## CC: Neck Pain

HPI: $70 y \mathrm{M}$ started 1 m ago $\mathrm{w} /$ sporadic but intense headaches associated w/neck pain.

36h before admission was typing on computer and was unable to localize keyboards. He felt the keyboard was lower than what he saw. He stood up, lost balance towards the left. This resolved spontaneously.

On same day, while watching TV had neck pain which radiated to $L$ side of head, associated w/ nausea, SOB (shortness of breath) and cough. Stood up and felt towards the left. Went to closest ED.

| PMH: DM, <br> HTN. | Fam Hx: |
| :--- | :--- |
| Meds: | Soc Hx: Peruvian. <br> Lawyer. |
|  | Health-Related <br> Behaviors: |
|  | Allergies: |

## Vitals: T: HR: BP: RR: $\mathrm{SpO}_{2}$

## Exam:

Systemic: Had hiccups.

## Neuro

## - Mental Status:

- Cranial Nerves: Facial symmetry w/sensory impairment on the L. Swallowing impairment. Gag reflex not present.
- Motor: Strength L $3 / 5, R 5 / 5$. Unsure if $L$ hemiparesis vs ataxia.
- Reflexes:
- Sensory: R hypoesthesia.
- Cerebellar: Horizontal nystagmus when face was pointing to left. Dysmetria - finger to nose test abnl.
- Other:


## Notable Labs \& Imaging

## Imaging:

CT brain no contrast: acute ischemic infarct on L cerebellar hemisphere and $L$ temporal lobe, $R$ pons paramedian had hyperdensity.
Brain MRI: Left posterolateral acute ischemic event in cerebellar hemisphere.

Further interrogation: 2 m ago he was feeling stressed. Patient used topical NSAID daily.

CT angio: extracranial and intracranial vertebral dissection w/PICA thrombi.

Final DX: Lateral medullary syndrome secondary to vertebral artery dissection.

Problem Representation: $70 y \mathrm{M}$ w/PMHx significant for DM and HTN p/w a new onset headache associated with neck pain recently aggravated $w / l o s s$ of balance and dysmetria.

## Teaching Points (Maria): \#EndNeurophobia

- E=MC2 Neck Pain:

Localizing: muscle $\rightarrow$ tension headaches, bone, cervical arteries, meninges (intra/extradural), spinal cord (intra/extramedullary).
Tempo: Hyperacute: trauma, vascular, seizure, migraines. Acute:
inflammatory, infection. Subacute: Infectious. Chronic: structural.
Acute on Chronic: critical point of a mass - compression, vascular event. (Most prone brain tumor to hemorrhage: melanoma, most common to hemorrhage: lung.) Vascular event 2ndary to infectious vasculitis, vasculitis (GCA)
IB: tuberculoma, Pott's disease, meningitis/arachnoiditis.

- Headaches
- Primary (migraine, tension, cluster) vs Secondary HA

Red flags: new onset HA, age (Giant cell arteritis, don't want to miss in new HA in older patients even w/out other signs), sensory/motor abnormalities, changes in preexistent HA, immunosuppression, increased ICP (brain, blood, CSF).

- Cerebellum

Balance: Central vs Peripheral Vertigo (HiNTS) vs Proprioception vs Sensory Abnl vs Environment.
Ataxia: sensory vs cerebellar (truncal (vermis) vs extremities (hemispheres)) Cross signs: ipsilateral face, contralateral body.

+ Brainstem findings:


## Swallowing, CN 9-10 $\rightarrow$ medulla.

- Midline brainstem: $3,4,6,12$, CSP tract, medial lemniscus, MLF.
- Trigeminal has all 3 levels of brainstem in lateral brainstem (PICA $\leftarrow$ vertebral artery).

