identify the strategies to prevent post-thrombectomy delayed PH among patients with low LDL levels.

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E-114 MIDDLE MENINGEAL ARTERY FISTULA: A SYSTEMATIC REVIEW AND POOLED COHORT ANALYSIS

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Introduction Dural arteriovenous fistulas (dAVF) consists of the development of acquired abnormal shunts between a main arterial feeder and draining veins. Amongst this category, middle meningeal artery (MMA) fistula rarely presents as a complication of head trauma or iatrogenic procedures such as endovascular embolization and surgery.

Objective This study aims to perform a systematic review of the clinical predictor for acquired MMA fistula postoperative course.

Methods We searched in PubMed, Embase, Scopus, Web of Science, and Google Scholar until September 1st, 2022. The risk of bias (RoB) and quality of the studies were assessed using the Joanna Briggs Institute (JBI) assessment tool for case series and case reports. Primary outcomes were overall obliteration rate and mortality, while secondary outcomes were post-procedural complications rate. A logistic multivariate regression was performed to identify predictors of overall obliteration, mortality and postoperative complications.

Results A total of 57 studies with 74 pooled patients were included in the analysis. Predominant gender, type of population and mean age were male (55.07%), adult (59.46%) and 48.59 ± 20.99 years old, respectively. Three main fistula origin events were reported: Endovascular embolization (9.46%), surgery (12.16%) and head trauma (74.32%). The mean time to fistula diagnosis was 69.87 ± 291.87 days. The most frequent defined lesion was fistula with MMA as the only feeder (96.77%), on the left side (58.11%), with a class I, III or IIII (14.86%) venous drainage classification. The JBI risk of bias assessment revealed patient's history and site demographic information reporting as the most neglected components in case reports and case series, respectively .Reported overall obliteration rate were high (89.19%) using endovascular (95.56%), surgical (64.29%) or conservative treatment (93.33%). After running the logistic regression, only statistically clinical predictors of overall obliteration were identified: male gender (OR = 9.5 (3.01 -23.95), p < 0.001), conservative treatment (OR = 14 (1.84 - 106.46), p = 0.011), MMA as the only feeder (OR = 11 (4.4 - 27.48), p < 0.001) and class I venous drainage (OR = 10 (1.28 - 78.12), p = 0.028).

Conclusion Literature oddly reports case series and case reports of acquired MMA fistula, doing so with an inaccurate methodological process. Most frequently occurring after head untreated head trauma. However, low mortality and postoperative complications rate might rely on its delayed sand stable development. More primary studies with a larger sample size are required to identify further clinical predictors for its post-operative course.

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E-115 TRANS-RADIAL VERSUS TRANS-FEMORAL ACCESS ROUTES FOR DIAGNOSTIC CEREBRAL ANGIOGRAMS: A LARGE SINGLE-CENTER COMPARATIVE COST-ANALYSIS STUDY

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Background Cerebral angiography has long been established as the gold standard modality to diagnose and treat cerebral vascular pathologies. Conventionally, the trans-femoral approach has been well established in neuro-interventional community for such procedures. Recently, the trans-radial approach has become a common alternative given its safety profile and increased patient satisfaction compared to the transfemoral route. Both routes are associated with their respective associated costs and differences typically emerge based on patients' anatomy, operator expertise, and occurrence of complications.

Objective In this study, we aim to compare and evaluate the overall costs of diagnostic cerebral angiography for both routes and shed light on individual equipment cost for each route.Methods: This a retrospective single-center study of 926 elective diagnostic angiograms performed between December 2019 and March 2022.

Results The study comprised of 314 and 612 angiograms done through the TF and TR routes respectively. Female patients were significantly higher in the TF cohort (79.3% vs 67.8%, p<.001), and most other demographic characteristics and baseline modified Rankin Scale score were comparable between both cohorts. Similarly, the number of devices used was comparable between both groups. The overall cost of patients utilizing the TR route was comparable to that of the TF route (12591.8$ ±19128 vs 12789.5$ ± 18424, p=.88). However, the median cost of catheters was significantly higher in TR group (55.2$ vs 12.4$, p=.03), while the median cost of closure devices (87$ vs 20.2$ p<.001), and sheaths (44.6$ ± 11.3 vs 41.1$ ± 3.1, p<.001) was significantly higher in the TF group.

Conclusion Overall, our study shows that the TR approach can be less a less expensive option for patients undergoing diagnostic cerebral angiograms, especially if complications occur. Future studies can corroborate our findings and potentially lead to the adoption of TR as a low-cost, efficient, gold-standard technique for cerebral angiography.

