Valve-in-valve-in-valve

Treating endocarditis of a transcatheter aortic valve

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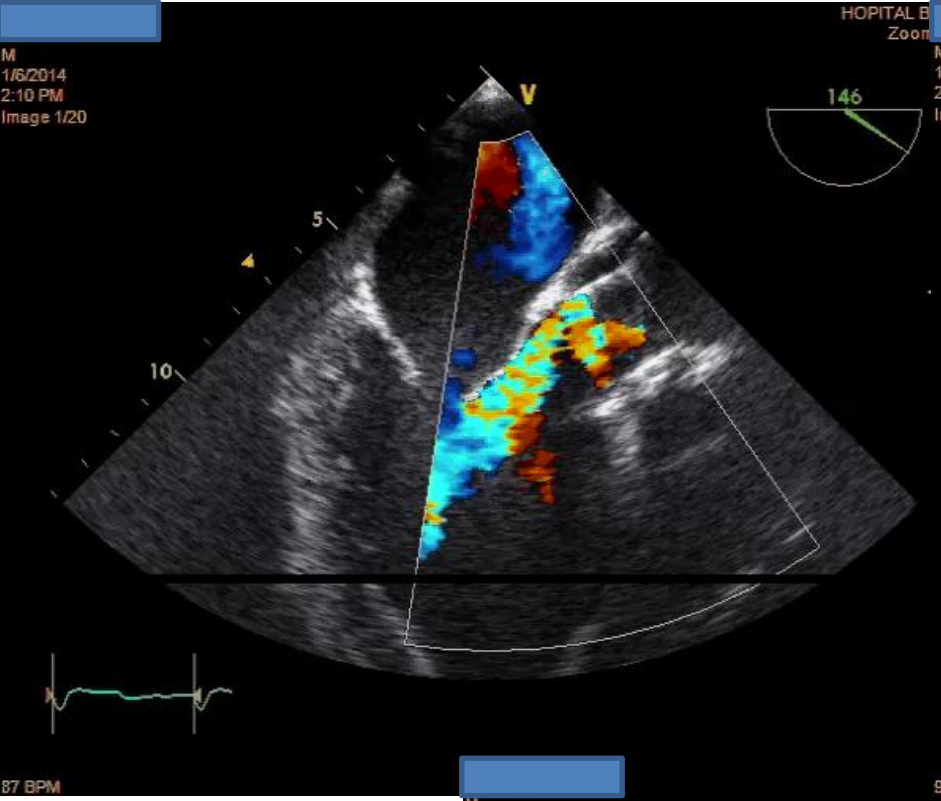
Bichat - Claude Bernard

History

- M/75
- Severe COPD
- EUROSCORE log 20% STS 8%
- Aortic bioprosthesis 2004 (Freestyle 29mm)
- Degenerative AR 2012 -> treated with transfemoral TAVI CoreValve 31mm, 12/2012
- Admitted to hospital with fever and SOB 11/2013

Progress in hospital

- Fever
- 2 blood cultures +ve for Streptococcus sanguis
- TTE and TEE showed severe intraprosthetic AR and cusp prolapse
- PET scan showed hypermetabolism around the CoreValve cage
- Diagnosed as prosthetic endocarditis


