U999

Sinus Venosus : le cathe bonus

3 juin 2021

Sébastien Hascoët

Congenital Heart Diseases department, Marie Lannelongue Hospital

Mme I. 73 ans

- Dyspnée d’effort NYHA 2
- Pas d’autre antécédent – excellent état général
- Découverte fortuite CIA SV au scanner

CIA = cardiopathie congénitale

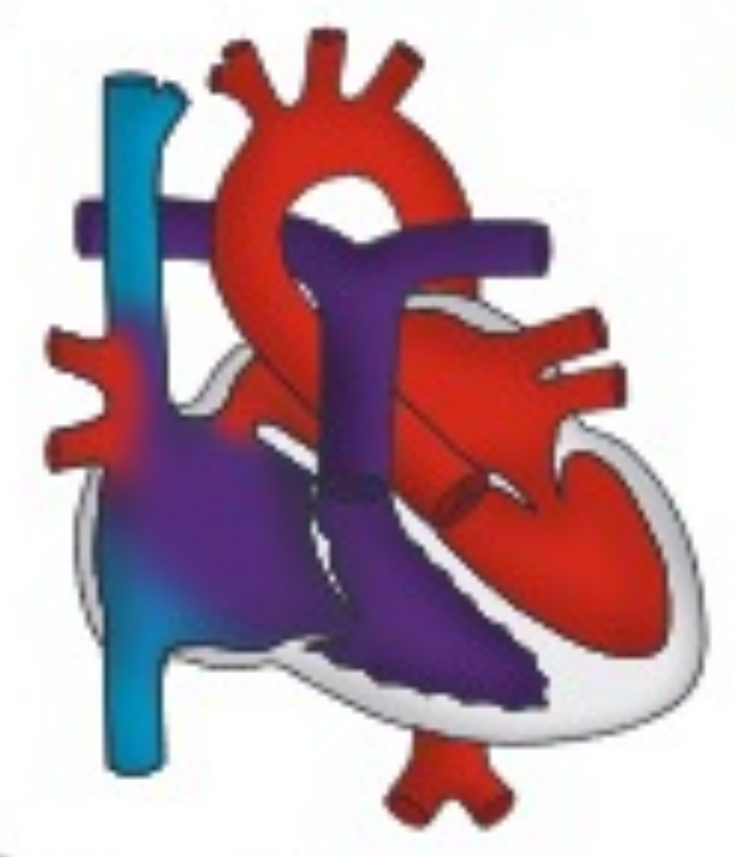
=1/1500 naissances

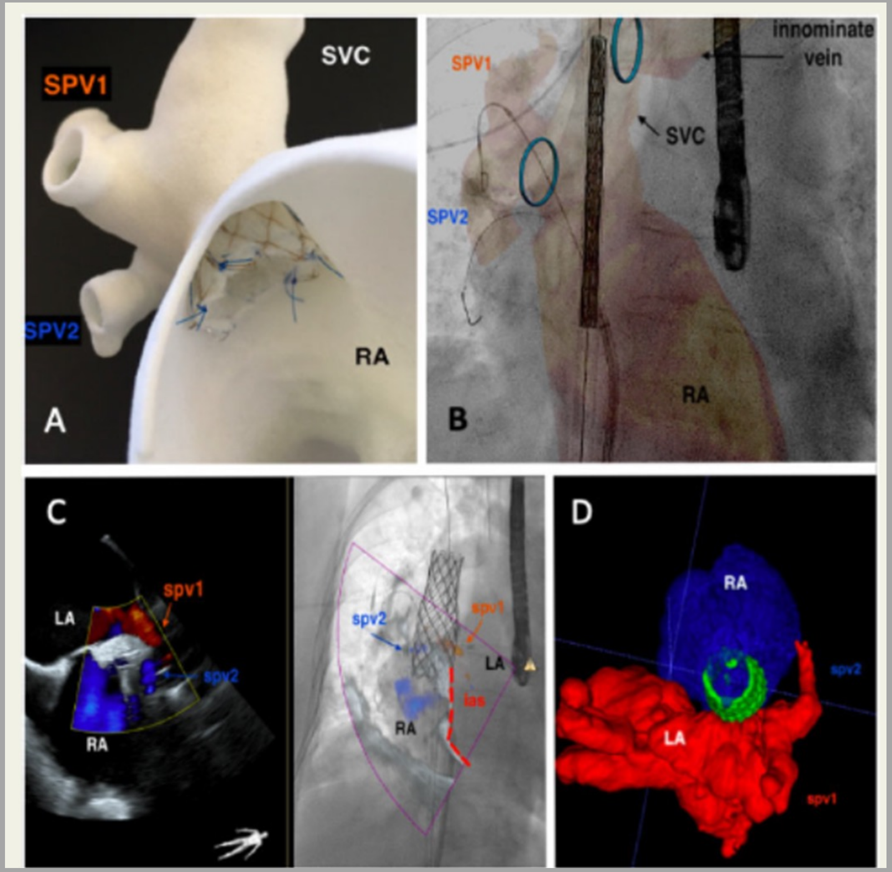
Traitement chirurgical classique à cœur ouvert

Traitement de référence pour CIA SV

Traitement par cathétérisme par voie endovasculaire

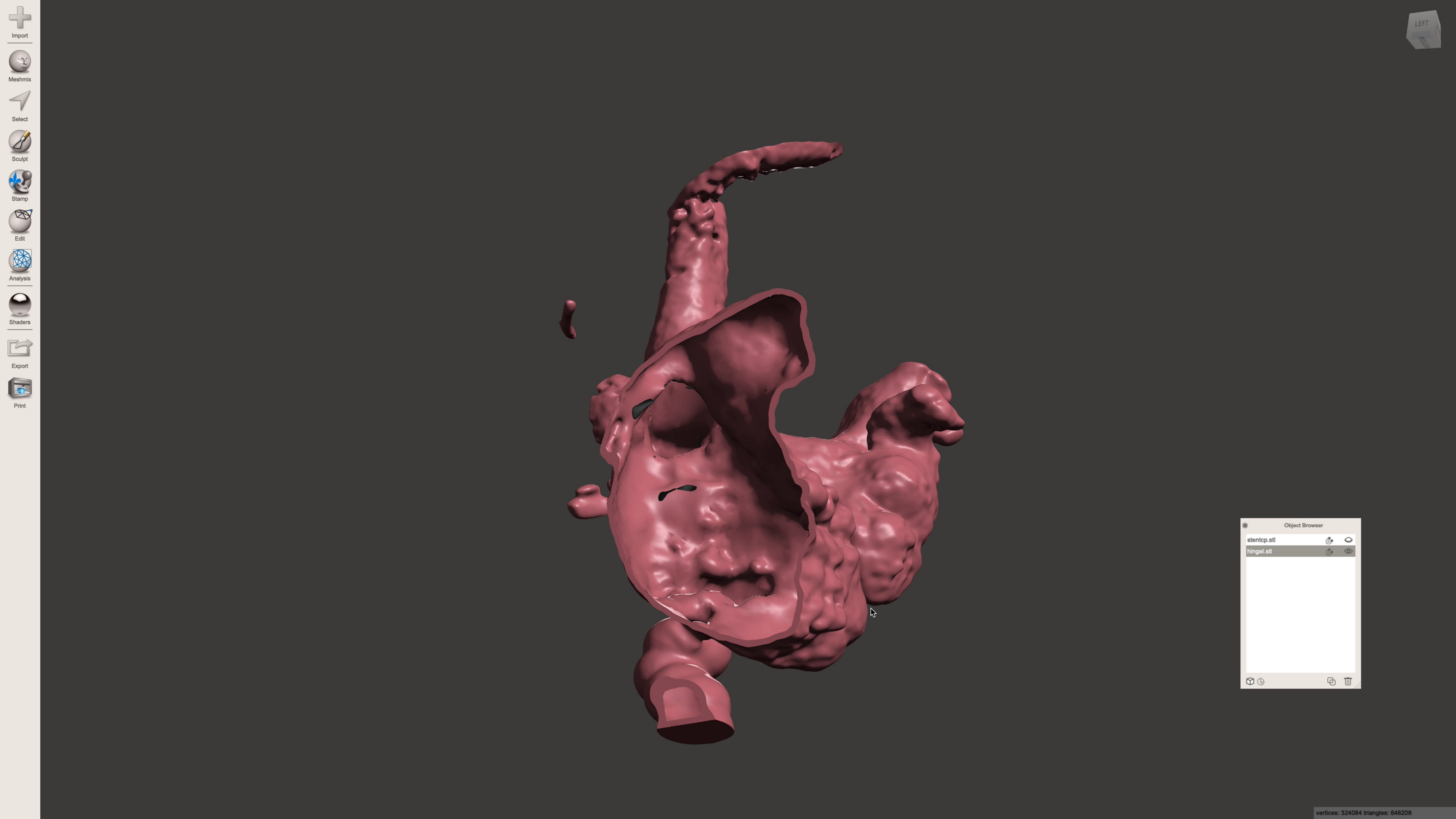
Traitement nouveau pour CIA SV




SPV1
SVC
SPV2
RA
A
SPV1
innominate vein
SVC
SPV2
RA
B
C
spv1
LA
spv2
RA
spv2
spv1
LA
ias
RA
D
RA
spv2
LA
spv1

Batteux , Ciobotaru, Hascoet European Heart Journal 2020

1) Reconstruction 3D


Import
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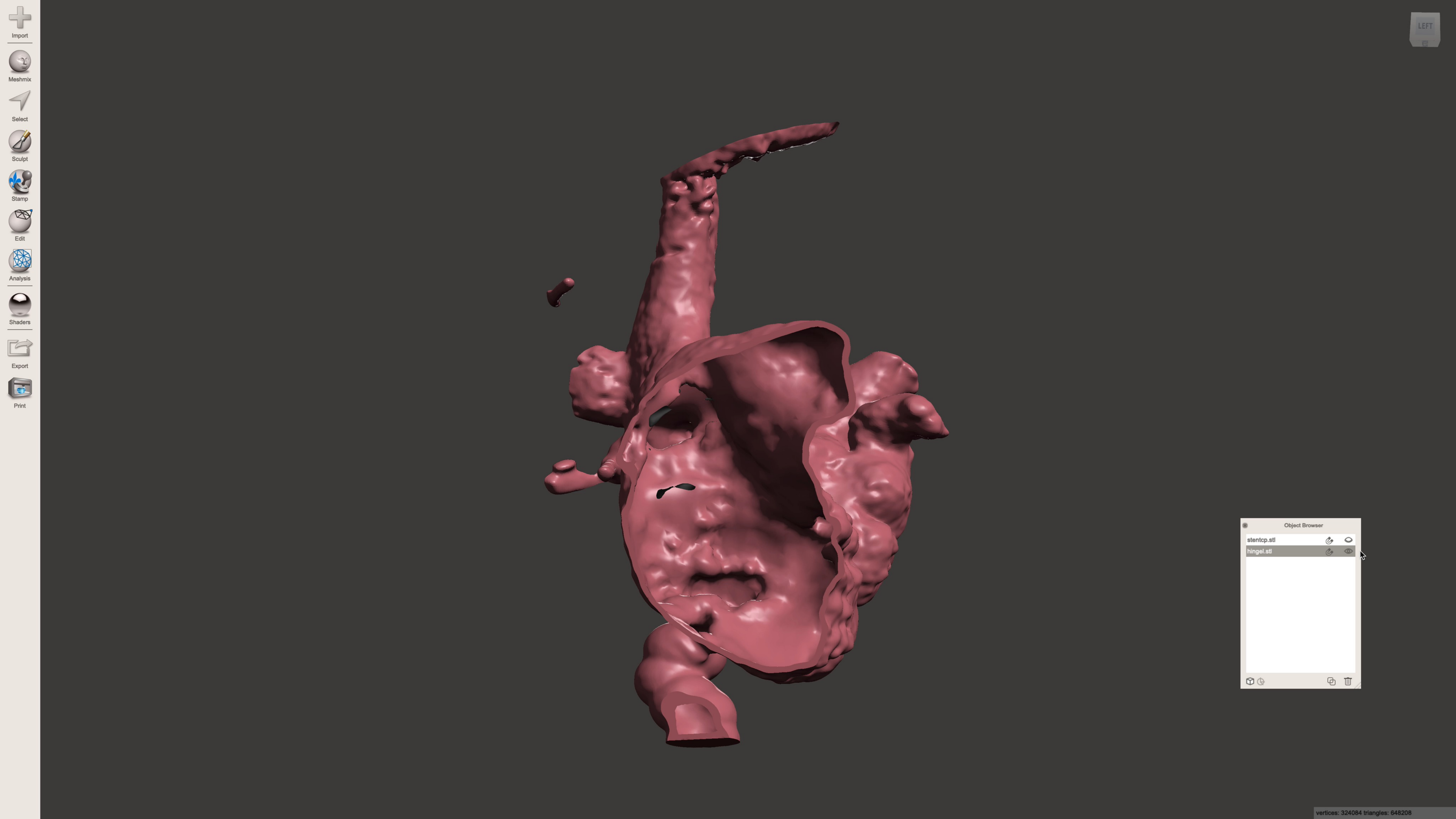
Sculpt
Stamp
Edit
Analysis
Shaders
Export
Print
LEFT
Object Browser
stentcp.stl
hingel.stl

