findings are similar to those seen in more common pathologies making it a challenging diagnosis if the entity is not a consideration in the initial evaluation. RCVS presentation and initial imaging findings may mimic a ruptured aneurysm, stroke, migraine and posterior reversible encephalopathy syndrome, among others. Our aim is to describe the entity of RCVS and demonstrate the common and uncommon imaging findings seen on CT, MRI, CT angiography, with emphasis on conventional digital subtraction arteriogram pre and post endovascular treatment.

Approach/methods A multimodality pictorial review of cases from our institution is presented, including non-contrast head CT, CT angiogram, MRI, MR angiogram and conventional digital subtraction arteriogram (DSA). Diagnosis of RCVS was confirmed by imaging demonstration of reversibility of arterial constriction on follow-up imaging or after intra-arterial therapy.

Findings/discussion We present indirect findings on non-invasive imaging, such as transient cerebral edema, convexal subarachnoid hemorrhage, intraparenchymal hemorrhage and cerebral. Direct signs of single or multivessel arterial vasoconstriction are seen on CTA, MRA and confirmed on DSA. Reversibility of the vasoconstriction is demonstrated after intra-arterial administration of calcium channel blocker. Conditions such as diffuse atherosclerotic arterial narrowing, vasculitis, posterior reversible encephalopathy, cerebral edema secondary to venous congestion and vasospasm secondary to aneurysmal subarachnoid hemorrhage were among the pathologies considered prior to a definitive diagnosis of RCVS.

Summary/conclusion Familiarity with the imaging findings of RCVS is of critical importance to direct appropriate and timely clinical management. Atypical subarachnoid hemorrhage, unexplained cerebral edema and hemorrhage, as well as single or multivessel diffuse narrowing with a relatively normal appearing brain should raise suspicion of RCVS. Suspicion can be confirmed by demonstrating the reversibility of vasoconstrictions after intra-arterial administration of calcium channel blocker or at follow-up imaging.

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E-044 STENT RETRIEVER THROMBECTOMY AND LOCAL ASPIRATION WITH A NAVIGABLE AND FLEXIBLE SECOND GENERATION SUPPORT CATHETER FOR ACUTE ISCHEMIC STROKE: THE "SOL-ARC" TECHNIQUE

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Multiple recent randomized controlled trials have proven the benefit of mechanical thrombectomy using stent retrievers for emergent large vessel occlusion (ELVO).[1–5] Techniques currently used for endovascular treatment of stroke employ either direct aspiration, stent retriever thrombectomy or a combination of both. When stent retrievers are used, temporary flow arrest with an extracranial balloon guide catheter or assisted local aspiration with a large bore intracranial suction catheter is recommended. This allows for more complete recanalization and prevents embolization to previously uninvolved territories. Recent advancements in large bore intracranial suction catheter technology have made it easier to utilize coaxial stent retriever thrombectomy assisted by local aspiration. At our high-volume comprehensive stroke center, we have found the second generation large bore intracranial Arc support catheter (ev3 Neurovascular, Irvine, CA) to be extremely effective when used in combination with the Solitaire stent retriever (ev3 Neurovascular, Irvine, CA). We have found the Arc support catheter to be much more navigable, less prone to kinking and easier to deliver into the M1 segment (without causing spasm) than the first generation local aspiration catheters. Additionally, the Arc support catheter is less costly than the currently available suction catheters. The Sol-Arc technique begins with placement of a stent retriever device across the embolic occlusion by deployment though a 021 or 027 microcatheter. This microcatheter is placed coaxially through the Arc support catheter which is positioned just proximal to the embolus. After waiting 5 minutes, the stent retriever is pulled inside the Arc support catheter which is simultaneously aspirated. Subsequently, the Arc support catheter is removed while aspirating the guiding sheath in the neck. This technique should allow for faster, safer and more successful stent retriever thrombectomy when used in conjunction with local aspiration.

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E-045 PRODUCT COST AND UTILIZATION IN MECHANICAL THROMBECTOMY: A COMPARISON OF TECHNIQUES

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Introduction/purpose Interventional stroke management has seen a period of explosive growth in the wake of recent trials demonstrating improved outcomes in patients who undergo timely and appropriate procedural management. The two most common interventional techniques involve the use of stent retrieval devices and suction aspiration. While clear clinical benefit to the patient has been seen in the use of these devices, it is not altogether clear the financial implications to the patient and/or his or her insurer for the use of these devices. In a period of heightened sensitivity to healthcare costs, it is reasonable to consider the material cost to the patient and healthcare system for utilization of these new techniques. The goal of our study is to determine the difference, if any, in cost to the healthcare system in performance of interventional thrombectomy by stent retrieval or suction aspiration.

Materials and methods We examined data for interventional stroke management cases performed for M1 segment occlusions at Duke University Medical Center from the period of January 2014 to January 2016. We analyzed the amount billed to the patient for products utilized during these cases. Cases were subdivided into those only utilizing stent retrieval devices (Solitaire^{TM}; Covidien, Dublin, Ireland) and those only

utilizing suction aspiration devices (Penumbra®, Alameda, CA). Total cost to patient for each case was calculated. Mean cost and standard deviation was calculated for each technique and compared using Student's t-test.

