

Successful cervical lesion crossing was achieved in 100% using the Tenzing-Dotter delivery technique. Mean time from groin puncture to successful Tenzing-Dotter delivery was 11 minutes, and the mean time from groin puncture to device delivery to the intracranial occlusion was 15 minutes. TICI 2B or greater reperfusion was achieved in 100%, with a mean time to best TICI of 21 minutes. Mean cervical ICA stenosis improved from 97% to 67%. No symptomatic intracranial hemorrhage or cervical dissections were noted.

Conclusion The Tenzing-Dotter technique may be promising for safe and fast access for TLVO thrombectomy.

2.2. Imaging

P129 MACHINE LEARNING IMAGING-BASED DIFFERENTIATION OF CLOT COMPOSITION IN ACUTE ISCHEMIC STROKE AND ITS POTENTIAL USE IN DECISION-MAKING IN MECHANICAL THROMBECTOMY

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Introduction Clot composition is variable and may influence the efficacy of mechanical thrombectomy (MT) devices for endovascular treatment of acute ischemic stroke (AIS) from large or medium vessel occlusions. Predictive methods may help the neurointerventionalist in appropriate device selection.

Aim of Study To explore the potential of machine learning to accurately determine clot histological characteristics.

Methods Data from non-contrast CT (NCCT) and CT angiography (CTA) were collected from 10 AIS patients with middle cerebral artery occlusions. Automated clot analysis software (Nicolab, Amsterdam, the Netherlands) was used to evaluate clot perviousness by analyzing clot attenuation increase (CAI) using each patient's NCCT and CTA datasets. Predetermined CAI thresholds were applied to classify clots as impervious, semi-pervious, and pervious. Histological analysis was done on the clot specimens and quantified for correlation with clot perviousness.

Results The software categorized the clot samples as follows: 50% were semi-pervious, 30% were impervious, and 20% were pervious. Statistical analyses did not reveal a significant correlation between histological clot composition and software-determined perviousness. However, fibrin-dominant (>90%) clots were observed in both impervious and pervious groups. Conversely, semi-pervious clots exhibited mixed and red blood cell content, ranging from 24.5% to 51.9%. Notably, an impervious sample was identified to contain mature fibrin, highlighting potential variability within clot composition.

Conclusion Despite the absence of significant correlations, a trend emerged, indicating that clots with extreme perviousness characteristics may be predominantly composed of a single component. Our findings suggest there may be a potential for machine learning to optimize MT.

Disclosure of Interest yes This study was sponsored by Nicolab.

2.1. Logistics

P130 SHORTENING DOOR-TO-PUNCTURE TIME (DPT) FOR MECHANICAL THROMBECTOMY (MT) IN ISCHEMIC STROKE IN SINGAPORE'S LARGEST HOSPITAL

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Introduction Mechanical Thrombectomy (MT) is now the gold standard for acute large vessel occlusion ischemic stroke. Actualizing MT for eligible patients is a time-sensitive, multi-disciplinary, multi-step endeavor. As 'time is brain', we embarked on a multi-disciplinary quality improvement project to reduce door-to-puncture time (DPT) for MT.

Aim of Study Identify and improve processes along the patient journey from door to puncture to reduce DPT for MT eligible patients from a median of 130 minutes to 80 minutes, in line with American Stroke Association targets.

Methods The project was conducted in 2 broad phases: current state analysis, followed by solution development and implementation. Various parts of MT were identified. Existing literature was studied, and innovative ideas were generated for applicable solutions on each part. These solutions were put through Plan, Do, Study, Act (PDSA) iterative cycles. Solutions were piloted across 4 PDSA cycles. Multiple interventions were applied along the PDSA cycles, including concepts of parallel processing, standardization and training, active feedback to nudge behavior, push systems, technological tools, and elimination of steps.

Results A total of 88 cases between June 2021 and January 2023 were included in analysis. Following the 4th PDSA cycle, median DPT reduced by 36.5% from 130 mins to 82.5 mins.

Conclusion MT is a complex process. Analysis of the process from multiple angles and intervening on multiple small aspects can add up to significant improvement in DPT.

Disclosure of Interest no.

P131 COMPARING VALIDATED STROKE SCREENING SCALES FOR IDENTIFYING LARGE AND MEDIUM VESSEL OCCLUSIONS: A PROSPECTIVE, OBSERVATIONAL COHORT STUDY

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Introduction Pre-hospital identification of large vessel occlusions (AIS-LVO) has proven to be successful in interhospital transfers and triaging.

Aim of Study This study compares 8 stroke screening scales to detect anterior and posterior circulation AIS-LVO and AIS secondary to medium vessel occlusions (AIS-MeVO).

