suggestive of a thrombosed aneurysm versus an epidermoid cyst. The patient underwent craniotomy, revealing a large saccular aneurysm, and clip ligation and excision were performed. Postoperative genetic analysis revealed a *RASA1*-CM-AVM syndrome.

Lessons This is the first documented case of a *RASA1*-associated pediatric cerebral aneurysm in the neurosurgical literature. This unique case highlights the need for maintaining a broad differential diagnosis as well as the utility of genetic testing for detecting underlying genetic syndromes in young children presenting with cerebral aneurysms.

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E-182 ASSESSING THE EFFICACY OF AQUA EMBOLIC SYSTEM IN MIDDLE MENINGEAL ARTERY EMBOLIZATION: A SWINE MODEL STUDY

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Introduction The Aqua Embolic System (AES) is a novel liquid embolic material composed of polysaccharides and free from DMSO (dimethyl sulfoxide). Unlike traditional embolic systems, AES offers advantages such as a reduced risk of catheter entrapment, elimination of the use of organic solvents, which are known to have tissue toxicity, and the ability to inject at unrestricted speeds. Recently, there has been increasing interest in using liquid embolics for middle meningeal artery (MMA) embolization in the treatment of Chronic Subdural Hematoma, prompting a search for optimal liquid embolics. In this study, we evaluated the performance of AES using a swine intercostal artery model, which serves as a preclinical model to simulate MMA embolization.

Methods Under general anesthesia, a 6F guiding catheter was placed in the intercostal arteries (ICA) of Yorkshire swine weighing approximately 50 kg. Using the roadmapping technique, a microcatheter (0.017 inch) was placed in the mid segment of the ICA, and AES was hand-injected into the artery using 1cc syringes. For control, Onyx Embolic Systems were used. We evaluated the performance of AES on a scale of 1–5, with 5 indicating optimal performance and 1 indicating the least favorable: 1) Ease of injection (required injection force), 2) visibility under fluoroscopy, and 3) penetration into distal vessels were assessed. As a reference standard, Onyx was assigned a score of 3. Additionally, we recorded the volume of AES necessary to block the ICA and documented any occurrences of catheter entrapment.

Results In three experiments involving two animals, AES effectively embolized 18 ICAs, resulting in complete occlusion of all 18 vessels. The injected AES rapidly formed solid casts within the target arteries, filling distal branches and exhibiting reflux into proximal vessels. Throughout the procedure, we rated the visibility of AES at 2.9, its pushability at 2.2, and the extent of distal penetration at 3.2. On average, Onyx samples required 0.44 mL for reflux visualization, whereas 0.9 mL of AES was injected for reflux visualization, indicating comparable radiopacity, mildly increased injection force, and superior distal penetration. We removed all catheters without encountering any entrapment. Additionally, there were no observed instances of unintended thrombosis or vessel spasms near the treatment site.

Conclusion In the MMA embolization model utilizing the swine ICA, AES demonstrated rapid and complete occlusion of the target vessels. Although it required slightly more injection force, AES exhibited comparable visibility and superior distal penetration compared to Onyx. These results indicate the promising applicability of AES in MMA embolization for the management of chronic subdural hematoma.

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E-183 COST EFFECTIVENESS OF WOVEN ENDOBRIDGE VERSUS STENT-ASSISTED COILING IN TREATMENT OF WIDE NECKED ANEURYSMS

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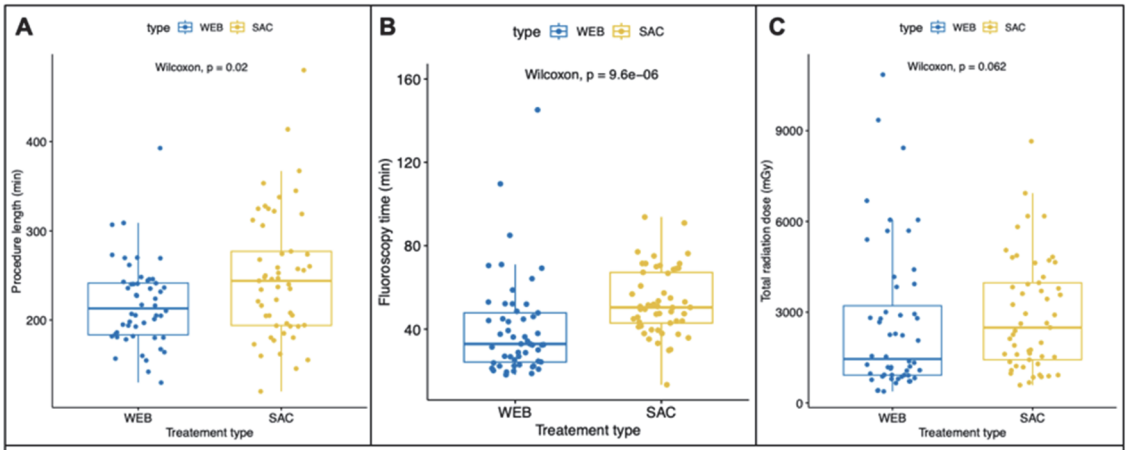
Background As more data is becoming available regarding the safety and efficacy of the Woven Endobridge (WEB) device for the treatment of wide-necked intracranial aneurysms it is important to understand the economic impact of the WEB device as compared to its counterpart, stent-assisted coiling (SAC).

