Stroke Prevention Clinic
TIA and Stroke Management

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Tuesday June 3, 2014

Objectives

- To describe what we do at the Stroke Prevention Clinic
- To define Transient Ischemic Attack
- To define Stroke
- To discuss Diagnosis and Management of TIA
- To discuss two case studies

Stroke Prevention Clinic
Contact Information

- Located BGH – WCA 1 Ext 2871
- Referral from a health professional (family physician or NP must send a referral note)
- Referral available online (pdf format)
  - http://www.qhc.on.ca/stroke--district-stroke-centre-c77.php
  - **Goal: The Stroke Prevention Clinic provides early access to multidisciplinary assessment, diagnostic testing, preventive measures and treatment for patients suspected of TIA or Stroke.**

Definition of TIA “mini-stroke”

- Transient focal symptoms (usually 5 – 20 minutes) without brain damage
- Focal symptoms include weakness, sensory loss, visual loss, loss of balance, vertigo and double vision in ONE arterial territory
- 15% of strokes have a warning TIA
- 10-20% of TIA patients will have a stroke within 90 days

Definition of Stroke

- “Ischemic stroke” refers to brain damage due to impaired blood flow.
- Stroke is a syndrome with many potential causes, differing symptoms and clinical signs
- There are 2 main types:
  - Ischemic: due to lack of blood supply
  - Hemorrhagic: due to bleeding in the brain

Causes of Stroke:

- Cardioembolic ~ 30%
- Thrombotic ~ 50%
- Hemorrhage ~ 20%

Questions we ask ourselves

- Is this a TIA, stroke or something else?
- What is the likely cause?
- What part of the brain is damaged?
- What are the vascular risk factors?
  - HTN, DM, smoking, hyperlipidemia
- What are the associated problems?
  - Physical and psychological

Triage

- Triage Priority
  - Level 1: Emergent < 48hrs
  - Level 2: Urgent < 7 days
  - Level 3: Semi-Urgent < 14 days
  - Level 4: Elective < 30 days

Case 1

- 91 year old very fit and active man who golfs every day
- Sudden onset of left-sided weakness May 15, 2014
- ER MD assessment
  - labs, CT Head, ECG
- CCAC, PT, OT, SW
- Patient discharged home with next day
  - Carotid Ultrasound
  - Referral to Stroke Prevention Clinic

Case 1

Past History:

- Myocardial infarction 1974
- Triple Coronary Bypass 2001 with aneurysmectomy
- HTN – had not been on treatment
- History of non-compliance: had stopped all prescribed medications after his bypass surgery

Medications:

