

# Childhood ischemic stroke caused by a large intracranial dissecting aneurysm: endovascular treatment and diagnostic challenges

Motto C, Cervo A, Iaselli S, Doneda P, Tovaglieri N, De Angeli F, Piano M, Sessa M.

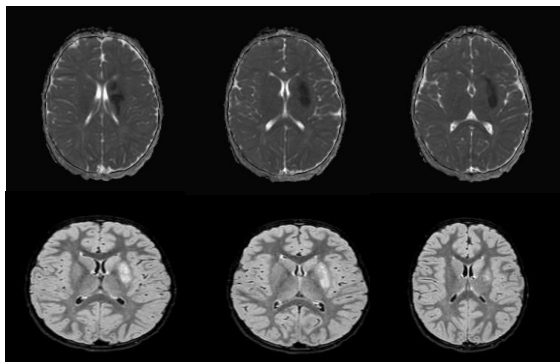
Stroke Unit & Neurology, Neuroradiology, Interventional Neuroradiology, Pediatrics  
Grande Ospedale Metropolitano Niguarda – Milano

## Background

Ischemic stroke in the pediatric population is rare, and those related to intracranial dissecting aneurysms (IDAs) are even rarer. IDAs could be related to trauma, but often they occur spontaneously. The prognosis could be unfavorable, and etiologic diagnosis and treatment remain a challenge, especially in pediatric patients.

## Case report

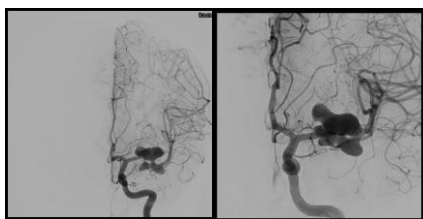
A five-year-old boy experienced severe right hemiparesis preceded by ideomotor slowing and speech disturbances. Neurological examination: dysarthria and severe right hemiparesis with arm plegia, PedNIHSS 11. No history of trauma was reported. Family history was unremarkable.



Brain MR: acute left lenticular ischemic lesion.



Angio-CT: large dissecting aneurysm in the M1 tract of the left MCA.



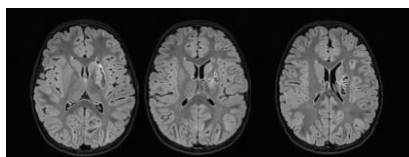
DSA: pollobulated dissecting aneurysm of the M1 tract of the left MCA, with reduced visibility of lenticulostriate arteries.

Therapy: aspirin plus Clopidogrel.

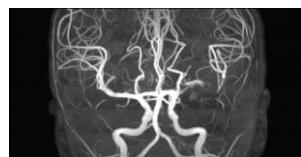


Endovascular treatment: telescopic deployment of three flow diverters to reconstruct the dissected artery. No intraoperative complications.

The patient progressively recovered from symptoms, and one month later, only mild hemiparesis persisted. A complete diagnostic workup was negative, including genetic NGS.



3-month brain MR: good apposition of the stents, with signs of initial thrombosis of the aneurysmal sac.



## Discussion and Conclusion

Acute ischemic strokes related to IDAs are rare in childhood, and only case reports or small series are described. The etiology is still not clear. Trauma is reported in half patients, but it could be only a precipitating factor. In post-mortem examination, pathologic changes of the internal elastic lamina were observed. The same features were also described in infections, collagenopathies, elastinopathies, and other connective tissue disorders that could be responsible for IDAs. In our case, the characteristics of the IDA suggest a congenital or very old development of the aneurysm with progression over time. Whatever it is the etiology, the endovascular treatment with telescopic flow diverters was safe and effective. Therefore, it should be considered to prevent severe ischemic or hemorrhagic complications, improving patient's prognosis.

## References

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