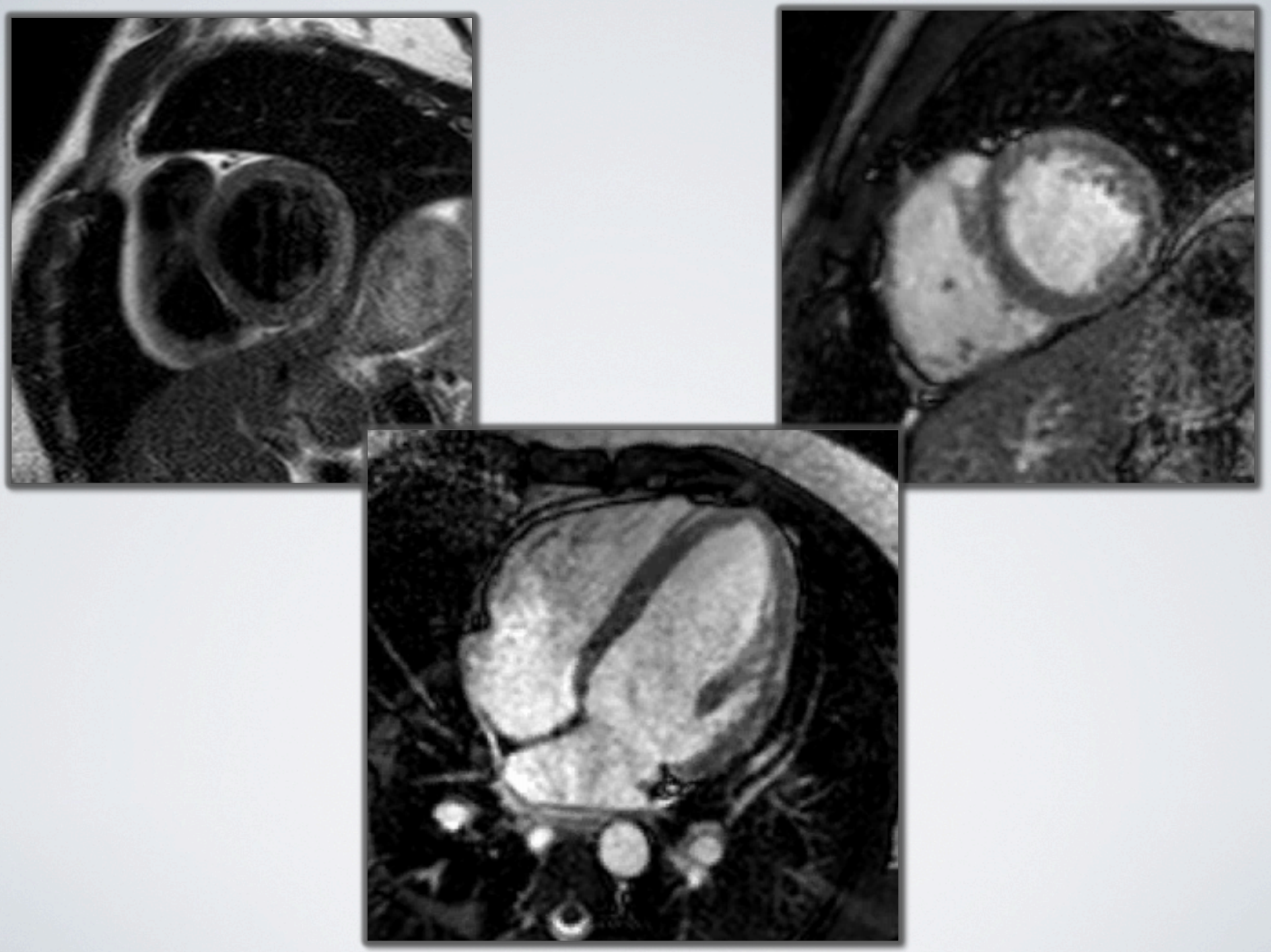
TE:1.55
Matrix:256/0/0/100
SO:IR/CT
PH

MYOCARDITES

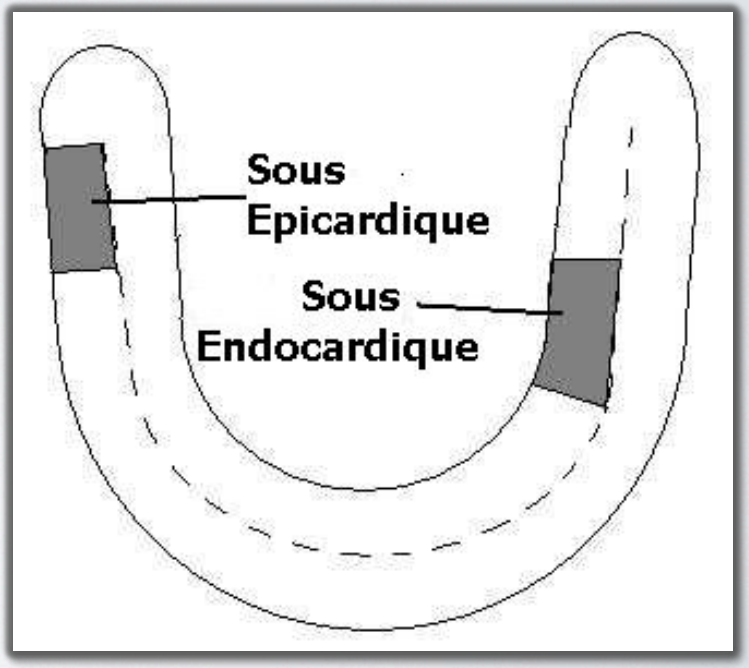




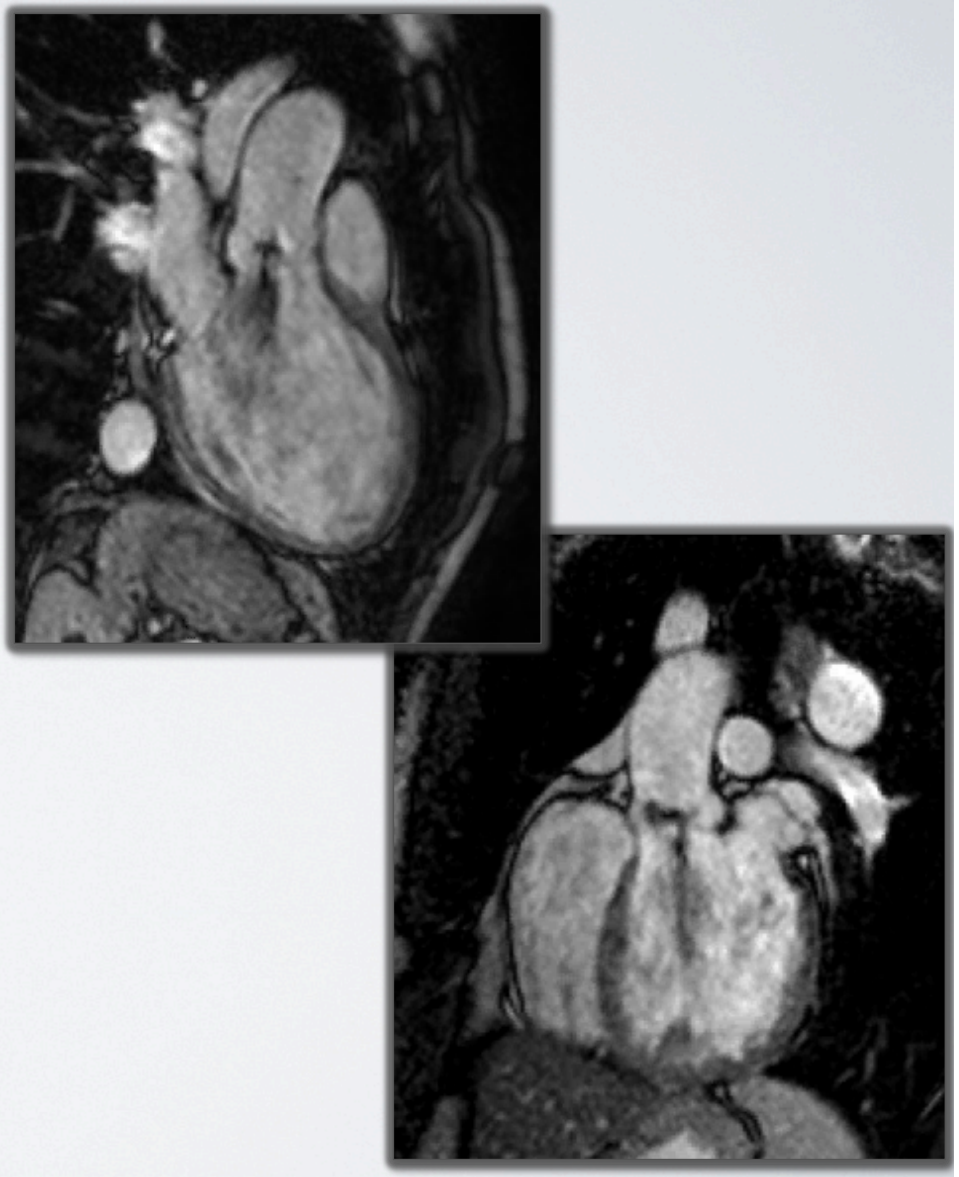


