Background Endovascular therapy is a highly effective treatment in previously-independent patients. In patients with severe comorbidities, the risks and benefits of endovascular treatment have to be balanced with the life expectancy and treatment risks. We explored the attitude of physicians towards endovascular treatment decision in patients with severe physical comorbidities.

Methods We conducted an international cross-sectional survey among 607 stroke physicians and interventionalists to understand their current practice and therapy decision-making in acute stroke. Participants were asked to give their treatment approach to 10 out of 22 randomly assigned case scenarios, 4 of them involving severe comorbidities (A: heart failure, COPD and renal insufficiency requiring dialysis, B: Stage IV metastatic prostate cancer, C: Non-metastatic prostate cancer treated with hormonal treatment, D: Rheumatoid arthritis requiring anti-TNF therapy related to the thrombectomy itself in our series has been very much associated to the disease, and the fact of overcoming other complications are relatively frequent in mechanical thrombectomy. Among other factors, this can be attributed to patient age, to the fact of needing a blind access to distal vessels, to the embolic material itself or to vascular atheromatous occlusion. Technical and angiographical incidences as well as complication or heart arrest in 6 (1%) of cases. Mortality directly attributable to the thrombectomy itself, three groups have been differentiated: Uncomplicated cases, those presenting complications, and those in which some incidence has been noted.

Results Out of 620 thrombectomies included in this review, no incidents have been recorded in 499 (80%) cases. A total of 135 incidences or complications have been noted (some patients had more than one). These were distributed as follows: 25 (4%) cases of haemorrhage or contrast extravasation, 18 (2.9%) cases of arterial dissection, 15 (2.4%) cases of puncture site hematoma, 1 patient (0.16%) presented a carotid-cavernous fistula, 5 (0.8%) cases of in-stent thrombosis, significant embolic events were noted in 43 (6.9%) patients, 24 (3.9%) related to the same territory of the thrombus location, and 19 (3%) extending to another territory. Severe vasospasm has been recorded in 7 (1.1%) cases, material related to the thrombectomy itself in our series has been recorded in less than 2% of cases.

Conclusion Technical and angiographical incidences as well as complications are relatively frequent in mechanical thrombectomy. Among other factors, this can be attributed to patient’s age, to the fact of needing a blind access to distal vessels, to the embolic material itself or to vascular atheromatous occlusion. Most of these complications, however, are transient or very much associated to the disease, and the fact of overcoming them is linked to the general state of the patient. Mortality related to the thrombectomy itself in our series has been recorded in less than 2% of cases.
DISRUPTING CLOT ADHESION TO THE VESSEL WALL IS AN ESSENTIAL STEP OF DIRECT THROMBUS ASPIRATION

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10.1136/neurintsurg-2019-SNIS.203

Introduction There are some misconceptions and misunderstandings regarding various implementations of what is generally called A Direct Aspiration First Pass Technique (ADAPT). Variants of the technique may result in significantly different results. We propose a modification of the ADAPT technique that promises faster procedures because of higher rates of single-pass recanalization.

Materials and methods Three years (2016–2018) of prospectively collected data on 147 consecutive thrombectomies by a single operator were reviewed retrospectively that included 68 ADAPT cases. The ratio of stent retriever cases versus ADAPT cases were compared. During this 3-year period a new catheter-handling technique has been implemented, that intends to mobilize the clot before retrieval.

Video animations suggest transcatheter aspiration of a Jello-like substance via the tubing into a canister. In real life that rarely happens. Instead, the goal is to have the embolus wedged, corked into the distal tip of the catheter with the help of vacuum, then to physically remove it along with the catheter, preferably in one piece. We recognized that vacuum alone is frequently insufficient to grab, mobilize and remove the embolus in one piece. Some extra effort, or force, is needed to disrupt the adhesion of the clot to the vessel wall it is wedged in. The pulling force is limited by the vacuum lock between the catheter tip and the embolus. However, a pushing force can be stronger, achieving two goals simultaneously: disrupt the clot adhesion, and help stronger corking of the embolus into the catheter tip where the vacuum will be able to hold it stronger during removal.

The guide sheath is advanced as high as possible to provide better support. The aspiration catheter is then advanced right in front of the embolus and vacuum is turned on. The catheter is then pushed forward, beyond the original position of the embolus, during continuous aspiration. If the catheter moves forward with ease, the embolus is almost certainly mobilized and locked. The catheter can be immediately removed.

The success or failure of this forward-push technique was correlated with ADAPT ONLY success versus cross-over to stent retriever, based on our fluoroscopic videos.

Results During the 3-year period the ratio of ADAPT ONLY cases grew from 35% to 61%. The ratio of ADAPT attempts, eventually crossed over to stent retriever, decreased from 46% to 18%. Forward-push technique was used in 4, 13 and 24 cases in the 3 subsequent years. None of them (0 of 41) required crossing over to stent retriever. During the same 3 years forward-push technique was not used or failed in 26, 20 and 20 cases respectively, of them 17 (65%), 12 (60%) and 10 (50%) required crossing over to stent retrievers.

Conclusion Adhesion disruption using the forward-push technique helps to mobilize the embolus and to prepare it for a more efficient, successful removal in a single piece. Further testing, including bench-top evaluation will be needed to optimize the technique.

Disclosures L. Miskolczi: None.