

sound measurements between the two patient-specific models for each sensor.

Results Both the Phonocatheter and stethoscope were able to record transluminal and intravascular sounds generated from stenosis respectively. The Phonocatheter was in good agreement with the stethoscope demonstrating that the peak-to-rms (mean \pm standard deviation) sound amplitude was significantly louder ($p < 0.0001$) in the TS stenosis region in pre-lumbar puncture model (Stethoscope: 9.03 ± 1.61 ; Phonocatheter: 6.62 ± 1.55) compared to the TS region in post-lumbar puncture model (Stethoscope: 4.20 ± 0.86 ; Phonocatheter: 3.62 ± 0.88) (figures 1B and 1C).

Conclusion We have developed a prototype of microphone enabled catheter that can measure sound in patient-specific PT flow models, and potentially measure sounds quantitatively in PT patients.

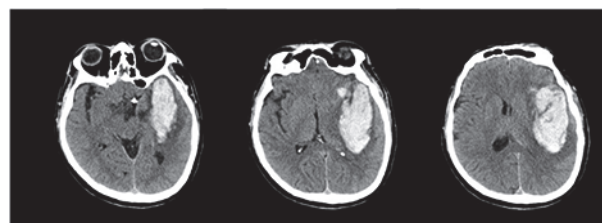
Disclosures M. Amans: 1; C; NIH R01 HL149124-01A1. K. Valluru: None. S. Kondapavulur: None. B. Kilbride: None. H. Haraldsson: None. W. Smith: None. K. Meisel: None. D. Saloner: None.

E-133 DELAYED INTRACEREBRAL HEMORRHAGE AFTER WINGSPAN STENTING FOR INTRACRANIAL INTERNAL CAROTID ARTERY STENOSIS: A CASE REPORT

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Acute ischemic infarction from intracranial atherosclerotic disease accounts for approximately 8%-10% of strokes in the United States each year. At a recent large prospective randomized trial, the efficacy and safety of wingspan stent for intracranial atherosclerotic stenosis was verified when it was used by experienced interventionalist with proper patient selection. Among several procedural complications, delayed hemorrhage is rarely reported. A 45-year-old man presented with a history of dysarthria and recurrent episodes of transient right hemiparesis. The patient was newly found atrial fibrillation and started warfarin medication. Cerebral catheter angiography and single-photon emission computed tomography (SPECT) scan with acetazolamide challenge confirmed moderate (60%) left carotid artery stenosis and symmetrical findings of both hemispheres. Endovascular Wingspan



Abstract E-133 Figure 2

stenting of the left communicating segment of internal cerebral artery was performed uneventfully. 22 days after treatment the patient presented with sudden headache and aphasia and CT scan showed intracerebral hemorrhage on left temporal lobe. Due to further rapid clinical deterioration, surgical removal of hematoma was required. The patient's poor neurological outcome did not improve during the 2-year follow-up period. This case report illustrates a severe delayed intracerebral hemorrhage following intracranial stenting of the internal carotid artery. The mechanism of delayed hemorrhage is unclear. Currently, 4 mechanisms have been discussed as potential causes of remote ICH after uneventful EVT. These mechanisms are dual antiplatelet therapy, hemorrhagic transformation of clinically silent small periprocedural embolic infarcts, intraprocedural foreign body emboli, and flow modification. This complication should not be neglected because of its poor clinical outcomes.

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E-134 TRANS-ULNAR ACCESS FOR NEUROINTERVENTION: PUSHING THE BOUNDARIES OF ARTERIAL ACCESS

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Background Transradial access has been gaining popularity in neurointerventional surgery. Failure to obtain radial access may lead neurointerventionists to convert to a transfemoral approach, which is associated with a higher complication rate than the radial approach. Ulnar access, however, provides a similar safety profile to radial access and permits neurointerventionists to work in the same hand without having to convert to a femoral approach. In this study, we evaluate the feasibility of using transulnar access to perform diagnostic cerebral angiograms and various neurointerventional procedures.

Methods Consecutive patients who underwent transulnar diagnostic angiogram or neurointerventional procedures were included in the study over a period of 12 months. Data on demographics, procedure indication, devices, technique and complications recorded. A descriptive analysis was carried out.

Results Transulnar access was utilized in 18 patients over the study period. Mean age was 71.6 ± 6.8 years; 10 (55.5%) patients were male. Fifteen diagnostic angiograms and 3 neurointerventions (1 left middle meningeal artery, 1 right carotid artery stenting, 1 left carotid artery stenting) were performed. All the procedures were performed using a right sided ulnar artery with ultrasound guidance. The indications for ulnar access included a feeble radial artery pulse ($n=17$), or radial