

Stroke Syndrome Recognition: Posterior Circulation Stroke Syndromes

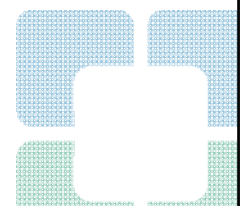
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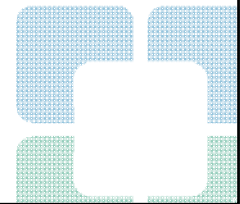
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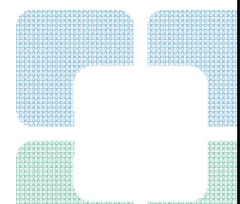
Epidemiology

- 20 to 25% of strokes
- Misdiagnosed up to 35 percent of time
- Differential Diagnosis
 - drug overdose
 - metabolic aberration
 - sepsis syndrome



Causes

- Atherothrombotic disease
- Embolic
 - Cardioembolic
 - Atheroembolic from a proximal large vessel.
- More commonly embolic
 - Maximal at onset
- Less Atherothrombotic or small vessel
 - deficits fluctuate
 - stuttering



Low Hanging Fruit....



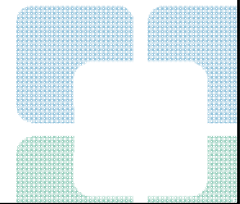
Low Hanging Fruit....



DIZZINESS

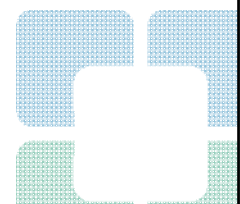
- 4 million ED VISITS/ year
- 5 % (200,000 visits) - cerebrovascular cause
 - 90% are vertebrobasilar or posterior circulation in origins.

New England Medical Center	Posterior Circulation Registry
SYMPTOMS AND SIGNS	(%) N = 407
Dizziness	47
Dysarthria	31
Nausea and Vomiting	2
Loss or Alteration of Consciousness	5
Limb Weakness	38
Ataxia	31
Nystagmus	24



DIZZINESS

- **Persistent**
- **Accompanied by other positive symptoms(pain)**
- **Neurological deficit**
- **1-2 accompanying symptoms/ signs**



Low Hanging Fruit....



Arterial Dissection

- 2% of all ischemic strokes,
- 25% of ischemic strokes in young and middle age
- 60-70% report neck pain

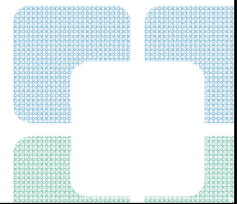
History Findings

Positive Symptoms

- Dizziness
- Nausea
- vomiting,
- Hiccups
- Tinnitus
- hallucinations.

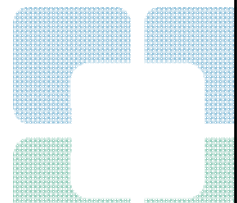
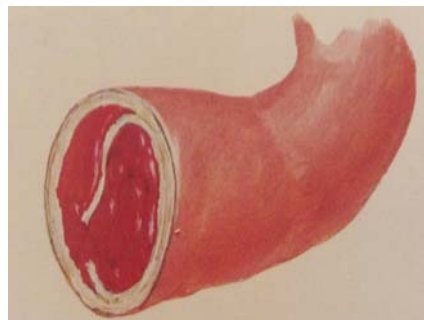
Common stroke risk factors

- ✓ HBP
- ✓ HDL
- ✓ DM



History Findings

Neck Pain....



NEUROLOGICAL EXAMINATION

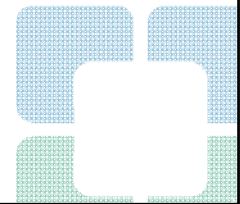
- Ataxia
 - Nystagmus
 - Altered Mentation
 - Focal Weakness
 - Lethargy
 - Truncal Ataxia
 - Gait Ataxia
- Scales
 - NIHSS
 - BEFAST
 - HINTS

HINTS

- **HEAD IMPULSE**
 - Patient fixes eyes on Examiners nose, head quickly rotated by examiner
 - Normal – Eyes remain fixated
 - Abnormal – Eyes make a corrective Saccade to fix on the target (nose)
 - **VOR reflex suggests peripheral pathology**
- **NYSTAGMUS TYPE**
 - Vertical/ Multidirectional – Central Pathology
- **TEST OF SKEW**
 - Cover and Uncover Test – Patient focuses on examiners nose
 - **Central Pathology →>Refixation of the eyes or acute vertical misalignment at rest**

