

Carotid stenting: difficult aortic arch and challenges in accessing the target artery



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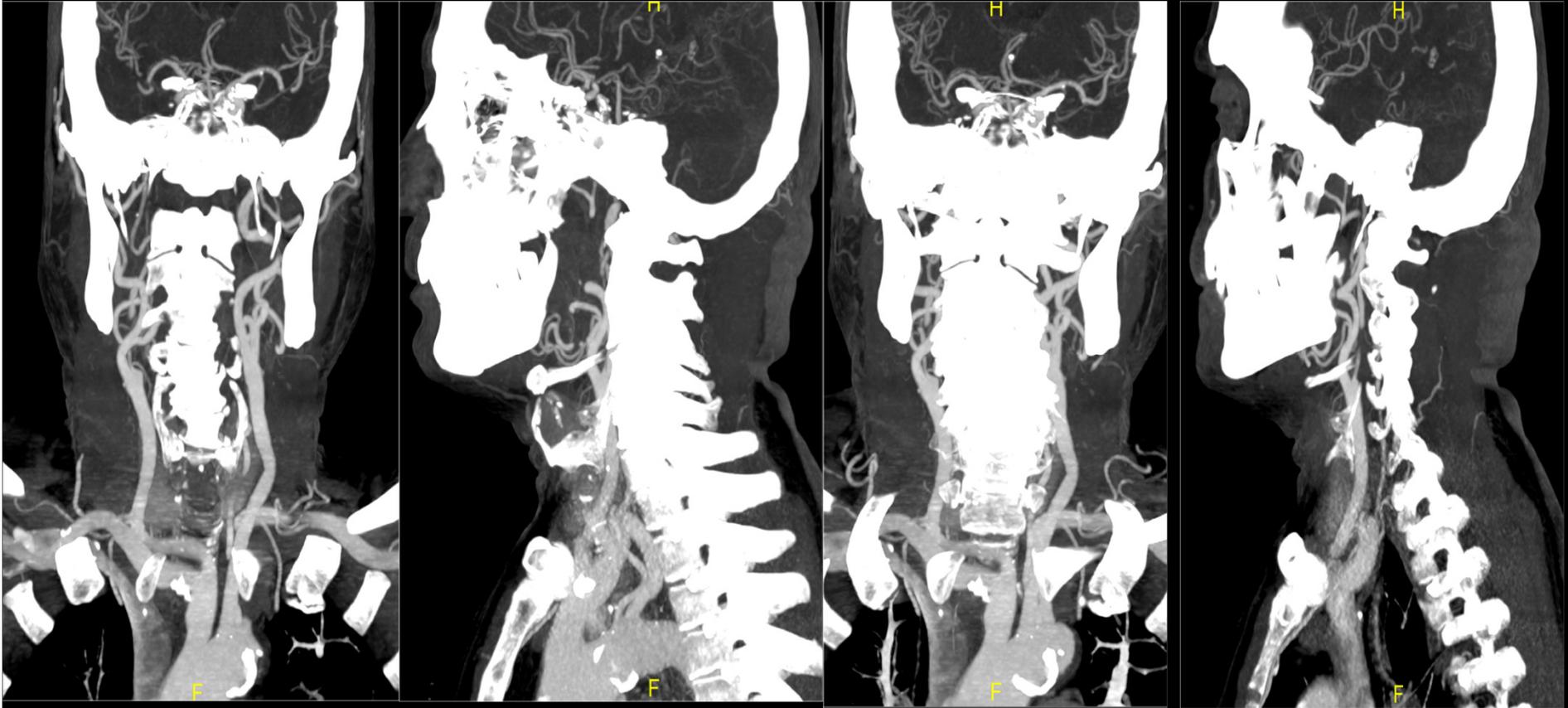
Disclosures

