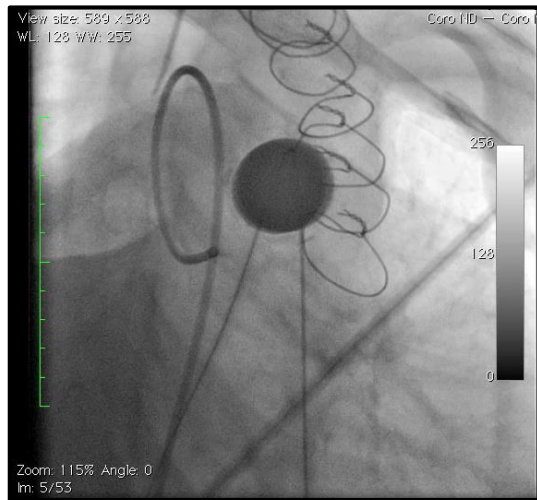


Coronary evaluation for PPVI: 2D vs 3DRA vs CTA/MRI



Dr. Francisco Garay G.
Department of Pediatric Cardiology
and Respiratory Diseases.
Pontifical Catholic University of Chile.



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Coronary evaluation for PPVI

- Catastrophic reported cases at the initial PPVI experience.
- 5% coronary artery compression.
- 71% patients with coronary artery compression had abnormal CA anatomy.
- Tetralogy of Fallot and TGA.

Murray. Circ Cardiovasc Interv. 2013



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Coronary evaluation for PPVI - MRI



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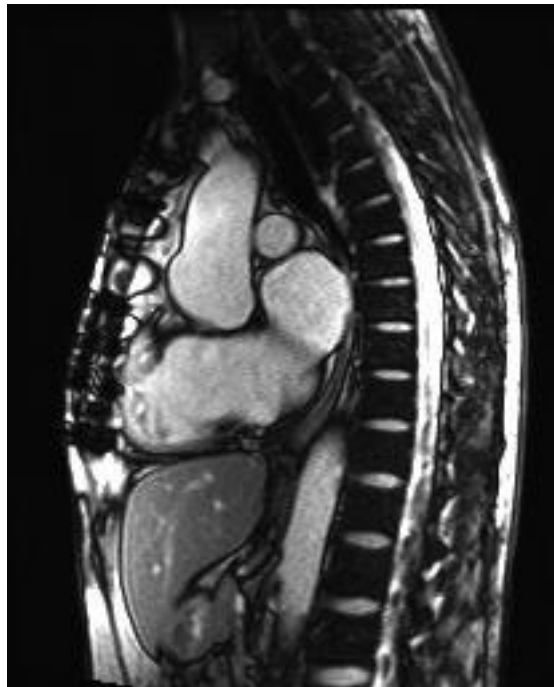
Coronary evaluation for PPVI - MRI

