Clinical Efficiency
CT and MRI Overview
Presenter Disclosure Information

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Primary and Comprehensive Stroke Center Designation

FINANCIAL DISCLOSURE:
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UNLABELED/UNAPPROVED USES DISCLOSURE:
None
Objectives

• Discuss ways to organize the clinical portion of the stroke coordinator/APN work day
• Explore normal and abnormal CT and MR imaging in acute stroke
• Relate imaging findings to the patient’s exam
Competing Priorities

How can you balance patient needs and program priorities when everything has a high priority?
Managing the Day: The CNS Perspective

- **Patient/Family Sphere**
  - Patient complexity
  - Family resiliency
  - Core Measures
  - Patient throughput

- **Nurse Sphere**
  - On the spot education
  - Nursing satisfaction

- **Systems Sphere**
  - Stroke program management
Managing the Day: 3 Stages

• **Morning**
  – Patient/Family focused
    • Medical record review
    • Rounds

• **Midday**
  – Patient/Family Focused
    • Work up, education, discharge planning

• **Afternoon**
  – Program focused
    • PSC or CSC certification
    • Maintaining and updating standards of practice
Never occurs at the right time
Sample Day at Swedish

• 0700-0855
  – Run/Create the daily list
  – Review each electronic chart
    • Determine prioritization of patient needs
      – Synergy model
      – PBDS prioritization
        » Must do, should do, or could do
    • Review CT/MR imaging
    • Core measures
Sample Day at Swedish

• 0900-1200  
  – Multidisciplinary rounds  
    • 7 South (Neurology Floor)  
    • Neurocritical Care Unit  
  – Write core measure related orders

• 1230-1400  
  – Meet with patients/family  
    • Assess/provide stroke related information  
    • Assess readiness/willingness to assist patient after discharge
Sample Day at Swedish

• 1400-1700
  – Cram 8 hours of program management in 3 hours of time
Never occurs at the right time
Sample Day at Swedish

• 1400-1700
  – Data entry and analysis
  – Communicate with telemedicine/outreach sites
  – Coordinate community/EMS education
  – Update/Create CSC related metrics for recertification
  – Attend/Manage stroke related meetings
  – Try to leave on time
Survival Tips

• Stay on task
• Avoid distractions
• Love what you do
• Enjoy the 1630 stroke alert
CT and MRI Overview
Vascular Territories of the Brain
Lobes of the Brain

- Primary motor cortex (motor control)
- Central sulcus
- Primary somatosensory cortex (touch & pressure)
- Parietal lobe
- Body awareness
- Language
- Occipital lobe
- Vision
- Reading
- Cerebellum
- Spinal cord
- Facial recognition
- Temporal lobe
- Smell
- Taste
- Speech
- Olfactory bulb
- Hearing
- Frontal lobe
CT Scan
Ischemia Present on CT
MRI - DWI
Steps for Stroke Localization

- History
- Primary Examination
- NIH Stroke Scale
- Determine which vascular territory could be the culprit
- Confirm finding with imaging when possible
Case Study

- 65 year-old woman presents to ED via EMS
- History of present illness (HPI)
  - Found down in pool of vomit
  - Somnolent
- Exam
  - Left gaze deviation
  - Relatively unresponsive
  - Right homonymous hemianopia (HH)
  - Right-sided weakness
Case Study

• 80 year-old woman with sudden onset
  – Right-sided weakness
    • Right lower extremity paresis
    • Right upper extremity with antigravity strength
  – Severe aphasia
Case Study

• 38 year-old woman with sudden onset
  – Dense left neglect
  – Left sided weakness
  – Left facial weakness
  – Left HH
  – Mild dysarthria
  – Decreased left sided sensation
  – Extinction to left side with double simultaneous stimulation
Case Study

• 79 year-old with PMH of HTN, A-fib on warfarin
  – Dysarthria
  – Mild right facial droop
  – No aphasia
  – Normal strength bilaterally
Case Study

• 88 year old man with dementia and 3 days of increased drowsiness and confusion
  – Aphasia
  – Does not follow commands
  – Mild right facial weakness
  – Equal strength B/L UE and LE
  – Severe dysphagia
Case Study

- 73 year-old woman with recent stroke. Was in rehab at outside facility. Symptoms worsened with hypotension.
  - Vertigo
  - Diplopia
  - Voice hoarse
  - Dysphagia
Case Study

- 63 year-old man with recent stroke. He is 20 hours post IV t-PA. Sudden onset:
  - Unresponsiveness
  - Respiratory Failure
  - Quadraplegia
  - Able to blink eyes yes and no to questions
  - Able to look up and down, not side to side
Case Study

• 64 year-old man with sudden onset vision loss. History of migraine. Post op total knee with DVT.
  – Right visual field defect
Case Study

• 59 year-old man with complaints of trouble seeing to the right and headache. “I didn’t feel right”

• Exam:
  – Right HH
  – Difficulty naming objects
    • Calls the hammock “that thing you lie on”
• Looking for computer-based stroke related education?
  – www.learnstroke.com
    • Net Smart APN
    • Net SMART Jr.
    • Net SMART MD
  – www.apexinnovate.com
    • Hemispheres
References