Results The total product cost to the patient for interventional management of vascular occlusions in a selected group of patients is given in the table.

Abstract E-045 Table 1

Suction aspiration		Stent retriever	
Vessel	**Cost (US Dollars)**	**Vessel**	**Cost (US Dollars)**
Left M1	29567.74	Left M1	57969.07
Left M1	72196.56	Left M1	57939.89
Right M1	30653.12	Right M1	63189.56
Right M1	69704.34	Right M1	64366.48
Right M1	29668.39	Right M1	58068.76
Mean	46358.03	**Mean**	60071.37
Standard Deviation	22470.99	**Standard Deviation**	2846.91
P-value	0.14		

Conclusion A cursory evaluation of the data from this selected subset of patients suggests that there may be no significant difference in overall product cost to the patient for utilization of these two techniques for performance of mechanical thrombectomy. However, upon closer inspection of the data, the cost for aspiration thrombectomy appears to vary quite widely across the subset, with a standard deviation of $22470.99, while the standard deviation for stent retrieval is $2846.91. It is difficult to determine whether this trend would be borne out in a larger sample set; however, it may suggest that product utilization in aspiration thrombectomy may vary considerably among operators and in varying situations while product utilization in stent retrieval thrombectomy may be more constant. Further exploration of this trend with larger patient subsets is warranted.

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E-046 PROCEDURAL EFFICIENCY OF THE STREAMLINED LAUNCHPAD STROKE ADMISSION PARADIGM – A SINGLE CENTER EXPERIENCE

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Introduction Time remains a crucial factor in stroke progression. Rapid and complete revascularization has been well correlated with favorable clinical outcome in patients with acute ischemic stroke secondary to large vessel occlusion. To mitigate the deleterious effects due to treatment delay, an initiative has been implemented to shorten the time for patient processing, expediting LVO patients for immediate intervention. The Launchpad protocol was established to ensure admitting stroke patients are triaged quickly and accurately identified in order to reduce time from arrival to intervention, and overall to revascularization. Herein, we assess the efficacy of the Launchpad paradigm in triaging presenting stroke patients.

Methods A retrospective review of the stroke database was conducted between September 2014 and January 2016, 3 months prior and 13 months post Launchpad implementation. Prior to Launchpad, patients presenting with stroke were triaged through the traditional Emergency Department (ED) pathway. Through Launchpad, incoming patients bypass the traditional ED pathway and are taken straight for a CT scan by a dedicated stroke team. A CT scan positive for LVO and penumbral tissues will permit patients to continue through the Launchpad pathway for further evaluation and subsequent intervention. Time differences during patient triage before and after Launchpad initiation are assessed to determine the efficiency of this paradigm.

Results In total, 764 patients were identified in the retrospective analysis, 137 were admitted prior, and 627 were admitted post Launchpad implementation. In the pre-Launchpad cohort, the median time from admission to CT imaging was 20 minutes. Patients under the Launchpad paradigm showed a reduction in time from presentation to imaging of 5 minutes ($p = 0.0004$). An increase in efficiency by roughly 25% to CT was observed following Launchpad implementation.

Conclusion The streamlined stroke activation Launchpad protocol demonstrated an increased speed in patient admission and significant reduction in time from presentation to CT scan. This significant improvement in processing time allowed for an increased number of patients to meet the therapeutic window for IV tPA eligibility. A prospective trial will strengthen the current finding and support the implementation of this paradigm amongst other stroke centers.

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E-047 DISTAL EMBOLI FOLLOWING ERIC THROMBECTOMY

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Introduction The use of clot retrievers during mechanical endovascular treatment of acute ischemic stroke can cause clot fragmentation with the release of distal emboli. It was our hypothesis that the risk of embolic shower may potentially be altered using the Embolus Retriever with Interlinked Cages (ERIC®) thrombectomy system. The objective of this study was the characterization of distal emboli generated during ERIC® thrombectomy device use as a function of access approach.

Materials and methods A hard, inelastic clot was prepared and injected into an anatomically correct circle of Willis (CoW) replica to form a middle cerebral artery occlusion. Thrombectomy was conducted per the manufacturer's instructions in four different groups (n = 10), each exploring different variables. In group 1, thrombectomy was performed using the ERIC® through an 8 F balloon guide catheter (BGC) positioned at the cervical ICA (ERIC®+BGC). In group 2, thrombectomy was performed using the ERIC® in conjunction with thromboaspiration via a 6 F Sofia intermediate catheter at the origin of the MCA (ERIC®+SOFIA). In group 3, thrombectomy was performed using the Solitaire in conjunction with thromboaspiration via a 6 F Sofia intermediate catheter at the origin of the MCA (Solitaire+SOFIA). Group 4 used the same setup as group 2 with the addition of proximal ICA flow arrest using a BGC during clot removal (ERIC®+SOFIA