RVOT long axis



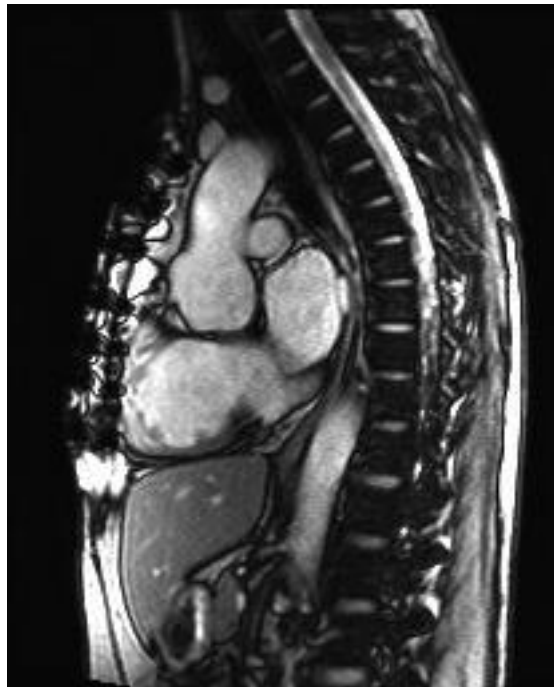
Coronary evaluation for PPVI - MRI

RVOT long axis



Coronary evaluation for PPVI - MRI

RVOT long axis



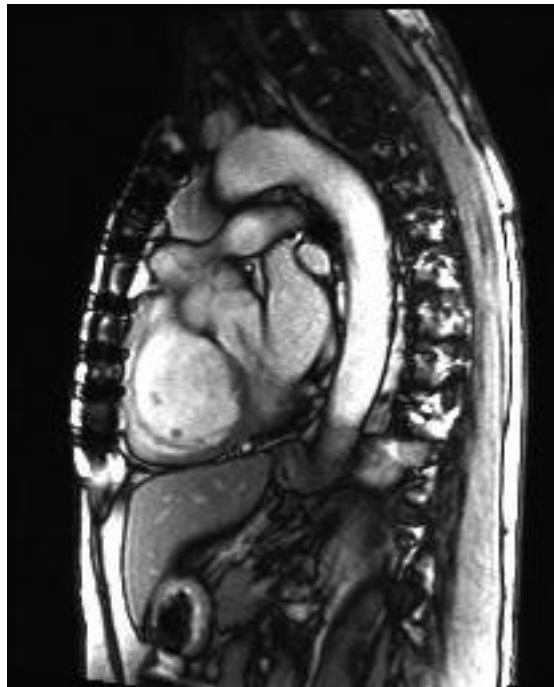
Coronary evaluation for PPVI - MRI

RVOT long axis



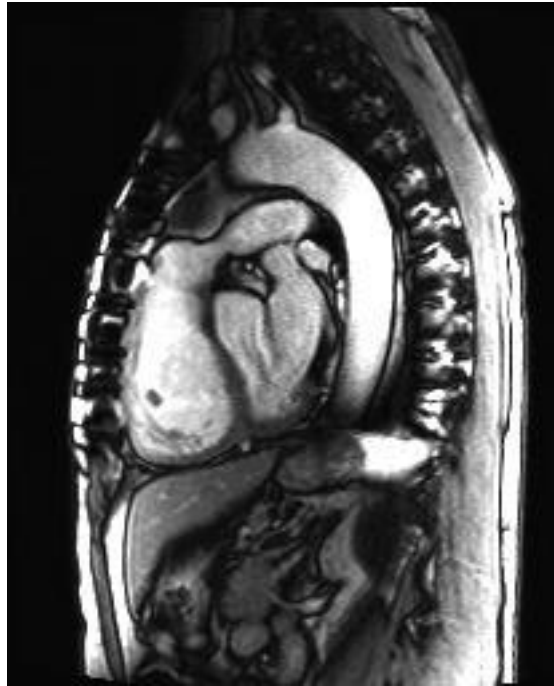
Coronary evaluation for PPVI - MRI

RVOT long axis



Coronary evaluation for PPVI - MRI

RVOT long axis



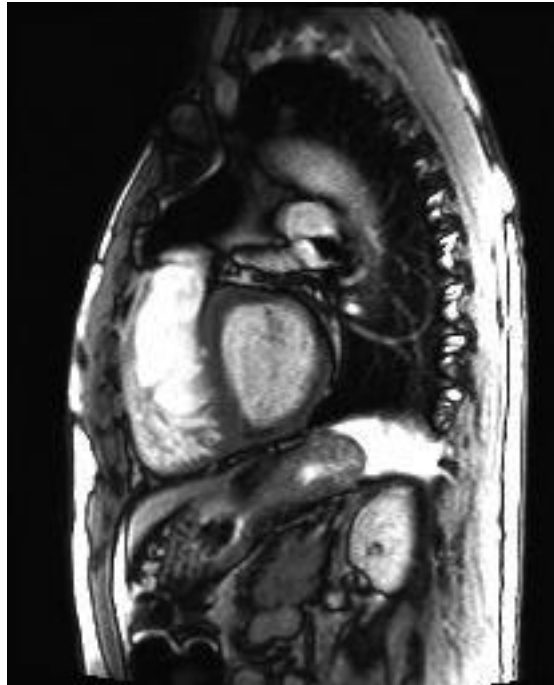
Coronary evaluation for PPVI - MRI

RVOT long axis



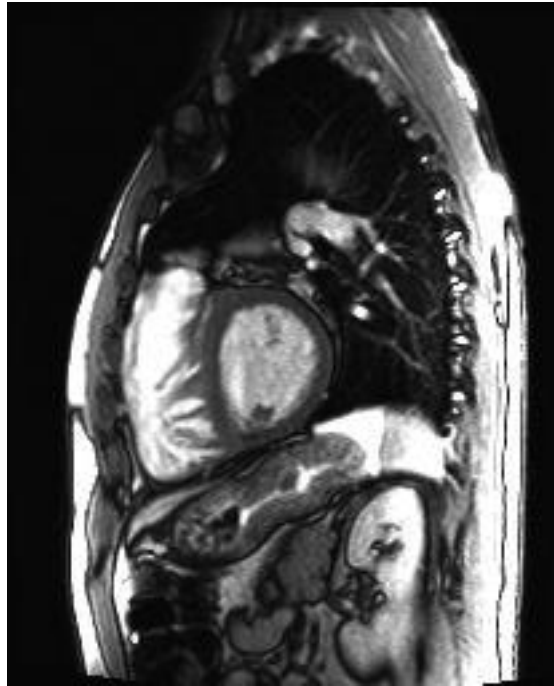
Coronary evaluation for PPVI - MRI

RVOT long axis



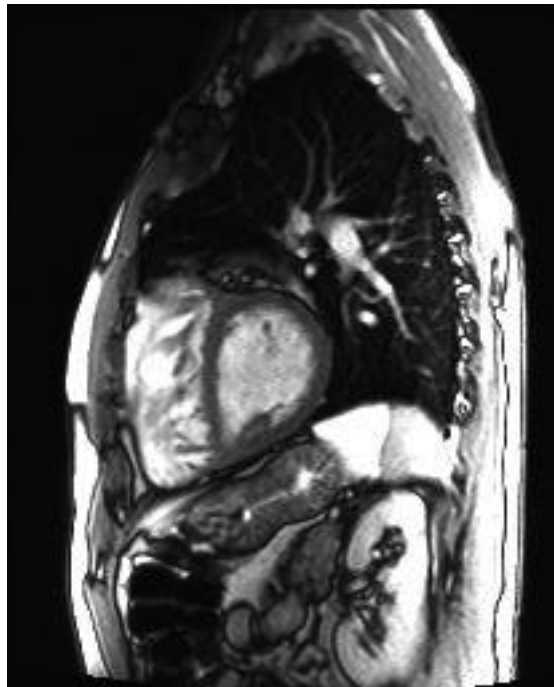
Coronary evaluation for PPVI - MRI

RVOT long axis



Coronary evaluation for PPVI - MRI

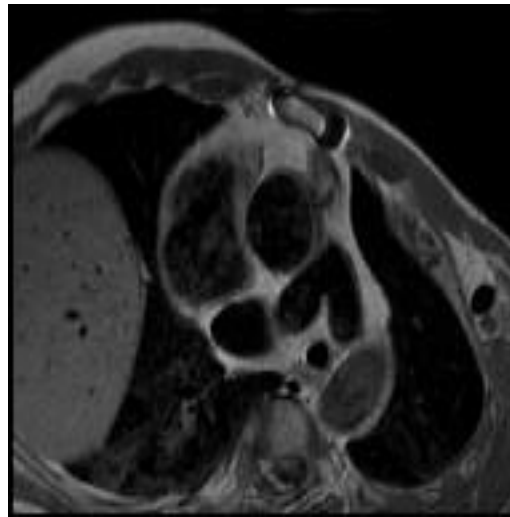
RVOT long axis



Coronary evaluation for PPVI - MRI

aortic root short axis

T1 mapping



T1 mapping shows the vessel lumen and fat.



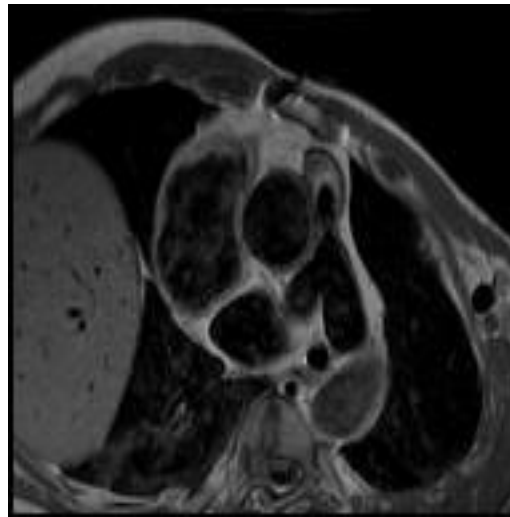