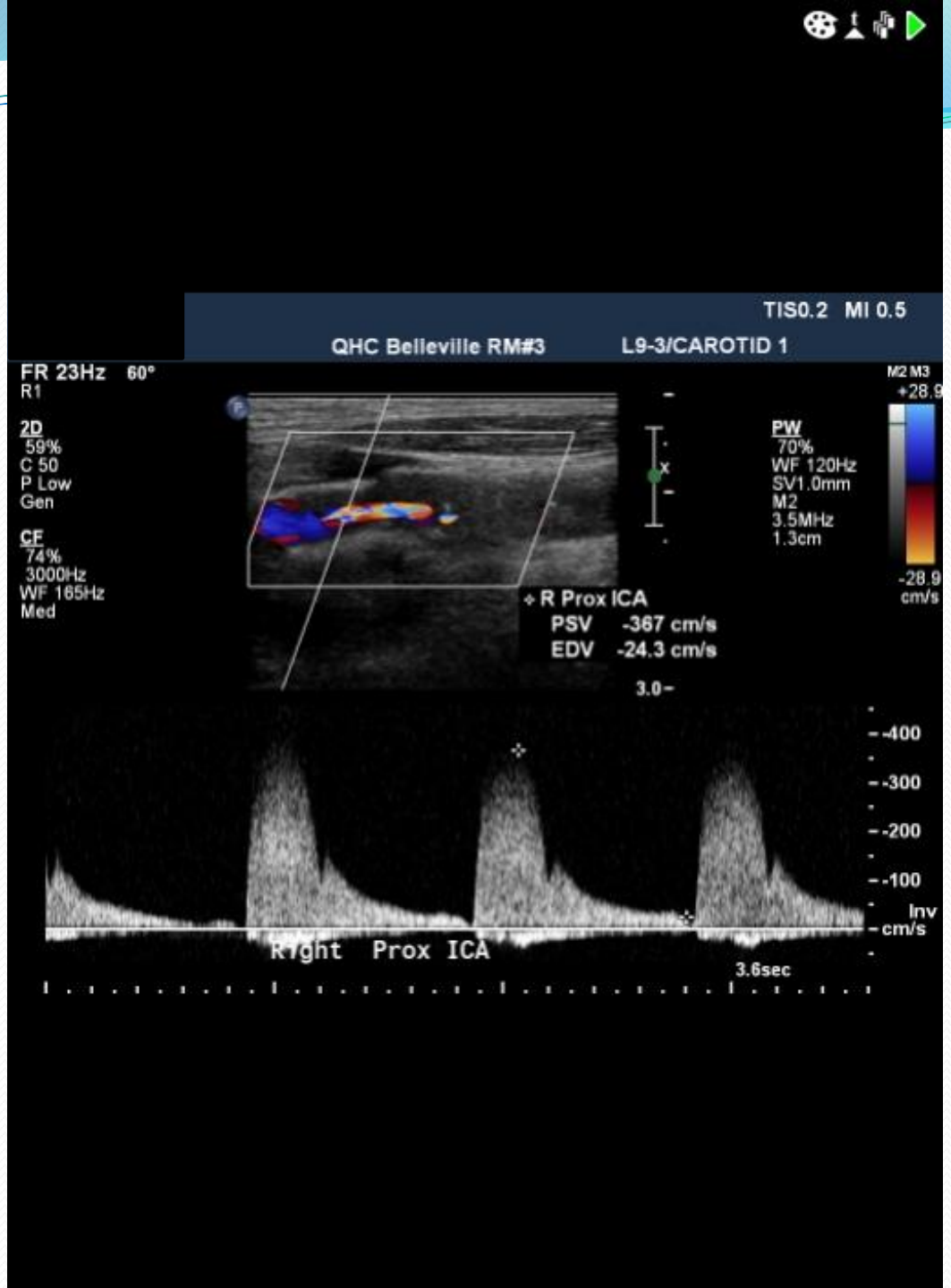
- Atorvastatin 20mg od – Started ER
- ASA 81mg od – Started ER
- Allopurinol 300mg od - Restarted
- Variety of vitamin and nutritional supplements

Physical Exam findings:

- BP 125/61, Pulse 72 – regular
- Mild residual left-sided weakness, increased reflexes on left

