one intraprocedural complication which involved the simultaneous use of two Comaneci devices.

CONCLUSION: Our initial experience shows that the Comaneci device is a promising and reliable tool that can safely support coil remodeling of WNA.

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Predictors of Transradial Failure in Neurointerventional Procedures

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INTRODUCTION: Neurointerventional procedures have traditionally been performed via transfemoral access. However, according to interventional cardiology literature, transradial access can have decreased access site complications and possibly decreased mortality compared to transfemoral access. Reported limitations for wide adoption of transradial access in neurointerventional procedures include the learning curve.

METHODS: All neurointerventional procedures performed at a single institution with a transradial first approach were identified from Aug 2017 to January 2020. Demographic and clinical information were identified. Access site complications were recorded. Univariate analysis was performed to identify predictors of transradial failure. Covariates with \( P < .15 \) were inputted into a multivariate model with statistical significance set at \( P < .05 \).

RESULTS: A total of 350 transradial neurointerventional procedures were performed in 313 patients. The mean age was 68.2 years and 51% female. Most procedures (95%) used 6F radial sheaths for access. Biaxial system (e.g. microcatheter and microwire) was used in most procedures (61%). There were 81 aneurysm interventions, 73 embolization procedures, 69 angioplasty/stenting procedures, 116 mechanical thrombectomies including 93 involving the anterior circulation, and 11 vasospasm treatments. There was a remarkably high procedure completion rate with a transradial approach (96%, 327/350). Thirteen procedures were converted to transfemoral access (3.7%), 1 procedure converted to transfemoral conversion (P = 1.00), technical success was achieved in all 6 (100%) neurointerventions, there were no technical or access site complications, and no catheter exchanges. TF conversion was required in 1 (16.7%) case due to a tortuous aortic arch. There were no perioperative complications including myocardial infarction, stroke, and mortality. Procedure time was significantly higher in the RA group (85.0 min \(±\) 14.3, 69.9-100.0 vs. 58.9 \(±\) 18.1, 42.2-75.6, \( P = .0159 \)). There was no significant difference in baseline characteristics, fluoroscopy time (\( P = .1123 \)), contrast dose (\( P = .0977 \)), radiation exposure (\( P = .7199 \)), catheter exchanges (\( P = 1.00 \)), technical success (\( P = 1.00 \)), transfemoral conversion (\( P = 1.00 \)), technical (\( P = 1.00 \)) or access site complications (\( P = 1.00 \)), myocardial infarction (\( P = 1.00 \)), stroke (\( P = 1.00 \)), other complications (\( P = 1.00 \)), or mortality (\( P = 1.00 \)).

CONCLUSION: Our results suggest that RA TR CAS is feasible, safe, and effective. Additional neurovascular-specific engineering and software modifications are needed prior to complete remote control and widespread adoption. Remote intervention has important implications regarding patient access to life-saving neurointerventions for those at risk stroke and aneurysm rupture as well as operative precision. Future clinical investigations amongst larger cohorts are needed to demonstrate reliable performance.

INTRODUCTION: Innovations in robotic engineering may enhance the consistency and precision of surgical performances. Additionally, robotic advancements may enable operators to perform surgeries from remote location inherently increasing patient access to life saving procedures as well as limiting occupations hazards such as radiation exposure or infectious disease. To date robotic surgery systems have been specifically designed for other specialties such as interventional cardiology thus limiting the use of robotics in neurointerventions.

METHODS: We conducted a retrospective analysis of a prospectively maintained database and identified 13 consecutive patients who underwent TR CAS from July 2019 through February 2020. Patients were divided into 2 groups: RA (6 patients) and manual (7 patients).

RESULTS: Amongst 6 patients in the RA group with a mean age (years) of 70.0 \(±\) 7.2, technical success was achieved in all 6 (100%) cases. There were no technical or access site complications, and no catheter exchanges. TF conversion was not required in 1 (16.7%) case due to a tortuous aortic arch. There were no perioperative complications including myocardial infarction, stroke, and mortality. Procedure time was significantly higher in the RA group (85.0 min \(±\) 14.3, 69.9-100.0 vs. 58.9 \(±\) 18.1, 42.2-75.6, \( P = .0159 \)). There was no significant difference in baseline characteristics, fluoroscopy time (\( P = .1123 \)), contrast dose (\( P = .0977 \)), radiation exposure (\( P = .7199 \)), catheter exchanges (\( P = 1.00 \)), technical success (\( P = 1.00 \)), transfemoral conversion (\( P = 1.00 \)), technical (\( P = 1.00 \)) or access site complications (\( P = 1.00 \)), myocardial infarction (\( P = 1.00 \)), stroke (\( P = 1.00 \)), other complications (\( P = 1.00 \)), or mortality (\( P = 1.00 \)).

CONCLUSION: Our initial experience shows that the Comaneci device is a promising and reliable tool that can safely support coil remodeling of WNA.

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Comparison of Robotic Assisted Carotid Stenting and Manual Carotid Stenting Through the Transradial Approach

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CONCLUSION: Our results suggest that RA TR CAS is feasible, safe, and effective. Additional neurovascular-specific engineering and software modifications are needed prior to complete remote control and widespread adoption. Remote intervention has important implications regarding patient access to life-saving neurointerventions for conditions such as stroke and aneurysm rupture as well as operative precision. Future clinical investigations amongst larger cohorts are needed to demonstrate reliable performance.
stroke-subtypes, and imaging characteristics were all collected by retrospective chart review.