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Coronary evaluation for PPVI - MRI

aortic root short axis

T1 mapping



T1 mapping shows the vessel lumen and fat.



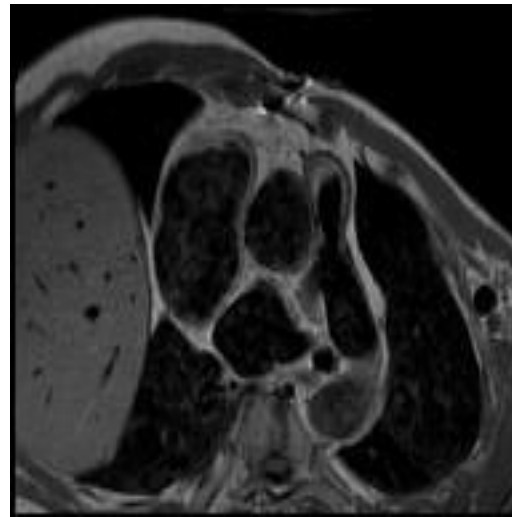
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Coronary evaluation for PPVI - MRI

aortic root short axis

T1 mapping



T1 mapping shows the vessel lumen and fat.



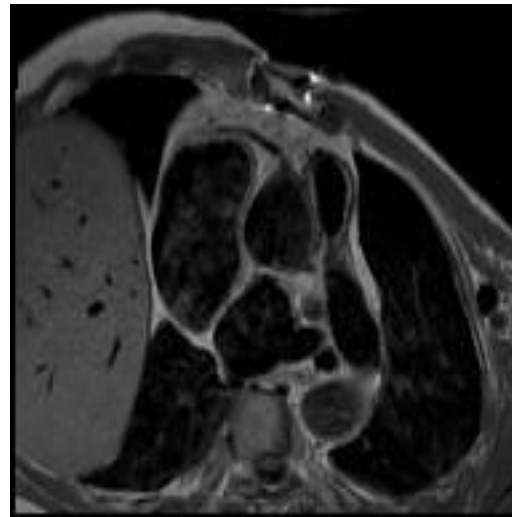
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Coronary evaluation for PPVI - MRI

aortic root short axis

T1 mapping



T1 mapping shows the vessel lumen and fat.



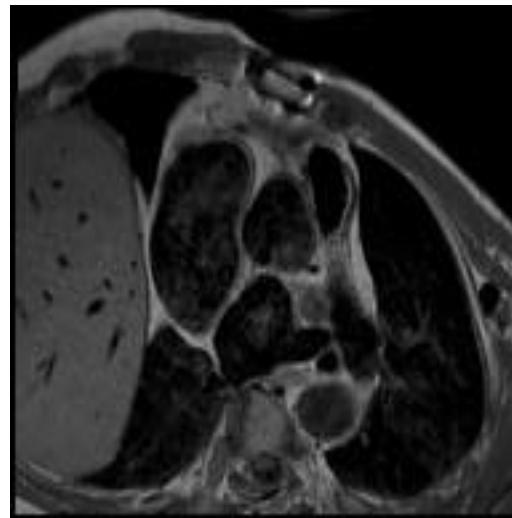
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Coronary evaluation for PPVI - MRI

aortic root short axis

T1 mapping



T1 mapping shows the vessel lumen and fat.



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Coronary evaluation for PPVI - MRI

RVOT long axis – T1 weighted



T1 mapping shows the vessel lumen and fat.