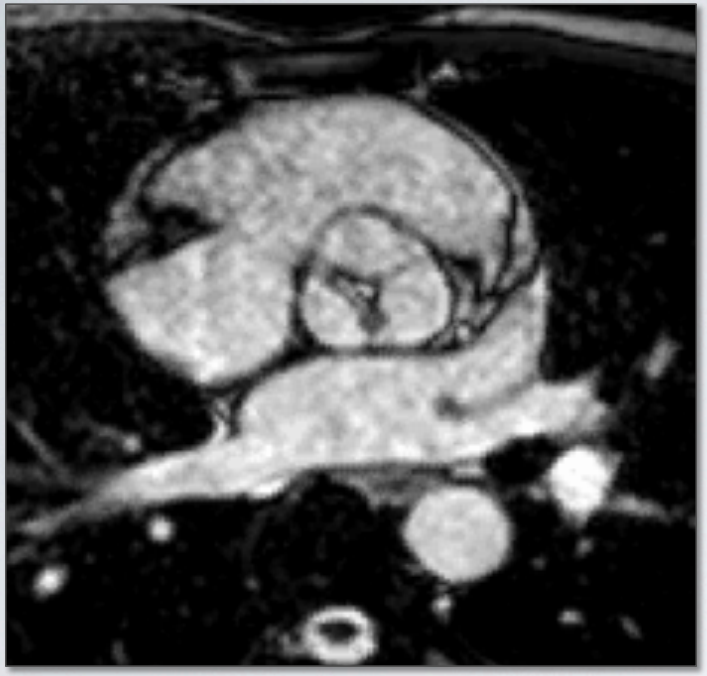
Page: 5 sur 10
IM: 5 SE: 2601
cm

Epicardial


Sous
Epicardique
Sous
Endocardique

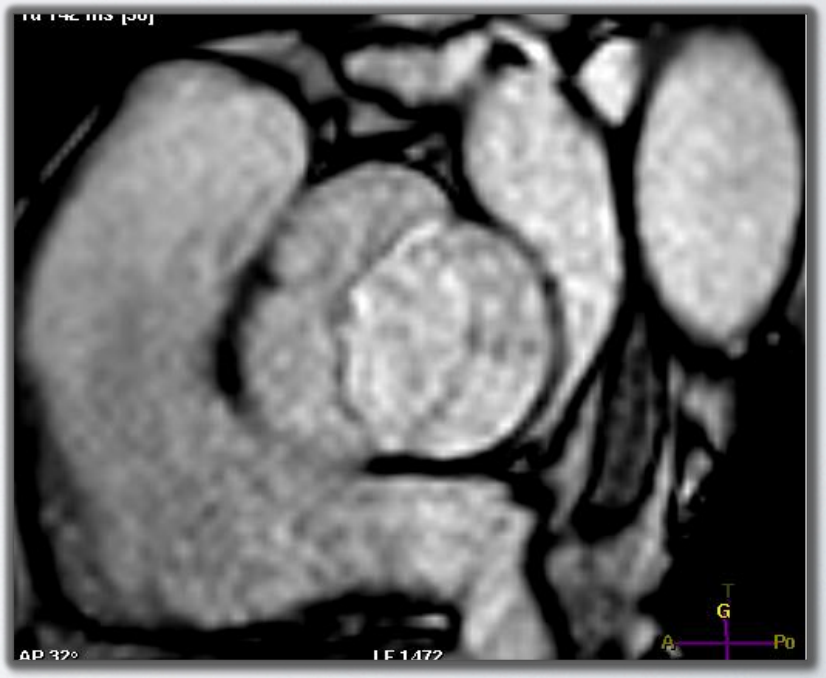