HOPITAL B
Zoom
M
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V
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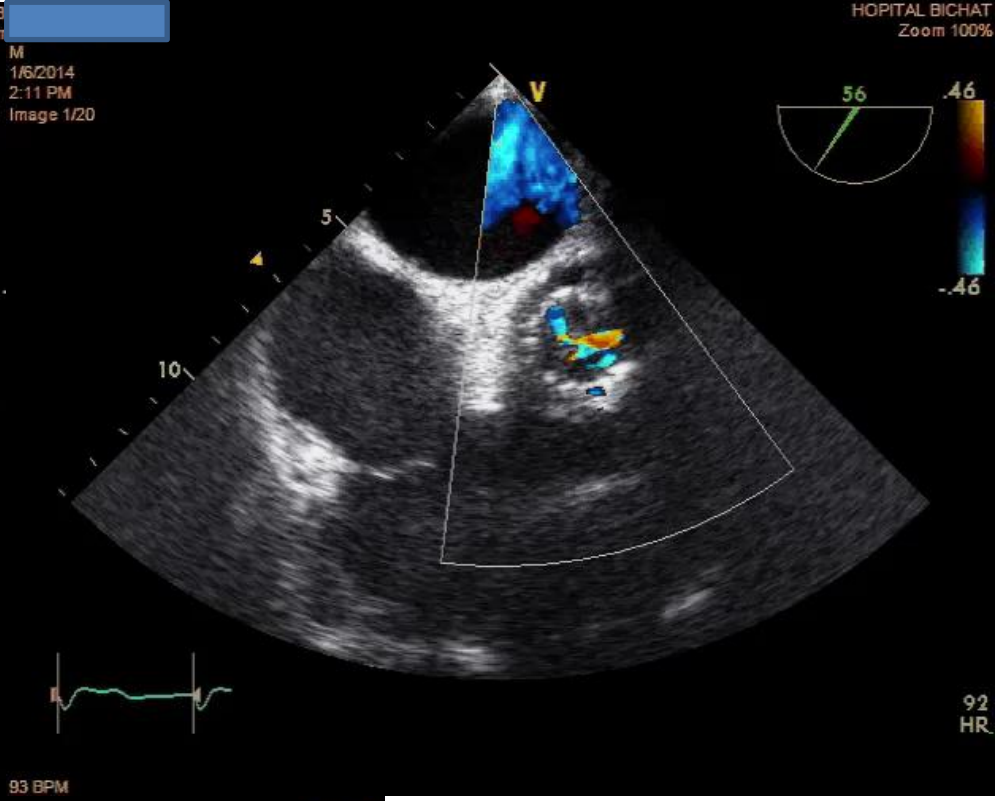
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