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Coronary evaluation for PPVI - MRI

RVOT long axis – T1 weighted



T1 mapping shows the vessel lumen and fat.

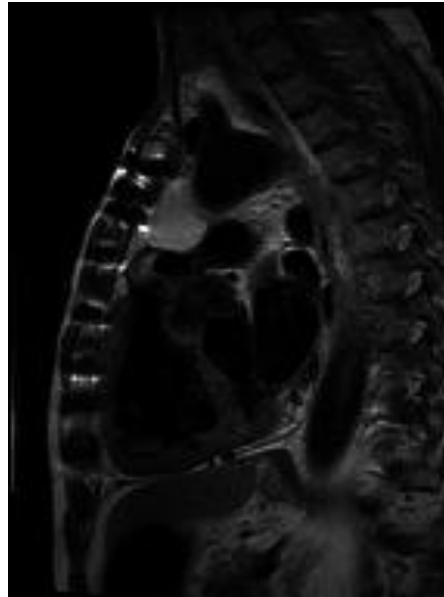


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Coronary evaluation for PPVI - MRI

RVOT long axis – T1 weighted



T1 mapping shows the vessel lumen and fat.

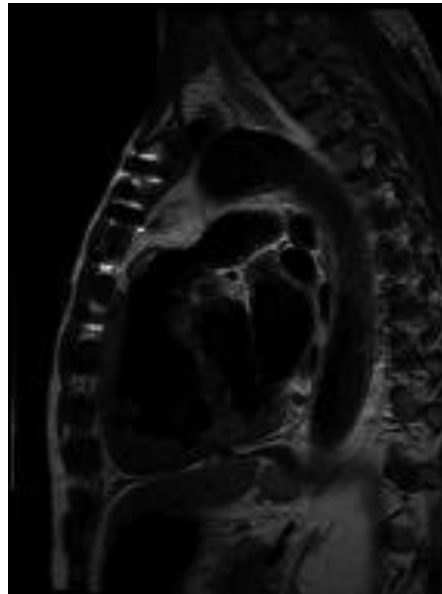


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Coronary evaluation for PPVI - MRI

RVOT long axis – T1 weighted



T1 mapping shows the vessel lumen and fat.

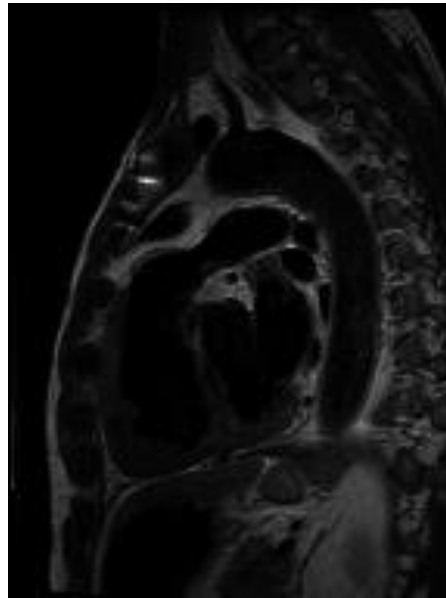


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Coronary evaluation for PPVI - MRI

RVOT long axis – T1 weighted



T1 mapping shows the vessel lumen and fat.



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Coronary evaluation for PPVI

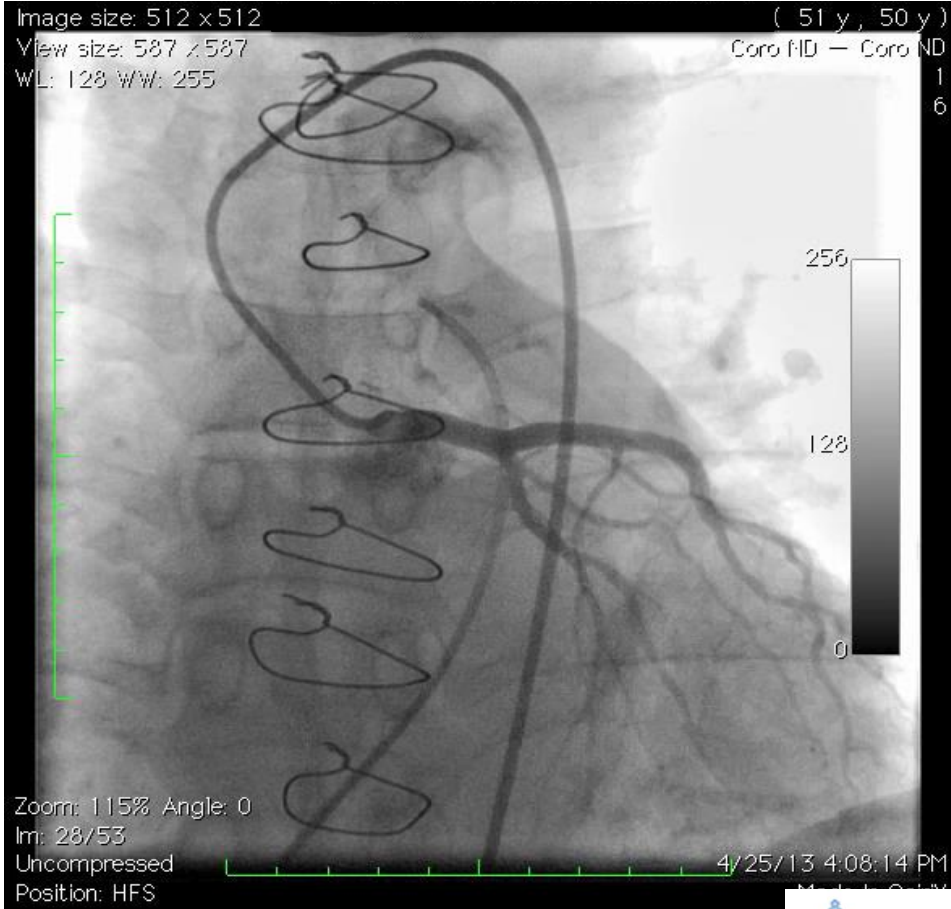
- Since no previous imaging technique 100% predicts or rule out the coronary artery compression occurrence.
- A dynamic coronary compression test is necessary during PPVI.