Cardiopathies valvulaires

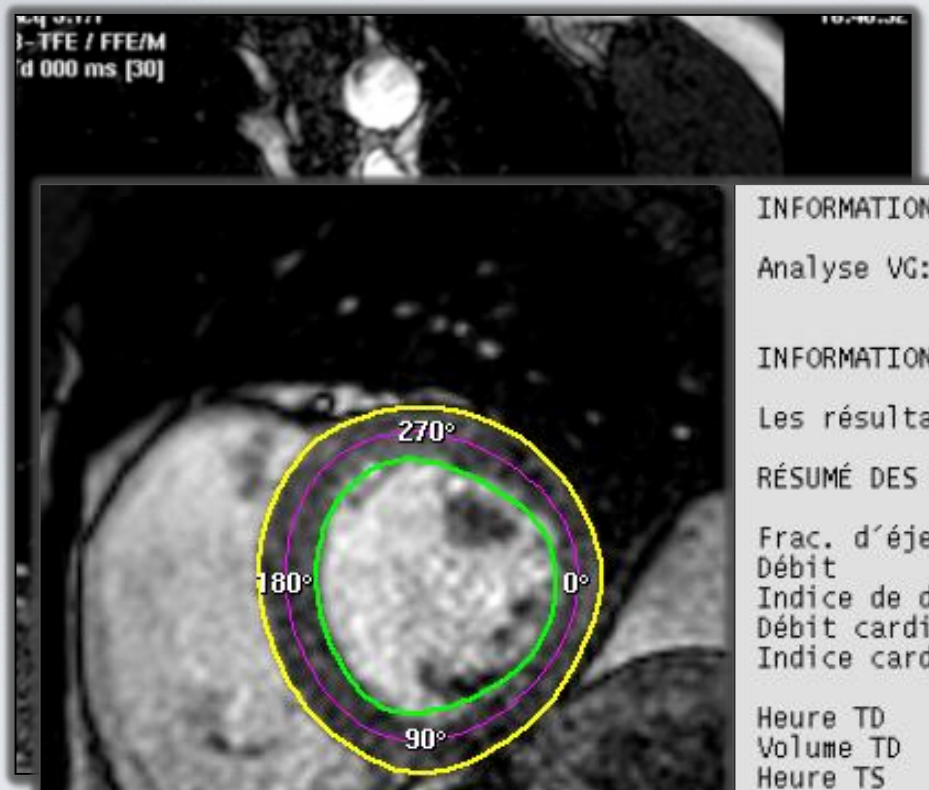




Valve tricuspide

Valve bicuspide





INFORMATIONS SESSION:

