

AcoA aneurysm embolization with silk vista baby flow diverter in X-technique



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Dr. Gelson Luís Koppe graduated in Medicine from Evangelical College of Paraná (1987).

Done specialization in Interventional Radiology and Endovascular Surgery at Evangelical Hospital of Curitiba in 1999.

Following his specialization in Diagnostic and Therapeutic Neuroradiology in 2000 at Hospital Heliópolis and in 2001 he specialized in Endovascular Neurosurgery and Interventional Radiology in Argentina (ENERI- Service). He is Head of the Interventional Neuroradiology Service at the Hospitals: Hospital Vita Curitiba; Hospital Marcelino Champagnat; Cajuru University Hospital.

Acts as Interventional Neuroradiologist in Hospitals: Cruz Vermelha; Nations' Hospital; Onix/Clinipam Hospital; Pequeno Príncipe Hospital; Santa Cruz Hospital; Vita Batel Hospital.

He is the founder of the "Instituto do Cérebro do Paraná"(ICPR) specialized in Interventional Neuroradiology, which has been operating in Curitiba since 2003.

At ICPR, he works with his team, which is also composed of Dr. Zeferino Demartini Jr and Dr. Luana Maranhã Gatto.

In addition, he has published several scientific papers and trained many fellows who work in different regions of the country along the past 15 years.

Introduction

Abbreviations

ACA Anterior Cerebral Artery

AcoA Anterior communicating Artery

A1 First segment of the ACA

A2 Second segment of the ACA

IA Intracranial Aneurysm

SVB Silk Vista Baby

Understanding Pathology

Aneurysm is an abnormal vascular dilation in an artery wall.

Intracranial aneurysms (IA) are present in up to 5% of individuals, which may vary according to the population studied. Its prevalence is higher in females and in individuals over 30 years old.¹

Aneurysms of the anterior communicating artery (ACoA) are, according to studies, the most likely to rupture.¹

Due to their multiple vascular relationships, as well as the frequent presence of anatomical variations and due to their deep location, ACoA aneurysms are considered complex aneurysms.¹

The most frequent location of ACoA aneurysms is the junction between the A1 segment of the ACA and the ACoA, on the side where the A1 segment is larger (A1 dominant).

Currently, there are two main modalities of treatment for IA: surgical treatment with clipping and endovascular treatment by embolization.¹

1: SOARES, Fabiano P. Perfil clínico de pacientes com aneurismas de artéria comunicante anterior submetidos a tratamento cirúrgico

Case:

AcoA Aneurysm
Embolization with
SVB Flow Diverter
in X-fashion

Male, 56-year-old patient who, after a car accident due to syncope, underwent CT and CT angiography, which showed the presence of dysplastic saccular aneurysm with a wide neck in an anterior communicating complex.

Embolization with double femoral access (DESTINATION Sheath) and use of the bilateral coaxial distal access guiding catheter FARGOMAX was planned.

The microcatheterization in X was made in one of the accesses via the left A1 to A2 right with a HEADWAY 17 and the other access via the right A1 to A2 left with another HEADWAY 17 microcatheter.

Two Silk Vista Baby 2.75x25 were deployed.

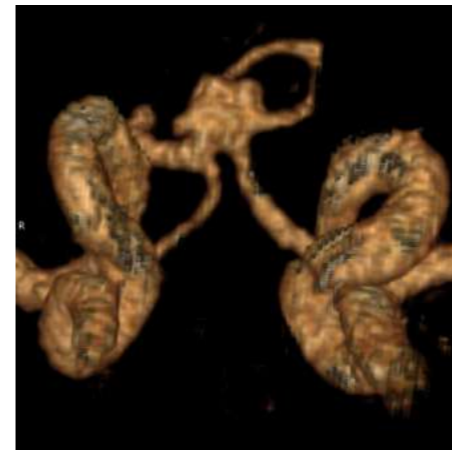
Patient was discharged from the ICU after 48 hours.

A 3D angiography showing the AcoA configuration.

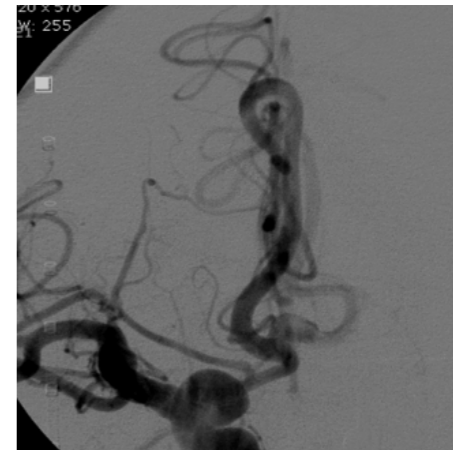
B Initial Control of the Right Internal Carotid, image AP.

C Initial Left Internal Carotid Control, image AP.

