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Oral communications

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Influence of WEB oversizing on aneurysm occlusion and device compaction

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Background Aneurysm recanalization concomitant to endo-saccular device (WEB) compaction has been reported. Association of compaction and aneurysm remnant is still discussed in literature. Effect of WEB oversizing on compaction and recanalization rates remains unknown.

Objective To assess the association of WEB compaction and risk of aneurysmal remnant.

To assess the association of oversized WEB with complete aneurysmal occlusion, peri-procedural complication, WEB compaction.

Methods We retrospectively included all patients treated with the WEB in our center between March 2012 and August 2018 from a prospectively maintained registry. Review Board approval was obtained. From February 2015 to August 2018, we used the oversizing technique (increase of the WEB width of 1 mm compared to aneurysmal width). First we analyzed the association between compaction and occlusion rates. We then compared patients before and after this technical shift, as long as patients with and without “>1 oversized WEB” (oversizing>1mm) for peri-procedural complication, device compaction, complete and adequate occlusion, at 3 to 6 months, 12 to 18 months and after 24 months follow-up (FU). Statistical analyses were performed.

Results We treated 78 aneurysms in 77 patients. In case of compaction, patients had a lower rate of adequate (91% vs 52%, $P=0.005$) and complete occlusion (36% vs. 16% $P=0.05$). The oversizing technique led to improved rates of no-compaction (36 vs. 18%), complete occlusion (28 vs. 13%) at last follow-up despite no statistical significance. For “>1 oversized WEB”, per-procedure



complication rate was 3 times higher despite being non-statistically significant ($P=0.07$). At last follow-up, no-compaction risk was improved (48 vs. 21%, $P=0.02$) but complete and adequate final occlusion rates were not different.

Conclusion WEB compaction is associated with increased rates of aneurysm remnants. WEB oversizing may improve the complete occlusion rate whereas decreasing WEB compaction. A too much oversizing may lead to increase the risk of per-procedure complication whereas no additional effect on aneurysmal occlusion. Rate of adequate occlusions remains acceptable.

Keywords Aneurysms; WEB; Recanalization; Compaction; Endovascular treatment; Intra-saccular device

Disclosure of interest The authors declare that they have no competing interest.

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Comparison of mono versus biplane performance and factors associated with higher radiation doses and contrast exposure during cerebrovascular mechanical thrombectomy, an international multi-centers study

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Background To compare efficacy and safety of mechanical thrombectomy (MT) depending on mono versus biplane angiogram (AR), radiation exposure, contrast dose, procedure duration for acute ischemic stroke with large vessel occlusion (AISLVO) according to procedural factors. To realize a systematic literature review on the single/biplane comparison.

Materials and methods Between January 2014 and May 2017, 906 consecutive patients from 3 countries with all available data underwent a MT in four centers:

– 330 on a single-plane (SP);

– 576 on a biplane;

– data were retrospectively analyzed.

Efficacy and safety characteristics, radiation dose, contrast load and fluoroscopy duration were analyzed and compared depending on clinical and procedural factors of the AR.

Results After multivariate analysis, only contrast load (50% lower) and scopy duration (19% lower) remained significantly lower on biplane versus monoplane. There was no difference concerning procedure duration, radiation doses, rate of successful recanalization, outcome and complication between MP and biplane, Philips and Siemens after multivariate analyses.

Among other factors, general anaesthesia was associated with higher DAP, Kerma, contrast load. Performing an angiogram before MT was associated with increased procedure duration (15% increase), DAP (33% increase), contrast load (125% increase) on univariate analyses.

Conclusion Both AR seem to be equivalent in terms of safety and effectiveness for MT. Biplane equipment drastically reduces contrast load. The decision to realize an angiogram before a MT should be clinically motivated because of increased radiation, contrast doses and procedure duration.

Disclosure of interest The authors declare that they have no competing interest.

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Angiographic patterns and the procedural and clinical outcomes achieved by proximal balloon occlusion in Symptomatic Carotid Artery Stenosis Stenting

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Background and purpose The best embolic protection strategy has not yet been established for carotid-artery stenting (CAS). We report here a new simplified approach using a balloon guiding catheter, inspired by stroke therapy, in patients harboring symptomatic ICA atherosclerotic stenosis or web. In addition, we describe the 3 angiographic patterns and clinical outcomes associated with this technique, called the simple flow blockage (SFB) technique.

Materials and methods This is a retrospective study with data extraction from a monocentric prospective clinical registry of consecutive patients admitted for symptomatic ICA stenosis or web. The primary study outcome (composite endpoint) was the rate of occurrence of death, symptomatic stroke or acute coronary syndrome within 30 days of intervention.

Results Seventy-five symptomatic patients with >50% carotid artery atherosclerotic stenosis or web were included. All procedures were successfully performed. The composite endpoint occurred in 3 patients (4.0%, 95%CI, 0.0 to 11.3): 1 had symptomatic ischemic stroke, 1 had reperfusion syndrome with symptomatic intracranial hemorrhage and 1 had acute coronary syndrome. Three angiographic patterns after proximal balloon inflation were observed: complete contrast column stagnation in the ICA (38.7%), retrograde washout of the ICA from the intracranial circulation towards the external carotid artery (35.5%), antegrade washout of contrast medium towards the intracranial circulation (25.8%). The median procedure length was 40 minutes. New asymptomatic ischemic lesions were observed in 22.5% on DWI-MRI.

Conclusion The SFB technique allows fast and safe procedures in CAS. A favorable angiographic pattern after proximal balloon inflation was observed in 74.2% of cases.

Disclosure of interest The authors declare that they have no competing interest.

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¹ A list of all Radiation DOses in Neuro-thrombectomy (RADON) study participants is given. RADON (Radiation DOses in Neuro-thrombectomy) investigators.