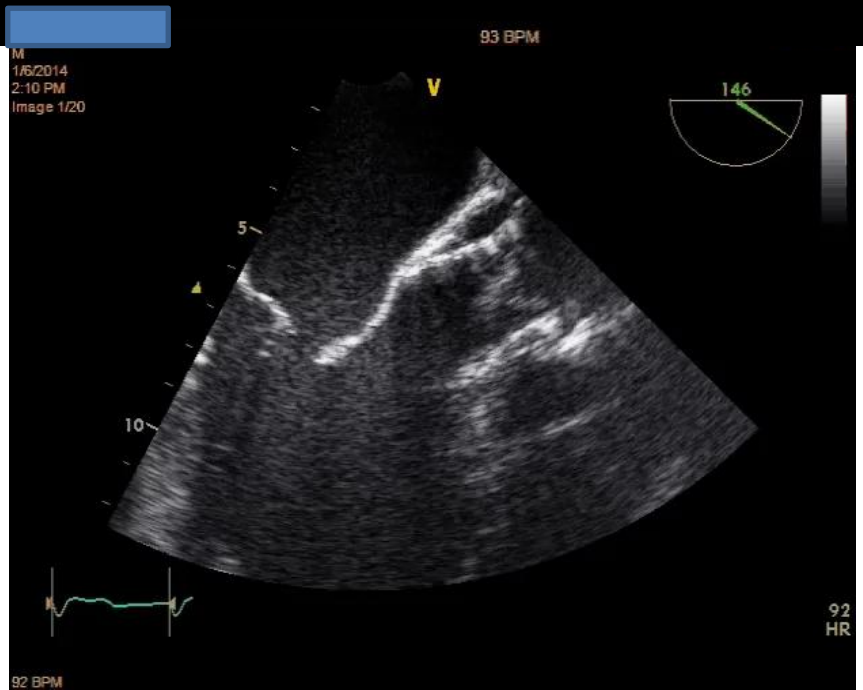
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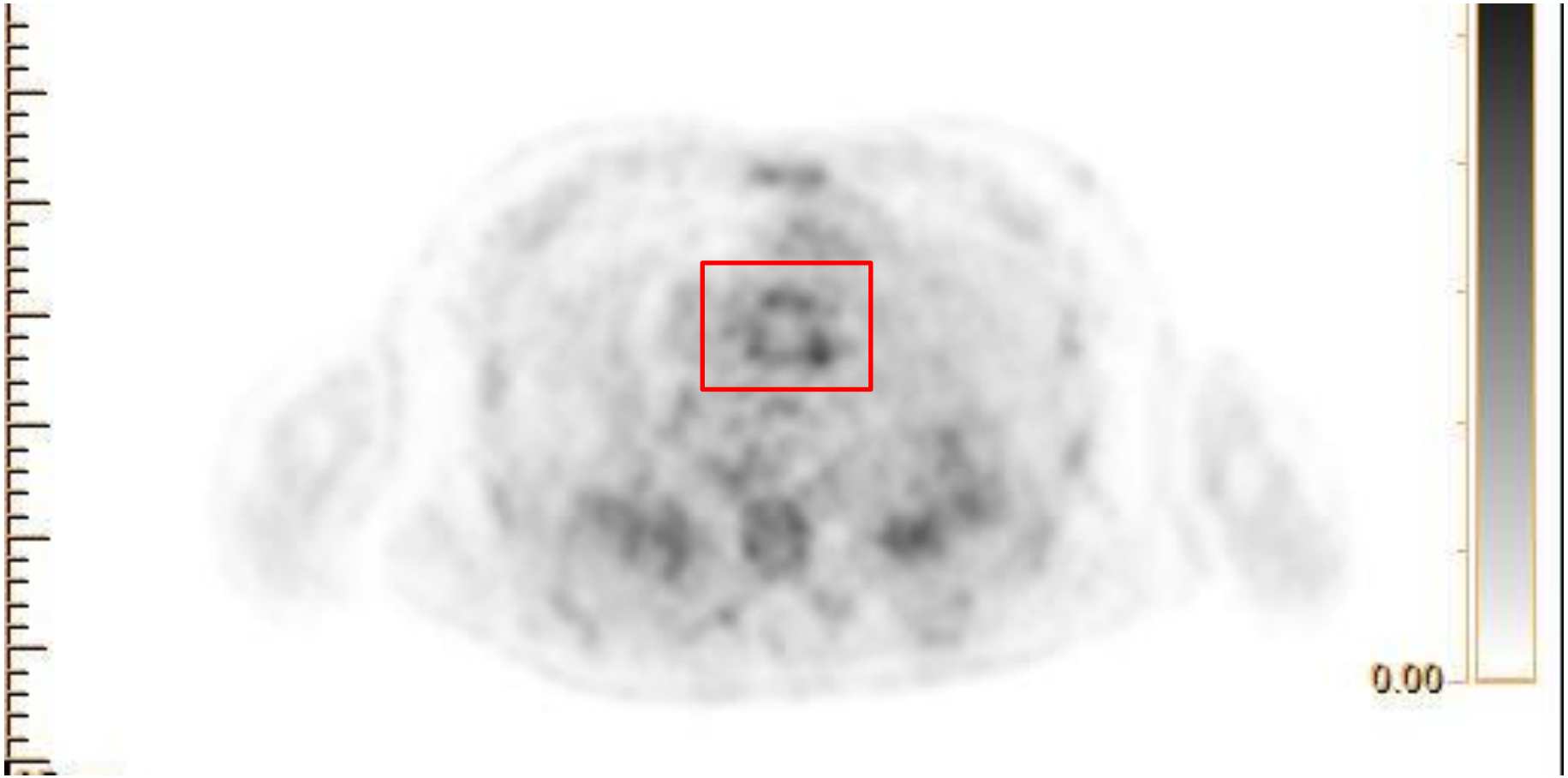
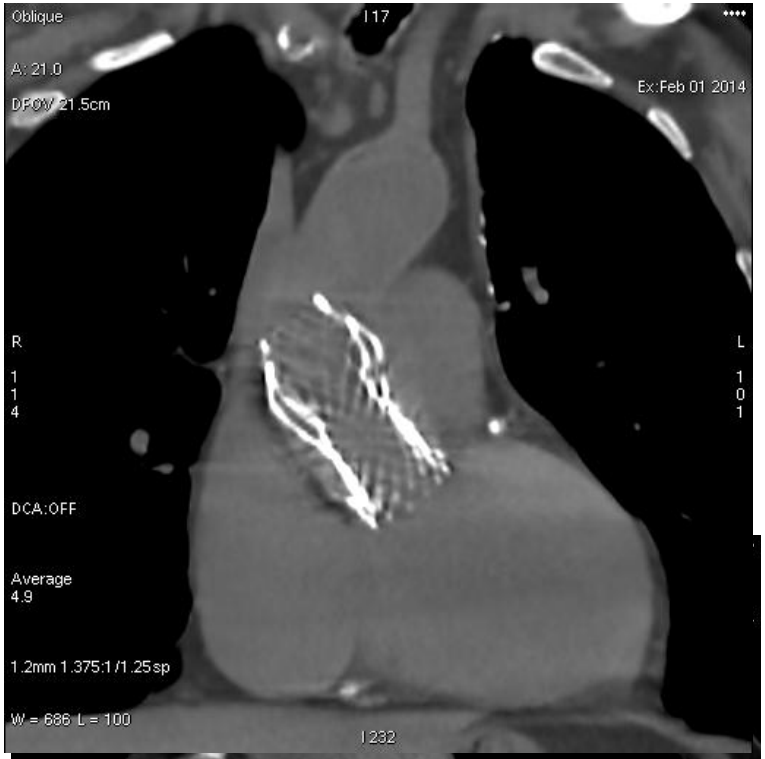
18-FDG PET scan