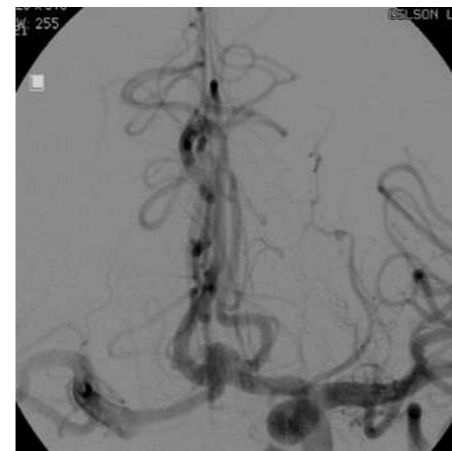
D Working image, bilateral approach: positioning of the guide catheter.



A



B



C



D

A Working image, positioning of the first microcatheter.

B Working image, positioning of the second microcatheter.

C & D Intermediate Control: positioning of the two SVBs inside the microcatheters



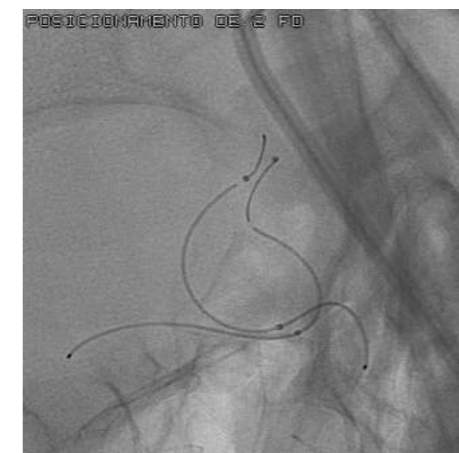
A



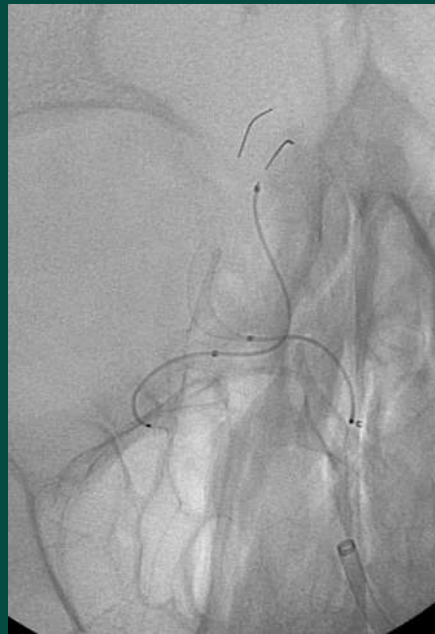
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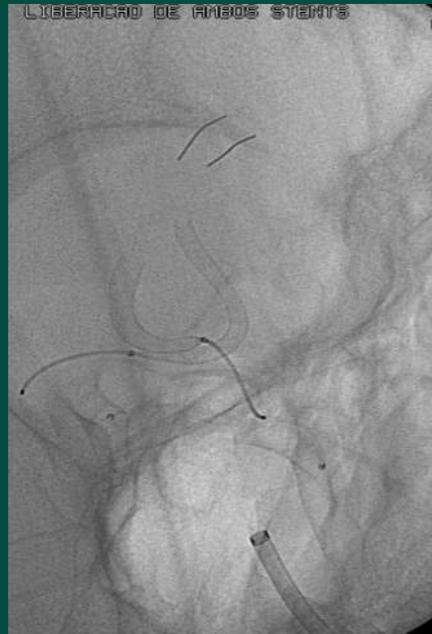
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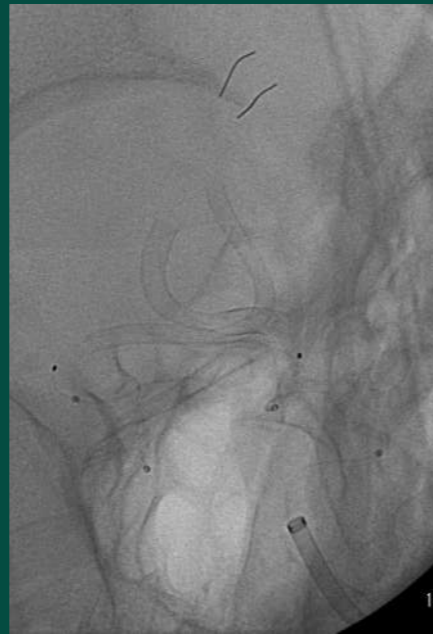
D



