

Case 3

63 year old male called EMS at 10 pm with a chief complaint of feeling dizzy for 2 hours. No headache, mild nausea, no vision change, no speech change.

- Symptoms began after dinner; 2 cocktails and 2 glasses of wine
- Dizziness described as room spinning
- Patient laid down and symptoms did not change, ie, no difference lying down or standing

Case 3

- PMHx:
 - Alcohol Abuse, quit for 3 years (!)
 - Hypertension
- Medications
 - Enalapril, 10 mg
 - Aspirin, 81 mg
- Social Hx
 - Smoking - 1 pack per day
- ROS: Mild "dizzy spells" for the past 2 weeks, each lasting 5-10 minutes

EMS called

- Upon arrival at 10:30 - symptoms resolved
- BP 190 / 110, P 80, RR 14
- Alert, O x 3
- No facial droop
- No UE drift
- Speech fluent
- PERL / EOM intact
- Gait – patient felt unsteady and preferred to sit down

Question 1

Can vertigo be the sole presently complaint posterior circulation ischemia?

- a) Yes
- b) No

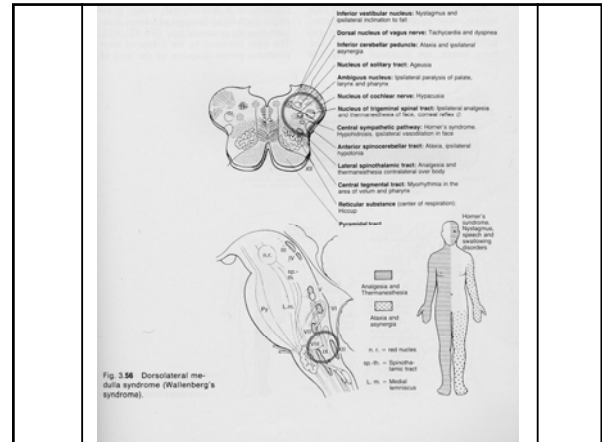
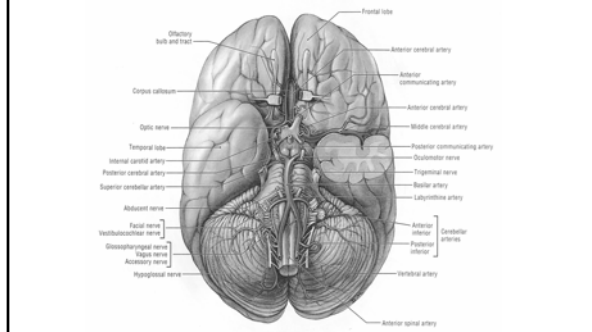
Posterior Circulation Ischemia

- Prodrome very common
 - 60 % of patients with basilar artery thrombosis
 - Stuttering or progressive onset of symptoms
 - 2 weeks prior to ED presentation

Emergency Department Presentation

- Clinical Findings: Depends on the syndrome
 - Range: asymptomatic to comatose
- The 5 Ds: Dizziness, Diplopia, Dysarthria, Dysphagia, Dystaxia
- Hallmarks: Crossed findings
 - Cranial nerve deficits - Ipsilateral
 - Motor / Sensory deficits - Contralateral

Posterior Circulation Stroke: Anatomy



Emergency Department Presentation

- Prodromal Symptoms (in order of frequency)
 - Vertigo and Nausea (30%)
 - Headache, Neckache (20%)
 - Hemiparesis (10%)
 - Dysarthria, Diplopia (10%)
 - Hemianopia (6%)

Question 2

Which of the following would you recommend to EMS:

- a) Do not transport
- b) Transport to the closest hospital
- c) Transport to a designated stroke center



Stroke Centers: The Thesis

- Thrombolytic and other interventions are effective treatments in improving outcomes from acute stroke
- Failure to adhere to protocols increase morbidity and mortality

Case 3

- Patient is transported to the closest hospital
 - BP- 190 / 110, P-80, RR-14, 98%, BS 110
 - Alert, O_x3; NAD
 - Neck: no bruit
 - Heart and lungs: “normal”
 - CN: “intact”
 - Sensation: “intact”
 - Gait: “normal”
 - ECG: normal sinus rhythm

Question 3

Which of the following would you recommend?