Recommendations

- Triage Level 1 since potential surgical candidate
- Urgent CT Angiogram to confirm the right internal carotid stenosis, with a view to carotid endarterectomy or angioplasty
- Emphasis on medication compliance
- Rehabilitation Day Hospital referral for PT, OT
- Should not drive for a month and completely recovered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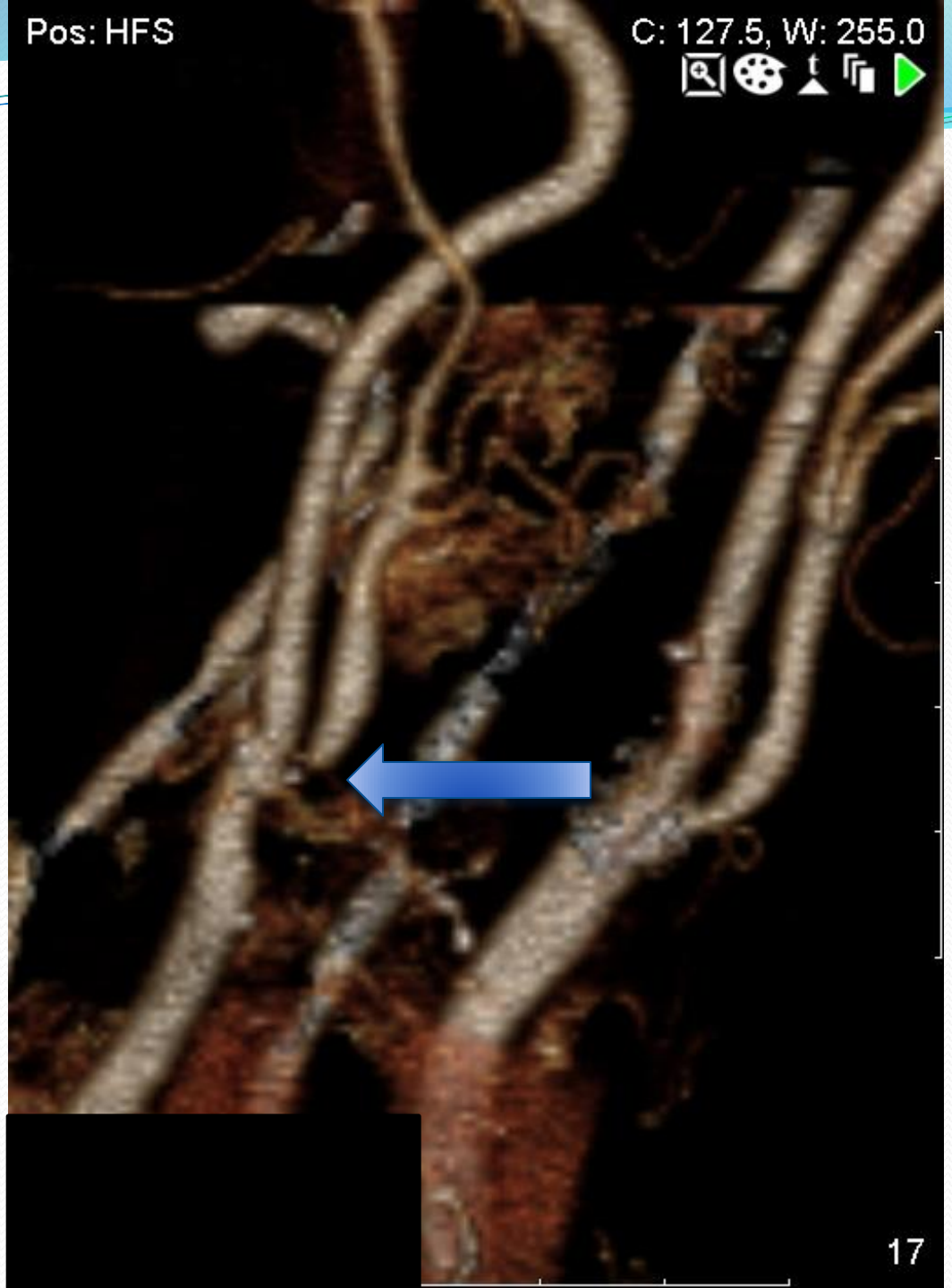
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Diagnostic Tests	Finding
CT Head (non-contrast)	No evidence of acute stroke
Carotid Ultrasound	Right Internal Carotid Stenosis >70% Left Internal Carotid Stenosis 50-69%
CT Angiogram	Right External Carotid Stenosis

Diagnosis (es):

1. Stroke with left hemiparesis, resolving
2. Previous Myocardial Infarction 1974
3. Previous triple coronary bypass surgery and aneurysmectomy 2001
4. Migraine, stable
5. Gout, stable