vertices: 324084 triangles: 648208

2) Simulation numérique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Object Browser
stentcp.stl
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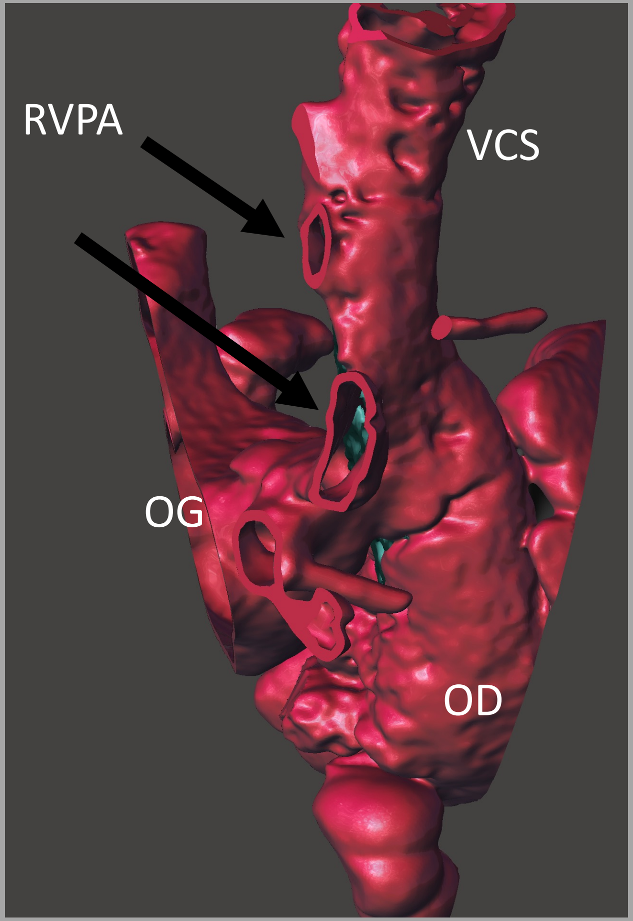
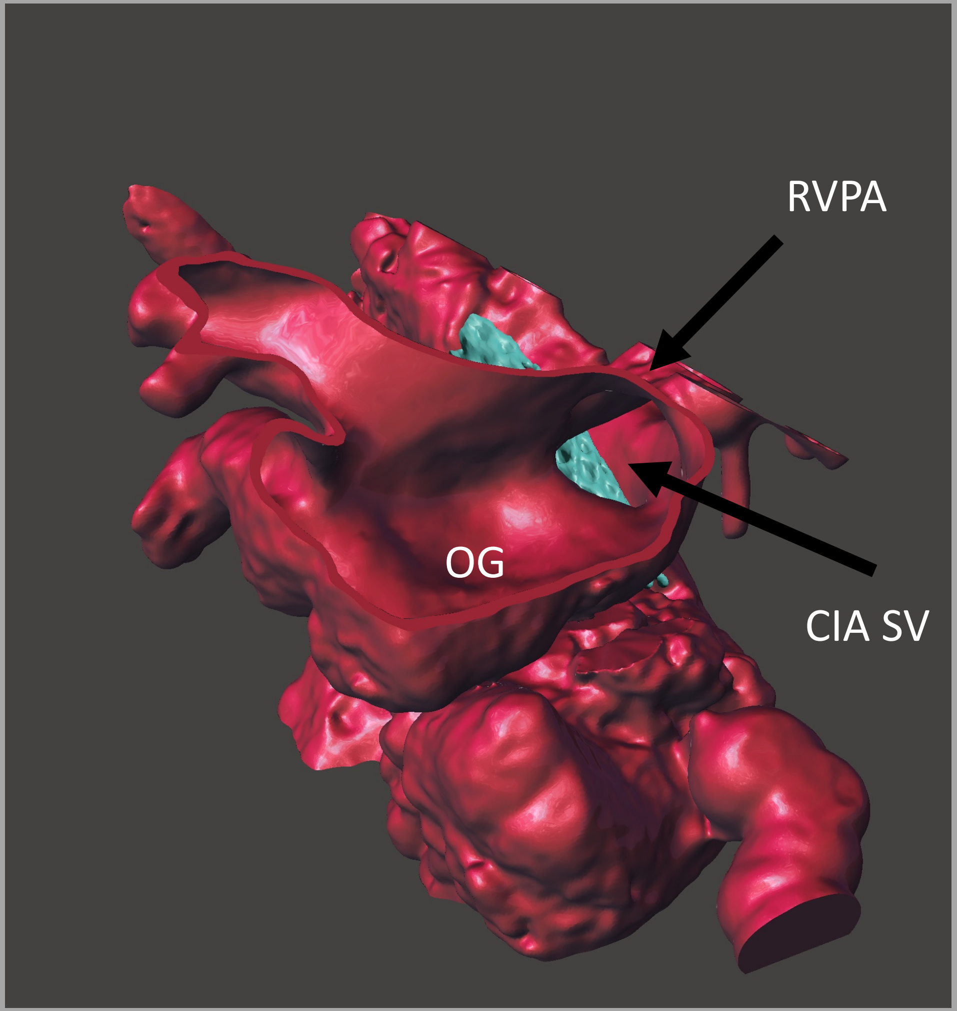
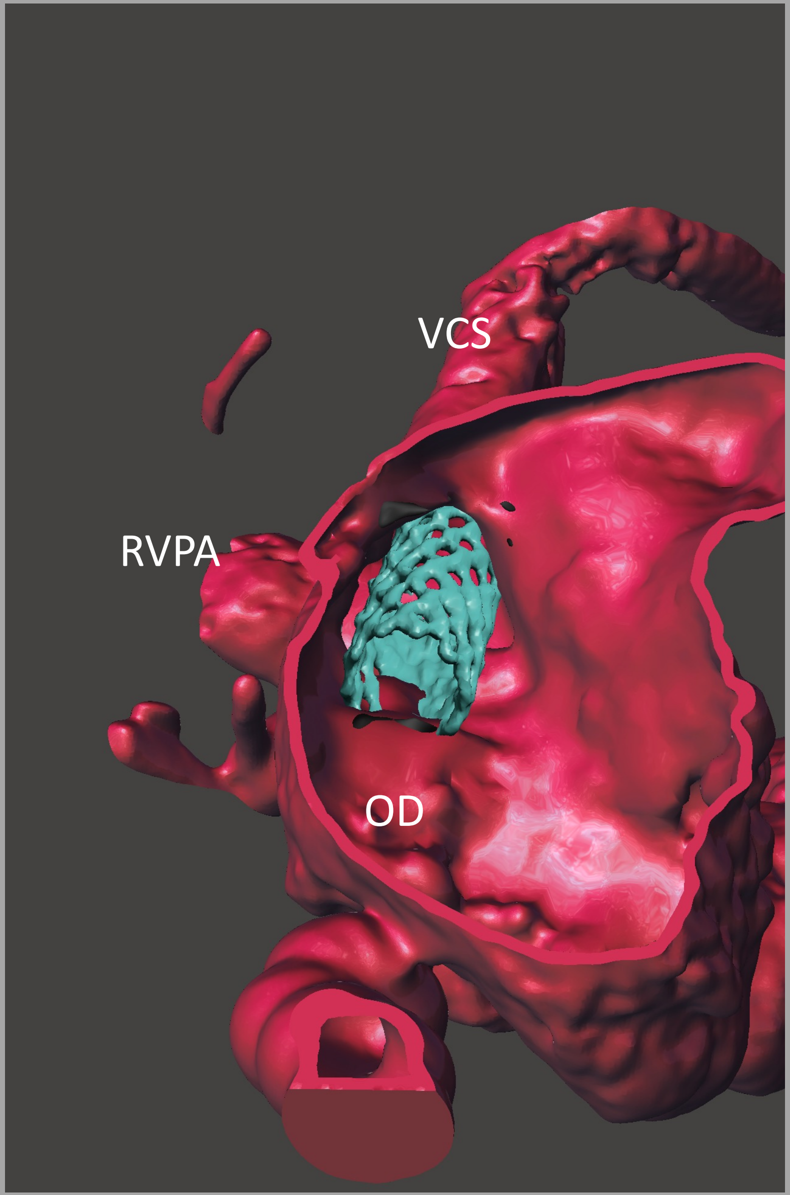
vertices: 324084 triangles: 648208


