

Nephrotic syndrome can lead to acute stroke, even in a young patient

Middle Cerebral Artery Stroke in an Eighteen-Year-Old as a Result of Minimal Change Disease Nephrotic Syndrome.

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CASE DIAGNOSIS

Left middle cerebral artery stroke secondary to minimal change disease.

CASE DESCRIPTION

- Eighteen-year-old female with a history minimal change disease, who presented with left sided hemiplegia and aphasia.
- Imaging showed left M1 segment occlusion.
- She underwent thrombectomy with recanalization and hemicraniectomy.
- The etiology of her stroke was embolic given hypercoagulability from nephrotic syndrome. Antiplatelet and anticoagulation were delayed initially due to the hemicraniectomy
- Her hospital course was complicated by respiratory failure secondary to dysphagia and multi-organ infarctions of the lungs, kidneys and gastrointestinal tract. There was also concern for hemorrhagic conversion.
- Once stable Xarelto was started given her high risk of recurrent thrombotic events.
- She was admitted to Acute Rehab with severe non-fluent expressive and receptive aphasia, impaired comprehension and right upper extremity weakness.



DISCUSSION

- This is a rare case of acute stroke in a young eighteen-year-old female due to minimal change disease nephrotic syndrome.
- During acute inpatient rehabilitation she improved to a supervision level with ambulation, transfers and activities of daily living.
- Neurocognition (including executive functioning), non-fluent aphasia, and apraxia continue to be her primary deficits throughout her rehab course.
- The patient was discharged with outpatient neuropsychology and speech therapy.



Left middle cerebral artery territory infarct

TABLE 3. MAJOR FACTORS CONTRIBUTING TO THE HYPERCOAGULABLE STATE IN THE NEPHROTIC SYNDROME.

Low zymogen factors: factor IX, factor XI
Increased procoagulatory cofactors: factor V, factor VIII
Increased fibrinogen levels
Decreased coagulation inhibitors: antithrombin III (but protein C and protein S increased)
Altered fibrinolytic system (α_2 -antiplasmin increased, plasminogen decreased)
Increased platelet reactivity
Thrombocytosis
Increased release reaction in vitro (adenosine diphosphate, thrombin, collagen, arachidonic acid, epinephrine)
Increased factor IV and β -thromboglobulin in vivo
Altered endothelial-cell function

The Nephrotic Syndrome | NEJM

KEY POINTS

- Acute stroke caused by minimal change disease is extremely uncommon especially in a young patient.
- Despite a patient's improvement functionally, the lasting neurocognitive deficits can be incredibly difficult to manage.
- Ongoing outpatient neuropsychological treatment is necessary.