Important Points from Case 1

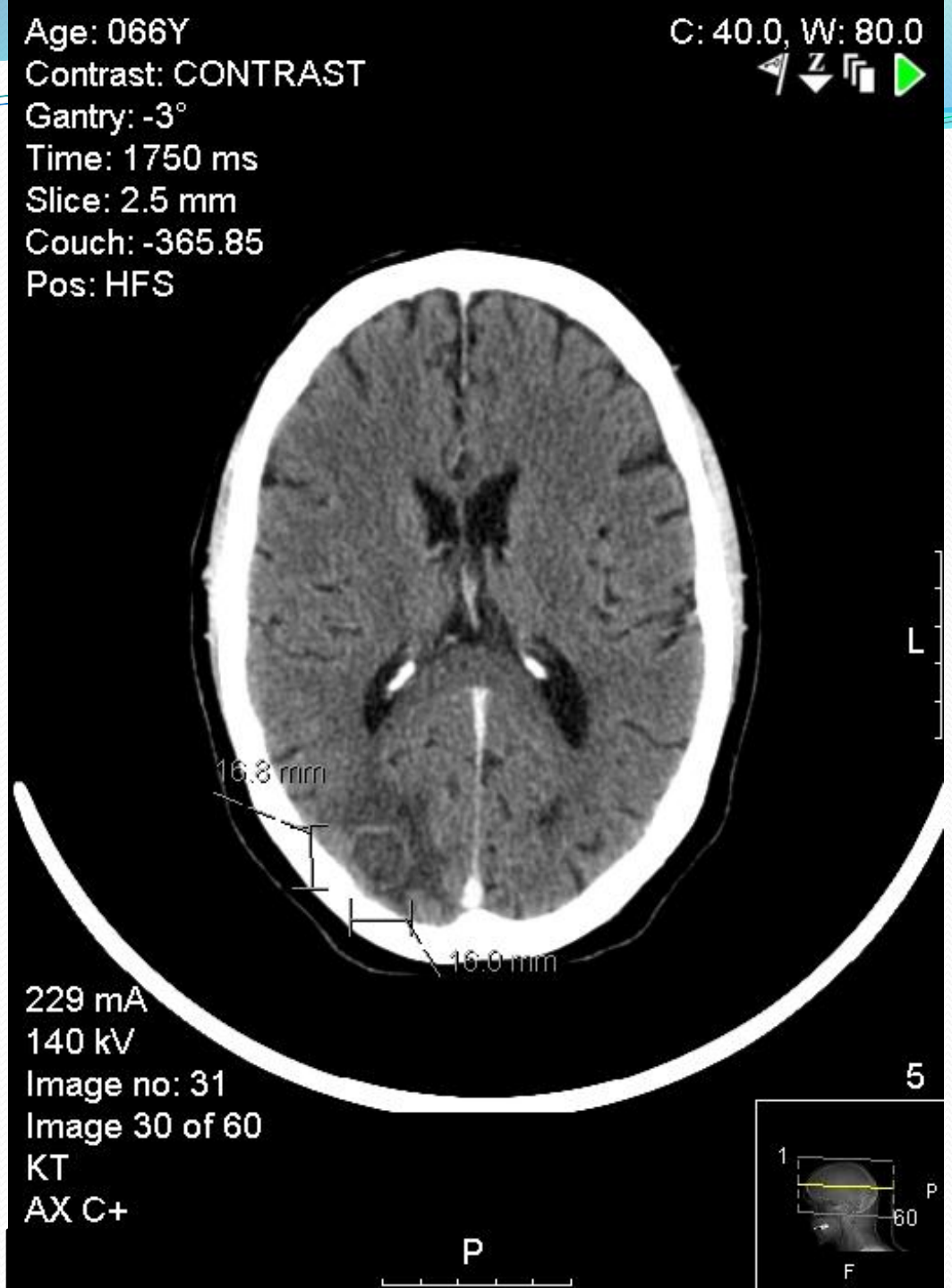
- The CT scan is often normal in acute stroke, and the test is done to exclude hemorrhage and tumour
- Rapid assessment of patients with TIA or minor stroke is essential to look for patients eligible for endarterectomy and angioplasty
- Diagnostic tests may be misleading!

Case 2 History

- This 66 year old man had a sudden onset of visual flashing on the left side on March 15, 2014
- Symptoms lasted a few minutes but recurred 3 or 4 times
- His ophthalmologist made a diagnosis of migraine
- Past History:
  - HTN, hyperlipidemia,
  - No history of migraine headaches
  - DVT 2009 (Unprovoked)
  - Peripheral sensory neuropathy

