Posterior circulation Stroke

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Stroke Director

Great Plains Health
Posterior circulation Stroke
Objective

Recognize presenting symptoms of posterior circulation stroke

Identify anatomy associated with posterior circulation stroke
Ischemic strokes comprise 87% of all strokes (ASA, 2016),

Approximately 20% of ischemic strokes are posterior strokes

Annual incidence of posterior stroke in the US: 160,000 (estimation based upon the above)

As many as 165,000 strokes/year may be misdiagnosed in US emergency departments
Posterior strokes are 3X more likely to be misdiagnosed

BMJ 2018;361:k1185

Great Plains Health
Most common presenting symptoms of posterior circulation ischemia

According to the New England Medical Center Posterior Circulation Registry

- **Dizziness** (47%)
- Unilateral limb weakness (41%)
- **Dysarthria** (31%)
- Headache (28%)
- Nausea and Vomiting (27%)

Most common signs of posterior circulation ischemia

- Unilateral limb weakness (38%)
- Gait ataxia (31%)
- Unilateral limb ataxia (30%)
- Dysarthria (28%)
- Nystagmus (24%)
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Posterior circulation Stroke

**HISTORY:** Patient is 35-year-old man who was caught by state patrol after he was found driving the truck on the wrong way.
Posterior circulation Stroke
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Anton-Babinski Syndrome

Symptoms: cortical blindness but unaware, confabulation
Primary cause: bilateral infarction of the posterior cerebral artery

Supportive cares: occupational therapy, physical therapy, audio books, 24 hours assistance
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Balint Syndrome

Symptoms: oculomotor apraxia, optic ataxia, visual simultagnosia

Primary cause: stroke affecting both parietal lobes
Supportive cares: occupational therapy, audio books, 24 hour care
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**HISTORY:** Patient is 65-year-old man came with chief complain of double vision, worse on looking closer objects. Her double vision resolve when she close one eye.

<table>
<thead>
<tr>
<th>Cranial nerve palsy</th>
<th>Exam findings – evidence of incomitance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Right 3rd nerve palsy</strong></td>
<td>Smaller angle of horizontal squint</td>
</tr>
<tr>
<td><strong>Right 4th nerve palsy</strong></td>
<td>No obvious squint</td>
</tr>
<tr>
<td><strong>Right 6th nerve palsy</strong></td>
<td>Unable to adduct right eye Larger angle of squint Double vision further apart</td>
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HISTORY: Patient is 82-year-old man came with chief complain of dizziness. He denies any double vision.
Vertigo

Sensation of feeling off balance

Often caused by inner ear problem
- Benign paroxysmal positional vertigo (BPPV)
  Tiny calcium particles clump in inner ear canals

Meniere’s Disease
- Caused by fluid buildup and changing pressure
  Vertigo often accompanies tinnitus and hearing loss

Vestibular Neuritis
- Inner ear infection (usually viral)
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Primary presentation is often “I’m dizzy”

Ask probing questions to determine if the patient has any other symptoms

5 D’s of posterior stroke
- Dizziness
- Diplopia
- Dysarthria
- Dysphagia
- Dystaxia

May also have motor/sensory deficits which mimic anterior circulation
Posterior circulation Stroke

Head impulse testing
Nystagmus
Test of Skew

100% sensitivity
96% specificity

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Wallenberg Syndrome

Symptoms: hoarseness, n/v, hiccups, nystagmus, inability or decrease in ability to sweat, body temperature sensation issues, dizziness, ataxia, balance difficulties, swallowing difficulties

Caused by a stroke in the lateral medulla

Supportive care: speech therapy, antiemetics, physical therapy, occupational therapy, tube feedings
Questions