RVPA
VCS
OG
OD

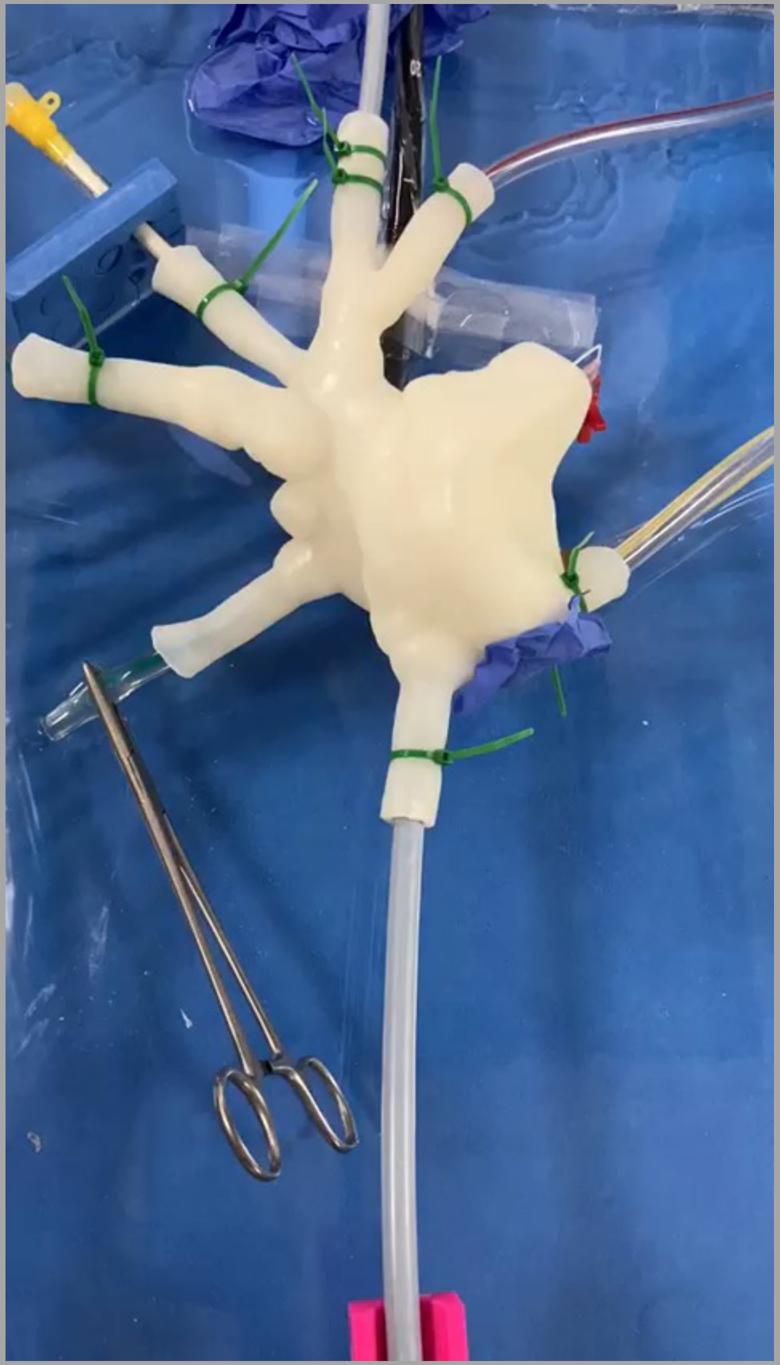

RVPA
OG
CIA SV

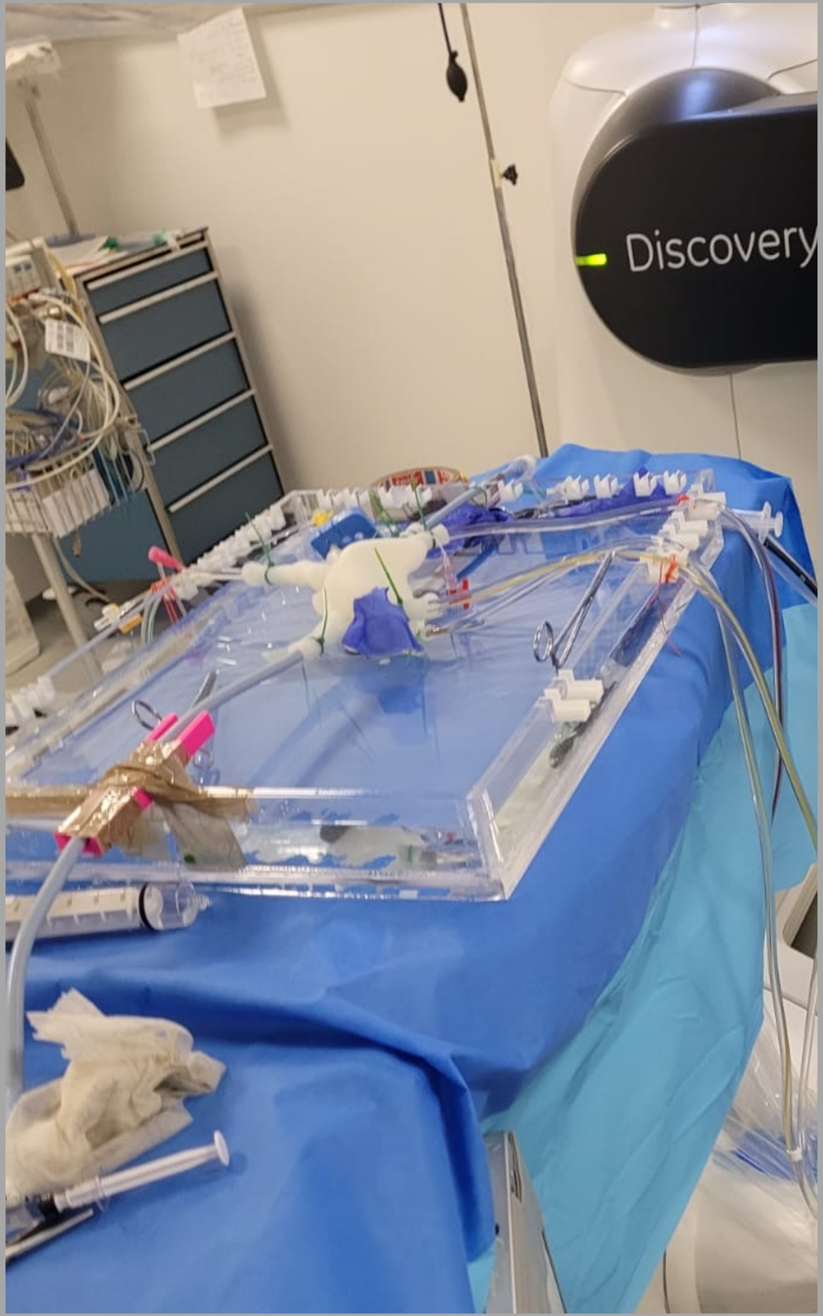

VCS
RVPA
OD

3) Impression 3D

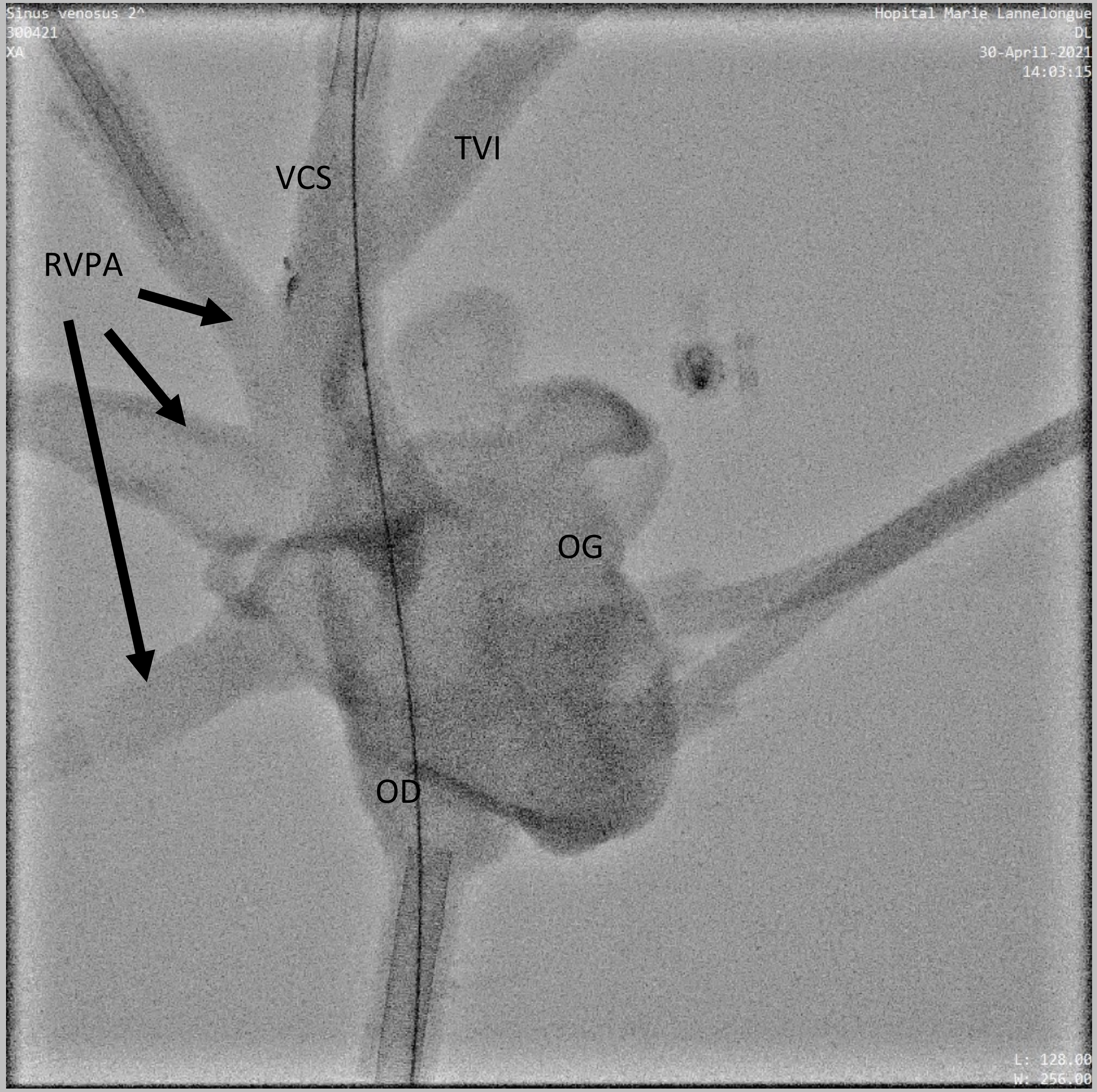
DR COMBES N
REVOLUTION

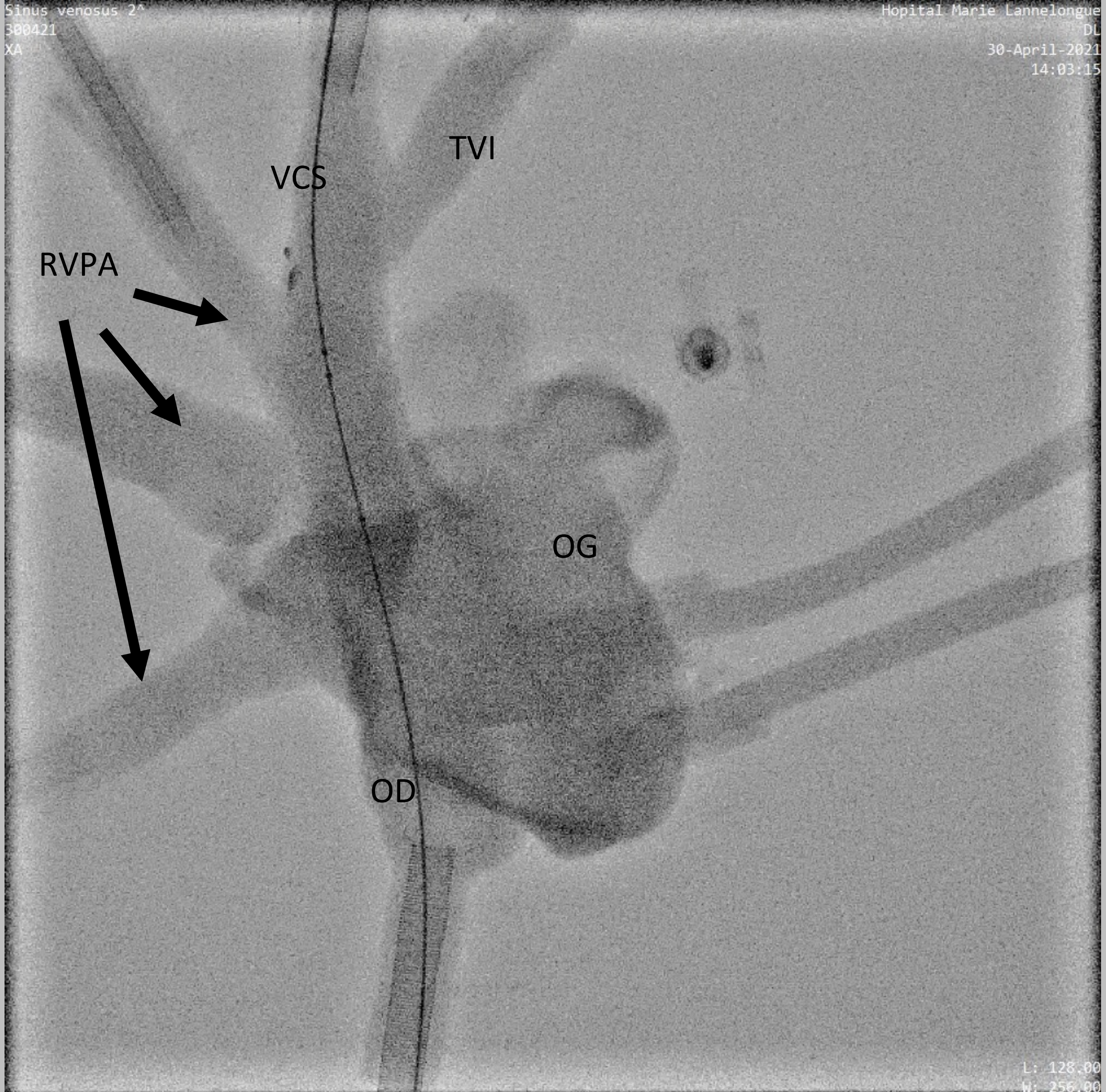
4) Simulation sur banc d’essai





Dr Batteux, Dr Hascoet, Dr Ciobotaru, Mr Arditi (ingénieur)
Salle hybride de recherche – Hôpital Marie Lannelongue
Cuve en impression 3D – centrale supélec
Modèle imprimé 3D des oreillettes (3D heart modeling) connecté à un circuit ECMO


Sinus venosus 2^
300421
XA
Hopital Marie Lannelongue
DL
30-April-2021
14:03:15
VCS
TVI
RVPA
OG
OD
L: 128.00
W: 256.00


