

KANSAS INITIATIVE FOR STROKE SURVIVAL
A PROJECT BY AND FOR KANSANS
Phone (913) 588-1554 • Fax (913) 945-8892

Posterior Circulation Stroke Localization

“First Tuesdays” Lecture Series
Sabreena Slavin, MD

1

Introduction and Goal of “First Tuesdays”

- **UPDATE: STARTING MARCH 2ND, NEW TIME 12-12:30 PM**
- **UPDATE: WILL GIVE 0.5 CREDIT CE**
- Didactic lecture series as part of the Kansas Initiative for Stroke Survival (KISS)
- Updates in Practice and FAQ's on Acute Stroke Care
- 20 minute didactic, 10 minutes for questions/discussion.

2

Posterior Circulation Strokes

- Posterior circulation strokes account for 10-25% of all ischemic strokes.
 - Associated with longer door-to-needle times, difficult to detect on plain CT
 - May have nonspecific signs that are confusing for central vs peripheral etiology
 - Can have bilateral or “cross findings” (eg. facial weakness on one side with extremity weakness on the other)

Caplan et al, *J Clin Neurol*, 2005; Sarraj et al, *Int J Stroke*, 2015; Chalela et al, *Lancet*, 2007

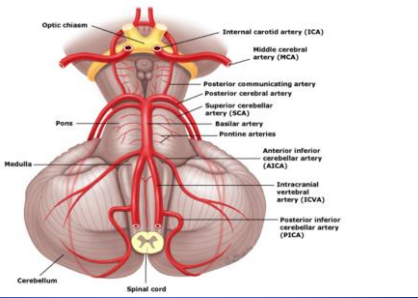
3

Dizziness and Vertigo?

- Isolated dizziness/vertigo presentations have even longer delay of diagnosis of stroke.
- Other considerations on differential for vertigo besides stroke:
 - Central processes: vestibular migraine
 - Peripheral processes: vestibular neuronitis/labyrinthitis, BPPV, Meniere's disease.
- More likely to be **CENTRAL vertigo**: spontaneous, nonpositional, nonepisodic.

Kim et al, *Eur Neurol*, 2013

4

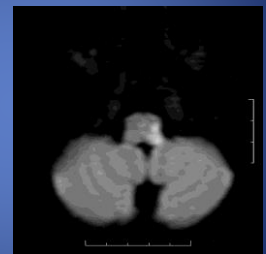


LVO in posterior circulation = vertebrasilar junction, basilar, PCA

5

Lateral medulla

- **PICA or vertebral artery**
- Numbness of ipsilateral face and contralateral limbs
- Diplopia (skew deviation)
- Dysarthria
- Dysphagia
- Ataxia
- Ipsilateral Horner's syndrome
- Poststroke pain

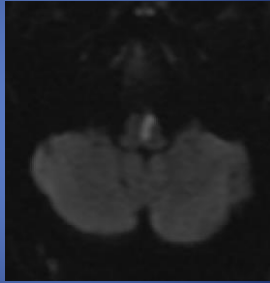


<https://radiopaedia.org/articles/lateral-medullary-syndrome?lang=us>

6

Medial medullary

- Vertebral artery
- Contralateral hemiparesis
- Ipsilateral CN 12 palsy (tongue deviation)

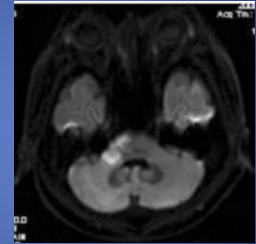


<https://radiopaedia.org/articles/medial-medullary-syndrome?lang=us>

7

Lateral pontine

- Vertebral artery
- Contralateral weakness and sensory loss
- Ipsilateral ataxia



Yu et al, BMC Neurology 2017

8

Medial pontine

- Pontine perforators
- Contralateral weakness and facial palsy
- Ipsilateral CN 6 palsy (lateral gaze restriction)

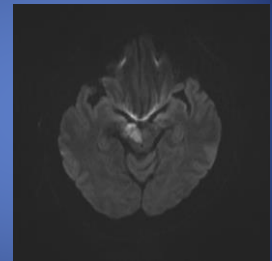


Yu et al, BMC Neurology 2017

9

Medial midbrain

- PCA or paramedian of basilar branches
- Less common as isolated syndrome
- Contralateral weakness
- Ipsilateral CN 3 palsy (limited upward and medial gaze)
- If red nucleus involved, can also have contralateral choreoathetosis



<https://radiopaedia.org/cases/acute-midbrain-infarction?lang=us>

10

Basilar

- Loss of consciousness
- Bilateral weakness
- Gaze restriction (can have preserved upgaze)
- Top of basilar = visual deficits, behavioral abnormalities, but can have preserved motor function
- Early identification is key with CTA head/neck.
- Worse outcomes

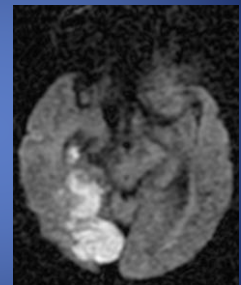


<https://radiopaedia.org/articles/acute-basilar-artery-occlusion?lang=us>

11

PCA

- Contralateral homonymous hemianopia
- Hemisensory loss and pain



<https://radiopaedia.org/articles/posterior-cerebral-artery-pca-infarct?lang=us>

12

Questions?

- Reminder: Patient with LVO can be taken for endovascular intervention up to 24 hours from last seen normal based on perfusion imaging.
- Reminder: If suspecting basilar LVO, please obtain CTA head/neck ASAP.
- Call for help anytime!
- <http://www.kissnetwork.us/>
- email at sslavin2@kumc.edu
- **UPDATE: STARTING MARCH 2ND, NEW TIME 12-12:30 PM**