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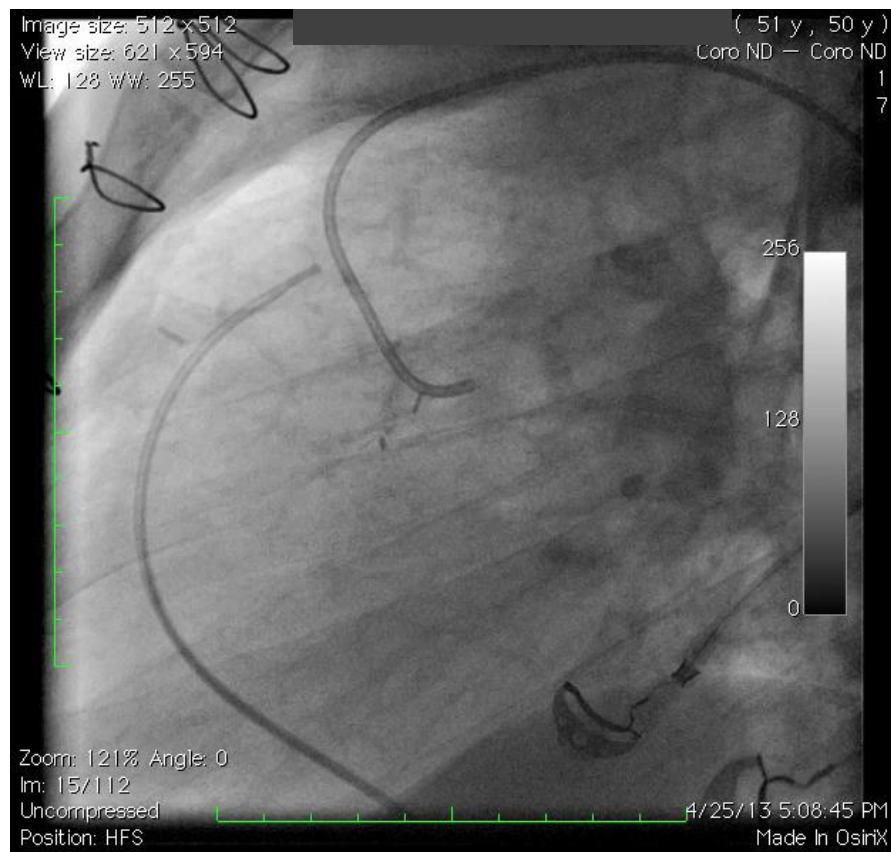
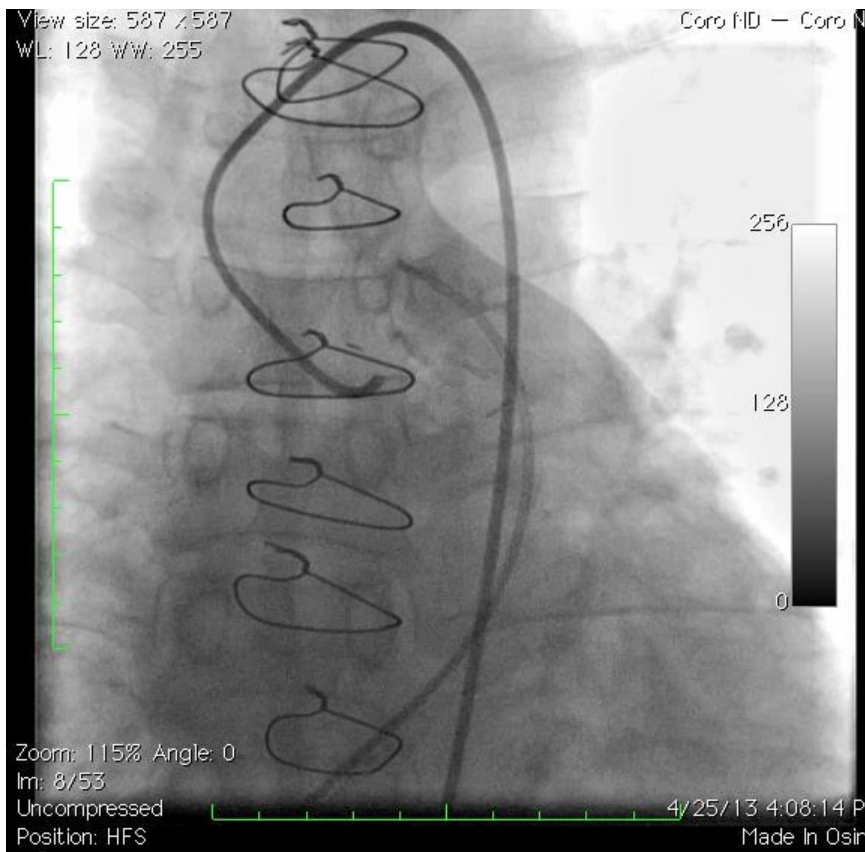
Traditional angiography for coronaries evaluation.



