Abstract E-042 Figure 1

cases of CHS following endovascular embolization and discuss diagnostic and differential challenges.

Cases Patient 1 is a 64yo woman who underwent elective stent-assisted-coiling of an unruptured 11×10 mm right MCA trifurcation aneurysm without intraoperative complication. Immediate and delayed post-treatment angiography showed patent vasculature with no extravasation of contrast. Initial post-procedure neurological exam was normal; 4 hours later, she developed left hemiplegia. CT showed a large right intraparenchymal parietal hematoma with local cerebral edema distal to aneurysm treatment (figure A). Follow up diagnostic angiography showed no extravasation from the MCA and no change in the treated aneurysm. Transcranial doppler showed proportional increase in right MCA and right ICA flow velocity, concerning for hyperperfusion. During decompressive craniotomy, multiple small arterial intraparenchymal bleeders were encountered.

Patient 2 is a 70yo man who underwent two stage stent assisted coiling of an unruptured ACOM aneurysm. Post-stenting but pre aneurysm coiling showed uniform contrast distribution (figure B), whereas post aneurysm coiling showed persistent contrast blush in the temporal and parietal regions (figure C, yellow arrows). This correlated with cortical edema found on CT twenty-four hours post-procedure. Cortical edema resolved the following day with conservative blood pressure management.

Discussion CHS following endovascular stent-coiling of aneurysms is not described in literature. Differential diagnosis considerations for these cases include vasospasm, which is far more prevalent, and contrast induced encephalopathy (CIE), which is rare. In both cases, increased arterial flow to the territory of the parent vessel was demonstrated. This is in contrast to vasospasm, where reduced flow results in ischemic infarct. CIE has also been reported to have decreased perfusion in studies which utilize flow imaging and is generally associated with posterior circulation angiography and symptoms. In contrast, our cases demonstrated increased flow, so we strongly favor CHS as the diagnosis. However, the incidence and mechanism of CHS, as well as CVS and CIE, in endovascular treatments requires more in-depth evaluation.

Disclosures P. Yager: None. L. Lin: None. J. Fraser: 2; C; Stream Biomedical, Medtronic. 4; C; Fawkes Biotechnology. A. Alhajeri: None.

E-043 DOUBLE MICRO-CATHETER TECHNIQUE AS A REASONABLE STRATEGY FOR COILING OF A RUPTURED WIDE-NECKED ANEURYSM IN DEVELOPING COUNTRY

H Harsan*. *Neurosurgery, Pelita Harapan University Medical School/Siloam Hospitals, Tangerang, Indonesia*

10.1136/neurintsurg-2019-SNIS.118

Introduction Wide-necked aneurysm will always be a challenge to treat, even with many adjunctive techniques. In a developing country where the equipment is limited, also the cost of the treatment is another important consideration, the less cost and equipment will be preferable. In ruptured case, use of stent also has disadvantages due to necessity of anti-platelet aggregation.

Materials and methods The author present his experience in treating cases of ruptured wide-necked aneurysm with double micro-catheter.

Results Tight packing of the coils with preservation of parent artery can be achieved with this technique. There were no rupture during coiling, no mortality in one-year follow-up.

Conclusion Double micro-catheter technique is useful and effective in treating wide-necked aneurysm, especially in ruptured case.

Disclosures H. Harsan: None.

E-044 PACKING DENSITY, RECURRENCE AND COMPLICATION RATES BETWEEN VARIOUS ENDOVASCULAR ANEURYSM TREATMENT MODALITIES: ANALYSES FROM THE SMART REGISTRY

¹S Al Kasab*, ²E Almallouhi, ²M Anadani, ³M Sattur, ³A Spiotta. ¹University of Iowa Hospitals and Clinics, Iowa city, IA; ²Neurology, Medical University of South Carolina, Charleston, SC; ³Neurosurgery, Medical University of South Carolina, Charleston, SC

10.1136/neurintsurg-2019-SNIS.119

Background Over the past decade, coil embolization of intracranial aneurysm has proved to be both safe and effective. A major concern coil embolization is the recurrence of aneurysm requiring re-treatment. Low coil packing leading to coil compaction has been associated with a higher risk of aneurysm recurrence. In this study, we evaluate packing density,