Analyse VG: fe (non validé).

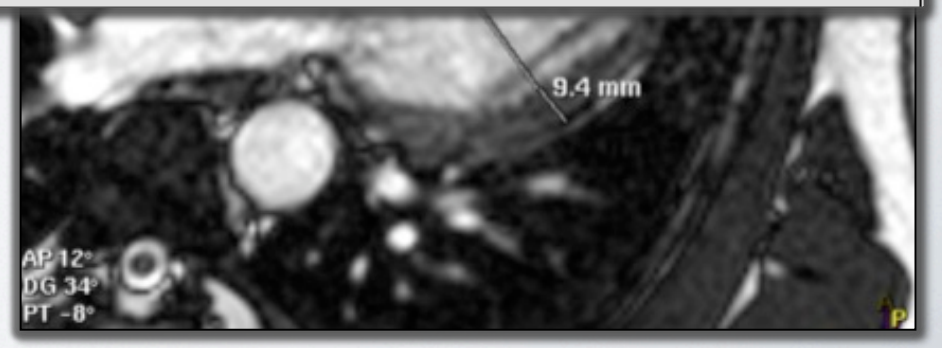
INFORMATIONS SUR LES RÉSULTATS D´ANALYSE:

Les résultats de volume sanguin sont non filtré et non corrigé.