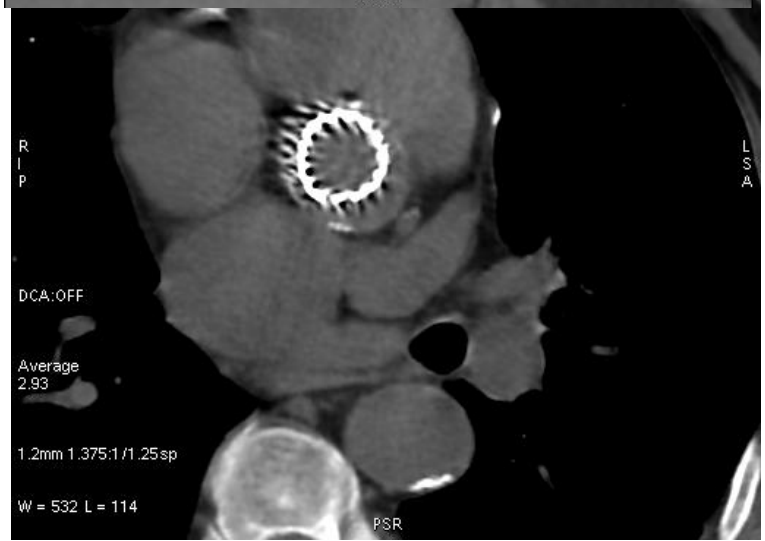


Endocarditis of the CoreValve

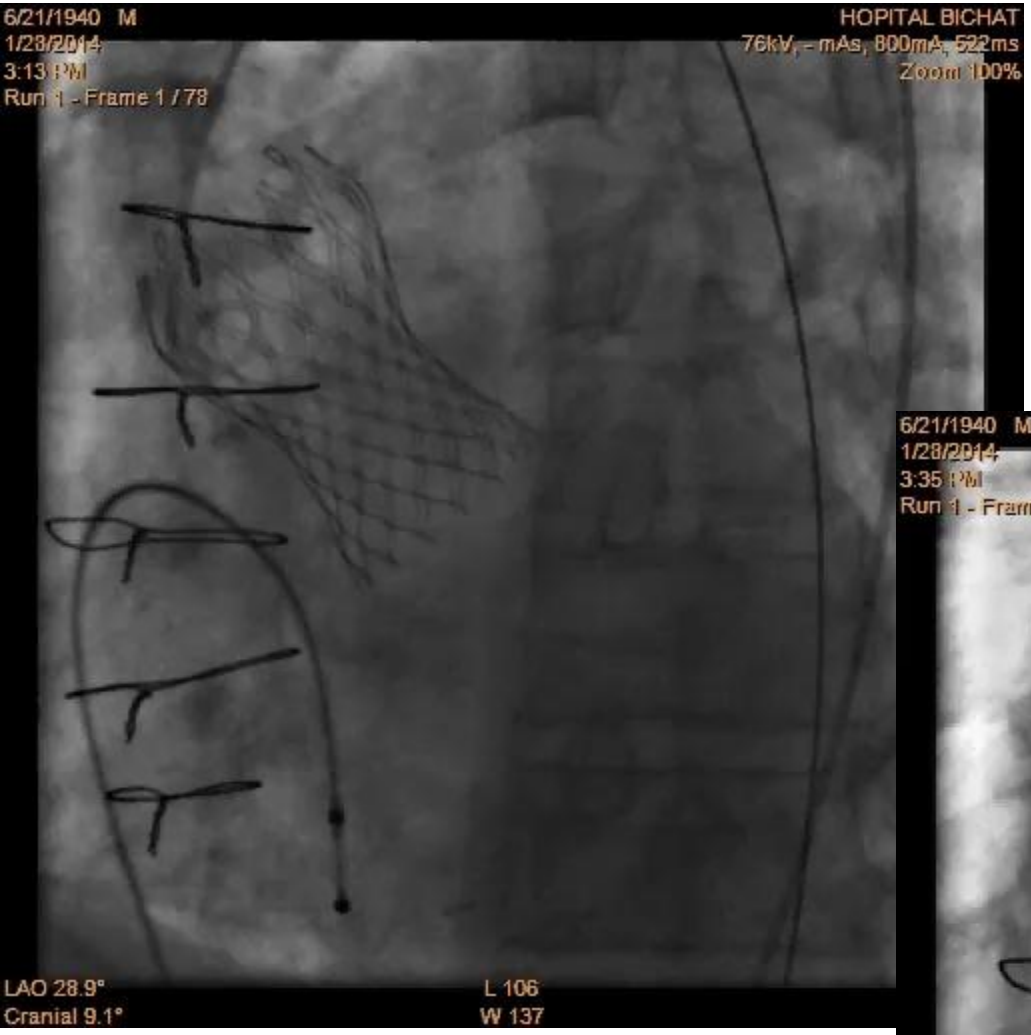
- Antibiotic treatment for 8 weeks
- Fever and inflammatory markers down
- Developed hemodynamic instability and CHF
- Heart team decision for TAVI valve-in-valve-in-valve