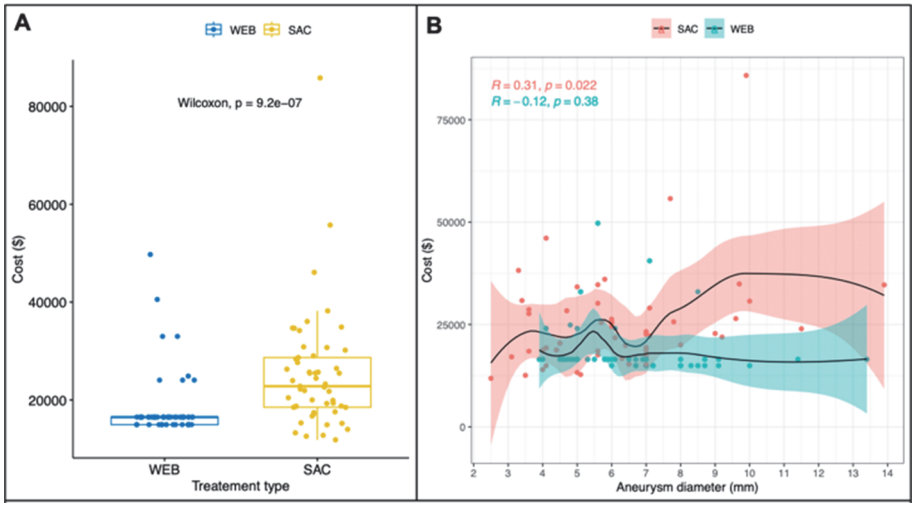
Methods A retrospective review of patients from two tertiary care centers undergoing endovascular treatment of ruptured and unruptured wide-necked aneurysms with a focus on the cost of the devices, procedure time, fluoroscopy time and total radiation dose.

Abstract E-183 Table 1 Clinical and aneurysm characteristics, procedure details and post-procedure outcomes. Media

	WEB (n=53)	SAC (n=53	p-value
Age (years)	62 (50.5 - 69.5)	64 (54.5 - 70)	0.72
Aneurysm diameter (mm)	6.1 (5–7.6)	6 (4.1–7)	0.3
Procedure length (minutes)	213 (183–242)	244 (194–291.5)	**0.02**
Fluoroscopy time (minutes)	32.9 (24–48.2)	50.4 (42.2–67.9)	**<0.0001**
Radiation dose (mGy)	1453.2 (915.4 - 3415)	2493.65 (1394.3 - 4067)	0.062
Cost of implants ($)	16,495 (14,950 16,495)	22,806 (18,490 - 28,843)	**<0.001**
Follow-up length (months)	7.75 (6.5 - 12)	7 (6 - 15)	0.33
Residual aneurysm	20.9%	10%	0.2385
Re-treatment	4.4%	2%	0.9261



Abstract E-183 Figure 1 Boxplots of A) procedure length (minutes), B) fluoroscopy time (minutes) and C) total radiation dose (mGy) between WEB treated and SAC treated patients



Abstract E-183 Figure 2 A. Boxplot of device cost ($) for patients undergoing WEB versus SAC treatment. B. Linear regression of cost ($) of devices used based on aneurysm diameter (mm) with shading representing the 95% confidence intervals. Regression modeling signifies that positive regression is observed in patients undergoing SAC while minimal positive association is observed in patients undergoing WEB treatment

Results A total of 53 WEB treated wide necked aneurysms were location and size matched with 53 SAC treated aneurysms (table 1). Procedure and fluoroscopy time were significantly shorter in the WEB group compared to SAC group (figure 1). A trend towards lower radiation dose in the WEB group compared to SAC was observed. The cost of the devices was significantly lower in the WEB group compared to the SAC group (figure 2). Analysis of cost based on aneurysm diameter showed that the cost becomes significantly less in the WEB group once the aneurysm diameter reaches 8.5 mm. One patient experienced rupture of a SAC-treated aneurysm which required re-treatment, 2 patients in the WEB group underwent re-treatment with flow-diversion.

Conclusion The cost of the WEB device is significantly lower than SAC. The difference becomes apparent once the aneurysm diameter reaches 8.5 mm. Procedure and fluoroscopy time are significantly lower in the WEB group. No difference in rates of recurrence or retreatment was found on short term follow up.

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