RÉSUMÉ DES RÉSULTATS:

Frac. d´éjection	58.0	%
Débit	95.5	ml
Indice de débit	nd	
Débit cardiaque	5.3	l/min
Indice cardiaque	nd	

Heure TD	0.00	ms (phase 1)
Volume TD	164.59	ml
Heure TS	396.00	ms (phase 12)
Volume TS	69.07	ml
Masse la paroi TD	172.39	g
paroi TD + masse papillaire	nd	
paroi TD - masse corrigée	nd	
paroi TD + musc. pap. - masse corr.	nd	
Rythme card.	56.00	bpm
Taille du patient	nd	
Poids du patient	104.00	kg



PHILIPS IRM 1.5 T

INFORMATIONS SESSION:

Débit Q: AOASC (non validé).

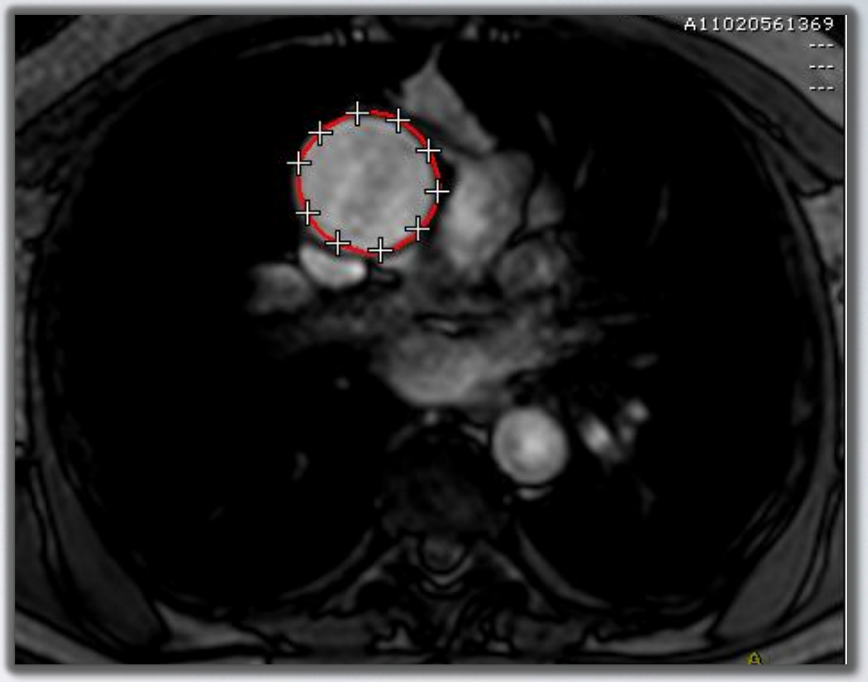
INFORMATIONS SUR LES RÉSULTATS D´ANALYSE:

Rythme card. : 53 bpm
Intervalle-RR : 1132 ms (à partir du r.c.)

Synchronisation cardiaque : rétroactif
Intervalle e mesure : 1132 ms (Intervalle-RR)

RÉSULTATS D´ANALYSE:

