CT got your tongue? Non-convulsive status epilepticus causing isolated global aphasia

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LEARNING OBJECTIVES

(1) Discuss the differential of acute aphasia.
(2) Describe key clinical findings and patient risk factors for non-convulsive status epilepticus (NCSE).

CASE PRESENTATION

• 73-year-old female teacher with Von Willebrand disease and treated non-Hodgkins lymphoma on ibrutinib presented with acute inability to speak.
• Onset at rest 1 hour prior. She was visibly frustrated, could not name objects, answer questions, or repeat words. She inconsistently followed commands.
• Home medications ibrutinib. No alcohol, or substances.
• Afebrile. BP: 160s / 90s, HR: 80s.
• Exam: mixed expressive and receptive aphasia. Neurologic exam was otherwise normal.

LABS AND IMAGING

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDS</td>
<td>negative.</td>
</tr>
<tr>
<td>TSH</td>
<td>normal.</td>
</tr>
<tr>
<td>LFTs</td>
<td>normal.</td>
</tr>
</tbody>
</table>

Imaging:

CT head non-contrast with vague left frontal hypodensity.

HOSPITAL COURSE

• EEG → non-convulsive status epilepticus (NCSE)
• Anti-epileptics → aphasia resolved
• Brain MRI → infiltrating left frontal lesion, crossed midline. Given her immunosuppression, diagnoses included CNS lymphoma, progressive multifocal leukoencephalopathy, or primary brain tumor.
• Lumbar puncture: unrevealing.
• Brain biopsy → glioblastoma
Her extensive disease limited surgical or chemotherapy options. She chose home hospice.

DIFFERENTIAL DIAGNOSIS and WORK-UP

<table>
<thead>
<tr>
<th>Differential</th>
<th>Reasoning</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute ischemic stroke</td>
<td>Most common, Acuity. Discordance: global aphasia suggests large territory involvement, would expect other neuro findings</td>
<td>Brain MRI</td>
</tr>
<tr>
<td>Mass → Seizure</td>
<td>Hypodensity on CT. No prior seizure history</td>
<td>EEG</td>
</tr>
<tr>
<td>Infectious</td>
<td>Age, + immunosuppressed. No leukocytosis, fever.</td>
<td>LP</td>
</tr>
<tr>
<td>Toxic / metabolic</td>
<td>No electrolyte abnormalities, substances, culprit medications</td>
<td>UDS</td>
</tr>
</tbody>
</table>

REFERENCES


ACUTE APHASIA

Location: A large region of the left hemisphere
Causes: Most common: Ischemic stroke, TIA
• Structural: hemorrhagic stroke, brain mass, tumor, or abscess.
• Infectious: encephalitis
• Seizure or post-ictal
• Neurodegenerative diseases
• Migraine
• Traumatic brain injury
Speech therapy is crucial.

NONCONVULSIVE STATUS EPILEPTICUS

Epidemiology: 50% have a prior seizure disorder
Risk factors: CNS pathology,
• Toxic/metabolic encephalopathy
• Encephalitis
• Systemic illness
• After convulsive status
• Substances, meds: ß-lactams,
Clinical findings:
• Coma, acute mental status or behavioral change including new psychosis
• Automatisms such as lip smacking, orofacial twitching, arm and hand stereotypic movements (44% specific)
• Repetitive eye movements or deviation (86% specific)

Reasoning
Evaluation
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NUMERICAL DATA

5.4 13.6 217
137 106 16 0.8 136

UDS negative. TSH, LFTs normal.