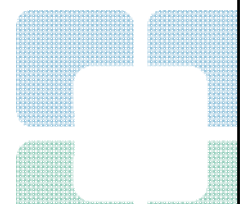
Imaging

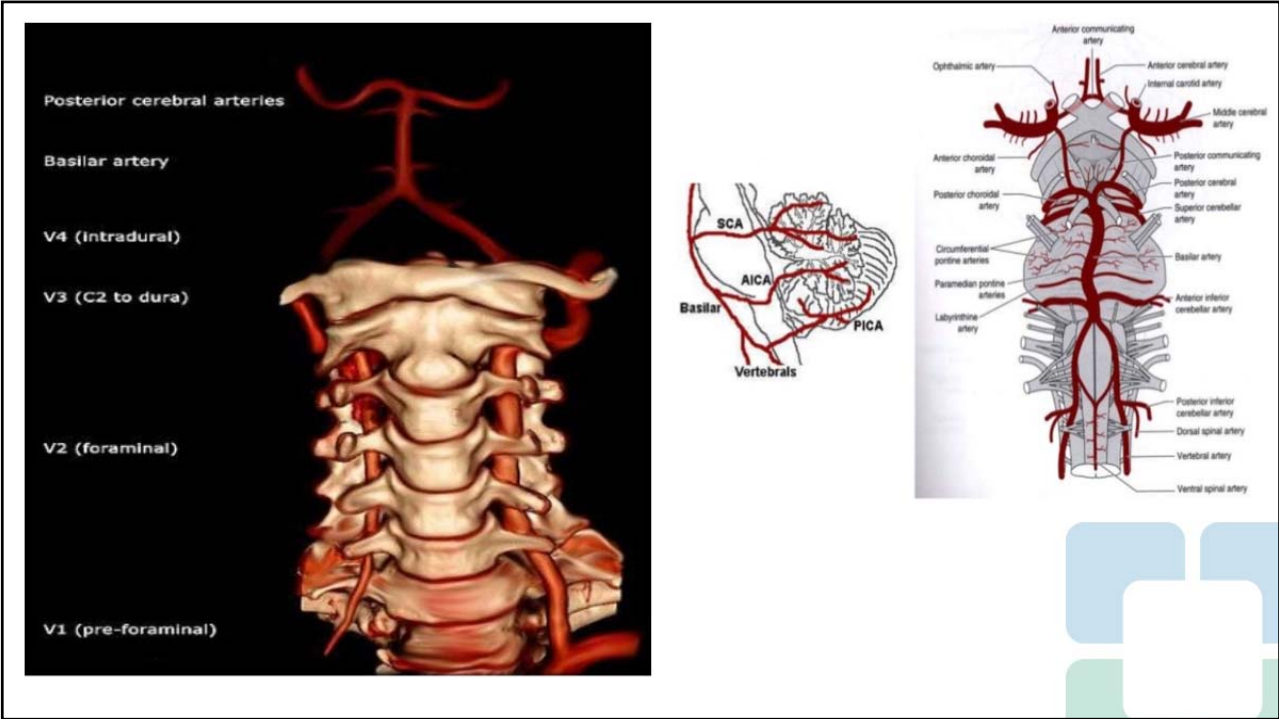
- CT
- CTA
- Consideration of Hyperacute MRI



Acute Management

- When indicated...
 - TPA
 - Mechanical Thrombectomy
 - Consideration for antiplatelet tx.
 - Tailoring of the blood pressure control goals
 - Statin Tx.
 - Other measures