Sinus venosus 2^
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Hopital Marie Lannelongue
DL
30-April-2021
14:03:15
TVI
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OG
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L: 128.00
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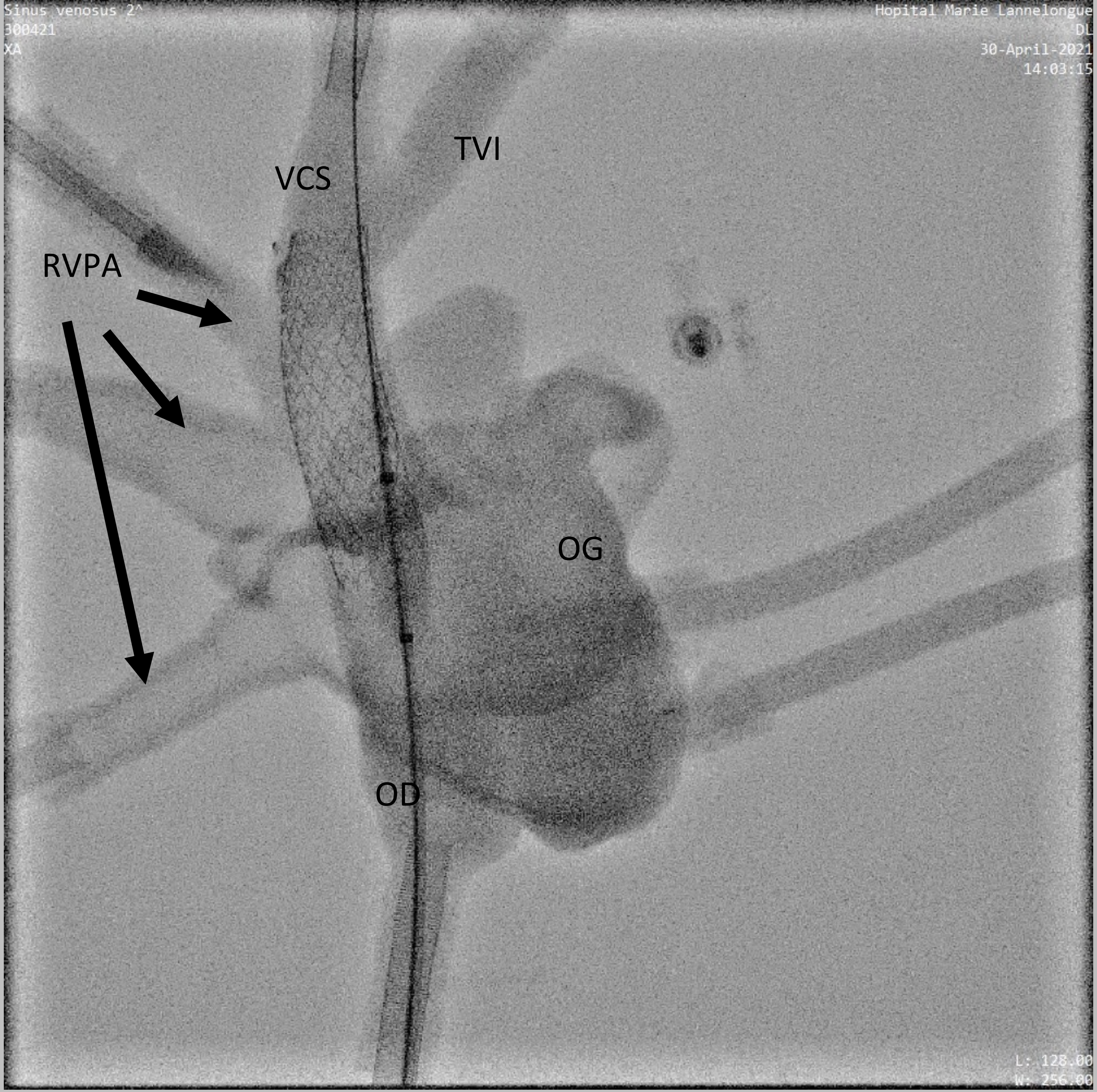
Sinus venosus 2^
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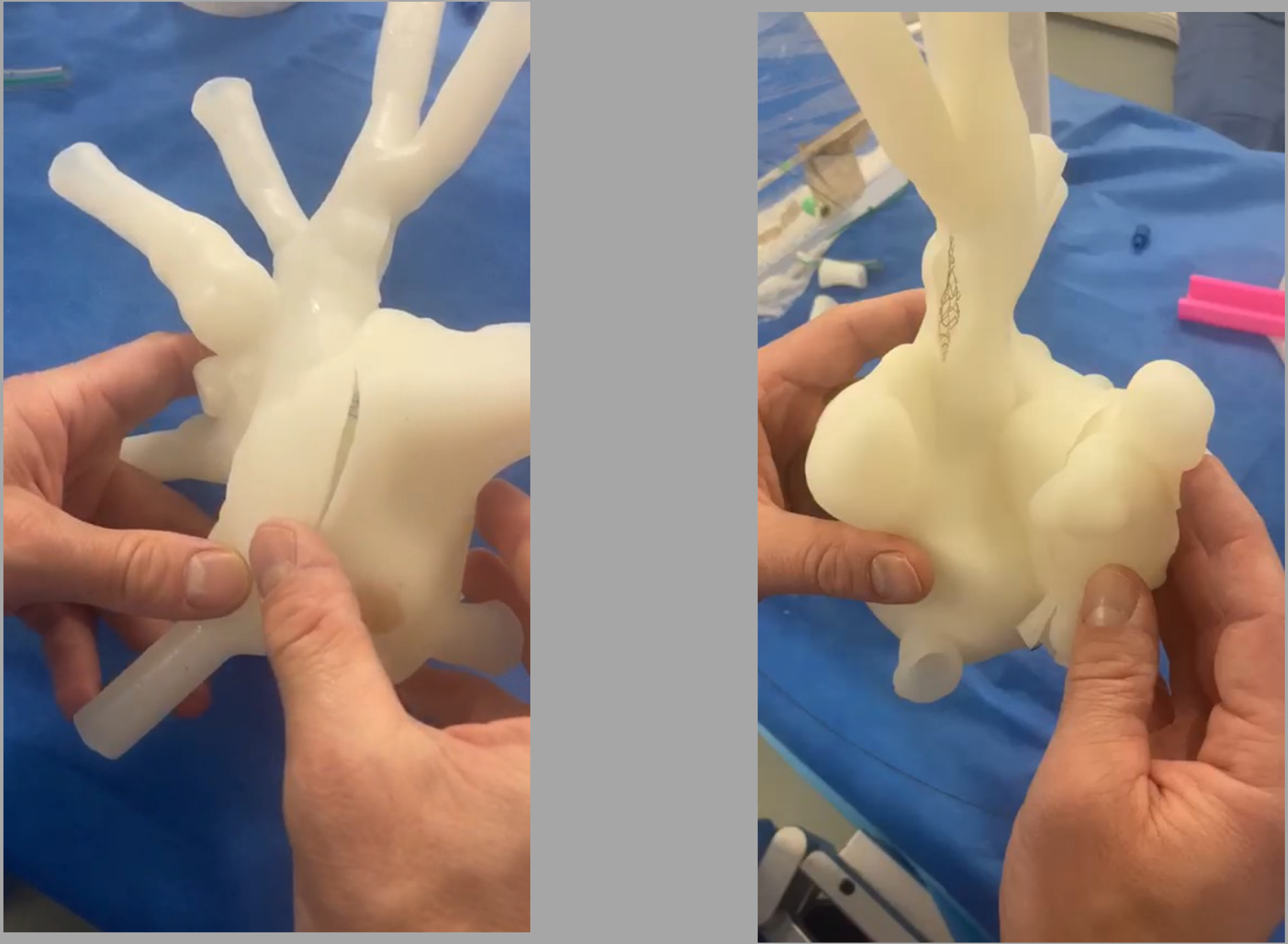
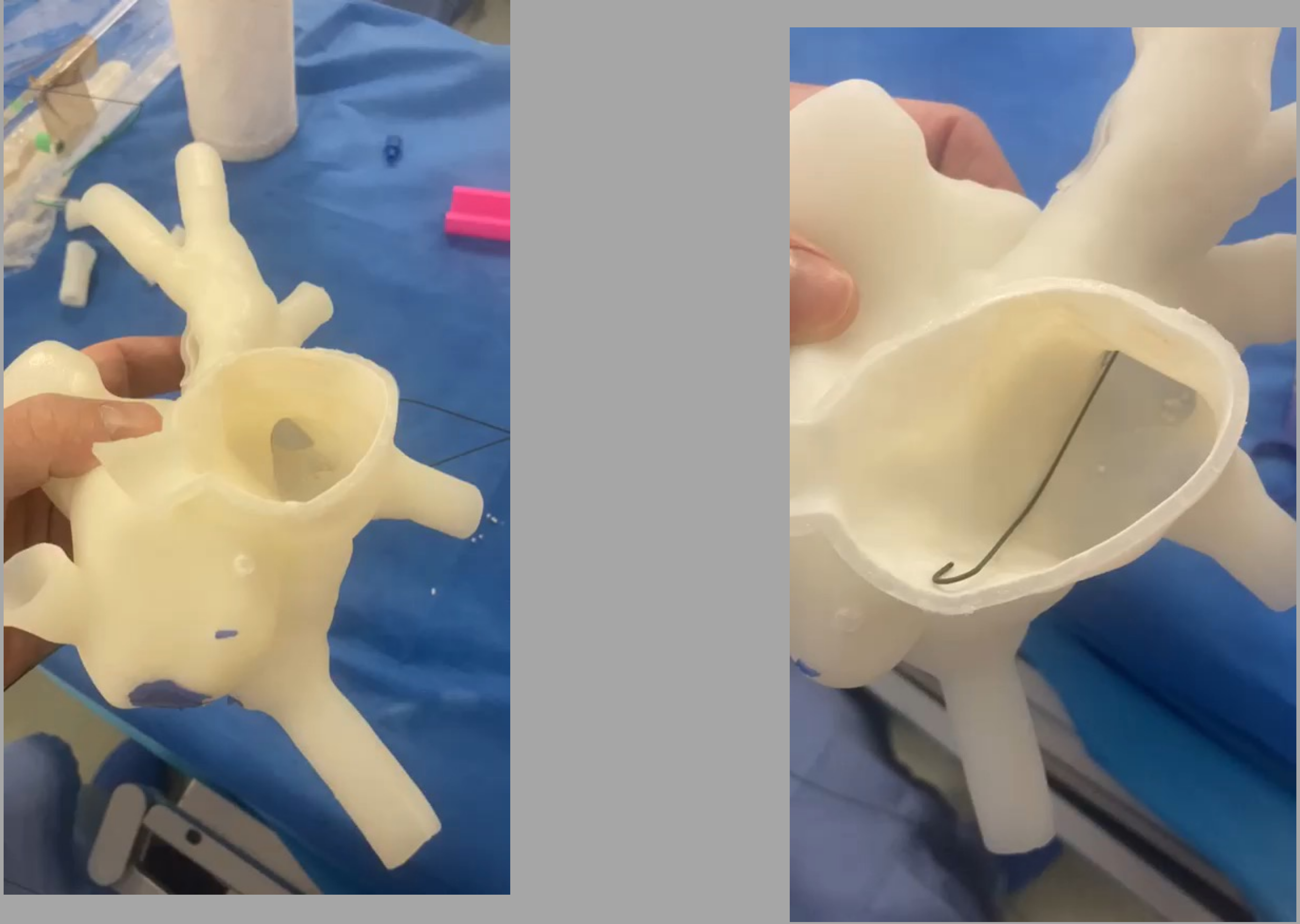
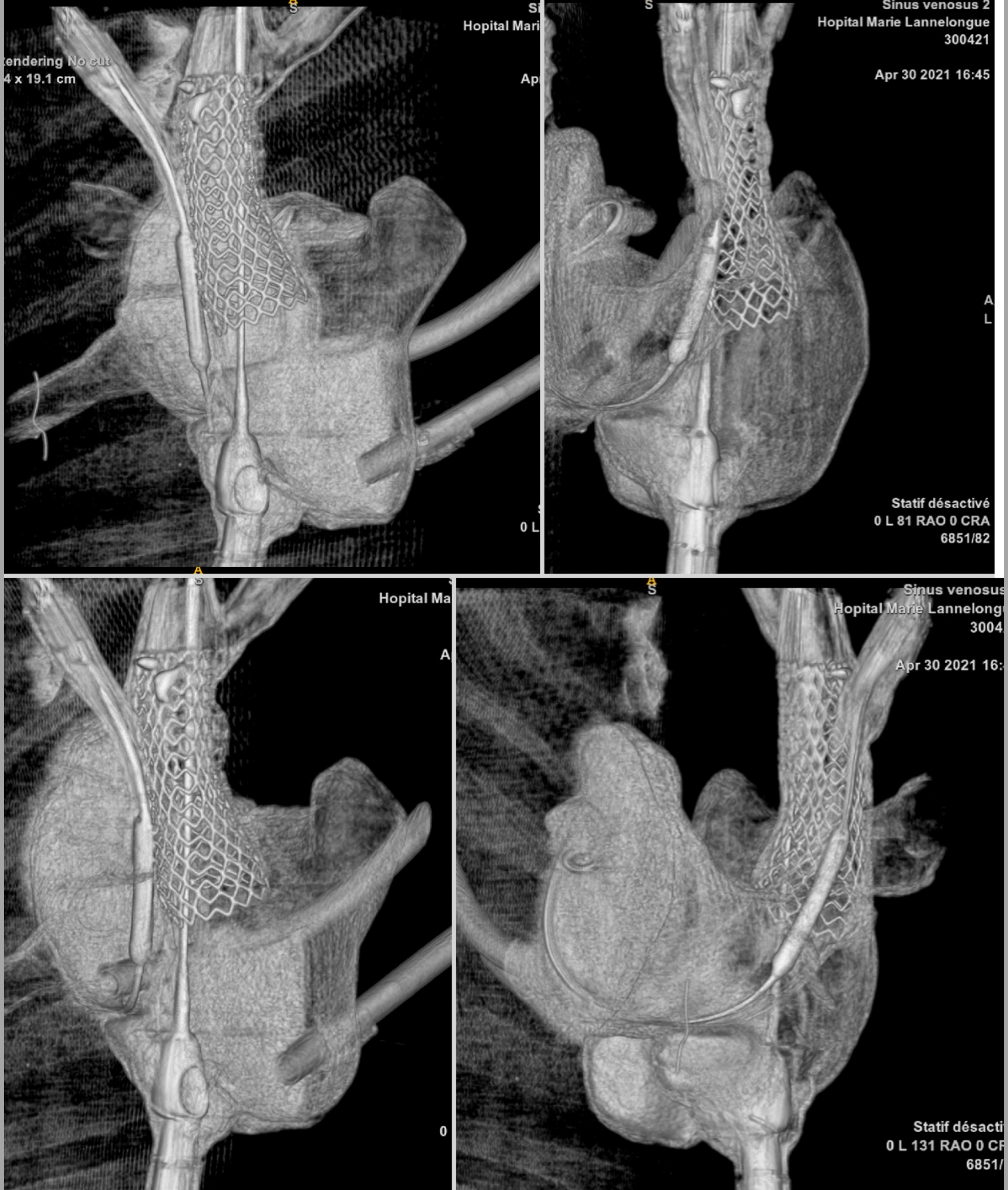




