pressure management following recanalization may play a role in improving clinical outcomes for these patients. Hence, we believe that there is a need for future prospective trials addressing this issue.

Disclosures S. Mannava: None. **A. Garg:** None.

E-015 EXTRA-FEMORAL ACCESS FOR MECHANICAL THROMBECTOMY IN ACUTE ISCHEMIC STROKE

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Objective To demonstrate the safety and effectiveness of extra-femoral endovascular access for mechanical thrombectomy for acute ischemic stroke (AIS) in patients whose vascular anatomy precludes safe or maneuverable trans-femoral access.

Methods We present a case series of seven patients treated by four separate neurointerventionalists utilizing either trans-radial or trans-cervical carotid access for treatment of acute ischemic stroke. All cases, except for one, were performed at Montefiore Medical Center, Bronx NY.

Results All seven patients presented with AIS symptoms and initial NCCT revealed no contraindications to proceeding for mechanical thrombectomy. Patients ranged from 25 to 88 years of age. There were two cases of basilar artery occlusion, two right middle cerebral artery (MCA) occlusions, two left MCA occlusions and one patient with a left carotid terminus occlusion. Femoral access was attempted in all but two patients, and sheath placement was successful in these five cases. In two of these five cases however, femoral catheterization was aborted after sheath placement due to identification of impassable femoral or aortic vascular anatomy; a prior fem-fem bypass in one and bilateral common femoral artery occlusions in another. The most common reason for aborting femoral access for thrombectomy was vessel tortuosity impeding catheterization of intracranial segments of either anterior or posterior circulation vessels. Four patients were treated via radial artery access and three patients were treated via cervical carotid access. Recanalization was achieved in six out of the seven patients. In five of the patients a TICI 2 B/3 recanalization score was achieved, and in one patient a TICI 2 A. There were no immediate procedure related complications observed. Two patients progressed to hemorrhagic conversion of their prior infarcts. No new acute infarcts were noted in any patient. Two patients expired several days post-thrombectomy due to cardiopulmonary arrest unrelated to intervention.

Conclusions While trans-femoral access remains the mainstay for endovascular treatment of AIS, risk of vascular injury and delay of recanalization should alert the interventionalist to consider extra-femoral approaches. This case series demonstrates the safety and success possible with trans-radial or trans-cervical carotid catheterization in the setting of mechanical thrombectomy for AIS. With these findings, we feel strongly that further standardization of these techniques, guidelines for the need of extra-femoral access prospectively, and development of devices tailored for trans-radial and trans-cervical carotid approaches are indispensable to see significant advancements in the field of interventional stroke treatment.

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E-016 AN ATHEROSCLEROTIC PLAQUE PHANTOM FOR MEDICAL IMAGING

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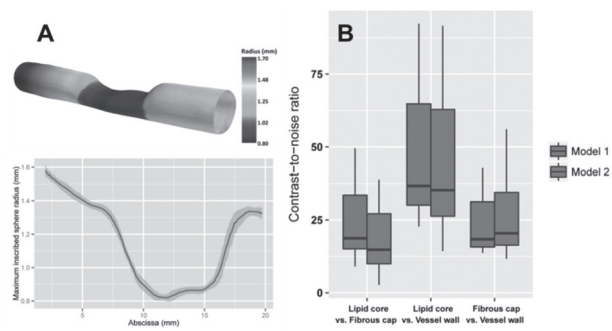
Introduction Intracranial atherosclerotic disease (ICAD) is a common cause of ischemic stroke, but little is known about how the characteristics of intracranial plaques are related to stroke risk. Recently, studies have attempted to correlate ICAD lesions with high-resolution MRI (HR MRI) vessel wall findings, an important emerging technology, to identify various plaque components. However, long-term, multi-center clinical studies are needed to show if HR MRI plaque components contribute to stroke risk. The goal of this study is to build an ICAD phantom that incorporates materials mimicking a stenotic vessel and plaque components (fibrous cap and lipid core) for standardizing MRI pulse sequences across multiple imaging platforms necessary for development of multi-center ICAD HR MRI networks.

Materials and methods HRMRI data from a patient with a basilar artery plaque was used to acquire the detailed structure of the stenotic artery and plaque components. A virtual core-shell mold of the basilar artery plaque was 3D printed to form a physical object. During 3D printing, the volume and shape of each plaque component were defined in the model. Polyvinyl alcohol hydrogel was infused into the core-shell mold to form the stenotic artery. A fibrous cap was constructed using a mixture of agarose, carrageenan, sodium azide, and water. The lipid core was mimicked using vegetable fat, sodium azide, and carrageenan mixture. Two phantoms were manufactured and scanned using various 3 T MRI systems across 7 different sites for image quality assessment. Quantitative comparisons of the scan results for both structural dimensions of plaque components (e.g. lumen diameter) and contrast-to-noise ratio (CNR) were based on the thin cross-sectional slices from 3D T2-weighted TSE/FSE sequences.



Abstract E-016 Figure 1