

Endovascular Treatment of Cerebral Aneurysms Using LVIS Jr Stent: Mid-term Clinical and Angiographic Results

Boris Leonardo Pabon MD; Carlos Diaz MD; Victor L Torres MD; Juan Andres Mejia MD



ANGIOTEAM, ANGIOSUR, ANGIODINAMIA, HOSPITAL SAN IGNACIO

Introduction

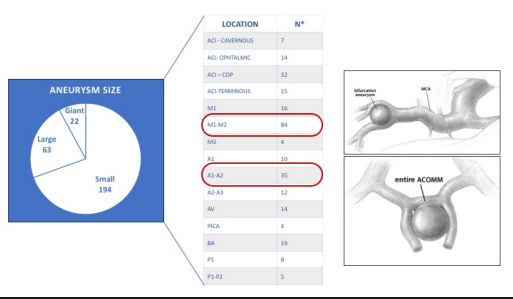
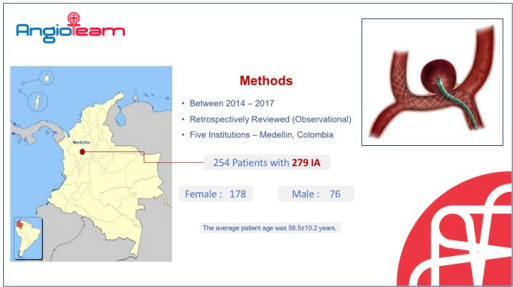
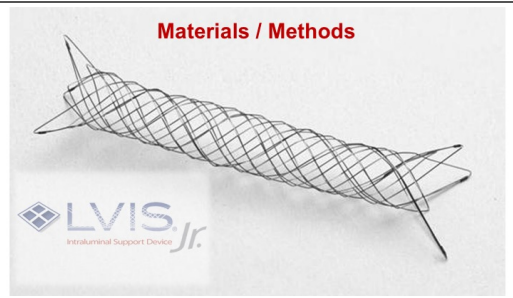
This report details our experience with the Low-profile Visualized Intraluminal Support Junior (LVIS Jr.) device (MicroVention-Terumo, Inc., Tustin, CA), with an emphasis on evolving treatment strategies, feasibility, complication rates and outcomes

Methods

We retrospectively reviewed records of patients treated with the LVIS Jr. device for intracranial aneurysms in Medellin and Bogotá, Colombia

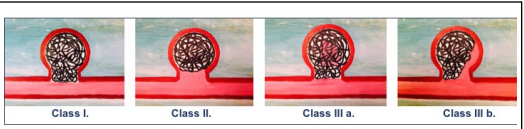
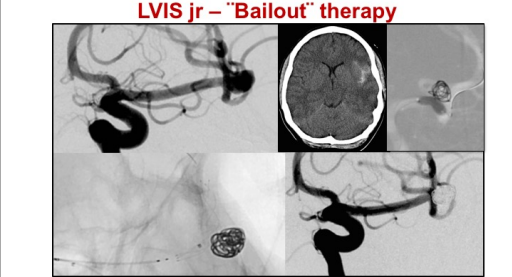
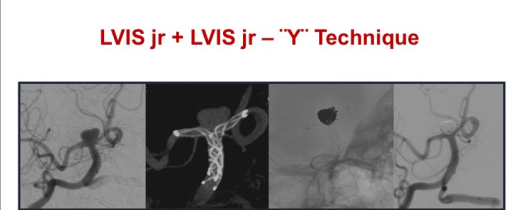
Results

254 patients with 279 aneurysms underwent aneurysm treatment with LVIS Jr during a 36-month study period. Stent deployment was successful in 100% of cases. 227 aneurysms were treated with stent-assisted coil embolization resulting in immediate complete occlusion in 90% of cases. 55 lesions were treated with stent-alone approach: 21 dissecting, blood blister-like aneurysms treated without coils, and 34 small aneurysms which treatment was planned in stages with further coiling after endothelialization in 14. Imaging follow-up was available for 104 aneurysms. None major recanalization for retreatment was observed. Seventeen patients presented with immediate thrombo-embolic complications (6.6%) and IIb-IIIa GPI administration was necessary. Eight of these strokes were associated with transient deficits, yielding a stroke rate of 3.1%. Six patients died (2.6%) due to clinical conditions, not as direct consequence of stenting. No significant in-stent stenosis, migration, delayed hemorrhage, or permanent deficits were observed. Of those patients with follow-up, a good functional outcome based on the modified Rankin Scale score (mRS = 2) was achieved in 100% of cases



LVISjr. Treatment Strategy/ Aneurysm size (N=279)

	Small	Large	Giant	Total (%)
LVIS Jr. Alone	31	3	-	34 (12%)
LVIS Jr. + LVIS Jr.	3	4	-	7 (2.5%)
LVIS Jr. + Coils	150	55	22	227 (81%)
LVIS Jr. Bailout	10	1	-	11 (4%)
Total	194	63	22	279



- 201/279 (72%) were evaluated Roy-Raymond grade I-II immediate after procedure
- 21 cases (Blood Blister-like) were treated with **stent alone** approach
- A single microcatheter was used in 88 cases, a second **jailed microcatheter** in 139
- **Eleven cases** were treated through Scepter Balloon Microcatheter (**Bailout - therapy**)



Conclusion

Although we only have 40% of patients with mid-term FU, the **LVIS Jr.** stent system was **safe** and **effective** for the treatment of wide-neck intracranial aneurysms. It provides a high level of occlusion with a low rate of complications. It has good parent vessel wall apposition especially in curved or tortuous vessels and provides adequate support of the coil mass within the aneurysm sac.

Conclusions

LVIS Jr. facilitates the endovascular treatment of complex and wide necked cerebral aneurysms especially for aneurysms involving distal and small vessels. Results are promising in a variety of situations with safety and low rates of complications. Patients with acute SAH due to dissecting or wide-neck ruptured aneurysms can be treated under special considerations.