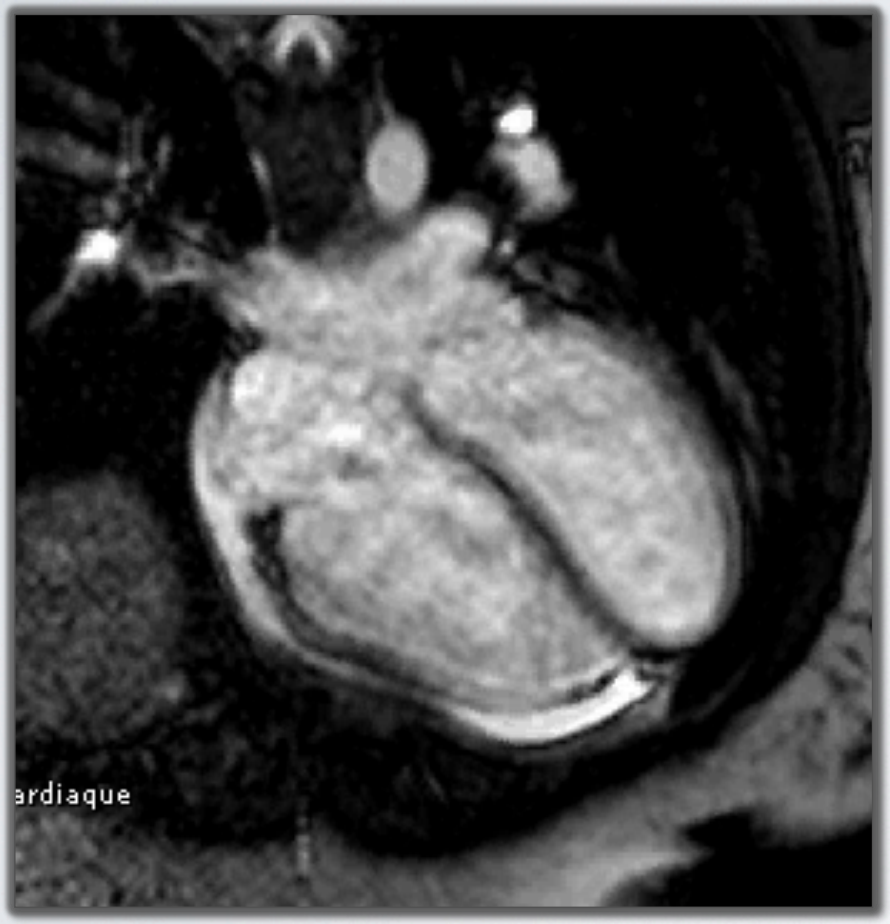
coupe 1	Vessel 1
Débit (ml)	58.8
Vol. flux avant (ml)	118.5
Vol. flux arrière (ml)	59.6
Fract. régurgitante (%)	50.3
Flux moyen (ml/s)	52.0
Distance systolique (cm)	3.1
Vitesse moyenne (cm/s)	2.8