Abstract E-044 Table 1

	Primary coiling (n=240)	balloon-assisted (n=68)	stent-assisted (n=287)	Stent-and-balloon assisted (n=22)	P-value
Female, n(%)	187 (77.9%)	54 (79.4%)	206 (71.8%)	17 (77.3%)	0.327
Age, median(IQR)	61 (55-70)	60 (48-70)	62 (53-69)	63 (53-67)	0.42
Aneurysm size, n(%)					0.683
.Small (<11 mm)	209 (87.1%)	64 (94.1%)	255 (88.9%)	20 (90.9%)	
.Large (11-25 mm)	31 (12.9%)	4 (5.9%)	31 (10.8%)	2 (9.1%)	
.Giant (>25 mm)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)	
Wide-Neck aneurysm, n(%)	139 (57.9%)	42 (61.8%)	209 (72.8%)	18 (81.8%)	0.008
Time of coil deployment in min, median (IQR)	15 (9-27)	25 (10-41)	16 (7-30)	15 (9-32)	0.287
Immediate Raymond Class I, n(%)	102 (42.5%)	30 (44.1%)	95 (33.1%)	5 (22.7%)	0.035
One-year Raymond Class I, n(%)	82 (62.6%) ^{oe}	20 (42.6%) [†]	120 (75%) ^{**}	12 (75%)*	<0.001
One-year recurrence, n(%)	17 (12.8%) ^{oeoe}	14 (29.2%) ^{††}	13 (8.1%) ^{***}	2 (12.5%)*	<0.001
Device related complications within 24-hour, n(%)	3 (1.3%)	3 (4.4%)	7 (2.4%)	3 (13.6%)	0.004
30-day mortality, n(%)	3 (1.3%)	1 (1.5%)	8 (1.7%)	0 (0%)	0.906
Packing density >30, n(%)	102 (42.5%)	26 (38.2%)	135 (47%)	12 (54.5%)	0.759

^{oe} missing 109 ^{oeoe} missing 107 [†] missing 21 ^{††} missing 20

*missing 6 **missing 127 ***missing 126

aneurysm recurrence and complication rates associated with different endovascular techniques.

Methods The prospectively collected data from the SMART registry was interrogated. Only patients with unruptured aneurysms were included in these analyses. Patients were divided into four groups according on the endovascular treatment modality used: group 1 (primary coiling), group 2 (balloon assisted coiling), group 3 (stent assisted coiling), and group 4 (balloon and stent assisted coiling). Baseline characteristics, aneurysm features, packing density, complication and recurrence rates were compared between the groups.

Results Total of 607 patients were included in this study. Of those, 240 were in group 1, 68 in group 2, 287 in group 3, and 22 in group 4. Median age was 61 (IQR, 53–69), and 75% were females (table 1). There was no difference in aneurysm size, or duration of coil deployment. Wide neck aneurysms were more prevalent in groups 3 and 4 compared to groups 1 and 2 (group 3; 72.8%, group 4; 81.8%, group 1; 57.9%, and group 2; 61.8%, $P=0.008$). While there was no difference in packing density between the groups at initial treatment, at 1-year, complete occlusion (RR class 1) was achieved at a higher rate in groups 3 and 4 (75%) compared to 1 (62.6%) and group 2 (42.6%) $P<0.001$. There was higher rate of device related complications within 24 hours in group 4 compared to groups 1, 2 and 3 (group 4 13.6%, groups 1,2 and 3; 1.3%, 4.4%, 2.4% respectively, $P=0.004$).

Conclusions In patients with unruptured intracranial aneurysms, the use of primary coiling and balloon assisted coiling was associated with similar packing density to stent or stent plus balloon assisted coiling, though with lower rates of aneurysm obliteration at 1 year. Combined stent and balloon assisted coiling was associated with higher rates of immediate complications. Further prospective studies are warranted to confirm our findings.

Disclosures S. Al Kasab: None. E. Almallouhi: None. M. Anadani: None. M. Sattur: None. A. Spiotta: None.

E-045

INTRAVASCULAR ULTRASOUND FOR EVALUATING VENOUS SINUS STENOSIS IN PATIENTS WITH PSEUDOTUMOR CEREBRI/IDIOPATHIC INTRACRANIAL HYPERTENSION

¹A Nicholson*, ²C Woods, ¹S Taylor, ¹E Williams, ¹J Cuoco, ¹B Klein, ¹D Summers, ¹M Witcher, ¹E Marvin, ¹J Entwistle. ¹Neurosurgery, Carilion Clinic, Roanoke, VA; ²Virginia Tech Carilion School of Medicine, Roanoke, VA

10.1136/neurintsurg-2019-SNIS.120

Introduction/Purpose Imaging and pressure readings in patients with pseudotumor cerebri (PTC)/idiopathic intracranial hypertension (IIH) are traditionally done using magnetic resonance imaging (MRI) and minimally invasive catheter-based manometry. These measurements are important to