- No financial or conflict of interests

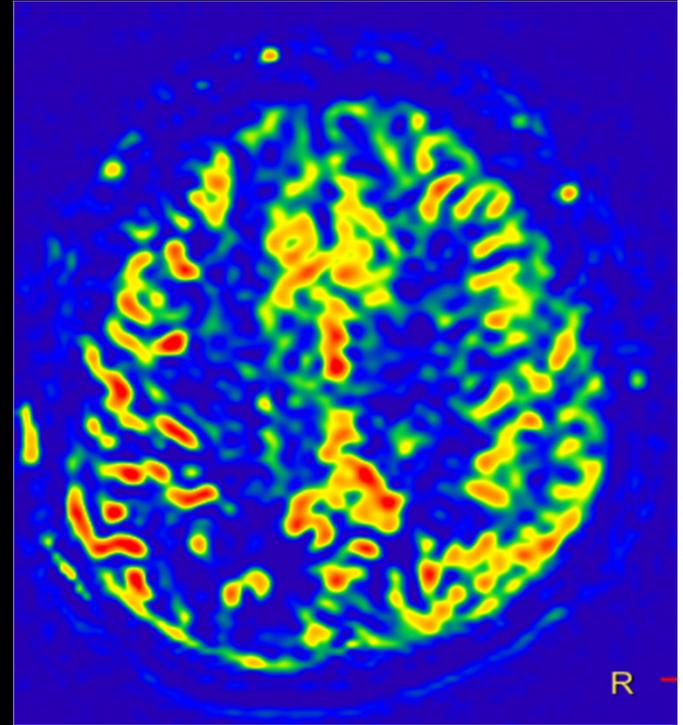
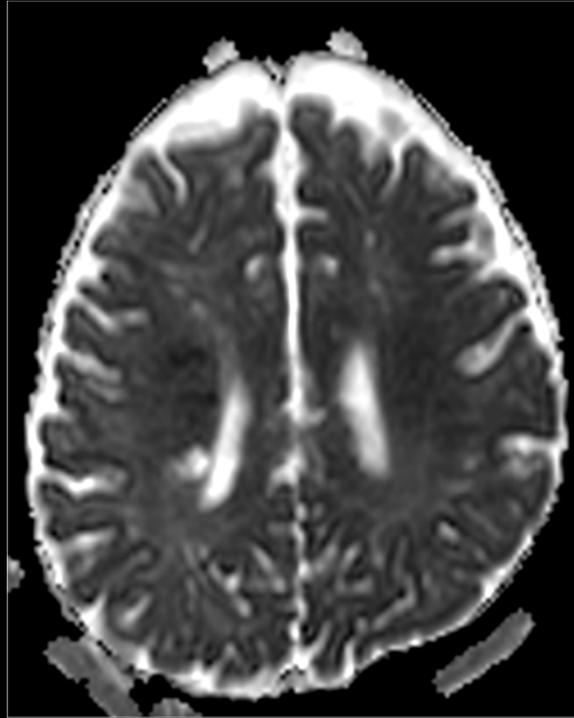
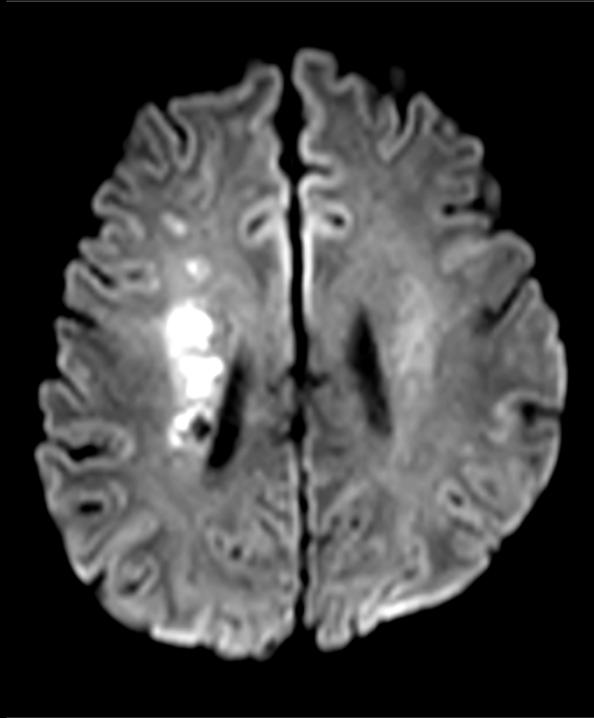
Carotid stenting: difficult aortic arch and challenges in accessing the target artery

- 63 male with history of recurrent TIA with acute onset left hemiparesis

CTA- RIGHT ICA 90% STENOSIS
Difficult arch!



