

Pediatric acute cerebrovascular infarct in the setting of positive COVID-19 antibodies: Case Report

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Case Description

- 8-year-old girl with a history of right Erb's palsy (no residual deficits) presented with headache, acute left-sided weakness, and ataxia
- Exam in ED notable for a pediatric NIH stroke score of 6 with: left cranial nerve seven palsy, mild dysarthria, left upper and lower extremity weakness, and limb ataxia
- Initial CT-brain negative, but MRI brain and spine revealed a basilar artery thrombus with a right-sided pontine stroke and left PICA thrombus
- A full rheumatologic workup, including hypercoagulability labs, was initiated with unrevealing results. Patient was admitted to the PICU and started on anticoagulation. Atrial level defect found on transthoracic echocardiogram
- Patient found positive for COVID-19 antibodies. Patient with history of COVID-19-compatible illness with negative PCR three months prior, at the time a symptomatic family member tested positive for COVID-19 PCR.

A

B

Discussion

- This patient had no other known risk factors for stroke, aside from positive COVID-19 antibodies and an atrial level defect
- At initial presentation, patient required maximum assist for mobility and standing secondary to decline in ability to track midline, a flaccid left hand, and less than antigravity strength on the left side.
- She admitted to acute inpatient rehabilitation for PT OT and SLP interdisciplinary rehabilitation
- By the end of her acute inpatient rehabilitation stay, patient improved to supervision for mobility, ambulation, and wheelchair manipulation

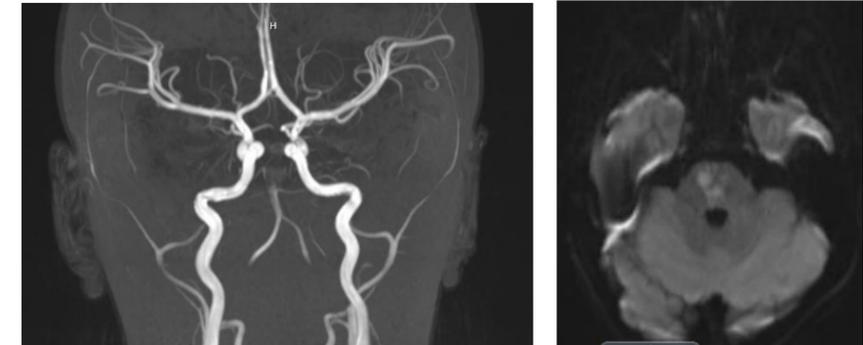
Does **COVID-19 hypercoagulability syndrome** extend to **preadolescents**? This 8 year old with an acute basilar **stroke** suggests the possibility.



Laboratory

CK 59	LDH 208
ESR 8	PT 11.3, INR 1.1, PTT 24.1
CRP <0.1	D-dimer 0.64
Ferritin 29	SARS-CoV2 Abs positive

Imaging



- A. MR Angiogram coronal plane demonstrating basilar occlusion and left PICA flow defect
B. MR T2-FLAIR weighted revealing patchy areas of diffusion restriction in the mid and right paracentral pons, concerning for ischemic change

Conclusion

There are many reports of COVID-19 presenting with thrombotic events in adults, and mechanistic models point to endothelial damage as a key mediator of disease ^{A,B}. Looking at the pediatric population, coagulation parameters in children such as D-dimer, may not parallel disease severity as seen in adults ^C. This case report prompts the questions:

1. to what extent does COVID-19 hypercoagulability manifest in pre-adolescents?
2. what is the duration of COVID-19 induced hypercoagulability?

The long term ramifications of COVID-19 are largely still unknown, however, prognosis appears promising in this case given her progress from initial event to discharge from acute inpatient rehabilitation.

References

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