

Demographic characteristics, MT complications, angiographic and clinical outcomes were evaluated separately for 'proximal' and 'distal' medium vessels occlusions (DMVO).

**Results** Between September 2017 and July 2021, 664 patients with a single MeVO were included. The Solitaire stent retriever was deployed in 86% 'proximal' and in 14% 'distal' medium vessels occlusions.

Overall (and for the DMVO), the successful reperfusion rate (mTICI 2b, 2c, 3) was 87% (94%). The first-pass effect was of 28% (44%). Control imaging at day one revealed symptomatic intracranial hemorrhage ( $\geq 4$  deterioration in NIHSS) in 9% (4%). At 3 months, the rate of favorable outcomes (mRS 0-2) was 56% (59%).

**Conclusion** Thrombectomy using the 3mm or 4mm Solitaire stent retrievers appears to be effective in primary MeVO across various centers and among different physicians with an acceptable safety profile, although the results of the various randomized studies currently under way are needed to assess its safety.

#### P016 SIMULATING EXTRA- AND INTRACRANIAL STENOSIS IN A 3D-PRINTED NEUROVASCULAR MODEL

Riccardo Tiberi, Jiahui Li, Joan Daniel Vargas, Magda Jablonska, Judith Cendrero, Pere Canals Canals, Marc Molina Van den Bosch, Alejandro Tomasello, Marc Ribo. *Vall d'Hebron Institut de Recerca, Barcelona, Spain*

10.1136/jnis-2024-ESMINT.53

**Introduction** Atherosclerotic disease has been described as an important underlying etiology of refractory occlusions. Despite being challenging thrombectomy procedures for

interventionalists, clinically accurate simulation flow models have not yet been developed.

**Aim of Study** To develop and test a 3D-printed stenosis model for research and training purposes.

**Methods** Stereolithography 3D-printing was used to create an elastic neurovascular model based on vascular anatomies extracted from anonymized CTA images. The phantom includes the aortic arch, bilateral carotid arteries, and a complete circle of Willis up to the M2-MCA, A2-ACA, and P2-PCA segments. To produce the stenotic segments, 3% sodium alginate solution was cast into stenosis molds featuring different geometries and then crosslinked in a 40% calcium chloride solution.

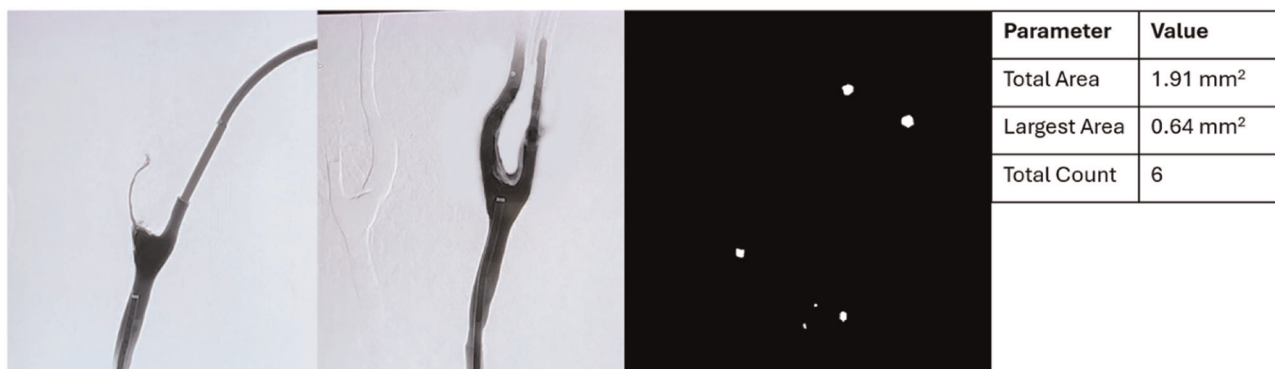
**Results** An 80% MCA-M1 stenosis (8mm-long segment with a luminal diameter of 0.5mm) and a 90% ICA stenosis (30mm-long segment with a luminal diameter of 0.7mm) were successfully implemented in the neurovascular flow model. The neurointerventionalist performing the simulation of the procedure deemed the angioplasty as intricate, consistent with the complexity often associated with severe stenosis. Angioplasties performed without a protection device resulted in visible emboli collected in a filter placed in the outflow of the model. Figure 1 and 2 represent intracranial and extracranial stenosis, respectively, with their corresponding postprocessed filter image after angioplasty treatment. Emboli parameters are included in both figures.

**Conclusion** A workflow for stenosis implementation inside a clinically accurate 3D model has been proposed as the first step toward educating future neurointerventionalists on performing endovascular treatment in severe stenosis.

**Disclosure of Interest** no.



Abstract P016 Figure 1



Abstract P016 Figure 2