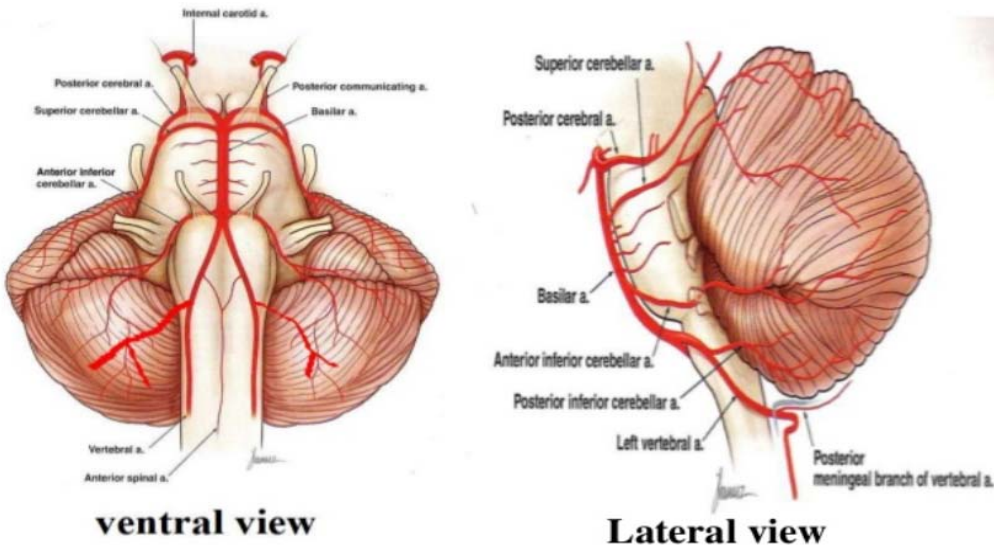




Localization



Posterior circulation



Common Posterior Circulation Stroke Syndromes

- Lateral Medullary (AKA – Wallenberg)
- Cerebellar Infarction
- Basilar Artery Perforator Syndrome
- Basilar Artery Thrombosis
- Posterior Cerebral Artery Syndrome

Lateral Medullary Infarction

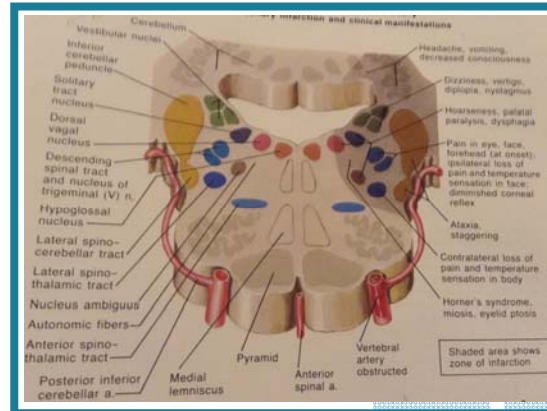
- **Most Common Brainstem Stroke**

- **Common Symptoms**

- dizziness or vertigo
- ipsilateral facial pain
- nausea and vomiting
- Hiccups
- Hoarseness
- difficulty swallowing,

- **Classic Triad**

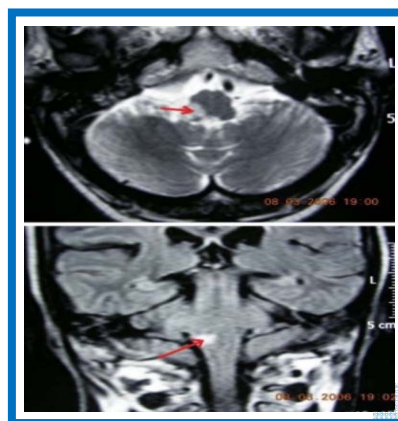
- ipsilateral meiosis and Ptosis - HORNERS
- ipsilateral limb ataxia
- contralateral limb numbness.



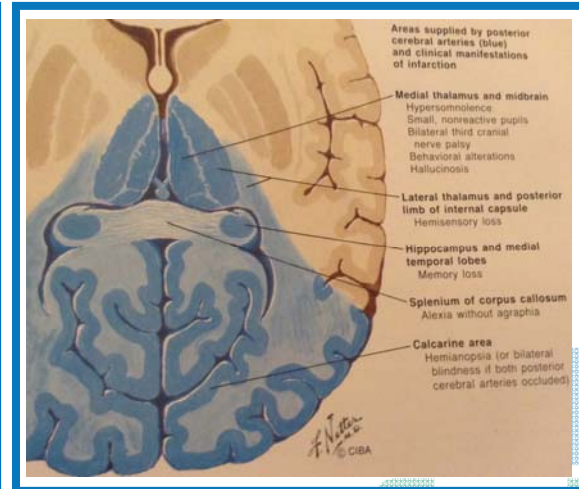
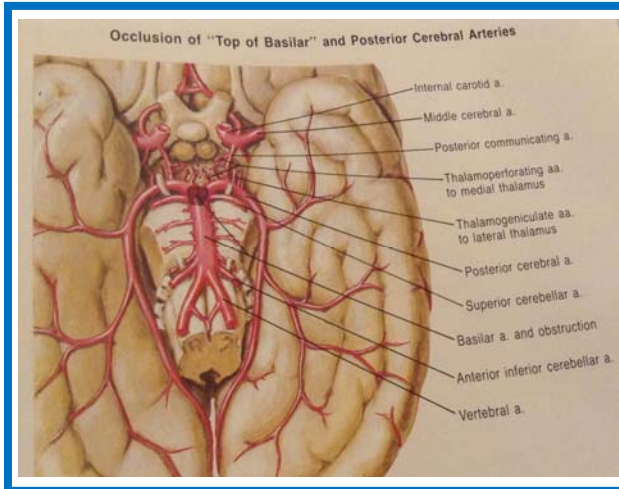
Lateral Medullary Infarction