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Traditional angiography for coronaries evaluation.



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View size: 589 x 588

Coro ND — Coro M

WL: 128 WW: 255

Atlas Balloon:
20 mm x 2 cm.



Zoom: 115% Angle: 0

Im: 1/52



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View size: 589 x 588

WL: 128 WW: 255

Coro FID - Coro ND

1
8

Atlas Balloon:
20 mm x 2 cm.



Zoom: 115% Angle: 0

Im: 3/48



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View size: 587 x 587

WL: 128 WW: 255

LV - LV

1
16

Atlas Balloon:
18 mm x 2 cm.



Zoom: 115% Angle: 0
Im: 1/65
Uncompressed
Position: HFS



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WL: 128 WW: 255

Atlas Balloon:
20 mm x 2 cm.



Zoom: 115% Angle: 0
Im: 1/98
Uncompressed
Position: HFS



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Image size: 512 x 512 Fuentes Villegas Aldo 2013_0587 Dr. Uriarte (51 y , 50 y)

View size: 574 x 574

LV - LV

WL: 128 WW: 255

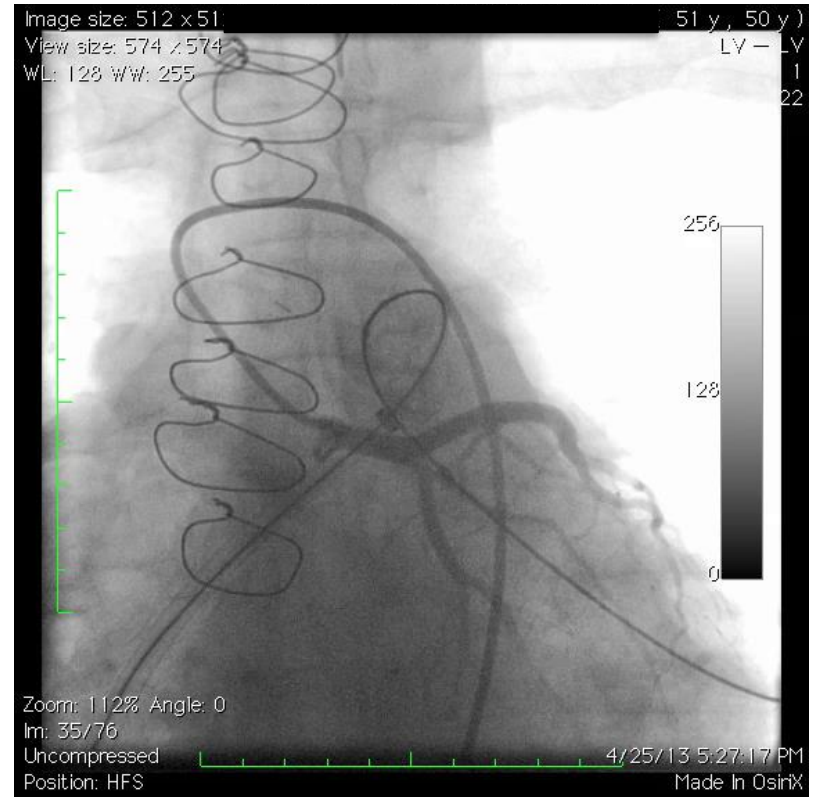
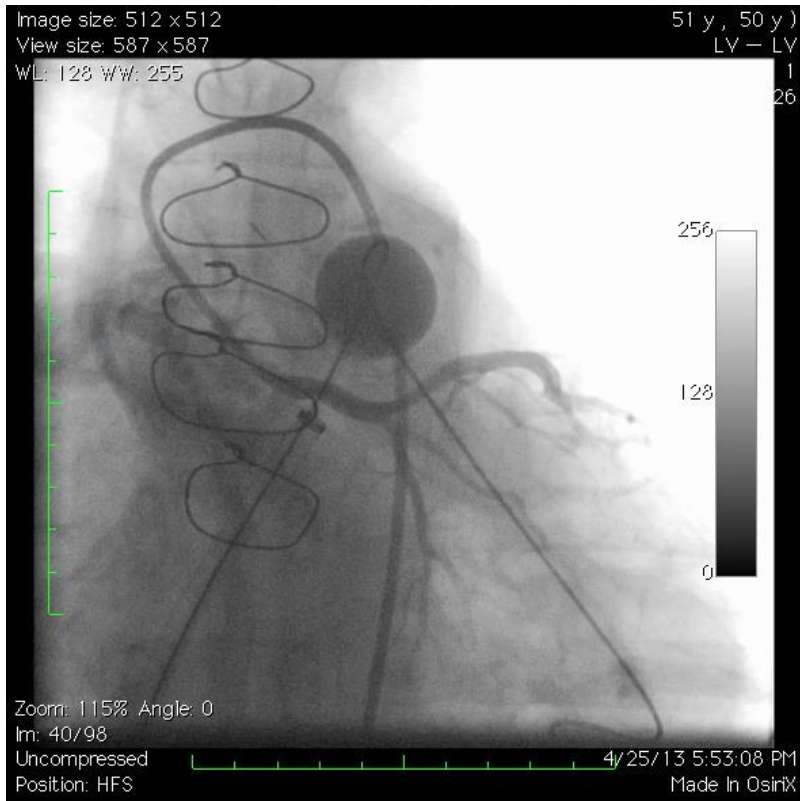
1
22