Valve-in-valve-in-valve





- Left femoral access
- Prostar preclosure
- Locoregional anaesthesia
- CoreValve 31mm
- 8mm higher than previous
- Minimal paraprosthetic AR
- Mean gradient 3mmHg
- 45 minute operation
- No immediate complications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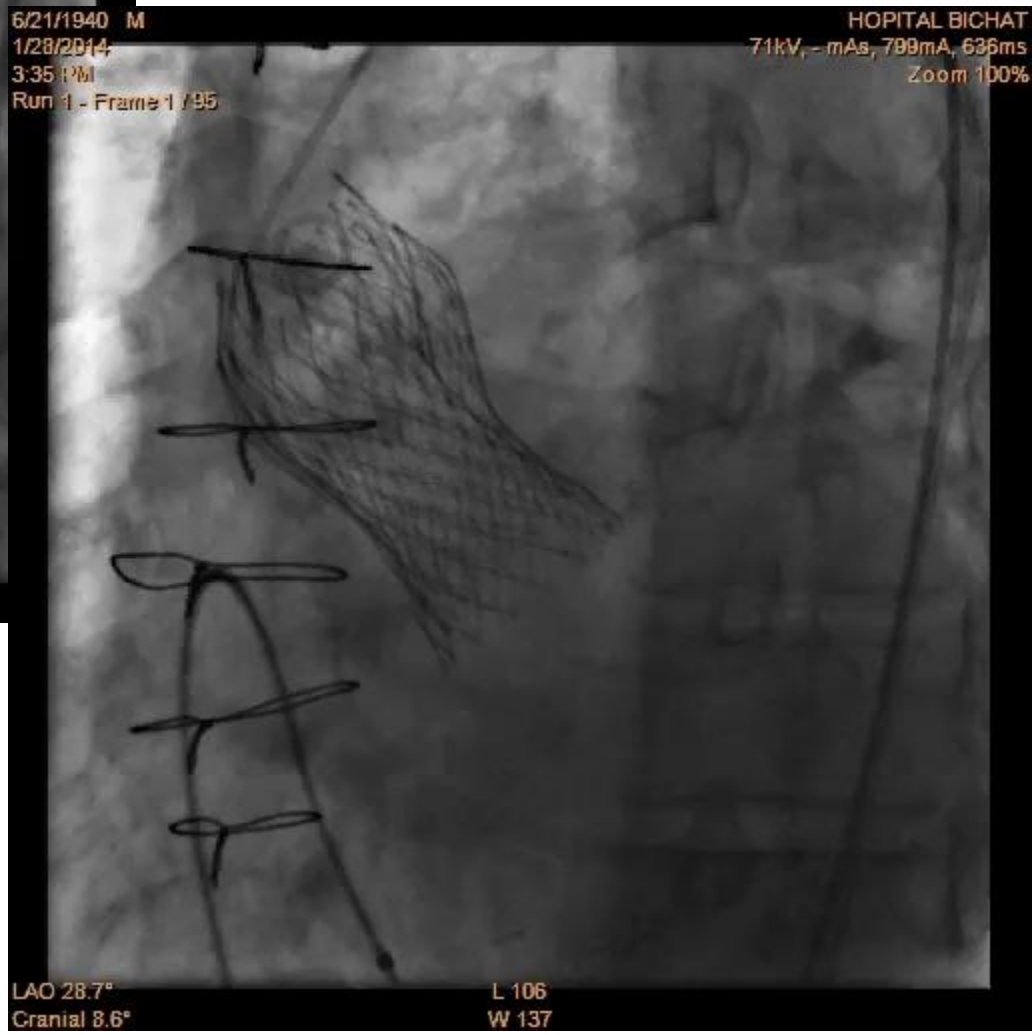
LAO 28.9°
Cranial 9.1°
L 106
W 137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HOPITAL BICHAT