5) Reconstruction 3D après simulation sur banc d’essai


S
Hopital Mari
Rendering No cut
4 x 19.1 cm
Ap
0 L
Sinus venosus 2
Hopital Marie Lannelongue
300421
Apr 30 2021 16:45
S
A
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Statif désactivé
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6851/82
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Hopital Ma
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Sinus venosus
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3004
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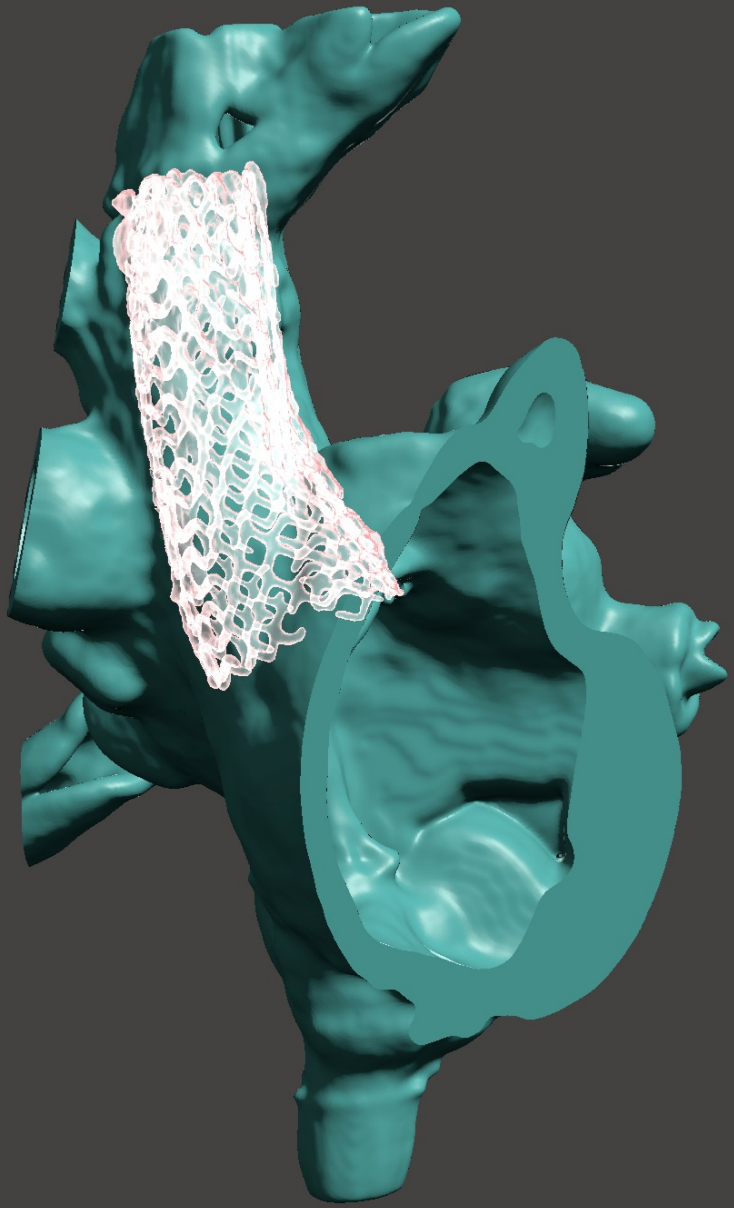
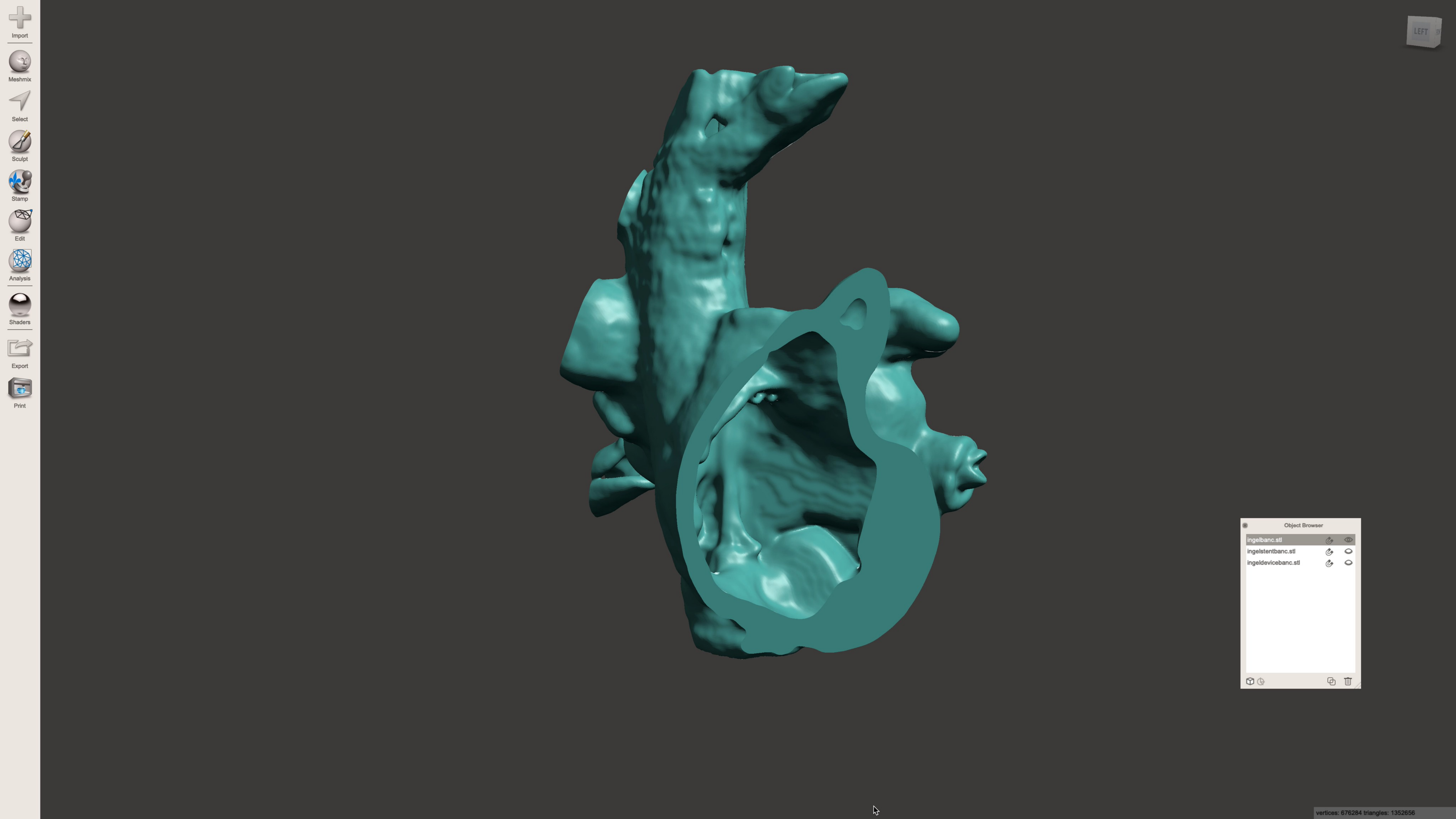
Statif désacti
0 L 131 RAO 0 CR
6851/




Import
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Shaders
Export
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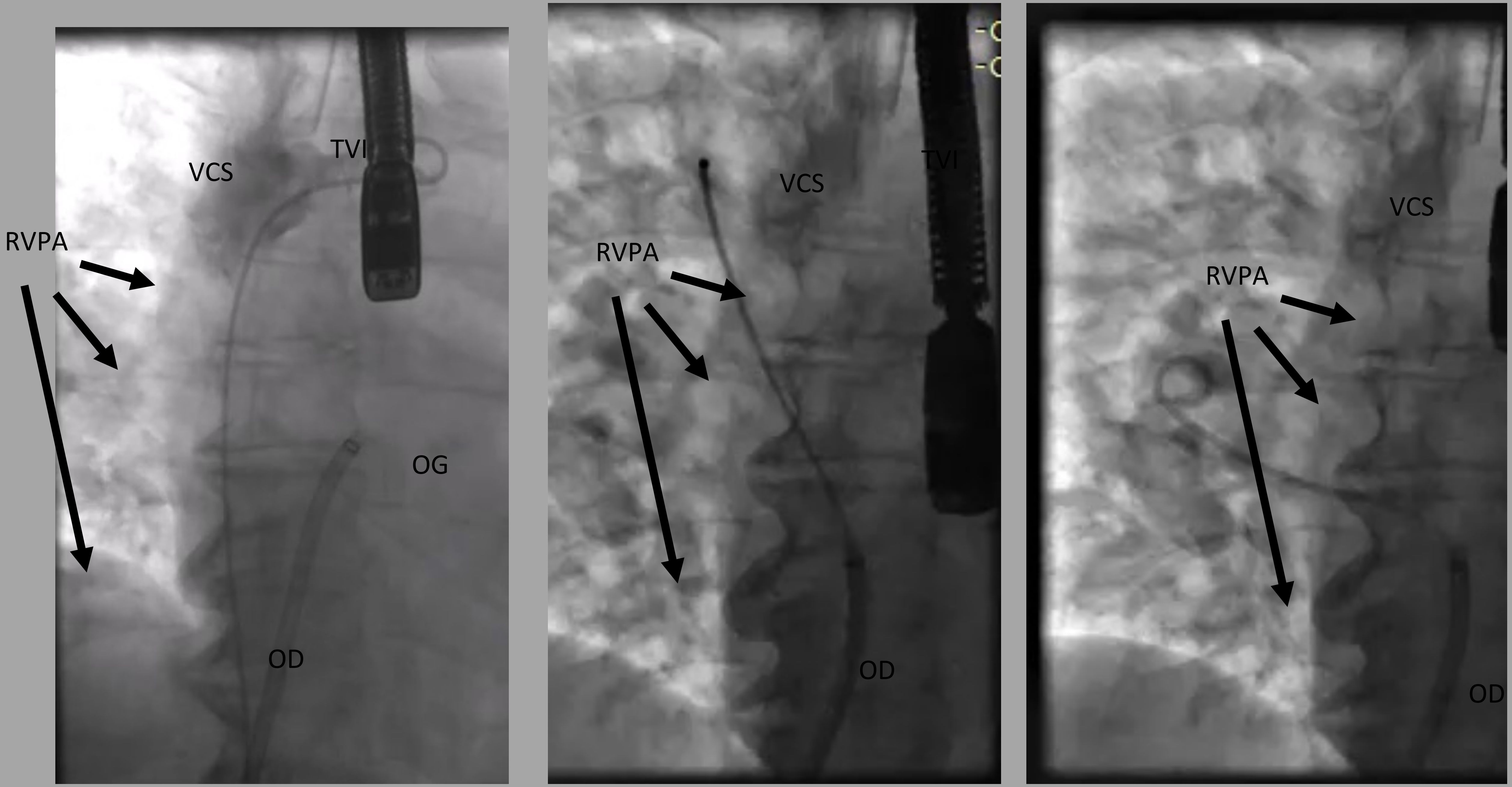
Object Browser
ingelbanc.stl
ingelstentbanc.stl
ingeldevicebanc.stl
vertices: 676284 triangles: 1352656

6) Procédure (cas n°6)

- Clinique Pasteur – collaboration équipe CHU Toulouse
- Dr Karsenty – Dr Combes – Dr Hascoet
- Dr Ciobotaru Dr Hadeed (ETO)
- AG – ETO
- Fusion d’image scan – fluoroscopie
- VFD (20F) – VFG (9F – transseptal) – VJID 6F
- Contraste 200 cc
- Temps de scopie 30’ Kerma 896 mGy
- Hemodynamique initiale POD = POG = 10 mmHg
- Hemodynamique finale POG = PVPSD = 18 mmHg POD = PVCS = 9 mmHg