Zoom: 112% Angle: 0
Im: 1/76
Uncompressed
Position: HFS

4/25/13 5:27:17 PM
Made In OsiriX

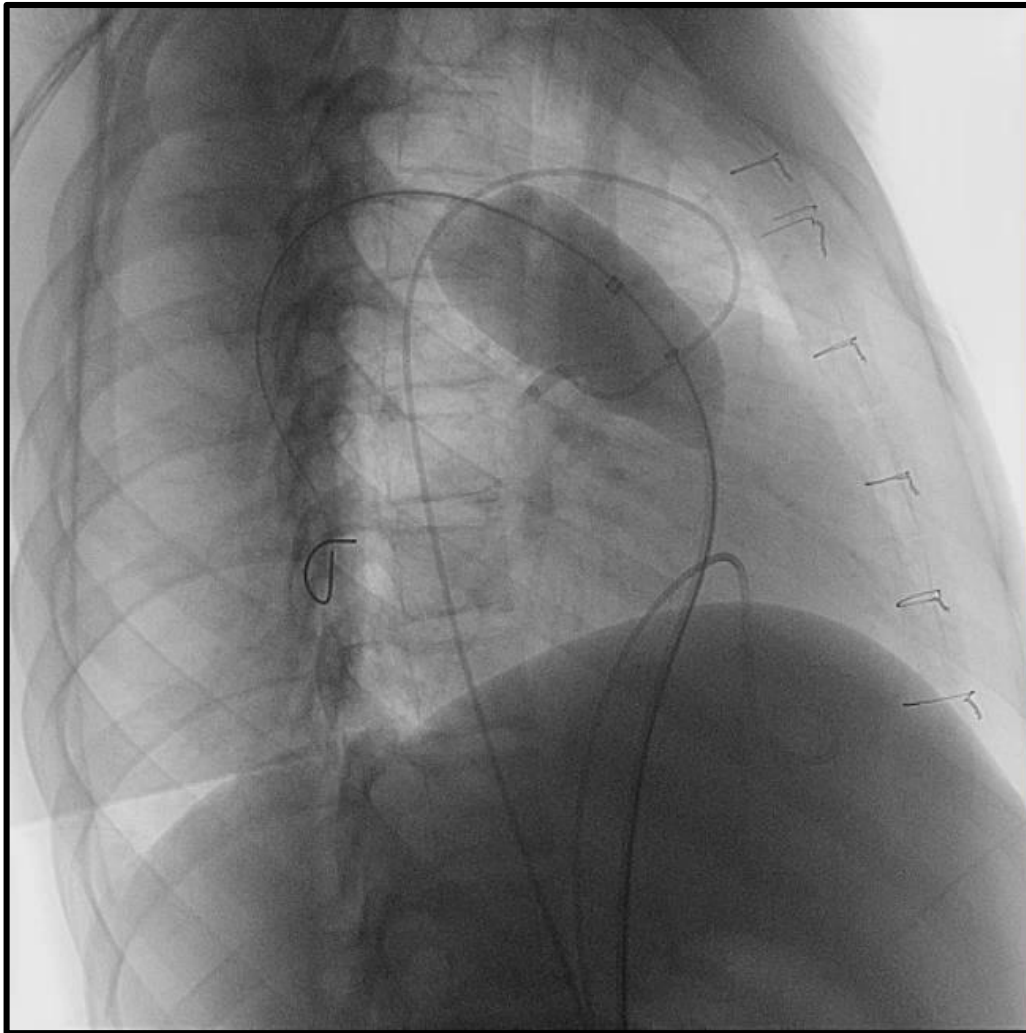




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3DRA for coronaries evaluation.



Useful angiographic information from different views.

High resolution images.



21200947-4
2002-12-27 M
2016-03-29
8:42
Secuencia 9029 - Fotograma 1 / 213

- kV, - mAs
Zoom 100%



Multiple views.

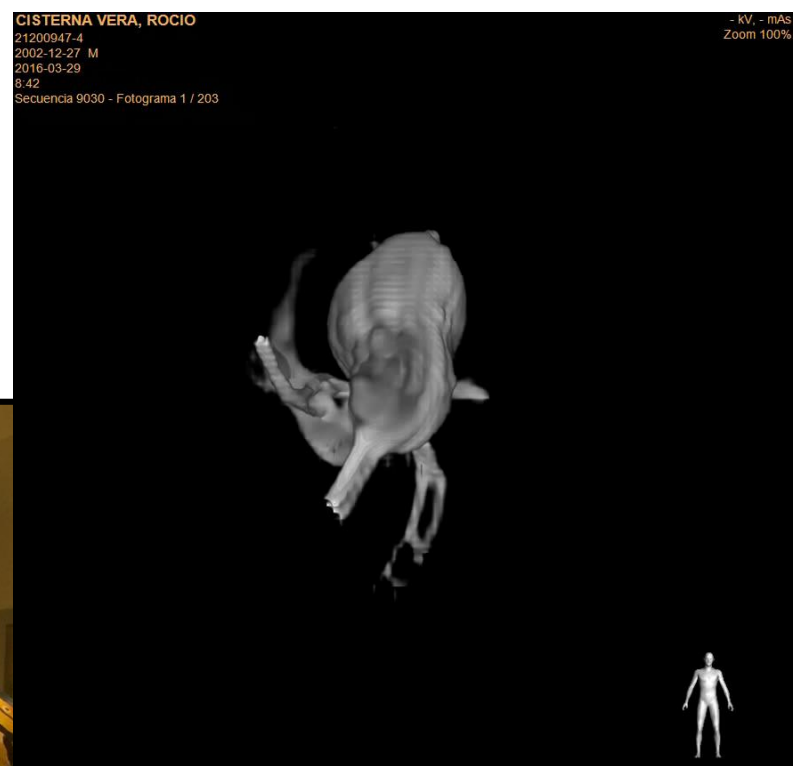
Comprehensive
anatomical
evaluation.