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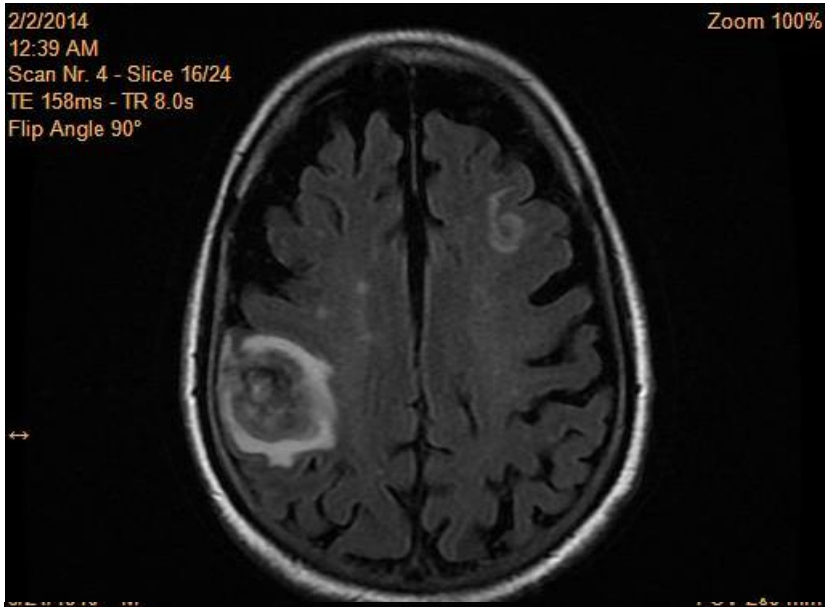
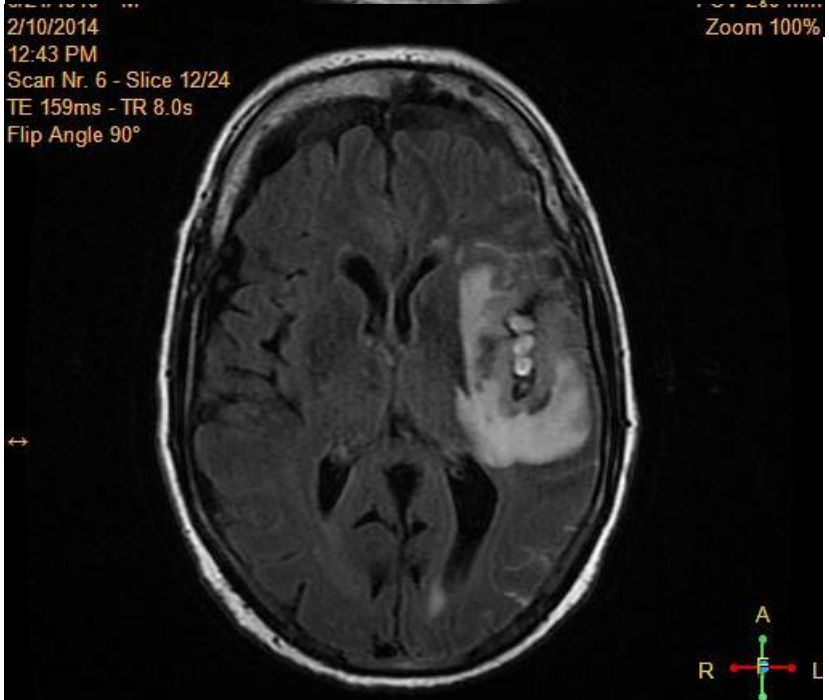
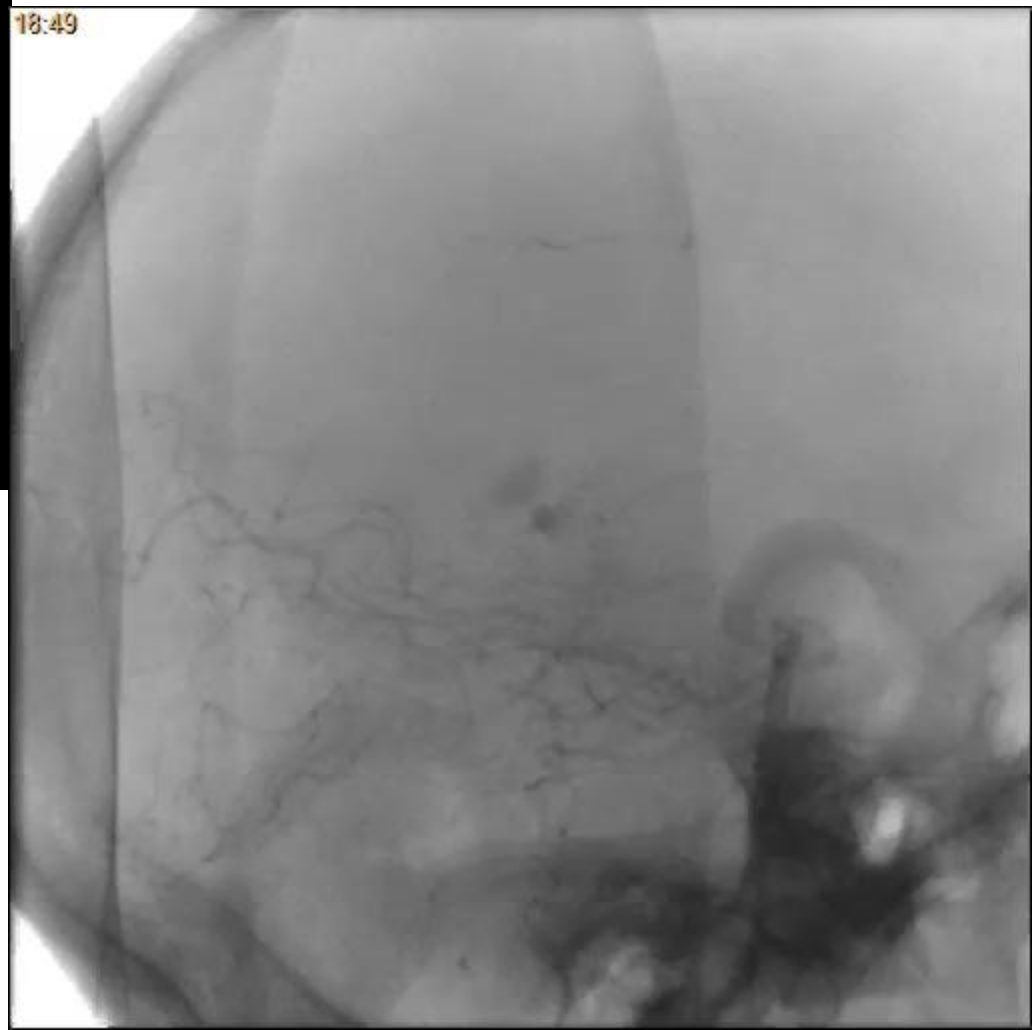
Cranial 8.6°
L 106
W 137