MRI



DSA



Difficult arch- Access options

- Direct carotid puncture
- Access through upper limb arteries
trans-radial / trans-brachial
- Negotiation of difficult arch by multiple support catheters using coaxial system

Direct carotid puncture

- Direct Carotid Puncture Angiography
 - Loman and Meyerson 1935
 - Before this, 1927 carotid angiography with surgical exposure by Moniz et al
 - A valuable alternative to femoral access :
 - Selected neuro-endovascular cases, when the femoral approach is impossible or contraindicated.
 - Treatment of acute stroke in a patient in whom common carotid artery and internal carotid artery tortuosity prevents the delivery of catheters

Disadvantages

- Disadvantages of Direct Carotid Access
 - Radiation Dose
 - Hands close proximity to the image intensifier
 - (Re) Education of physicians
 - Need for Closure Devices
 - Difficulty in anticoagulation

Trans radial / Trans brachial approach

EuroIntervention
Official Journal of EuroPCR and the European Association of Percutaneous Cardiovascular Interventions (EAPCI)

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CLINICAL RESEARCH ENDOASCULAR INTERVENTIONS

A randomised comparison of transradial and transfemoral approach for carotid artery stenting: RADCAR (RADial access for CARotid artery stenting) study

Published on 21 July 2014

RADCAR Study

Methods and results: The clinical and angiographic data of 260 consecutive patients with high risk for carotid endarterectomy, treated between 2010 and 2012 by carotid stenting with cerebral protection, were evaluated. Patients were randomised to transradial (n=130) or transfemoral (n=130) groups and several parameters were evaluated. Primary combined endpoint: major adverse cardiac and cerebral events, rate of access-site complications. Secondary endpoints: angiographic outcome of the procedure, fluoroscopy time and X-ray dose, procedural time, crossover rate to another puncture site and hospitalisation in days. Procedural success was achieved in all 260 patients (100%), the crossover rate was 10% in the TR and 1.5% in the TF group ($p<0.05$). A major access-site complication was encountered in one patient (0.9%) in the TR group and in one patient (0.8%) in the TF group ($p=ns$). The incidence of major adverse cardiac and cerebral events was 0.9% in the TR and 0.8% in the TF group ($p=ns$). Procedure time (1,620 [1,230-2,100] vs. 1,500 [1,080-2,100] sec, $p=ns$) and fluoroscopy time (540 [411-735] vs. 501 [378-702] sec, $p=ns$) were not significantly different, but the radiation dose was significantly higher in the TR group (195 [129-274] vs. 148 [102-237] Gy*cm², $p<0.05$) by per-protocol analysis. Hospitalisation days were significantly lower in the TR group (1.17 ± 0.40 vs. 1.25 ± 0.45 , $p<0.05$). By intention-to-treat analysis there was a significantly higher radiation dose in the TR group (195 [130-288] vs. 150 [104-241], $p<0.05$), but no difference in major events (0.9 vs. 0.8, $p=ns$) and length of hospitalisation in days (1.4 ± 2.6 vs. 1.25 ± 0.45 , $p=ns$).

Trans radial access

- Safe and technically feasible
- Useful alternative access

In patients with right carotid lesions

Left ICA lesion with bovine arch

Non – bovine left ICA lesion remains a challenge!