- a) Discharge with PMD follow up
- b) Discharge on increased aspirin
- c) Discharge on clopidogrel
- d) Discharge on dipyridamole
- e) Admit to the hospital

Case 3

- Discharge diagnosis: “Dizziness – resolved”
 - Limit alcohol use
 - Return to ED if symptoms reoccur
 - Call your doctor in the am

TIA and Stroke

- Johnston, et al. JAMA 2000; 284:2901
 - Follow-up of 1707 ED patients diagnosed with TIA
 - Stroke rate at 90 days was 10.5%
 - Half of these occurred in the first 48 hours after ED presentation
- Gladstone, et al. CMAJ 2004; 170:1099-1104
 - 371 consecutive patients with TIA
 - 8% ischemic stroke in 30 days; ½ within 48 hours
 - 12% in motor deficit group

ED Disposition

- Consider ED discharge if:
 - Further testing will not change treatment
 - Prior work-up
 - Not a candidate for CEA or anticoagulation
 - ECG
 - Cardiac echo
 - Carotid ultrasound

Management: Antiplatelet Therapy

- Aspirin
 - Compared with placebo in patients with minor stroke/TIA
 - Relative risk of composite endpoint reduced by 13% to 17%
 - Dose of aspirin probably not important
 - Lower dose gives lower incidence of GI side effects.

Management

- Cochrane Systematic Review: September 2004
- Clopidogrel and Ticlopidine
 - Effective in reducing composite endpoint of morbidity and mortality from vascular disease
 - Less GI complications than ASA
 - More skin rash and neutropenia with ticlopidine

Management: Dipyridamole

- Meta-analysis. Stroke 2005; 36:162-168
 - Small absolute risk reduction for stroke compared with ASA alone
 - Recommended if symptomatic on ASA

TIA Management

- Discharged patients should receive ASA 50 - 325 mg/day
 - Based on cost and small absolute benefit of other agents
- Patients with TIA on ASA should have change in agent
 - Dipyridamole plus ASA
 - Clopidogrel
 - Increase dose of ASA to 1300 mg/day

Case 3

- While waiting in the waiting room for a taxi, the patient acutely developed vertigo, left sided facial droop, right sided weakness, slurred speech
- Alert but decreased gag
- BP 210 / 115, P 110, RR 14, POx 92% RA
- BS 110
- A decision is made to aero-medical transport to a stroke center

Question 4

Repeat BPs over the next 15 minute remain 220 / 120. What do you recommend?

- a) No BP intervention
- b) Clonidine .2 mg po
- c) Labetolol 10 mg IV
- d) Nitroprusside .5 ug / kg / min

Question 5

BP is treated with labetalol and decreases to 180 / 100. Would you intubate this patient before transport?

- a) No
- b) Yes: Ativan / Ketamine / Suc
- c) Yes: Fentanyl / Etomidate / Roc
- d) Yes: Etomidate / Suc

Case 3

- The patient arrives at the stroke center 45 minutes from the onset of symptoms
- BP 160 / 90
- Patient is intubated, left facial droop present, not moving right side
- CT is done and read within 90 minutes of symptom onset – no infarct, edema, hemorrhage

Question 6

Which of the following do you recommend?

- a) Nothing
- b) Induced hypothermia to 32 degrees
- c) Intravenous tPA
- d) Intra-arterial tPA
- e) Other

Case Study: Outcome

- Patient received intravenous thrombolysis
- Significant early improvement but without complete resolution of symptoms
- On day 4, the NIHSS score was 10
- MRA : Left superior cerebellar artery and both anterior-inferior cerebellar arteries were non-visualized
- Cardiac evaluation was negative
- He was transferred to rehab on coumadin