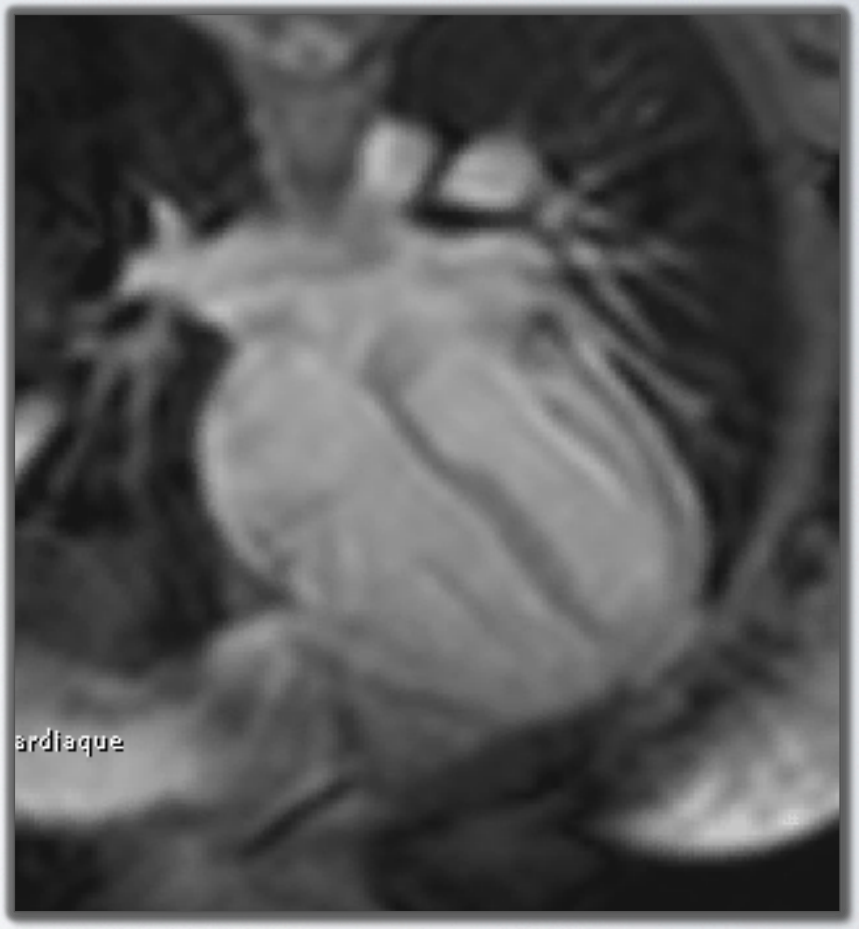


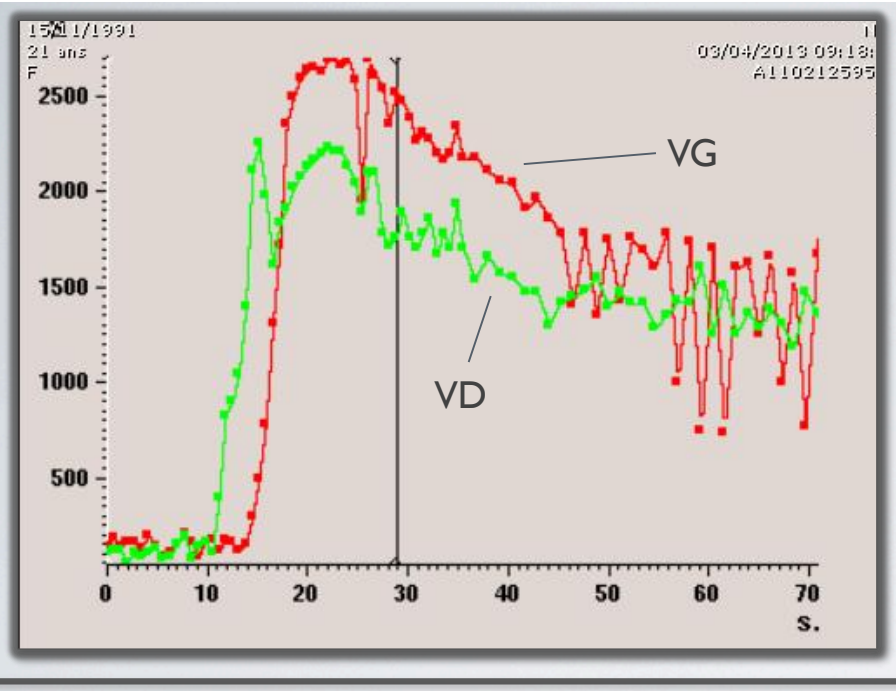
Débit: 58,8ml
Flux antérograde: 118,5mL
Flux régurgitant: 59,6ml

Fraction régurgitante: 50%

Shunts





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INFORMATIONS SESSION:

Débit Q: ao (non validé).

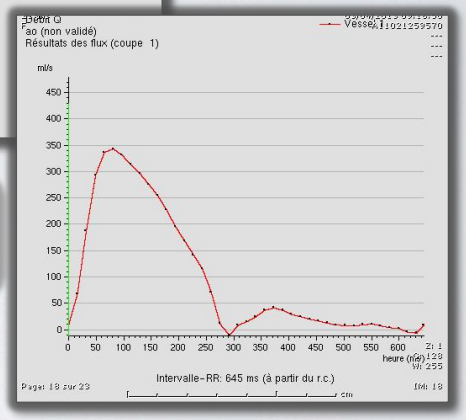
INFORMATIONS SUR LES RÉSULTATS D´ANALYSE:

Rythme card.                :   93 bpm
Intervalle-RR               :  645 ms   (à partir du r.c.)

Synchronisation cardiaque   :  rétroactif
Intervalle e mesure         :  645 ms   (Intervalle-RR)

RÉSULTATS D´ANALYSE:

coupe 1                   | Vessel
                          |      1
--------------------------|--------
Débit (ml)                |   63.7
Vol. flux avant (ml)      |   63.9
Vol. flux arrière (ml)    |    0.2
Fract. régurgitante (%)   |    0.4
Débit abs. (ml)           |   64.1
Flux moyen (ml/s)         |   98.7
Distance systolique (cm)  |   12.9
Vitesse moyenne (cm/s)    |   20.0
```



Qs: 5,92 L/min

```
INFORMATIONS SESSION:

Débit Q: ap (non validé).

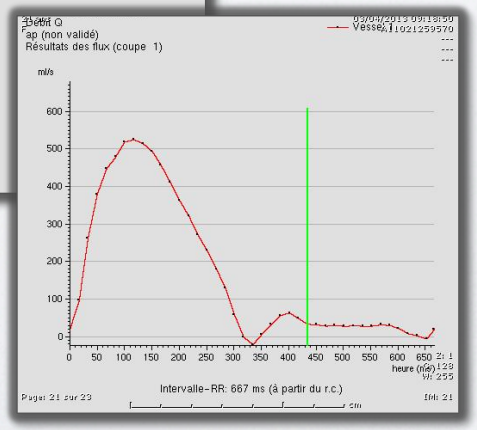
INFORMATIONS SUR LES RÉSULTATS D´ANALYSE:

Rythme card.                :   90 bpm
Intervalle-RR               :  667 ms   (à partir du r.c.)

