Methods A 62 year old woman with a history of endometrial cancer and radiation enteritis presented to the emergency department with two days of nausea, vomiting, and increasing abdominal pain. A CT scan of the abdomen with contrast revealed thrombosis of the proximal superior mesenteric artery (SMA) not seen on an abdominal CT performed two months previously (not shown). The patient was placed on a heparin drip and seen emergently by a vascular surgeon who performed a selective SMA angiogram confirming that the main trunk of the SMA was occluded (Figure 1A). Recanalization of the SMA was attempted with both balloon angioplasty and intra-arterial tPA. Salvage treatment using the Solitaire device was then attempted as a joint procedure between vascular surgery and neurosurgery.

A 7 F Cook Shuttle sheath (Cook Medical) was placed into the SMA. A Prowler Select Plus microcatheter (Codman) was then advanced through the clot and into a distal SMA branch over a 0.014" Synchro-2 Soft (Stryker Neurovascular) wire. After performing a microcatheter run to make sure that the distal end of the microcatheter was beyond the clot, a 6 mm x 30 mm Solitaire clot retrieval device (Medtronic) was deployed across the lesion. The Solitaire device was left in place for 5 minutes and then pulled back into the Cook Shuttle sheath. Continuous suction was applied to the sheath during clot retrieval using a 60 cc syringe. A post-thrombectomy angiogram showed full recanalization of the proximal SMA and right main trunk and partial recanalization of the left trunk (Figure 1B).

Results The patient tolerated the procedure well. Her abdominal pain decreased over the next 48 hours and she was able to resume a normal diet. She was started on Coumadin, but later transitioned to aspirin due to difficulties in maintaining a consistent INR.

Conclusions The techniques and equipment used for acute stroke intervention may be suitable for acute recanalization of peripheral vessels, under the right circumstances. As with many surgical interventions, a multidisciplinary approach may at times yield a novel and effective strategy for a difficult clinical problem.

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P-014 A SIX-SIGMA APPROACH FOR DECREASING DOOR TO NEEDLE TIMES IN ENDOVASCULAR STROKE THERAPY

¹A Rai, ²M Smith, ¹S Boo, ¹A Tarabishy, ³G Hobbs, ¹J Carpenter. ¹Interventional Neuroradiology, West Virginia University, Morgantown, WV; ²Neurology, West Virginia University, Morgantown, WV; ³Biostatistics, West Virginia University, Morgantown, WV

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Background and purpose Delays in delivering endovascular stroke therapy adversely impact outcomes. Time-sensitive treatments such as stroke interventions benefit from methodically developed protocols. Clearly defined roles in these protocols allow for parallel processing of tasks resulting in consistent delivery of care. The paper presents the outcomes of a quality-improvement (QI) process directed at reducing stroke treatment times in a tertiary level academic medical center.

Methods A six-sigma based QI-process was developed over a 3 month period. After an initial analysis, procedures were implemented and fine-tuned to identify and address rate-limiting steps in the endovascular care pathway. Prospectively recorded treatment times were then compared in two groups of patients who were treated "Before" (n = 64) or "After" (n = 30) the QI-process. Three time intervals were measured: ER-arrival to CT-scan (ER-CT), CT-scan to interventional lab (CT-Lab) and Interventional lab arrival to groin puncture (Lab-puncture). The ER-CT time was 40(±29)-minutes in the "Before" and 26(±15)-minutes in the "After" group (p = 0.008). The CT-Lab time was 87(±47)-minutes in the "Before" and 51(±33)-minutes in the "After" group (p = 0.0002). The Lab-puncture time was 24(±11)-minutes in the "Before" and 15(±4)-minutes in the "After" group (p < 0.0001). The overall ER-arrival to groin-puncture time was reduced from 2 hours, 31 minutes (±51 minutes) in the "Before" to 1 hour, 33 minutes (±37 minutes) in the "After" group, (p < 0.0001). The improved times were observed for both during and off-hours interventions.

Conclusion A protocol driven process can significantly improve efficiency of care in the time-sensitive stroke interventions.

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Abstract P-013 Figure 1