Initial management

- CT Head Scan: Right occipital brain tumour
- Referral to neurosurgeon and preparation for surgery
- Preoperative MRI head scan showed a stroke, not a tumour
- Triage Level 4 because of the long delay from stroke to referral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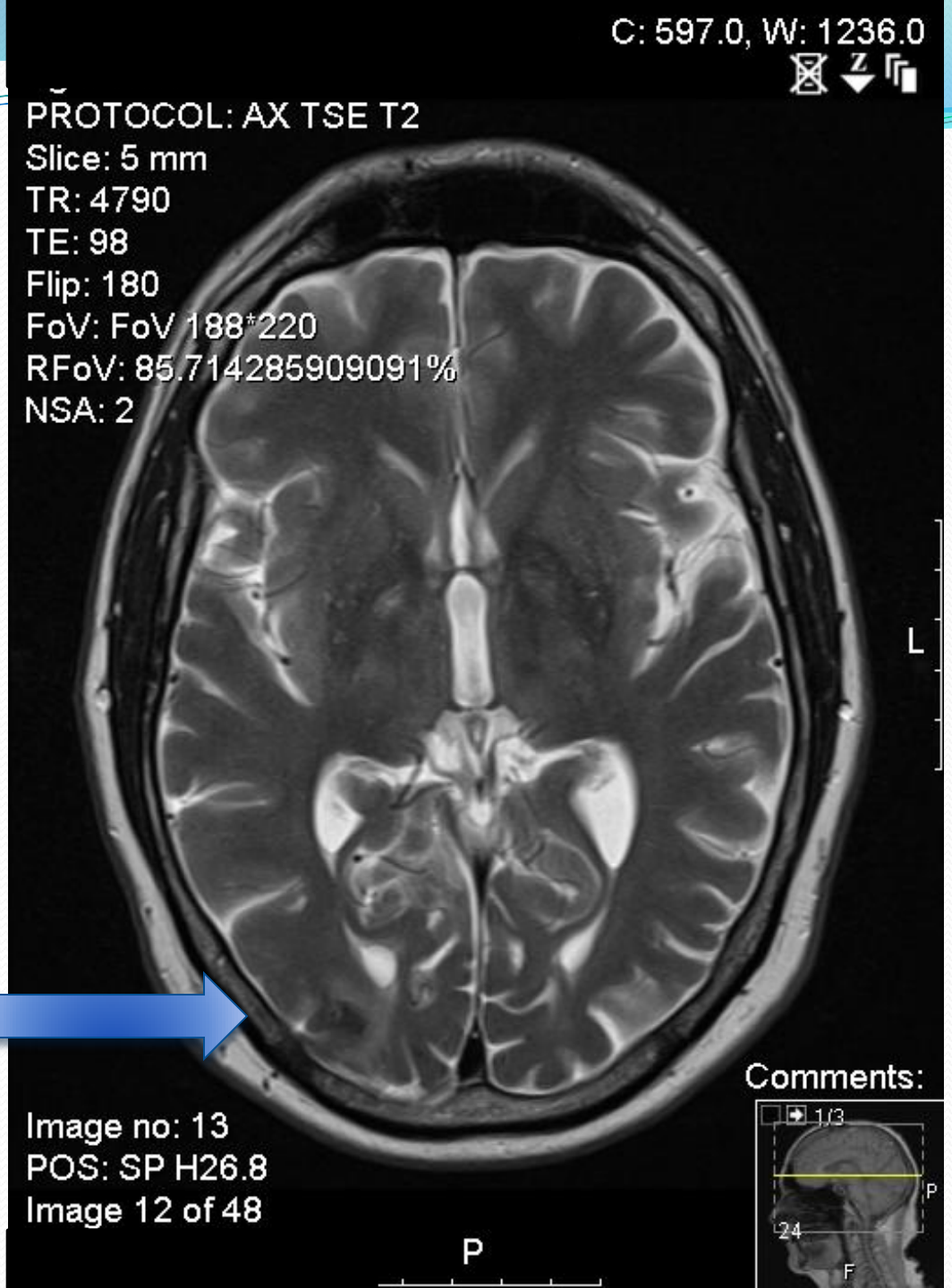
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Case 2 Medications

- ASA 81mg od – New (March 2014)
- Perindopril 8mg od
- Simvastatin 10mg od – New (January 2014)
- Pantoprazole 40mg od
- Naproxen 500mg bid prn (for gout)
- Vesicare 5mg od
- Vitamin Supplements

Review of Risk factors:

- Father at history of TIAs and Stroke
- Quit Smoking 1989 (history 1 pack/day for 25 yrs)
- Alcohol: 3 – 4 pints beer / week
- No use of recreational drugs
- Hyperlipidemia
- HTN