Synchronisation cardiaque   :  rétroactif
Intervalle e mesure         :  666 ms   (Intervalle-RR)

RÉSULTATS D´ANALYSE:

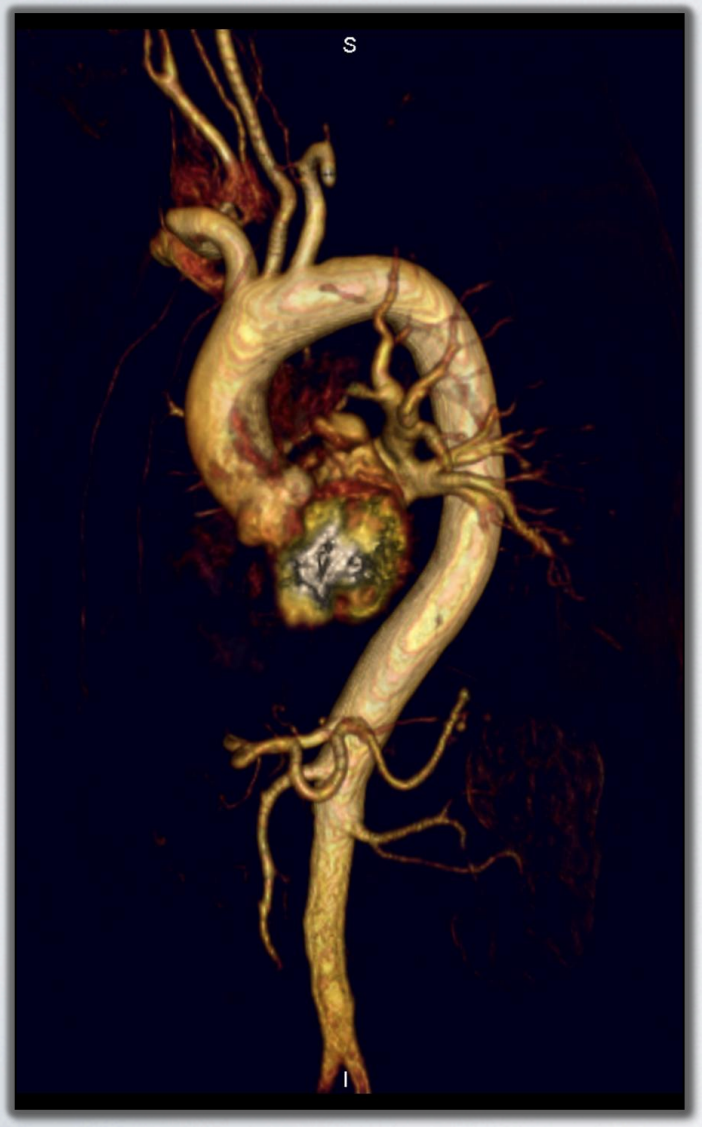
coupe 1                   | Vessel
                          |      1
--------------------------|--------
Débit (ml)                |  111.3
Vol. flux avant (ml)      |  111.7
Vol. flux arrière (ml)    |    0.4
Fract. régurgitante (%)   |    0.3
Débit abs. (ml)           |  112.1
Flux moyen (ml/s)         |  166.9
Distance systolique (cm)  |   13.4
Vitesse moyenne (cm/s)    |   20.1
```



Qp: 10,02 L/min

Qp/Qs: 1,69

Aortographie



Et aussi…

- Cardiomyopathies dilatées, hypertrophiques, restrictives,
- Péricardites constrictives,
- Masses cardiaques (tumeurs-thrombus),
- Cardiopathies congénitales, DAVD, Non compaction…

Points forts

- Non irradiant,
- Pas de produit de contraste iodé,
- Analyse fonctionnelle et morphologique,
- Séquences de Viabilité +++
- Analyse du péricarde

Points faibles

- Chronophage,
- Troubles du rythme,
- Coût,
- Temps machine disponible,