Acceptable
resolution.

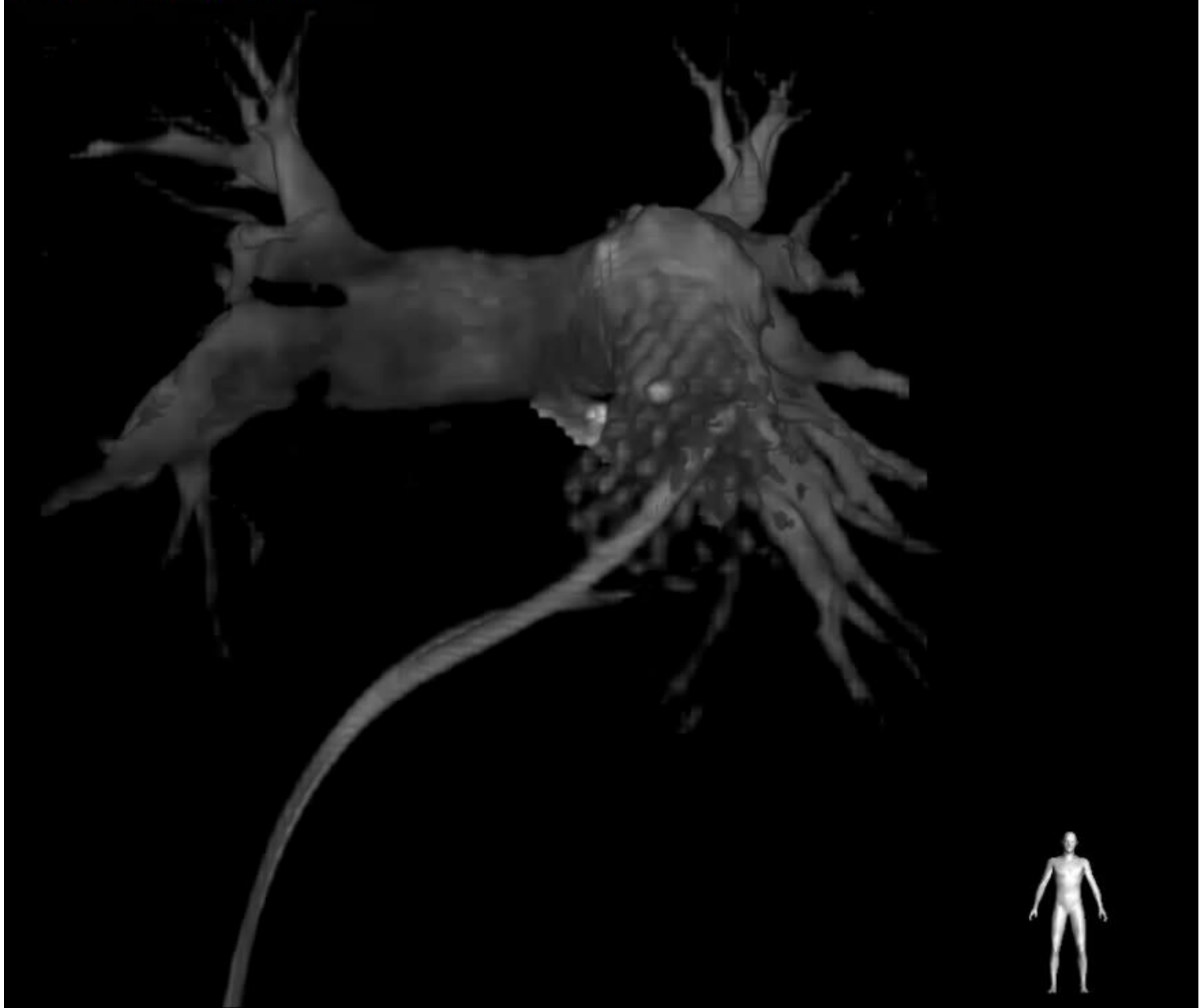
Cath lab with 3DRA

CISTERNA VERA, ROCIO
21200947-4
2002-12-27 M
2016-03-29
8:42
Secuencia 9030 - Fotograma 1 / 203

- KV, - mAS
Zoom 100%



2002-12-27 M
2016-03-29
8:42
Secuencia 9031 - Fotograma 1 / 293



Summary

- Coronary dynamic compression test must to be performed always no matter the MRI or CT previous information.
- Coronary compression test can be done with conventional angiography obtaining the best resolution imaging but needing more acquisitions and injections.
- Coronary compression test can be done with 3DRA obtaining a more comprehensive anatomic assesment of proximal LCA with one adquisition. Images are acceptable.
- When doing 3DRA; “look at the 3D and the RA”