ENDOVASCULAR TREATMENT OF ACUTE ISCHEMIC STROKE IN THE PEDIATRIC POPULATION – A SINGLE-CENTER EXPERIENCE

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Introduction: Pediatric ischemic stroke is an under-recognized condition, frequently leading to delayed diagnosis. Most childhood strokes are due to intracranial arteriopathy, wherein mechanical thrombectomy is not applicable. Conversely, cardioembolic strokes may benefit from mechanical intervention, similarly to adults. Despite strong evidence for endovascular therapy in adults with acute ischemic stroke, limited data exist in children and adolescents.

Methods: We performed a retrospective review of all cases of endovascular treatment of acute ischemic stroke in the pediatric population at our center between 2011 and 2018.

Results:

	Age	G ¹	Personal history	NIHSSped	SO- NI ² (min)	Neuroimaging findings	rTPA	Final TICI	mRS at 3 months
1	14	F	Rheumatic mitral-aortic disease submitted to mitral valvuloplasty, under warfarin	14	75	ASPECTS 10, right M1 occlusion	No	3	1
2	14	F	Congenital mitral insufficiency, no outpatient medication.	3	390	ASPECTS 10, right M2 occlusion	No	2c	2
3	10	F	Irrelevant	21	330	ASPECTS 8, left M1 occlusion	No	2b	3
4	2	M	Prior varicella infection (revealed after the procedure)	15	1260	Occlusion of the basilar artery	No	0	6
5	13	M	Dilated cardiomyopathy, under ventricular assistance, waiting for cardiac transplantation.	16	240	ASPECTS 10, left M2 occlusion	No	3	2
6	17	F	Congenital cardiomyopathy with transposition of large arteries surgically corrected	5	120	ASPECTS 8, left M2 occlusion	Yes	2b	2
7	8	F	Complex congenital cardiomyopathy, under ECMO ³	?	> 1440	ASPECTS 2, right M1 occlusion	No	2c	6

¹ Gender
² Symptoms onset – neuroimaging
³ Extracorporeal membrane oxygenation

Example - Case 4

First row: Axial FLAIR; MRA-TOF
Second row: Angiography – TICI 0.

Example - Case 5

First row: CT and angio-CT;
Second row: Angiography before and after thrombectomy; Chest X-ray after heart transplantation

Discussion/Conclusion: With the rise of mechanical thrombectomy for the treatment of LVO stroke, increasing numbers of treated strokes in the pediatric population are expected. Mechanical thrombectomy seems safe and feasible in the pediatric population. Multidisciplinary selection of pediatric patients with LVO is warranted. Larger prospective studies are needed to validate these conclusions.

References:
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