VCS
TVI
RVPA
OG
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RVPA
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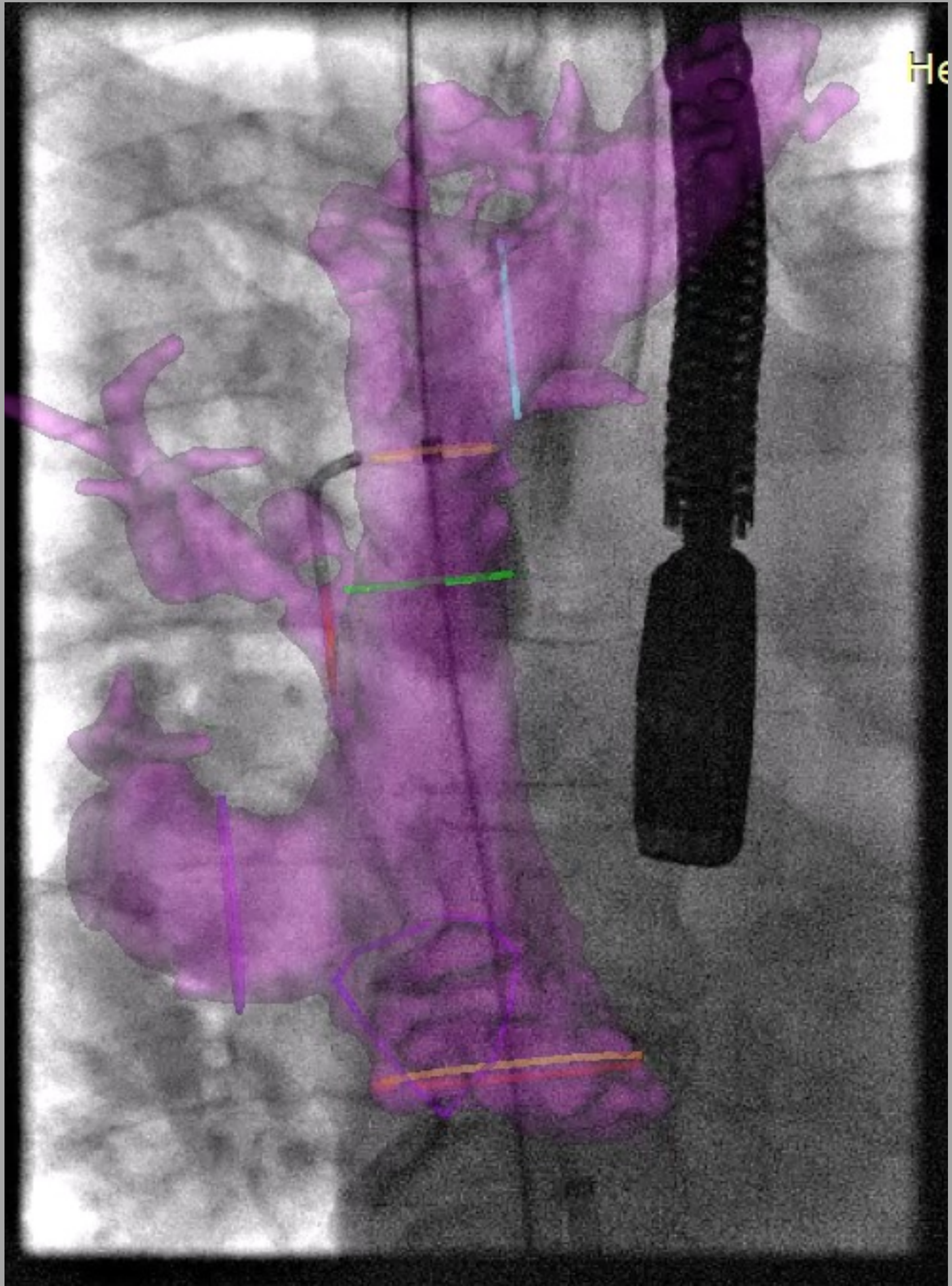
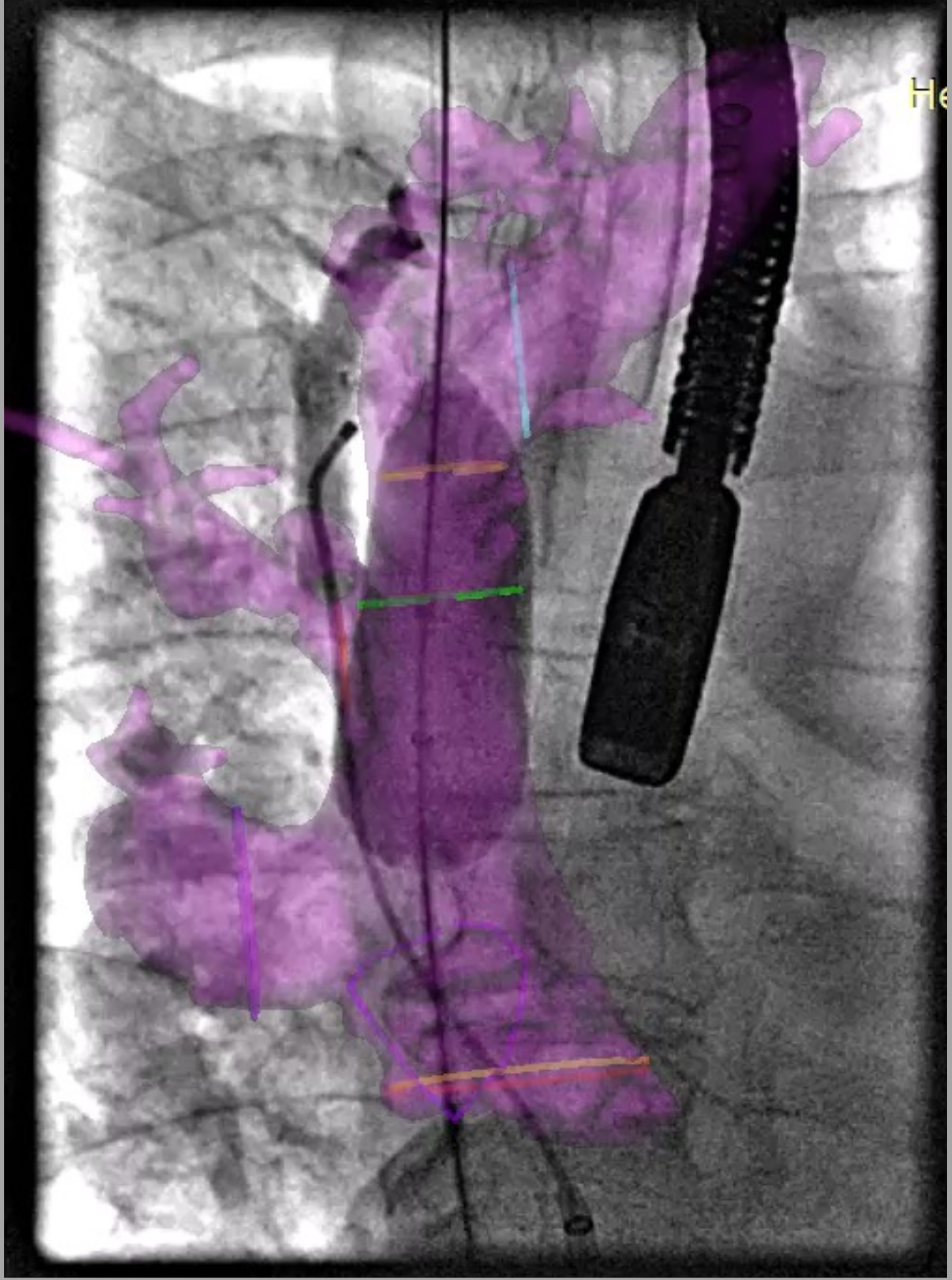
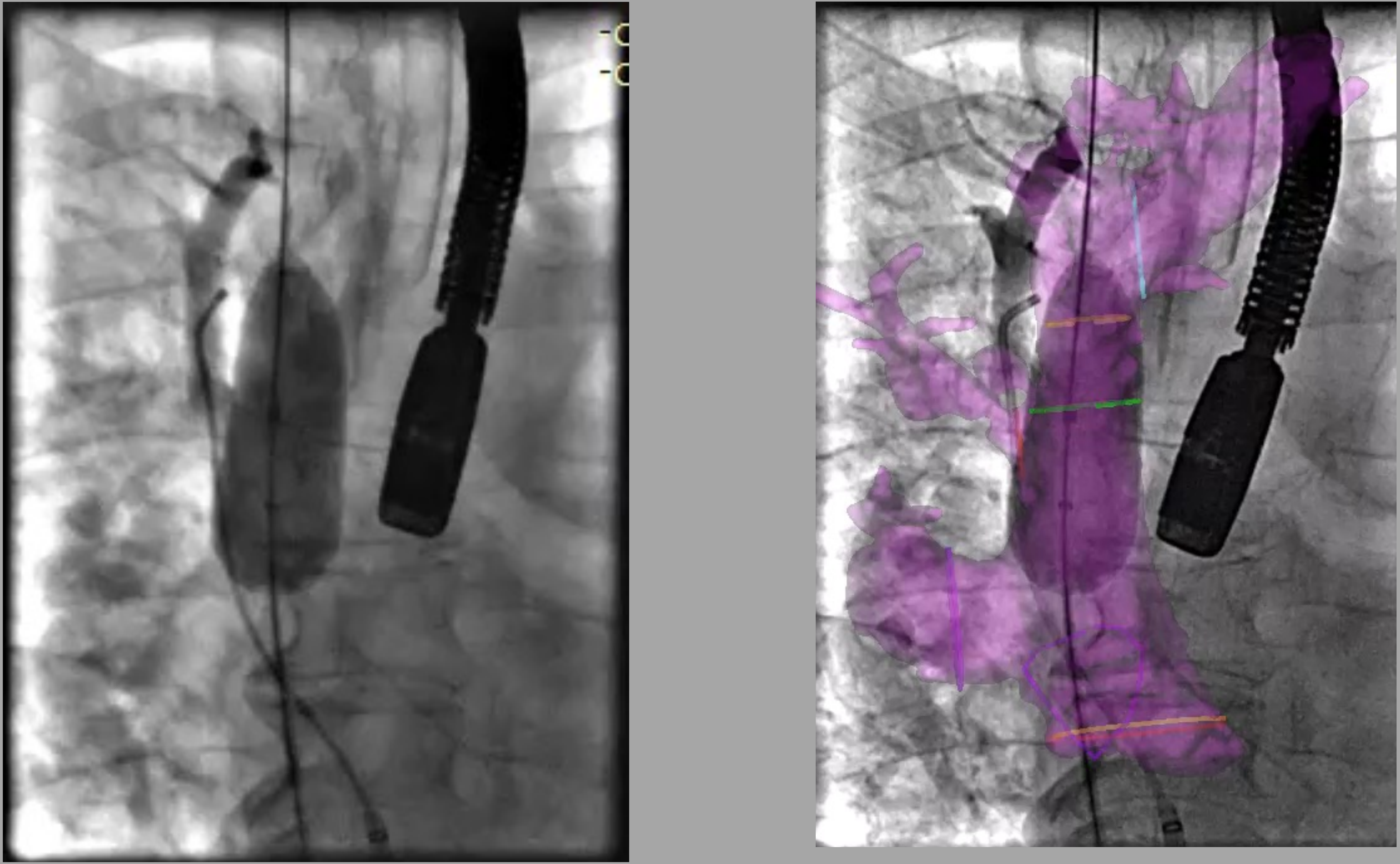
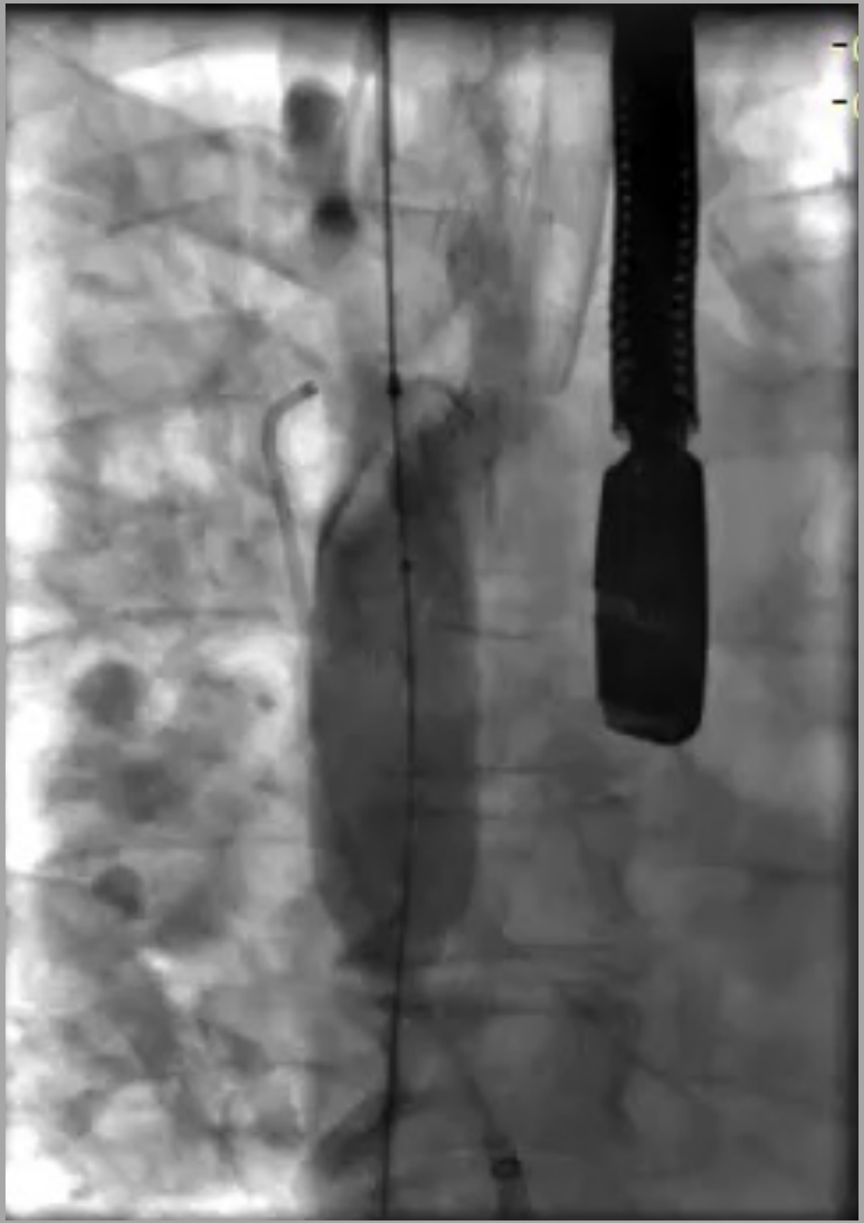