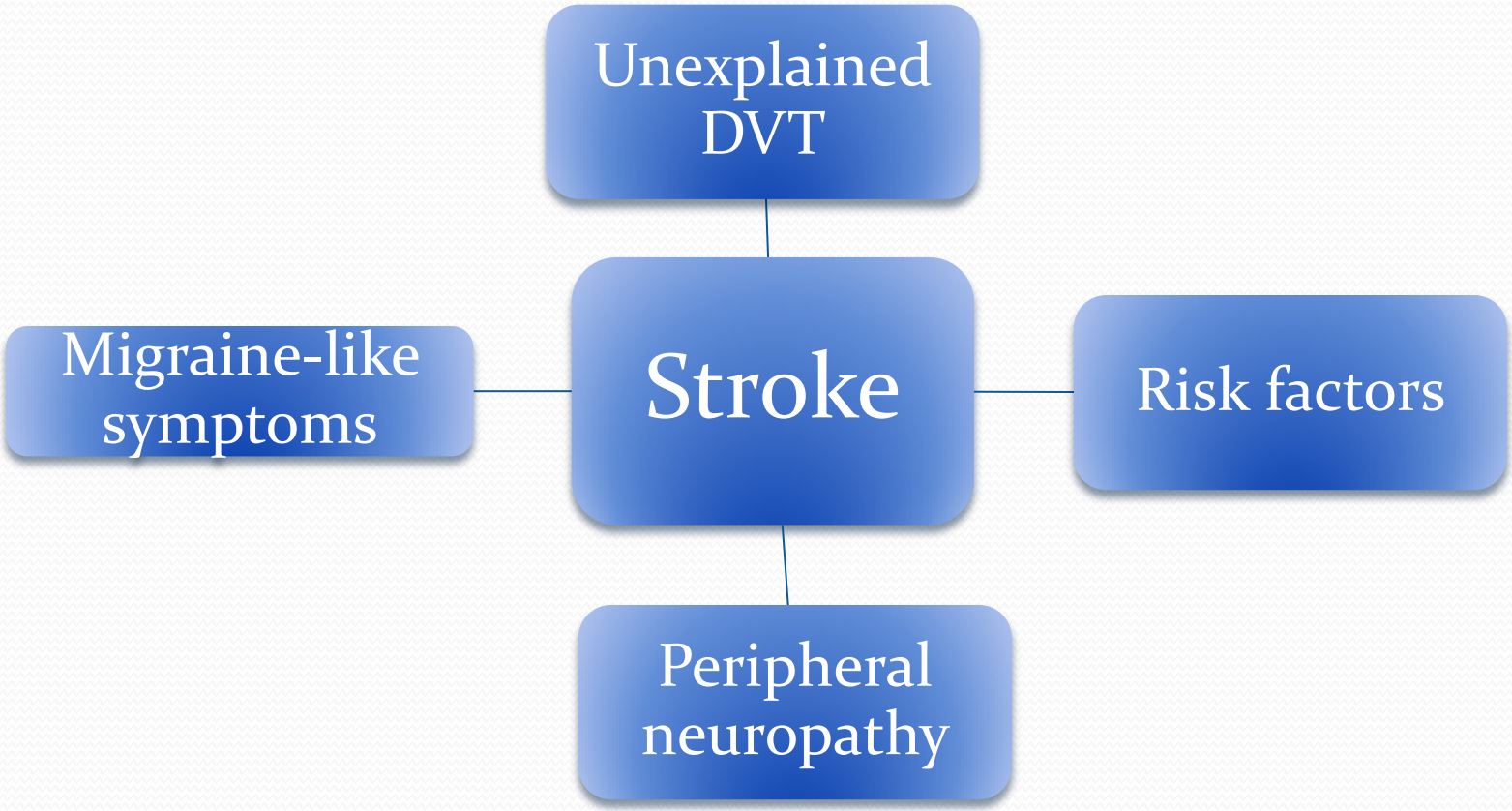
Physical Exam findings:

- BP Tru (Left arm): 147/88, (Right arm) 140/91, Pulse 79 regular
- Right-handed, healthy weight
- No abnormal findings
- Visual fields were full to confrontation
- Alert, good historian, well-oriented
- Cranial nerve examination normal
- Normal symmetrical reflexes, normal motor power
- Coordination, gait and Romberg normal

What caused this stroke?

- Risk factors:
- Previous heavy smoking
- High blood pressure
- High cholesterol

Can we put it all together?



Possible Causes in this Patient

- Blood clotting abnormality (History of DVT)
- Hyperviscosity Syndrome (thick blood) (History of peripheral neuropathy)
- Cardiac embolism (location of stroke, risk factors for heart disease)
- Migrainous stroke

Lessons learned from Case 2

- Again, the CT scan may be inaccurate with acute stroke
- We can do better than this!
  - Symptoms March 15
  - Ophthalmologist March 24
  - CT April 3
  - Neurosurgeon April 14
  - MRI May 7
  - SPC Referral May 12
  - Clinic consult May 21

Thanks for your Support and Referrals

June 2, 2014 was our 10th Anniversary

Over 4200 new referrals

Questions?