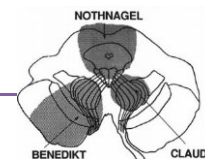


ANATOMY

Vascular Syndromes of the Brainstem

	Syndrome	Vascular	Structures affected	Presentation
Midbrain	Weber (superior alternating hemiplegia)	Paramedian branch of PCA	CN: 3 rd Nuclei: Tracts: CST	Ipsilateral: 3 rd palsy Contralateral: Hemiplegia
	Benedikt's (Paramedian midbrain)	Paramedian branch of PCA	CN: 3 rd Nuclei: Red nucleus Tracts: CST	Ipsilateral: 3 rd palsy Contralateral: Hemiplegia, rubral tremors, chorea
	Claude	Paramedian branch of PCA	CN: 3 rd Nuclei: Red nucleus Tracts: CST - SCP	Ipsilateral: 3 rd palsy Contralateral: Ataxia
	Nothnagel	Midbrain tumors	3 rd CN - Sup cerebellar ped.	Bilateral 3 rd palsy Cerebellar ataxia
	Parinaud (dorsal midbrain)	Tectal lesion: Pineal tumor- MS - Stroke <u>Obstructive HCP</u>	CN: Nuclei: upward gaze center (riMLF) – Edinger Westphal Tracts:	Triad of: -Upward gaze palsy (Supranuclear) -Pupillary light near dissociation (accommodates, doesn't react to light) -Convergence-retraction nystagmus (attempts for upward gaze causes convergence)
Pons	Millard Gubler (Ventral Pontine)	Penetrating of Basilar	CN: 6 th – 7 th Nuclei: Tracts: CST	Ipsilateral: 6 th – 7 th palsy Contralateral: hemiplegia
	Foville (Inferior medial pontine)	Penetrating of Basilar	CN: 6 th – 7 th Nuclei: PPRF Tracts: MLB – ML – CST	Ipsilateral: 7 th palsy - horizontal gaze palsy Contralateral: hemiplegia – hemihypoesthesia - INC
	Lateral Pontine (Marie Foix)	AICA	CN: Spinal 5 th - 7 th – 8 th Nuclei: cochlear – vestibular, lateral reticular nucleus (cause Horner) Tracts: LSTT – Cerebellar peduncle – Descending sympathetic	Ipsilateral: Spinal 5 th (all facial sensations) – 7 th (facial weakness) – 8 th (hearing loss) – Ataxia – Horner's — falling to same side (vestibular) Contralateral: pain and temp loss – contralateral beating nystagmus
Medulla	Avellis'		9 th - 10 th - CST	9 th + 10 th palsy Crossed hemiplegia
	Jackson		9 th - 10 th - 11 th - 12 th - CST	9 th , 10 th , 11 th , 12 th palsy Crossed hemiplegia
	Wallenberg Lateral medullary	PICA	9 th , 10 th , 11 th , spinal 5 th - LSTT, spinocerebellar tract	9 th , 10 th , 11 th , spinal 5 th palsy Ipsilateral Cerebellar ataxia Contralateral pain & temp loss.
	Medial medullary		12 th CN – CST – Medial lemniscus	12 th palsy Crossed hemiplegia & deep sensory loss
	Top of basilar	Rostral basilar	Midbrain, thalamus, temporo-occipital	Hemianopia or cortical blindness Impaired vertical gaze Loss of initiative (abulia)
	Locked in		Bilateral ventral pontine lesion	Quadriplegic – intact consciousness – aphasia – preserved vertical eye movement and blinking



- There is a lot of overlap between brainstem syndromes, presented here are the main characteristic.
- **Supranuclear upgaze paralysis:** means loss of voluntary upgaze but preserved with doll's head maneuver.
- **AICA vs PICA:** AICA involves ipsilateral facial weakness and hearing loss.