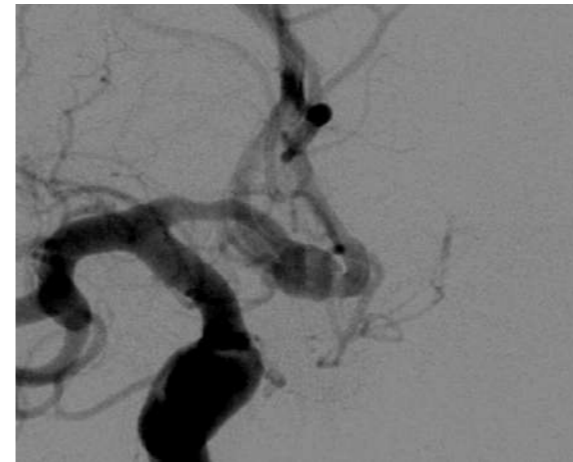
Partial Release



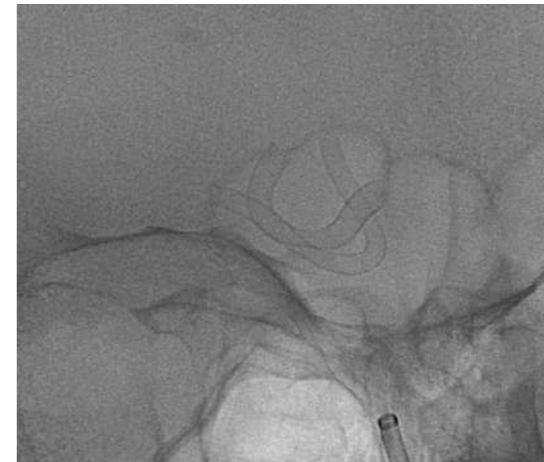
Delivery of first SVB



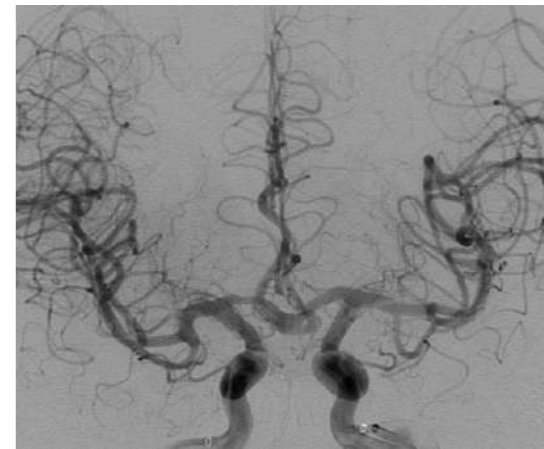
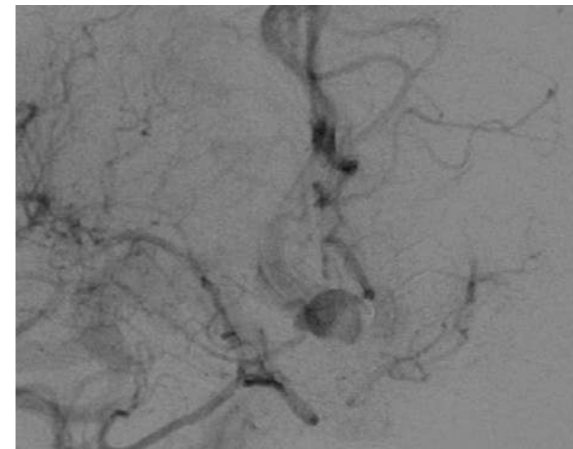
Delivery of second SVB



Perfusion controls



2 x SVB
2,75x25



Final control

Strategy

Dual stent-assisted embolization (DSCE) in the X or Y configuration has been reported as an alternative technique for surgical approach in the treatment of complex intracranial bifurcation aneurysms, maintaining the flow in the involved arteries. The current literature on the DSCE technique is entirely based on conventional open or closed cell stents.

However, clinical experience and results of this challenging technique with next-generation intracranial stents are lacking.²

The SVB is compatible with a 0.017" inner diameter microcatheter which can facilitate its implantation in smaller diameter vessels.

2: Boddu SR, Link TW, Santillan A, Sax-Bolder A, Lin N, Gobin P, Patsalides A, Knopman J. Double Stent-Assisted (Y and X) Coil Embolization of Unruptured Intracranial Saccular Aneurysms using the Low-Profile Visualized Intraluminal Support Device-Single Center Experience. J Vasc Interv Neurol. 2019 May;10(3):1-9. PMID: 31308863; PMCID: PMC6613488."

Conclusion

Dr. Gelson Koppe and his team have performed several cases with the Silk Vista Baby device. For this case, the SVB was chosen, as the material is easy to use following the defined protocols and because its compatibility with a low-profile microcatheter is a differential.

Thanks to its visibility, it is possible to recapture it without damage or "twist", in addition to a gradual opening and controlled release.

References:

1: SOARES, Fabiano P. Perfil clínico de pacientes com aneurismas de artéria comunicante anterior submetidos a tratamento cirúrgico. Porto Alegre: Universidade Federal do Rio Grande do Sul (UFRGS), 2019.

2: Boddu SR, Link TW, Santillan A, Sax-Bolder A, Lin N, Gobin P, Patsalides A, Knopman J. Double Stent-Assisted (Y and X) Coil Embolization of Unruptured Intracranial Saccular Aneurysms using the Low-Profile Visualized Intraluminal Support Device-Single Center Experience. J Vasc Interv Neurol. 2019 May;10(3):1-9. PMID: 31308863; PMCID: PMC6613488.

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