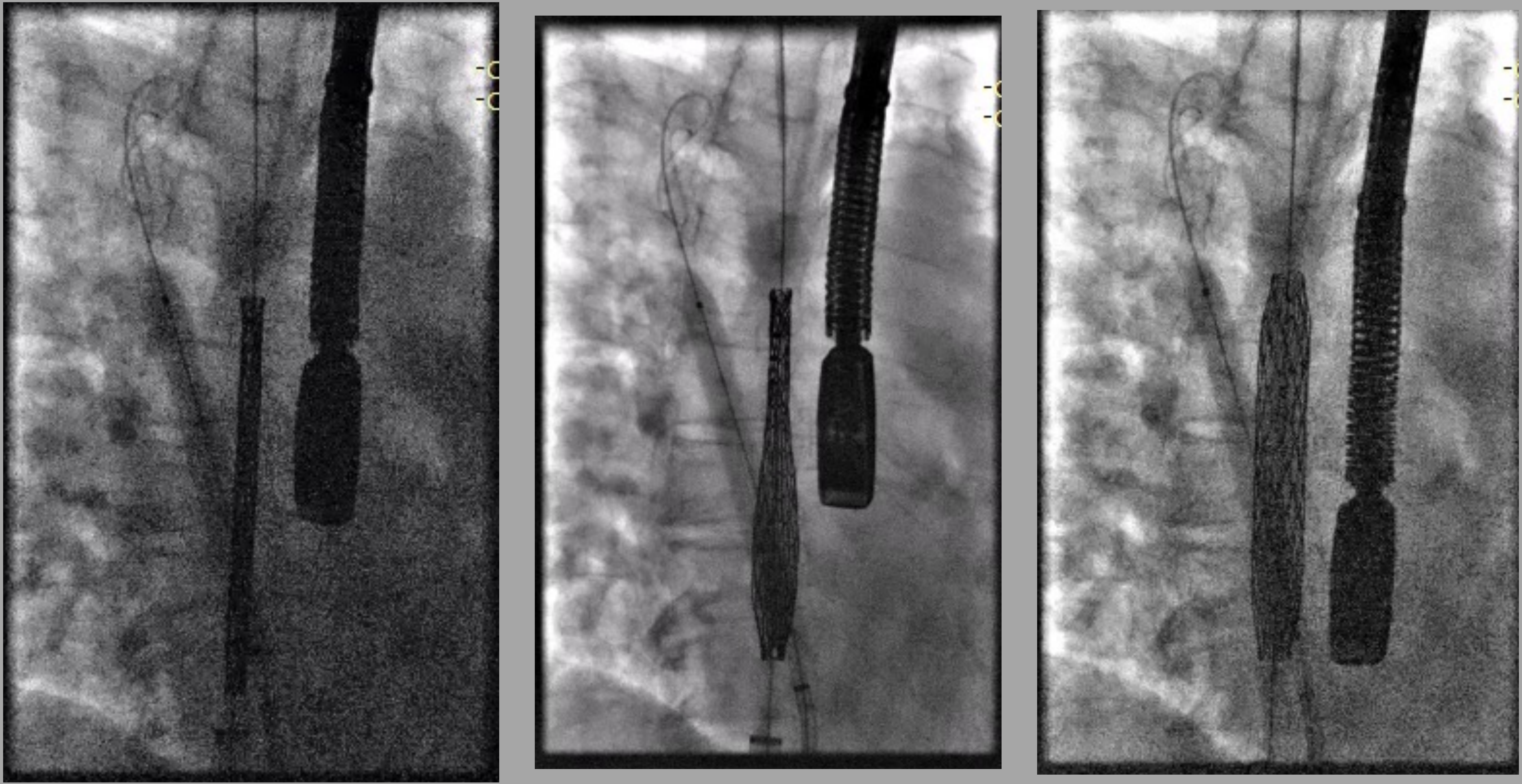


Calibration ballon mou amplatz 24

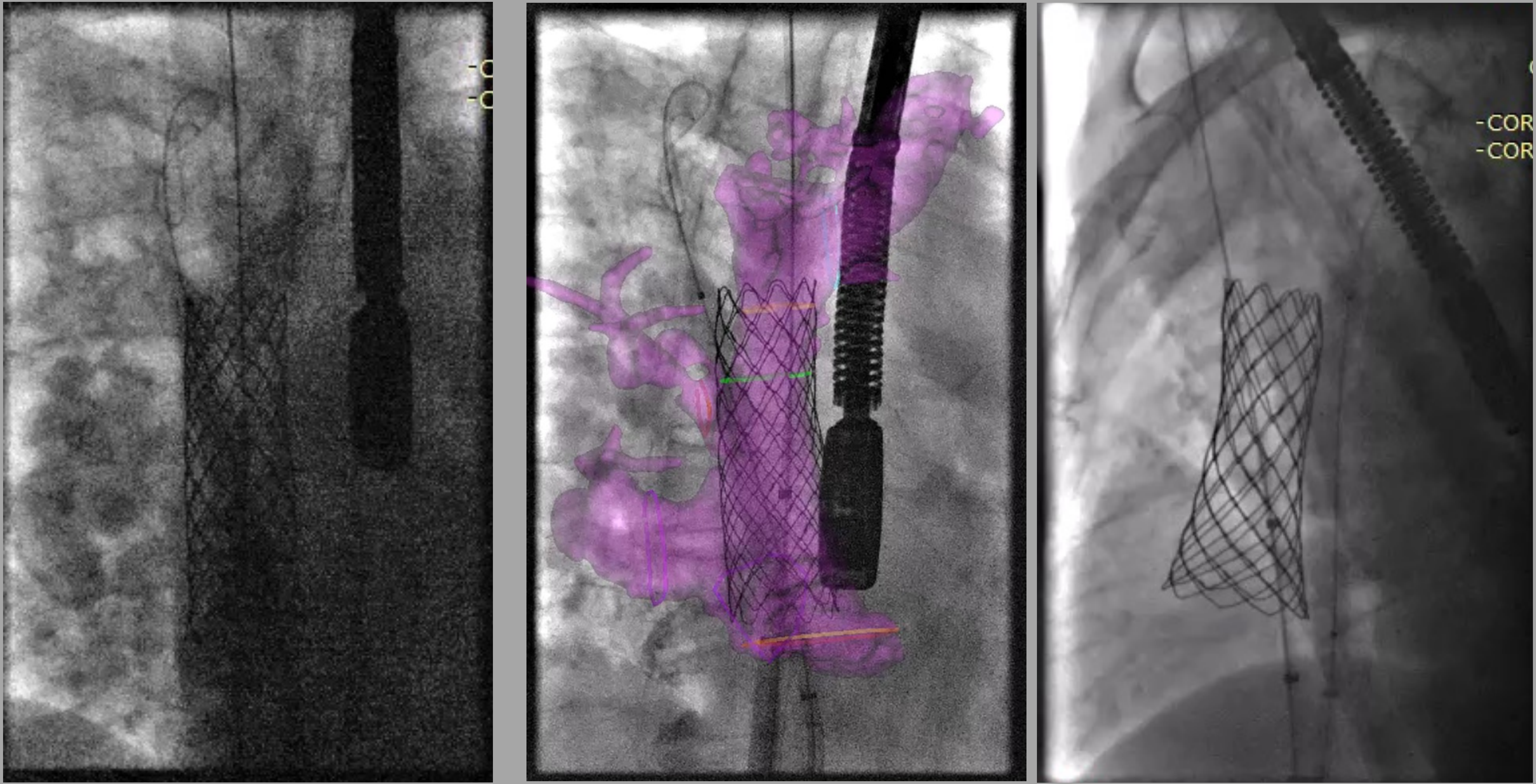




Calibration ballon non compliant atlas 22 x 40



Protection VPSD Armada 9 x 80
Stent CP10Z x 85 sur BIB 24 x 80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-C
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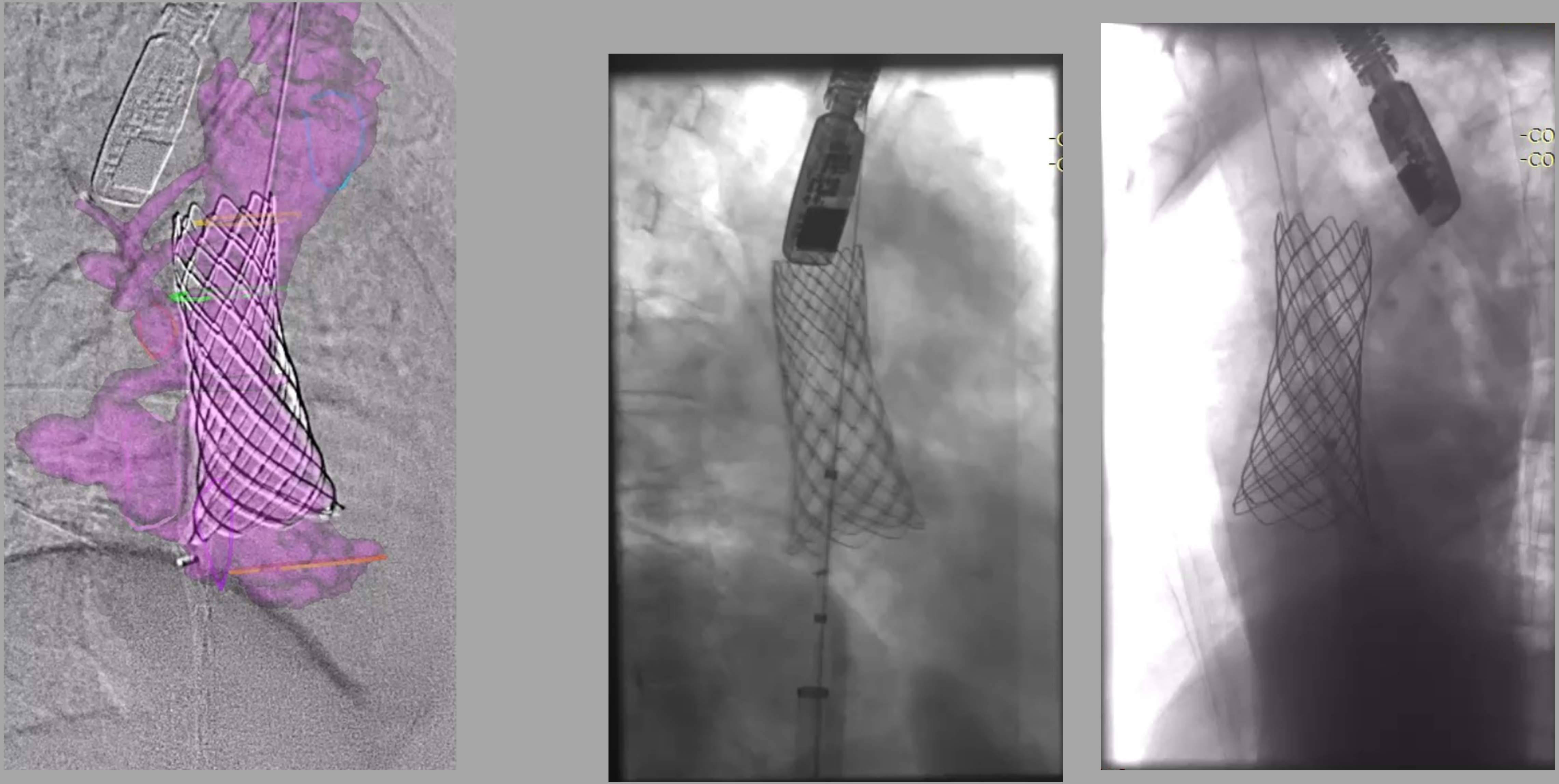
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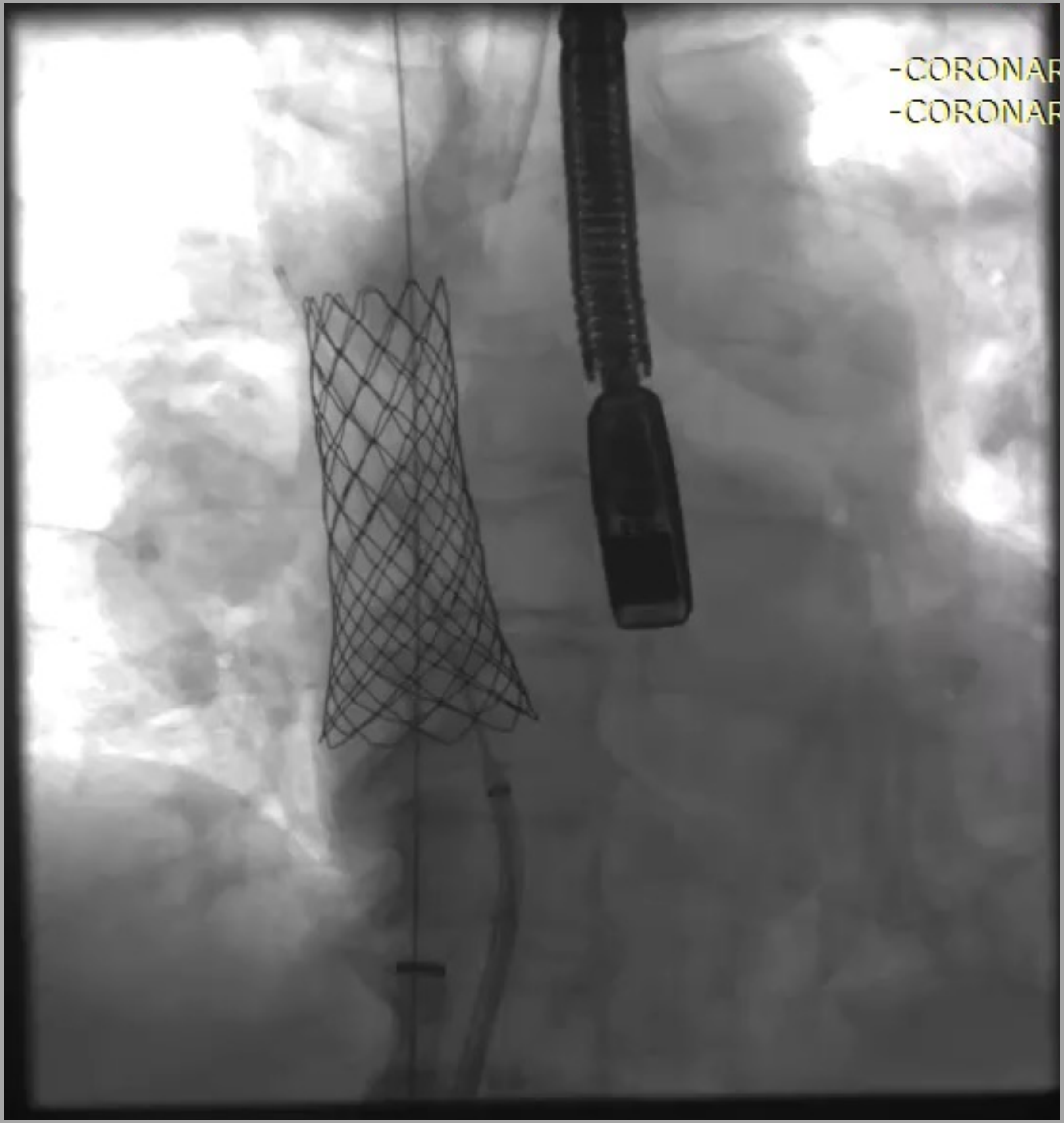
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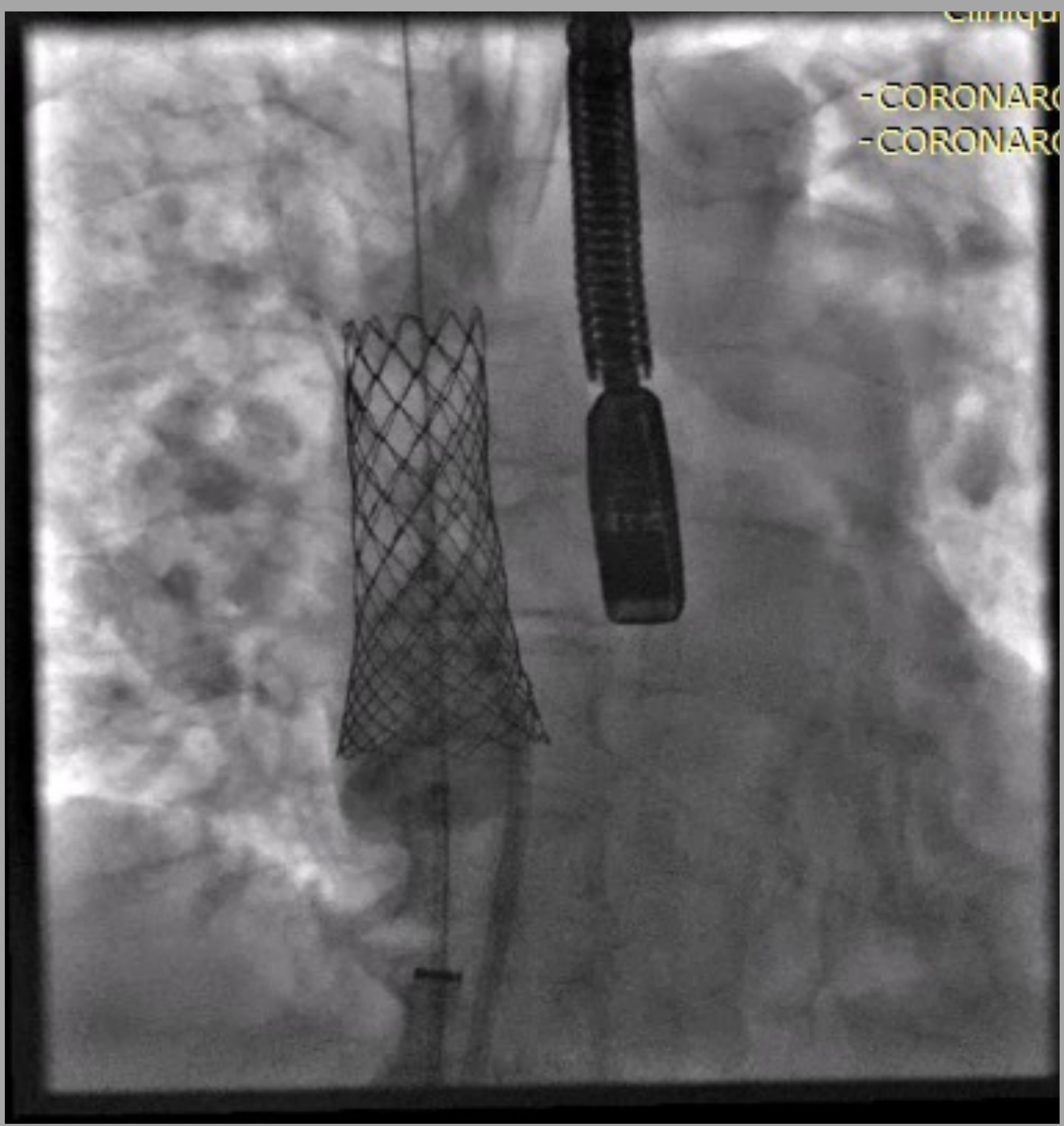