Costs (dollars) Associated with Trans-Radial Versus Trans-Femoral Access

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Abstract E-115 Table 1

Variable	Trans-Femoral (n=314)	Trans-Radial (n=612)	P-value
Total Cost, mean (SD)	12591.8 (19128)	12789.5 (18424)	.88
Catheters, median (range)	12.4 (12.4-1900)	55.2 (12.4-369)	**.03**
Closure devices, median (range)	87 (87-174)	20.2 (20.2-40.4)	**<.001**
Wires, median (Range)	43.9 (43.9-576.8)	43.9 (43.9-576.8)	.16
Sheaths, mean, (SD)	44.3 (11.3)	41.1 (3.1)	**<.001**
Groin Ultrasound, median (Range) Radial Ultrasound, median (Range)	1510 (1510-1510)	908(908-908)	-
Pelvic CT, median (Range)Brain MRI, median (Range)ICU Stay per night, median (Range)	2901 (2901-2901) 5249 (5249-5249) 8982 (8982-8982)		-
Anesthesia, mean (SD)	738.8 (717.5)	726.9 (616.9)	.79
Contrast, mean (SD)	298.7 (326.6)	280.9 (324.9)	.69
Cost of postop stay, median (IQR)	180 (135-225)	67.5 (45-90)	**<.001**

Bold font= statistical significance

Abstract E-115 Table 2

Patient	Access Route	Complication	Additional expenses	Individual Charges (USD)	Total Charge (USD)
1	TF	Pseudoaneurysm	US Thrombin/ injection	1510689 (x2)	2888
2	TF	Retroperitoneal hematoma	US CT Scan ICU stay/night	151029018982	13393
3	TF	Stroke (MRI)	MRI Scan ICU stay/night	52498982	14231
4	TR	Radial access site abscess	US CT Scan Antibiotics cost	15102901987	5398
5	TR	Vasospasm	IA Cardene injection	15.25	15.25
6	TR	Vasospasm	Cross-Over to TF	12591.8	12591.8

Summary of Individual Cost (in USD) of Complication Treatment. Abbreviations: US: ultrasound, CT: computed tomography, MRI: magnetic resonance imaging, IA: intra-arterial, ICU: intensive care unit.

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E-116 STENT-ASSISTED COIL EMBOLIZATION OF HILLTOP ANEURYSM IN MIDDLE CEREBRAL ARTERY

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Background M1 segment of middle cerebral artery (MCA) aneurysm is a relatively rare clinical condition. However, due to its complex geometry and deep location, microsurgical treatment is challenging. With the development of devices and techniques, the range of aneurysms that can be treated with endovascular treatment (EVT) continues to expand. We performed this study to define a specific form of M1 aneurysm that can be safely and effectively treated through EVT as M1 hilltop aneurysm, and to report our treatment results.

Methods Of 757 MCA aneurysm between December 2017 and October 2021, 54 M1 segment aneurysms were treated with EVT, and these aneurysms were designated M1 hilltop aneurysms. Clinical and radiographic data, including aneurysm characteristics, endovascular techniques, angiographic outcome, procedure-related complications and clinical outcomes at the time of the last follow-up, were collected and reviewed retrospectively.

Results Treatments were successful in all 54 cases, 21 cases were treated with coiling and 33 cases with stent-assist coiling (SAC). The mean height of the aneurysm was 4.35 ± 1.9 mm, the mean width was 4.59 ± 1.9 mm, and the mean neck size was 3.63 ± 1.4 mm. Of the 54 cases, 50 (92.6%) cases were identified as wide-neck aneurysms. The neck of aneurysm incorporating branch vessel was found in 49 (90.7%) cases. Immediate post-procedural angiogram showed favorable occlusion in 32 (59.3%), incomplete occlusion in 22 (40.7%). There were 4 (7.4%) procedures-related complications including thromboembolism and internal carotid artery dissection, but there were no cases of permanent neurological impairment. The mean follow-up duration was 18.2 months. During the follow-up period, there was no neurological deterioration or aneurysmal rupture in any of the patients. On 50 available follow-up angiographic studies, minor recurrence was found in 6 (12%) cases and major recurrence was found in 1 (2%) case. Recurrence was significantly related to aneurysm neck (OR 3.9, 95% CI 1.2 to 12.9, p = 0.025).

Conclusions EVT for M1 hilltop aneurysms appears to be safe and efficacious, with low mid-term recurrence rate. However, long-term and large cohort study will be needed.

Disclosures S. Park: None. **W. Lee:** None. **J. Jung:** None.

E-117 MECHANICAL THROMBECTOMY FOR TREATMENT OF ACUTE ISCHEMIC STROKE IN FRAIL PATIENTS: A SYSTEMATIC REVIEW OF LITERATURE

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Background Frailty is a complex syndrome, referring to a state of increased vulnerability from age-associated decline that has been quantified by various validated scales. While frailty has been associated with an increased risk of adverse outcomes and reduced tolerance to open neurosurgical interventions, the overall safety and efficacy of mechanical thrombectomy (MT) for acute ischemic stroke (AIS) in frail patients is not well delineated. This systematic review aims to summarize and compare outcomes in frail and non-frail patients who underwent MT for AIS.

Methods A systematic review of literature was performed using Pubmed, Ovid Medline, and Web of Science. Studies with outcomes-related data patients with MT-treated AIS and with pre-stroke validated frailty score (ie. Clinical Frailty Scale, Hospital Frailty Risk Score, or Frailty Index) were included. Baseline patient and AIS characteristics, recanalization rate, procedural complications, and clinical outcome at 90-day follow-up for frail and non-frail patients were collected.