

from growth to rupture in a patient with a middle cerebral artery aneurysm and annual imaging from 2012-2022.

Results We could successfully develop a simulation software that was implemented as part of a graphical user interface. Using this intuitive approach, it is possible for medical personnel without simulation experience to run detailed FSI simulations.

In our exemplary case, WSS was highest in 2012 and decreased during growth. In contrast, oscillatory shear index (fluid dynamics) increased over time, especially in the region of aneurysm growth. Wall stress (structural dynamics) remained constant during growth over years. However, shortly before aneurysm rupture, wall stress increased significantly.

Conclusion We could successfully develop a simulation software. The aim of this project is to integrate this simulation method in our cerebrovascular conference to improve decision making and patient care. In a next step we will perform external validation using a multi-center approach.

Disclosure of Interest no.

P091 EFFICACY AND SAFETY OF FLOW DIVERSION IN THE TREATMENT OF CAROTICO-OPHTHALMIC ANEURYSMS

¹James Ayre, ²Fathallah Islim, ²Nayyar Saleem, ¹Aubrey Smith, ¹Paul Maliakal, ¹Hamed Nejadhamzeeigilani, ²Tufail Patankar. ¹Hull Royal Infirmary, Hull, UK; ²Leeds Teaching Hospital Trust, Leeds, UK

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Introduction Carotico-ophthalmic aneurysms represent 5.6% of all intracranial aneurysms¹. Flow diversion has been shown to be effective in the treatment of intracranial aneurysms, demonstrating high rates of occlusion and low complication rates.

Aim of Study The study aimed to assess the efficacy and safety of flow diversion in the treatment of carotico-ophthalmic aneurysms.

Methods Patients from two institutions with carotico-ophthalmic aneurysms treated with flow diversion between 2015 and 2021 were retrospectively analysed. Patient demographics, aneurysm characteristics, clinical outcome, and follow-up imaging were assessed.

Results 106 patients were treated using 10 different types of flow diverter. 97% of patients were female. 28% had hypertension, 27% were active smokers, and 18% were ex-smokers. Three patients were acute presentations. Mean maximum aneurysm width diameter was 7.25mm (1.5 – 25.8) and mean aneurysm neck diameter was 4.36mm (1.2 – 9.46). 30.2% of patients had adjunctive coiling. Complications included intracranial haemorrhage (n = 1), major stroke (n = 2), minor stroke (n = 13) of which all had resolved at 6 months, and groin complications (n = 10). Mortality was <1%. No visual symptoms were reported. 96% of patients received follow-up, with an average follow-up duration of 23.7 months. 94% of patients had complete occlusion (RROC 1) on follow-up imaging, and 100% of patients had adequate occlusion (RROC 1 or 2) on the most recent imaging.

Conclusion The study demonstrates that flow diversion is both effective and safe in the treatment of carotico-ophthalmic aneurysms, providing extremely high rates of occlusion and low rates of morbidity and mortality.

Disclosure of Interest no.

P092 JAILED A1/A2 SEGMENT FOLLOWING FLOW DIVERTER USE IN THE TREATMENT OF INTRACRANIAL ANEURYSMS

James Ayre, Aubrey Smith, Paul Maliakal, Hamed Nejadhamzeeigilani. Hull Royal Infirmary, Hull, UK

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Introduction The treatment of internal carotid artery termination and A1/A2 junction aneurysms can be challenging, particularly in the context of anatomical variation.

Aim of Study The study aimed to assess the safety and clinical outcomes of the use of flow diversion in the treatment of aneurysms where the A1 or A2 segment was jailed.

Methods Patients who underwent flow diversion as the primary modality of treatment between 2013 and 2022 at a single centre were retrospectively reviewed. Data was collected on patient demographics, aneurysm characteristics, intra-procedural imaging, clinical outcome, and follow-up.

Results 20 patients (80% female) with 26 aneurysms were treated where the A1 or A2 segment was jailed. The mean age was 53. Two cases were acute procedures for subarachnoid haemorrhage. Aneurysm location included the ICA (n=12), MCA (n=5), AComA (n=4), and PComA (n=5). The A1 segment was jailed on 18 occasions, and the A2 segment on two occasions. Thromboembolic complications resulting in permanent neurological deficit occurred in one patient. Other complications included groin haematomas (n=2) and hyperperfusion syndrome (n=1), all of which were successfully medically managed. 96% received follow-up, with a mean duration of 33 months. 77% of aneurysms were completely occluded (RROC 1) on most recent imaging with 92% demonstrating satisfactory occlusion (RROC 1 or 2). No patient required re-intervention.

Conclusion Jailing of the A1 or A2 segment during flow diverting treatment of aneurysms may be performed in selected cases dependent on the patient anatomy with a relatively safe and efficacious outcomes.

Disclosure of Interest no.

P093 ACUTE FLOW DIVERSION IN RUPTURED INTRACRANIAL ANEURYSMS – A CASE SERIES ANALYSIS

¹Iago Tsertsvadze, ¹Giga Sulaberidze, ²Andrii Netliukh, ¹Lasha Dzotsenidze, ¹Giorgi Loria, ¹Salome Tsertsvadze, ¹Nana Tchantchaleishvili. ¹West Georgia Medical Center, Kutaisi, Georgia; ²1st Lviv Territorial Medical Union, Lviv, Ukraine

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Introduction Endovascular embolization, currently established as the primary treatment for over 70% of ruptured intracranial aneurysms, reflects the rapid evolution of neurointerventional surgery. While traditional microsurgical approaches present obstacles, the challenges are magnified in acute cases due to heightened device limitations and complexities in anti-platelet therapy.