RESULTS: We identified 27 symptomatic and 14 non-symptomatic COVID-19 patients with AIS. There were no differences in baseline characteristics between the COVID-19 symptomatic and asymptomatic groups. The only difference in risk factors was that COVID-19 asymptomatic patients were more likely to be active smokers than COVID-19 symptomatic patients (P < .05). There were also no differences in stroke sub-type or stroke location between COVID-19 symptomatic and asymptomatic patients. Finally, there were no differences in mortality or functional outcomes between the two groups.

CONCLUSION: Our study suggests that there are no clear differences between the characteristics and outcomes of AIS in patients who are COVID-19 symptomatic vs asymptomatic. Larger studies are needed to determine if these similarities hold true. Additionally, better markers of systemic COVID-19 infection are needed to help delineate between COVID-19 and non-COVID-19 related strokes.

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**Posterior Circulation Tandem Occlusions: Classification and Techniques**

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INTRODUCTION: Posterior circulation tandem occlusions are poorly characterized in current literature. Data regarding endovascular approaches and outcomes in this patient subgroup is extremely limited.

METHODS: We conducted a retrospective analysis of a prospectively maintained database and identified 17 patients with posterior circulation tandem occlusions who underwent mechanical thrombectomy between 2014 and 2019.

RESULTS: Of 17 patients with posterior circulation tandem occlusion, the mean age was 55.76 ± 11.8 with 35.3% female. The mean NIHSS score on presentation was 17.2 ± 9.2. Tissue plasminogen activator was administered in 7 (41.2%) patients, stent-retrievers alone were used in 2 (11.8%), aspiration catheters alone were used in 2 (11.8%), a combination was used 12 (70.6%), and a self-expandable stent in 5 (29.4%). The mean number of device passes was 2.24 (11.8%), a combination was used 12 (70.6%), and a self-expandable activator was administered in 7 (41.2%) patients, stent-retrievers alone were used in 5 (29.4%) and iVADs from puncture to recanalization was 59.3 ± 26.6 minutes. Postprocedural symptomatic ICH occurred in 1 (5.9%) patient, periprocedural ICH/SAH occurred in 2 (11.8%), periprocedural distal emboli occurred in 0 (0%), periprocedural vessel dissection occurred in 1 (5.9%), and periprocedural vessel perforation occurred in 1 (5.9%) patient. TICI score > 2b was achieved in 13 (76.5%) patients. An improvement in NIHSS > 3 at discharge occurred in 10 (58.8%) patients, and good outcomes (mRS score < 2) occurred in 7 (41.2%). The mean length of stay was 11.6 ± 12.2 days, and the mortality rate was 41.2%.

CONCLUSION: Endovascular intervention with mechanical thrombectomy is safe and feasible in patients with posterior circulation tandem occlusions.

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**Size of Vertebral Artery Dissection, Not Location, as a Driver of Concomitant Stroke**

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INTRODUCTION: Vertebral artery dissections (VADs) are rare events that occasionally cause ischemic strokes, which can result in severe injury or death in otherwise healthy individuals. VADs can be classified by segment affected or location with respect to the dura (intracranial vs. extracranial). Some VADs are solely intracranial (iVAD) or solely extracranial (eVAD), while others cross the dura (ieVAD). Prior literature has shown that intracranial involvement of a VAD is a predictive factor for stroke.

METHODS: Demographic and clinical data on consecutive patients treated at our institution were collected. The modified Rankin Scale (mRS) was used as a metric of neurologic status. Parametric data were compared using Wilcoxon-sum rank tests and non-parametric data were compared using chi-square tests.

RESULTS: Patients with eiVADs were more likely to be older (47.84 vs. 42.1, P = .001) and were more often female than those with eVADs (and P = .02). Patients with eiVADs were more likely to present with occlusion on initial imaging and have a concomitant stroke at presentation compared to eVADs (P < .001, P < .001) and iVADs (P < .001, P < .001) respectively. Patients with eiVADs were less likely to present with pseudoaneurysm or aneurysm compared to eVADs and iVADs (P = .007, P < .001). eiVADs were more likely to be larger than eVADs or iVADs (P < .001, P < .001). VADs affecting V2 were associated with fracture and vertebral artery occlusion (P < .001, P < .0001). VADs with an intracranial component were more likely to occur in those who were older (P < .001) and had a higher CCI (P = .014).

CONCLUSION: This study makes several key new contributions. It suggests that the size of the VAD is more closely associated with the risk of vertebral artery occlusion and stroke at presentation, rather than intracranial location of the dissection. Second, VADs affecting V2 are more likely to present with an associated fracture. Third, VADs affecting intracranial segments are likely to arise in those who are older and have increased comorbidities.

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**Significance of Carotid Canal Plasticity and the RNF213 p.R4810K Mutation in Distinguishing Moyamoya Disease From Middle Cerebral Artery Disease**

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INTRODUCTION: Difference between moyamoya disease (MMD) and middle cerebral artery disease (MCAD) is not necessarily clear.

METHODS: Eighty-five MMD patients, 27 MCAD patients and 79 controls were recruited. Outer diameter of carotid arteries were assessed by the carotid canal diameter (CCD) in thin slice CT and/or direct measurement by high resolution MRI. The p.R4810K genotyping was