Methods We analyzed stroke alerts at a stroke center from January 2022 to December 2023. We prospectively applied 8 stroke screening scales (BE-FAST, LAMS, PASS, FAST-ED, EMS RACE, 3-ISS, VAN, and NIHSS) to each stroke alert in the ED and inpatient settings. The final diagnosis for each was classified as AIS-LVO or AIS-MeVO, AIS without LVO or MeVO, intracranial hemorrhage, TIA, and stroke mimic.

Results Of 221 patients where stroke screening scales were performed, 199 patients were analyzed to compare performance of 8 scales in detection of anterior circulation AIS-LVO and AIS-MeVO. The mean age was 63.8 ± 15.2 years, 62.3% were female (n=124), and 84.4% were Black (n=168). The LAMS scale had a strong performance (AUC: 0.750 [95% CI: 0.668-0.831]), followed by the FAST-ED (AUC: 0.736 [95% CI: 0.649-0.822]), and VAN (AUC: 0.735 [95% CI: 0.651-0.818]) scales. Cutoff points selected from coordinates of the ROC curves were 3, 3, and a positive VAN, respectively.

Conclusion This is the first, prospective cohort study comparing the discrimination of 8 different screening scales among stroke alerts in the ED and inpatient settings for the detection of both AIS-LVO and AIS-MeVO. We found LAMS to be the most discriminative for detection of AIS-LVO and AIS-MeVO, followed by FAST-ED and VAN.

2.2. Imaging

P132 PROGNOSTIC VALUE OF THROMBUS LOCATION AND COLLATERAL STATUS IN BASILAR ARTERY OCCLUSION: SINGLE-CENTRE RETROSPECTIVE COHORT STUDY

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Introduction Endovascular Therapy (EVT) is an effective treatment for Basilar Artery Occlusion (BAO), but selecting the right patients can be challenging. Therefore, a prognostic model such as the Basilar Artery on Computed Tomography Angiography (BATMAN) score may help predict outcomes and guide patient selection.

Aim of Study To assess the prognostic value of BATMAN score in predicting good functional status for BAO patients treated with EVT.

Methods We conducted a single-centre retrospective cohort study and analysed data from all consecutive patients who underwent EVT for BAO between January 2015 and September 2023. Patients were divided into 2 groups according to BATMAN score: good BATMAN score (gBS) group (values 7-10) and poor BATMAN score (pBS) group (0-6). Primary outcome was good functional status classified as modified Rankin Scale (mRS) score 0-3. Safety outcomes were symptomatic intracranial haemorrhage (sICH) and 90day mortality.

Results 55 patients were included in the analysis (23 gBS/32 pBS). Baseline characteristics did not differ significantly

between groups. Good functional status occurred in 14 patients (61%) in gBS group and in 9 patients (28%) in pBS group (OR, 3.98; 95% CI, 1.27 to 12.41; P=0.026). sICH occurred in 1 patient (4%) in gBS group and in 3 patients (9%) in pBS group (RR, 0.46; 95% CI, 0.051 to 4.18; P=0.479). Mortality at 90 days was 26% in gBS group and 69% in pBS group (RR, 0.38; 95% CI, 0.18 to 0.78, P=0.0018).

Conclusion BATMAN score seems to be a reliable prognostic tool for patients with BAO undergoing EVT.

Disclosure of Interest no.

P133 MAIN CLINICAL VARIABLES THAT IMPACT LESION CHARACTERIZATION AND OUTCOME IN ISCHEMIC STROKE IMAGING

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Introduction Stroke remains a leading cause of worldwide morbidity and mortality. Understanding the relation between its clinical and imaging characteristics is crucial for effective management.

Aim of Study To evaluate how time since stroke onset and clinical variables affect the divergence in stroke size segmentation between non-contrast cranial computed tomography (NCCT) and apparent diffusion coefficient(ADC) imaging, using a self-developed artificial intelligence(AI) software in patients with acute ischemic anterior circulation stroke within 24 hours from symptom onset.

Methods An anonymized cohort of patients diagnosed with ischemic stroke, in whom brain magnetic resonance imaging (MRI), diffusion-weighted imaging(DWI), ADC, and NCCT were performed, with manual segmentation carried out by two neuro-interventional radiologists using the MRICroGL software to outline the ischemic area in NCCT and MRI. Divergence was established as a lesion visible on MRI but not on NCCT.

Results Seventy-seven patients with a median age of 77 years (IQR:64-85) were included, with a predominance of female sex(52%). None had a previous history of ischemic stroke, and 69% of the patients had comorbidities, arterial hypertension(62%) being the most prevalent. Lower stroke size volume in each method showed higher volume between the first 5 hours since stroke onset. Spearman's Rho correlations showed significant association: infarction size in both modalities (0.402), NIHSS at admission and mRS at discharge(0.432), and NCCT infarction volume and segmentation divergence(-0.884).

Conclusion Stroke size and progression time are crucial for enhancing diagnostic accuracy in AI training. NCCT smaller lesions showed more divergence with MRI. Beyond 5 hours from stroke onset, we found no significant difference between both images.