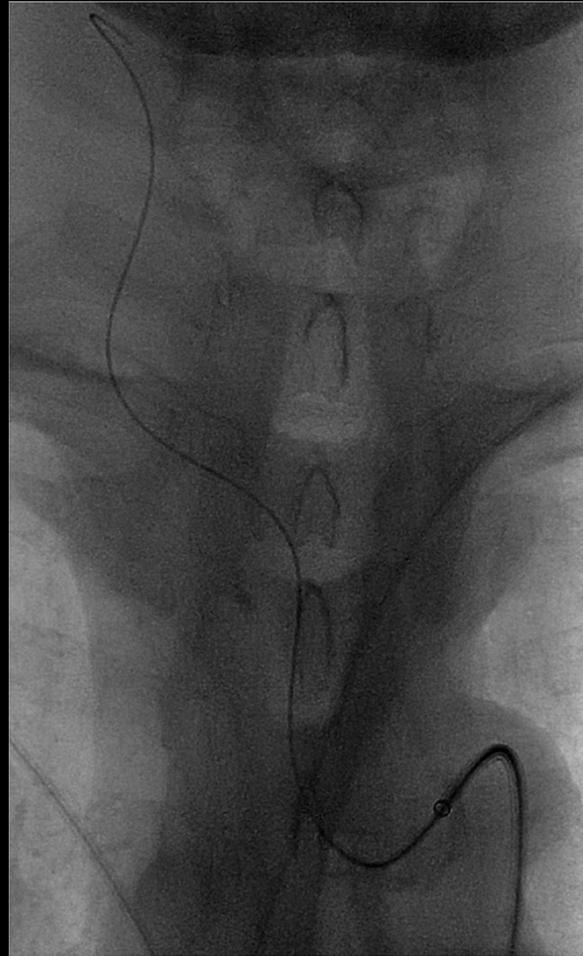
Draw backs

- Limited experience with huge learning curve
- Small size arteries- Maximum allowable hardware is 6F catheter / 5F sheath