- **Other Signs**

- Diplopia
- Multidirectional Nystagmus
- Ocular tilt or Skew - ipsilateral eye tilted downward,
- Ipsilateral facial weakness
- Soft palate weakness
- Ipsilateral Loss of Facial Pain and Temperature sensation
- Unsteady Gait

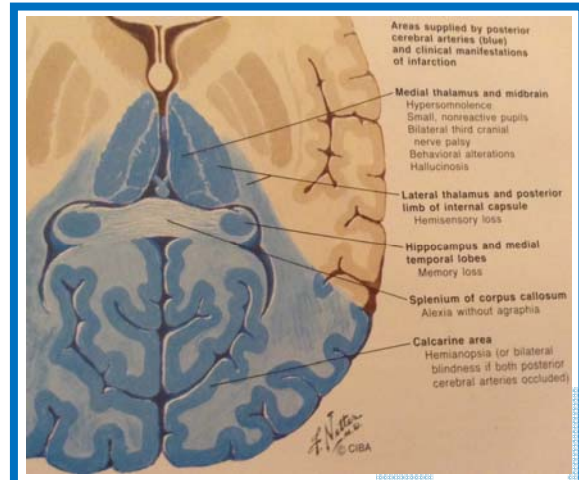


Top of the Basilar Syndrome



Top of the Basilar Syndrome

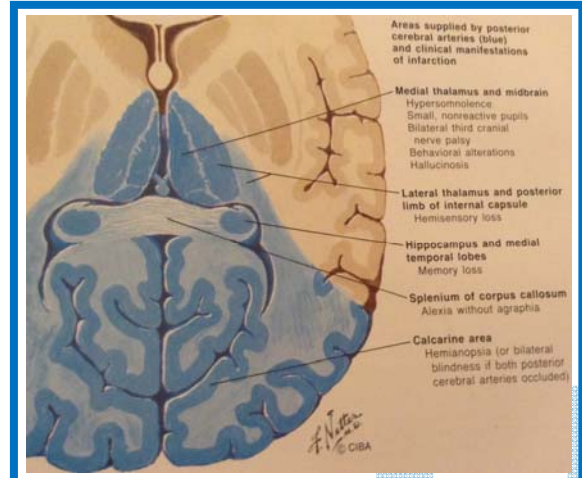
- **Symptoms**
 - visual and auditory hallucinations
 - dreamlike experiences
 - hemianopsia or bilateral vision loss
 - hemisensori loss and parathesias
 - Amnesia
 - Alexia without agraphia,
 - Color agnosia,
- **Exam Findings**
 - Pupils - pin point or mid position
 - Decreased pupil reactivity
 - Ptosis
 - paralysis of vertical gaze,
 - Mental impairment



Top of the Basilar Syndrome

- **Mimics**

- Toxic Metabolic issue
- Infection
- Post-ictal state



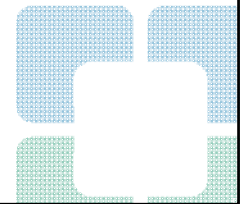
CASE Study

- 59 yo man
- PMH HTN, DM. HPL
- ER – acute onset dizziness
slurred speech
numbness left side
- Symptoms resolve in the ED



Prognosis in Posterior Circulation Stroke

- Gulli et al. *Stroke* 2013;44:598–604
- Pooled analysis of 323 patients
- 90-day risk of recurrent stroke
- 2.8% in patients with no stenosis
- 5.4% in patients with extracranial vertebral artery stenosis
- 13.9% in patients with intracranial stenosis (OR=5.6; 95% CI 1.7 to 18.7, p<0.0001)



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Every life deserves world class care.