A Silent Threat:

Basilar Artery Occlusion Presenting as Prodromal Hemisensory Deficit

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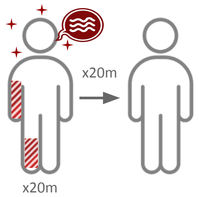
Introduction

- **Acute basilar artery occlusion** is a **rare posterior circulation stroke**, representing 1% of all strokes. **[1]**
- **Early detection** is critical in attempts to intervene to improve already poor prognosis
  - Median time from ED arrival to diagnosis of ≥ 8 hr **[2]**
  - Well beyond the typical window for intravenous thrombolytics.
- 19.1% of patients with basilar occlusions are **misdiagnosed**, most commonly with a vestibular disorder. **[3]**

Case Description

This patient is a **54-year-old female on apixaban** anticoagulation who presented to the ED after an episode of **right-sided upper and lower extremity numbness, paresthesia, dizziness, and slurred speech that lasted for 20 minutes**, now resolved.



ED Triage

BP 131/85	Glucose 250 mg/dL	Symptoms Resolved	NIH Stroke Scale of 0

Exam: Exam with no abnormalities.
Did not meet institutional stroke alert criteria.

Differential

- Ischemic Stroke or Hemorrhagic Stroke
- Transient Ischemic Attack
- Thoracic Outlet Syndrome Related Ischemia
- Hyperglycemia
- Seizure with postictal state
- Migraine

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ED Course

ED Evaluation

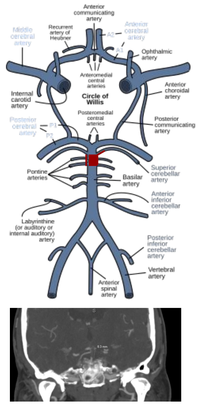
- Over the phone her daughter thought her speech was little off. Recent cross-country travel and cruise travel.
- Exam: Patient remained without weakness, numbness, or abnormal speech. NIHSS = 0.
- Medical History: diabetes, recently diagnosed left-sided thoracic outlet syndrome with confirmed axillary artery occlusion.
- Surgical History: **Attempted open thrombectomy two weeks prior did *not* identify any blood clots**;; Apixaban therapeutic anticoagulation was started.

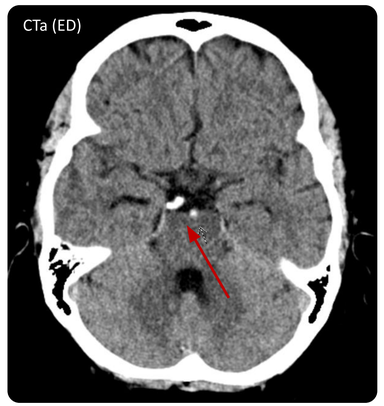
ED Workup

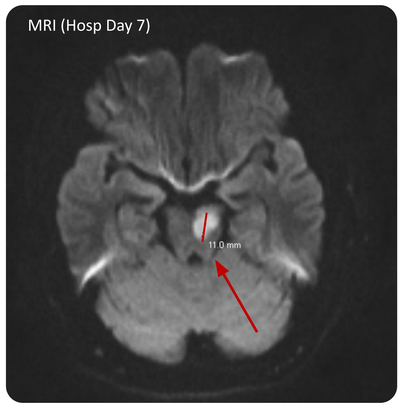
Synthesis: resolved neuro symptoms with potential vertebrobasilar localization
Labs: CBC, BMP, Mg2+, and EKG non-diagnostic.
Imaging:

- A CT scan did **not show an acute intracranial hemorrhage** or territorial infarct.
- A CT angiogram revealed an **8mm distal basilar thrombus with near-absent blood flow that extended into the left superior cerebellar artery.** [📷]

Disposition: admitted to neurocritical care unit
Hospital Course: C/b cryptogenic stroke; eventual d/c home







Hospital Course

Admission to Neuro ICU for Basilar Artery Occlusion (Day 0) → **(!) Stroke Alert** Worsening Dysarthria, R facial droop, difficulty swallowing (Day 6) → Progressed stenosis basilar artery, acute L midbrain infarct [📷] **Cryptogenic Stroke** → Symptoms Improved and Stable. No Thrombectomy. Plan to continue Eliquis 5mg BID 2º stroke prevention and 3mo repeat CTA, → Discharge Near neuro baseline! (Day ~20)

Case Discussion & Learning Points

- **ABCD2 Score** of 3 (**Low Risk**) 1% 2-Day Stroke Risk, 3.1% 90 Day Stroke Risk
- The patient's presentation of **unilateral transient paresthesia** is similar to **"herald hemiplegia,"** a sign sensitive for impending vertebrobasilar occlusion in 6-12 hours. **[4]**
  - Though reduced consciousness, quadriparesis, and cranial nerve abnormalities are considered hallmark symptoms of basilar artery occlusion, presentations vary greatly, including minimally symptomatic patients. **[5]**
- Without obtaining neuroimaging, it is difficult to rule out rare acute occult vascular pathologies.

ED Pearl: Why are vestibular disorders a common misdiagnosis?

- **SAEM GRACE 3-Guidelines** for **Spontaneous Episodic Vestibular Syndrome** (dizziness w/o trigger)**,** CT not routinely indicated. **[6]**
  - However, extremity numbness, paresthesia, and sensory deficit increase concern for TIA and **merit workup with CTA.**
  - If there were an *acute onset* of *persistent* dizziness, a HINTS exam could risk stratify for posterior circulation stroke.
  - Only ~50% of patients diagnosed with basilar occlusion have reduced levels of consciousness, with many patterns of neurologic defects **[5]**

Conclusions

- **Prompt identification** of basilar artery occlusion within the window for thrombolytic or endovascular intervention
  - critical to emergent management
  - critical to preventing complications (ex: locked-in syndrome)
- Clinical suspicion for vascular vertebrobasilar pathology should **remain high in a patient with dizziness and any additional neurologic symptoms,**
  - change in level of consciousness, eye movements, and gait, which makes a vascular etiology more likely. **[7]**
  - Should prompt neuroimaging, even without severe symptoms.
- Basilar occlusions are **often preceded by prodromal symptoms**,
  - If prodromal symptoms are detected prior to full occlusion, can facilitate timely treatment and improved outcomes.

References

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