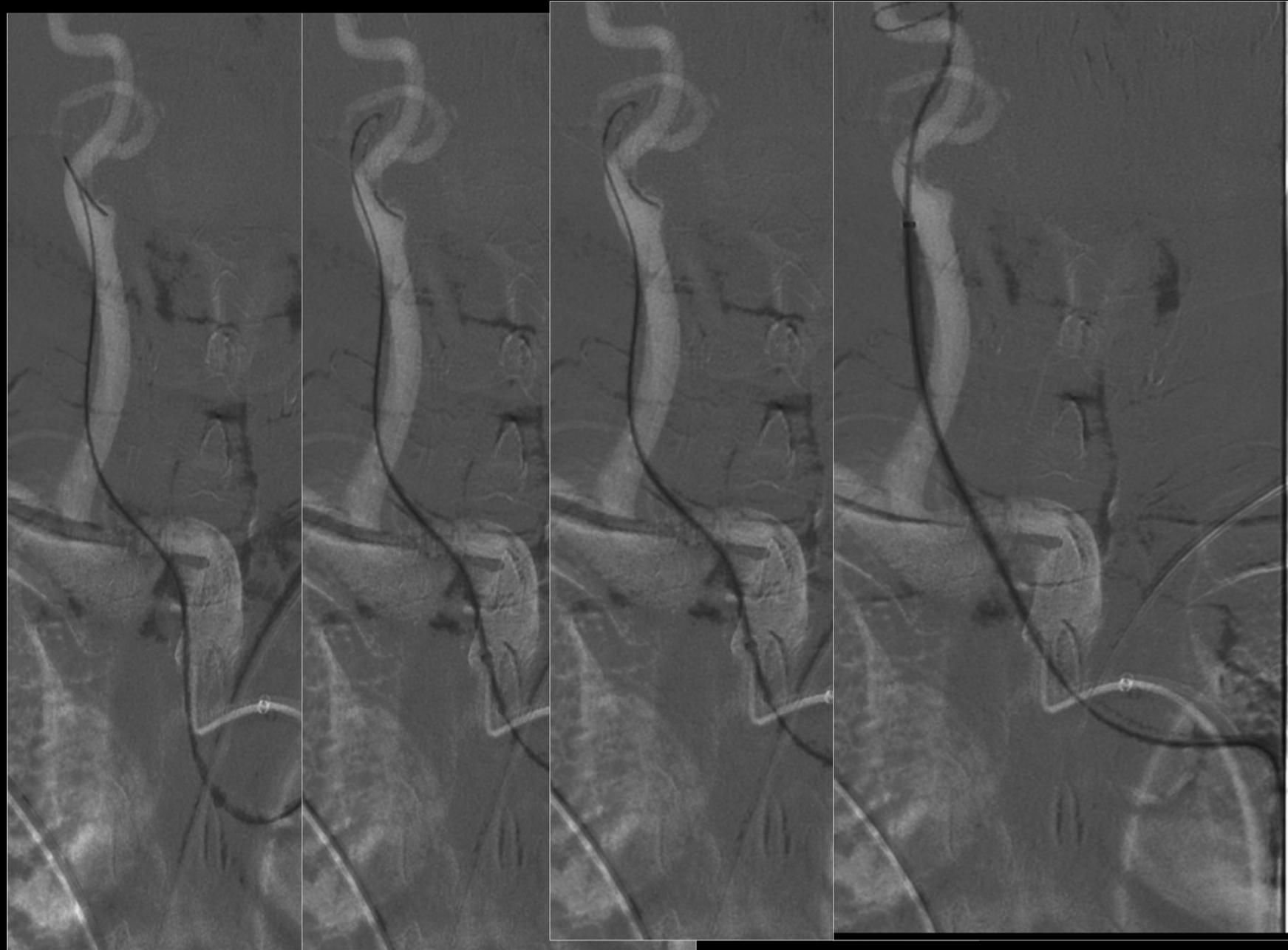
Our case-DSA



0.038 exchange length placed in ECA
after accessing r BCA with 5F catheter



Slip cath with Shuttle 6F Through 0.038 WIRE



RIC

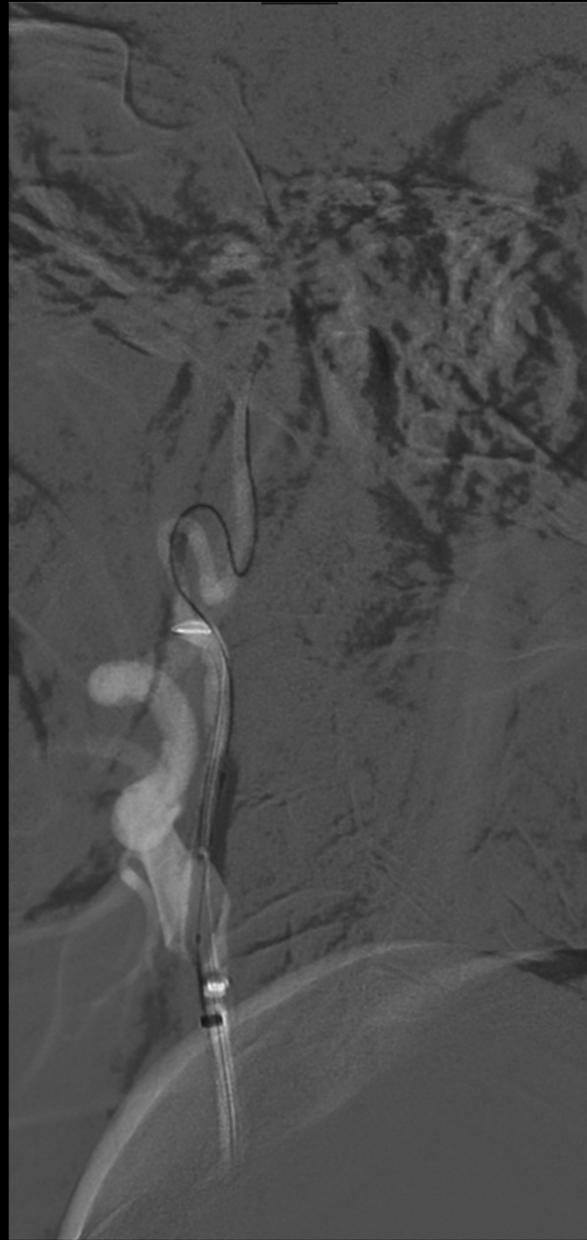