Aim of Study To assess the efficacy and safety of intracranial stent placement in the management of acute ruptured cerebral aneurysms, emphasizing patient selection criteria, procedural nuances, and post-treatment outcomes, within a single-center cohort.

Methods Out of 462 patients with acute aneurysmal subarachnoid hemorrhage (SAH) treated at our institution since 2015,

Abstract P093 Table 1

Case #	Sex	Age	Hunt Hess	EVD	Localization & Type	Size (mm)	Treatment Methods	Antiplatelet Agents		Complications	Outcome (MRS)	6-Month Follow-up (Raymond Roy)
								Loading Dose	Maintenance Dose (per day)			
1	F	55	4	yes	Lower Trunk Basilar Fusiform Aneurysm	25	FD VA Sin to BA, with Deconstruction of VA Dex, Distal to Anterior Spinal Artery	300mg Clopidogrel + 300mg Aspirin	75mg Clopidogrel + 100mg Aspirin	None	5	II
2	F	65	3	no	ACom wide-necked aneurysm, with coil Protrusion in Acom	25	Braided Stent A2-A1 Sin	180mg Ticagrelor + 300mg Aspirin	180mg Ticagrelor + 100mg Aspirin	None	0	I
3	F	35	2	yes	ACom wide-necked aneurysm, with coil Protrusion in Acom	4	Braided Stent A2-A1 Dex	180mg Ticagrelor + 300mg Aspirin	180mg Ticagrelor + 100mg Aspirin	None	0	I
4	F	49	3	yes	Left Vertebral (V4) fusiform aneurysm	4.6	Flow Diverter Left Vertebral Artery V4 Segment	300mg Clopidogrel + 300mg Aspirin, + Tirofiban 0.5mg for 30 mins	75mg Clopidogrel + 100mg Aspirin	Intraventricular Hemorrhage	6	N/A
5	F	44	3	no	Right Vertebral Artery, with Right Pica Coming out from Aneurysm	6	Flow Diverter Right Vertebral Artery V4 Segment	Tirofiban 0.4mg/kg/min for 30 mins	0.1mg/kg/min in the ICU, followed with 180mg Ticagrelor + 100mg Aspirin	None	0	I
6	M	53	2	no	Left MCA Bifurcation Fusiform Aneurysm	10	Flow Diverter Left Inferior M2 to Proximal M1	Tirofiban 0.4mg/kg/min for 30 mins	0.1mg/kg/min in the ICU, followed with 180mg Ticagrelor + 100mg Aspirin	None	0	I

263 underwent clipping, and 199 received endovascular treatment, with six cases involving stenting in the acute phase. The majority of aneurysmal surgeries, including all six stenting cases, were performed within <12 hours from SAH onset. Stenting was performed under dual or triple antiplatelet therapy. Braided stents or flow diverter devices were used in cases where coils protruded into the parent artery or for fusiform aneurysms. In one case, the posterior inferior cerebellar artery (PICA) originated from the aneurysmal sac.

Results The mean patient age was 50 years, with Hunt-Hess scores ranging 2-4. Four patients achieved a favorable outcome (Modified Rankin Scale, MRS-0) following treatment, while one experienced a prolonged ICU stay (MRS-5). One patient developed delayed aggressive vasospasm, leading to demise on the 10th day post-hemorrhage despite intervention (MRS-6).

Conclusion Intracranial stent placement for acute ruptured cerebral aneurysms necessitates careful patient selection. However, with a personalized approach to antiplatelet therapy, early intervention holds potential for safety and efficacy.

1.3 Miscellaneous

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NEUROVASCULAR PATIENT PATHWAYS AND OUTCOMES FOLLOWING ADMISSION TO A TERTIARY NEUROSURGICAL REFERRAL CENTRE – A SERVICE EVALUATION OF AN EXPANDED ADVANCED CLINICAL PRACTICE (ACP) TEAM

Natalie Thrale, Catherine Lamb. *Oxford University Hospitals NHS Foundation Trust, Oxford, UK*

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Introduction In 2023 the neurovascular advanced clinical practice (ACP) team expanded to support all patients who had bleed from a neurovascular pathology. To better understand this population and to tailor service development, a service evaluation was completed.

Aim of Study To describe the population supported by the ACP service, understand patient pathways, and identify common challenges experienced by patients.

Methods Routinely collected patient data was analysed for patients seen between March 2023 and February 2024, including demographics, admission information, and physical and mental well-being outcome measures at discharge and follow-up.

Results 229 patients were included. The majority had subarachnoid haemorrhage (76%), with most others having arteriovenous malformations (16%), arteriovenous fistulas (3%) and cavernomas (2%). Mean age was 56 and around half (53%) were female. Half required ICU admission (50%), and 51% had neurological deficits. Median length of stay was 12.5 days (2.1-128 days). Most patients were discharged home (68%), but 24% required inpatient rehabilitation. At discharge 66% rated their physical health as poor or fair and 60% rated their mental health as poor or fair.

At a 6-week follow-up, 32% rated their physical health as poor or fair and 42% reported their mental health as poor or fair. Anxiety and/or depression was reported by 76%. Moderate to very severe fatigue was reported by 52% and 63% had ongoing pain.

Conclusion Neurovascular patients had variable admission and rehabilitation pathways. Physical and mental health concerns were prevalent and persistent at 6-week follow-up. The ACP team supports patients with these challenges along the clinical pathway.

Disclosure of Interest no.