Ruptured cerebral mycotic aneurysms





- D5 developed left facial paralysis
- CT – ruptured mycotic aneurysm
- D12 developed aphasia
- CT – ruptured mycotic aneurysm
- Both embolised by transcatheter coiling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DSA Général
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WL: 2047 WW: 4095 [D]
LAO: 30
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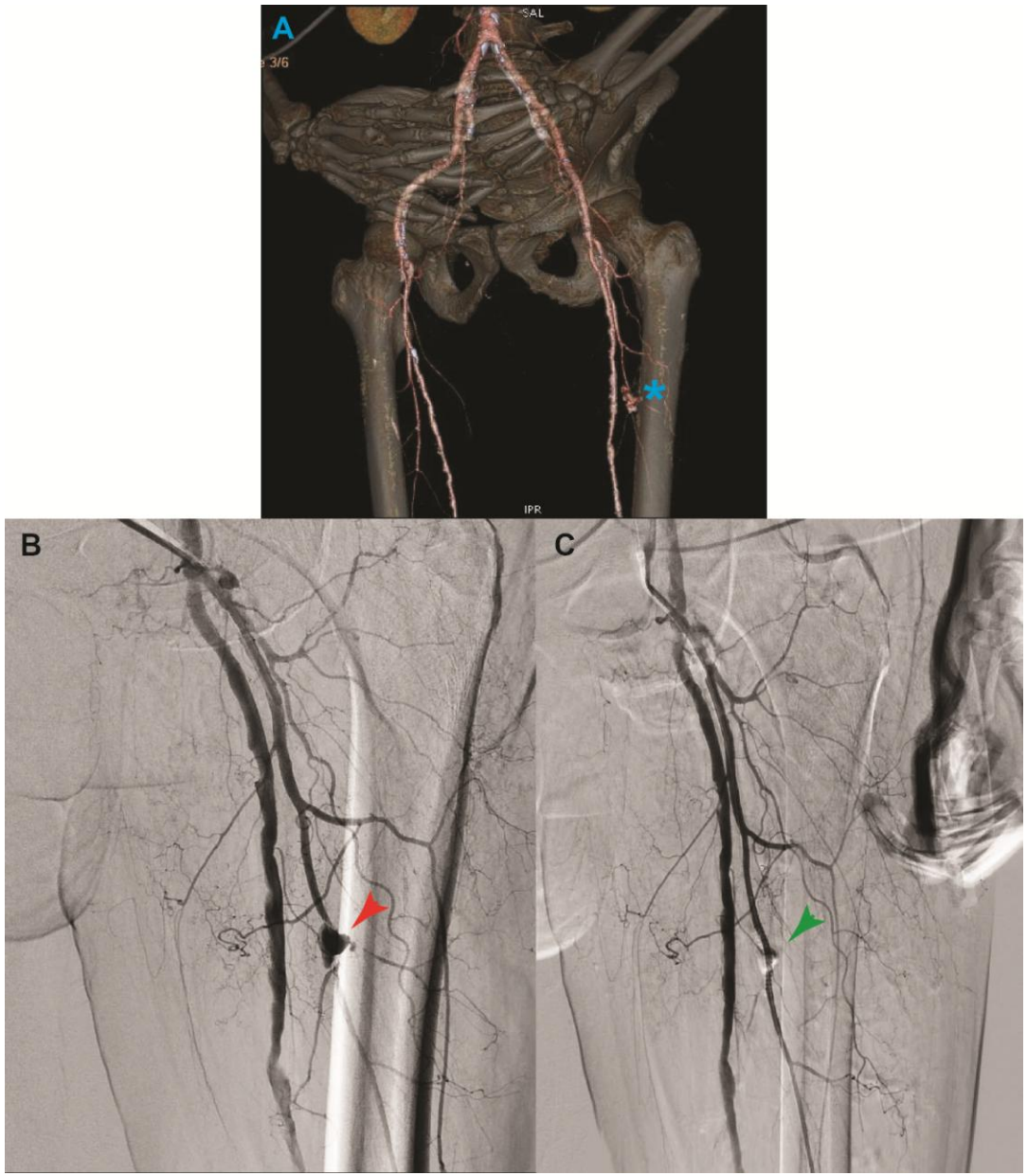
Femoral mycotic aneurysm



- A search for further embolic sites found another mycotic aneurysm in the left profunda femoris artery

- Transcatheter covered stent deployed

Finally

- Recovered fully – independently walking and living at home with wife, mild facial asymmetry
- Discharged after 13 weeks total antibiotics
- Well at 16-week follow-up

Learning points

- First report of a valve-in-valve-in-valve
- Completely transcatheter treatment of a high risk patient

- IE after TAVI – 1-3%
- Will become more frequent in the future
- Treatment needs to be carefully discussed on a case-by-case basis by a heart team
- Limitation of the technique used is that the old material is not removed, and may continue seeding infection