-CORONAR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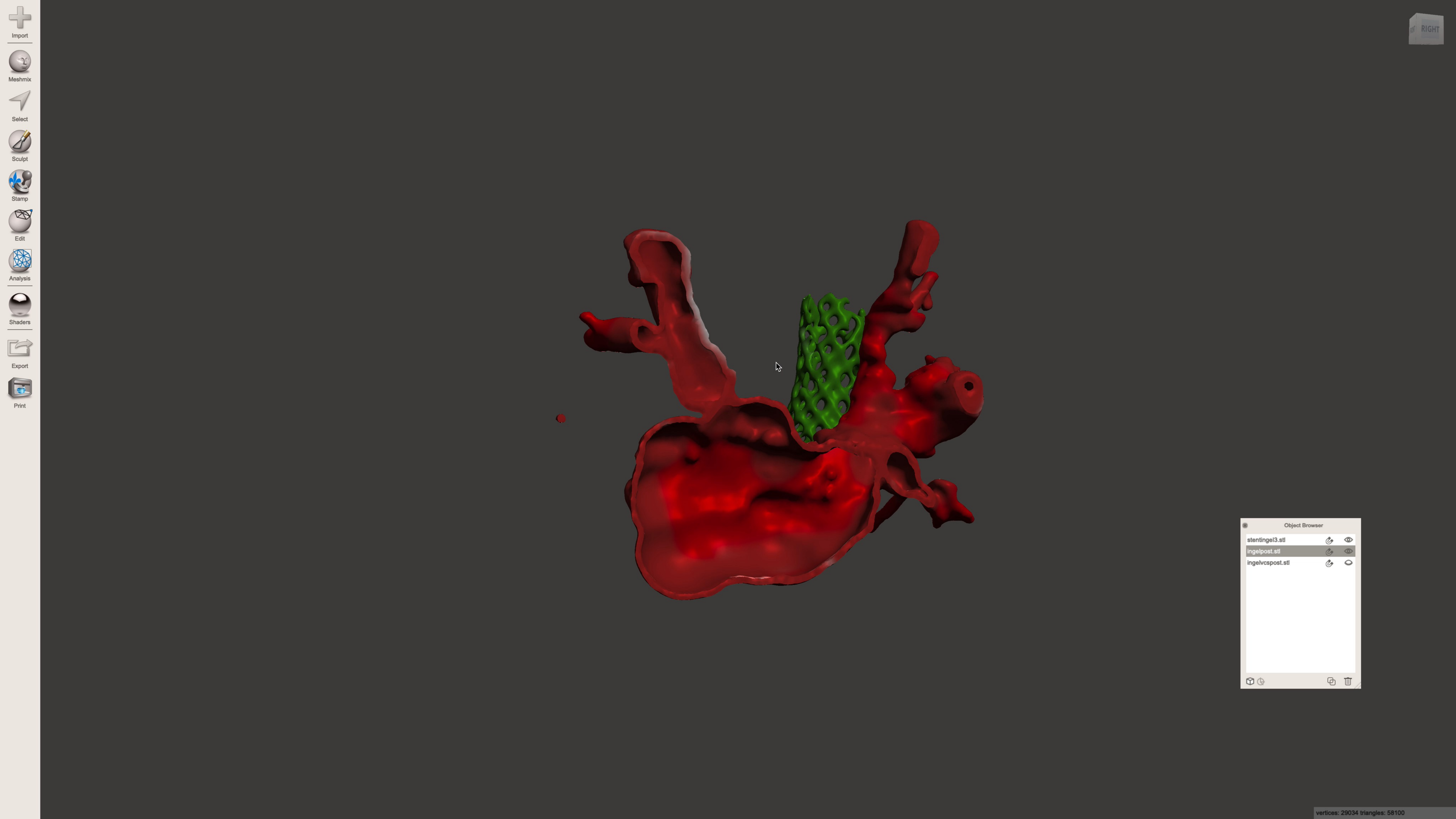
7) Reconstruction 3D sur scan post procédure


Import
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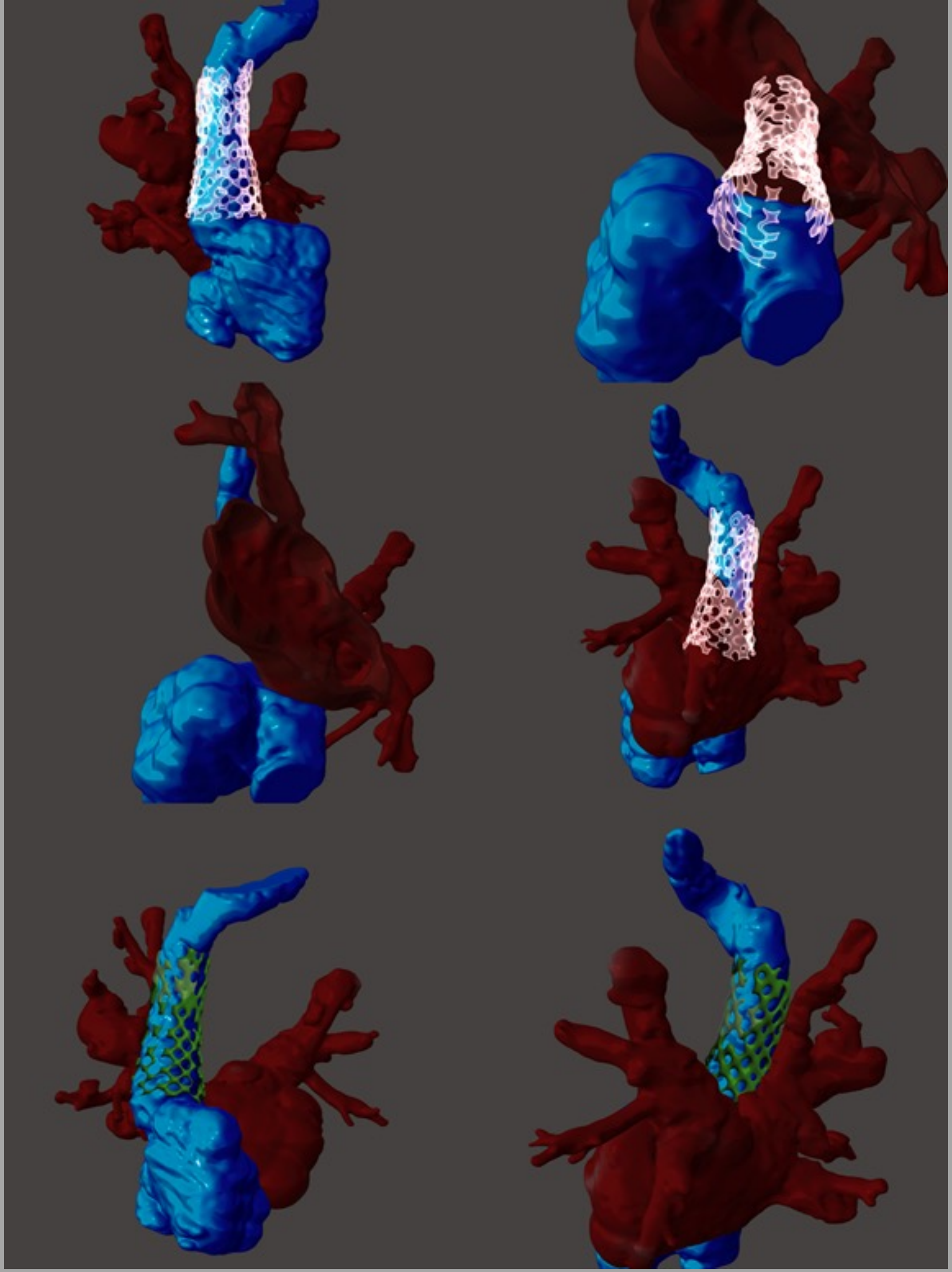
ingelvcspost.stl

vertices: 29034 triangles: 58100



PHILIPS

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Marie Lannelongue

GROUPE
HOSPITALIER
PARIS
SAINT-JOSEPH

Sinus Venosus : le cathe bonus

3 juin 2021

Sébastien Hascoët

Congenital Heart Diseases department, Marie Lannelongue Hospital

APPAC
Ensemble, imaginons la cardiologie de demain