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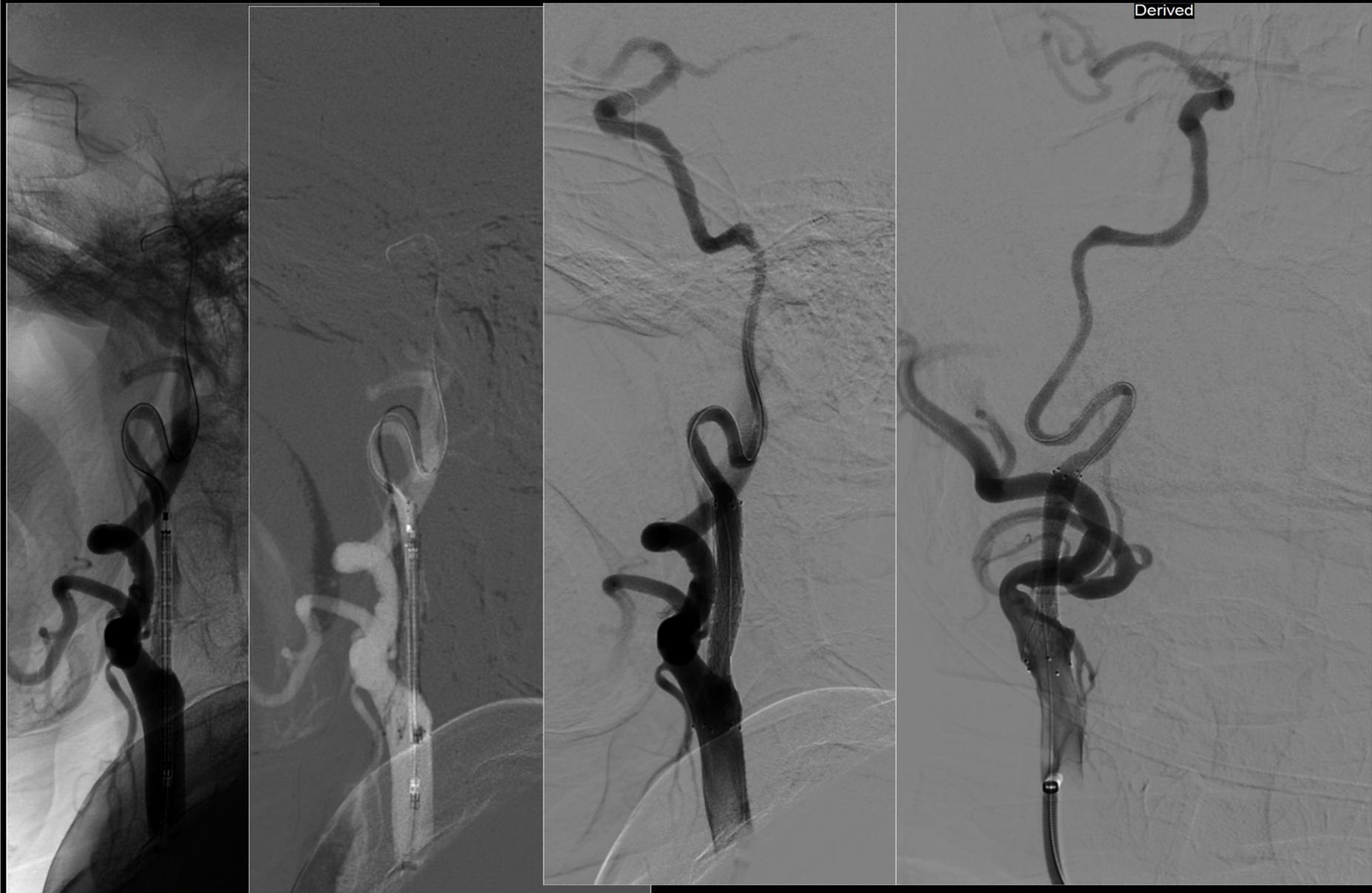
0.014 microwire across stenosis with balloon angioplasty 3x20 mm
balloon



Serial dilatation with 4x20mm Balloon



Carotid stent placement



Post stenting- DSA





Thank You