

# TYING IT ALL TOGETHER



## *A Case Review Discussion*

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**You've got administration behind you,  
You've assembled your Stroke Team,  
You've set up your protocols & procedures,  
You're educating the staff,  
You're monitoring your performance,  
You're sharing your outcomes,  
You're working with community partners,  
(maybe you've had a lunch break)**

**So...now what?**

# Case Review #1

## Pre-Hospital:

- **09:35** 61 yo male developed right temporal pain while driving
  - Began driving erratically and could not speak
  - His wife was with him- assisted in getting car pulled over
  - Note left facial droop, color was gray, lower extremities were weak
  - Called 911- EMS arrived and transported to the hospital

## Case #1 Cont.

### Emergency Department:

- **11:00** -Arrived in ED-
- **11:02**- Code NEURO (Rapid Response for Stroke)- NIHSS = 3
- **11:22** -CT results to ED MD-- thrombus obstruction to Right ICA to M1; NIHSS = 5
- **11:25**- Results viewed by Neuro IR MD; consult
- **12:04**-IV tPA started
- **12:38**- Neuro exam worse- left arm now flaccid- NIHSS = 16
- **12:44**- Re-assessment per Neuro IR – transferred to Neuro IR suite for intervention

## Case #1 Cont.

### Neuro Intervention:

- MERCI- one pass
- Penumbra- one pass
- IA tPA
- MERCI- clot retrieved
- Procedure completed in 60 minutes

## Case #1 Cont.

### Hospital Care/Outcome:

- Admitted to Neuroscience ICU
- Hourly neuro-assessments X 24 hours
- Permissive hypertension
- IV tPA precautions X 24 hours
- NIHSS = 2 at 24 hr mark
- Discharged home in 2 days; NIHSS = 1
- 3 week follow up NIHSS = 0; no deficits

# Case #1 Discussion

## Stroke Coordinator Role

- Advance EMS notification to expedite stroke care
- Code NEURO process in place
- ED pharmacist response to code NEURO to assist MD and RN with inclusion/exclusion criteria, tPA mixing and administration
- Neuro IR RN/tech acute stroke response for prep of lab

## Case #1 Discussion – Cont.

### Stroke Coordinator Role

- Neuroscience ICU RN education in post tPA/intervention care
- tPA precautions and neuro checks X24 hours
- Patient and family education on going and at discharge
- Provide feedback to EMS and ED personnel



# Case Review #2

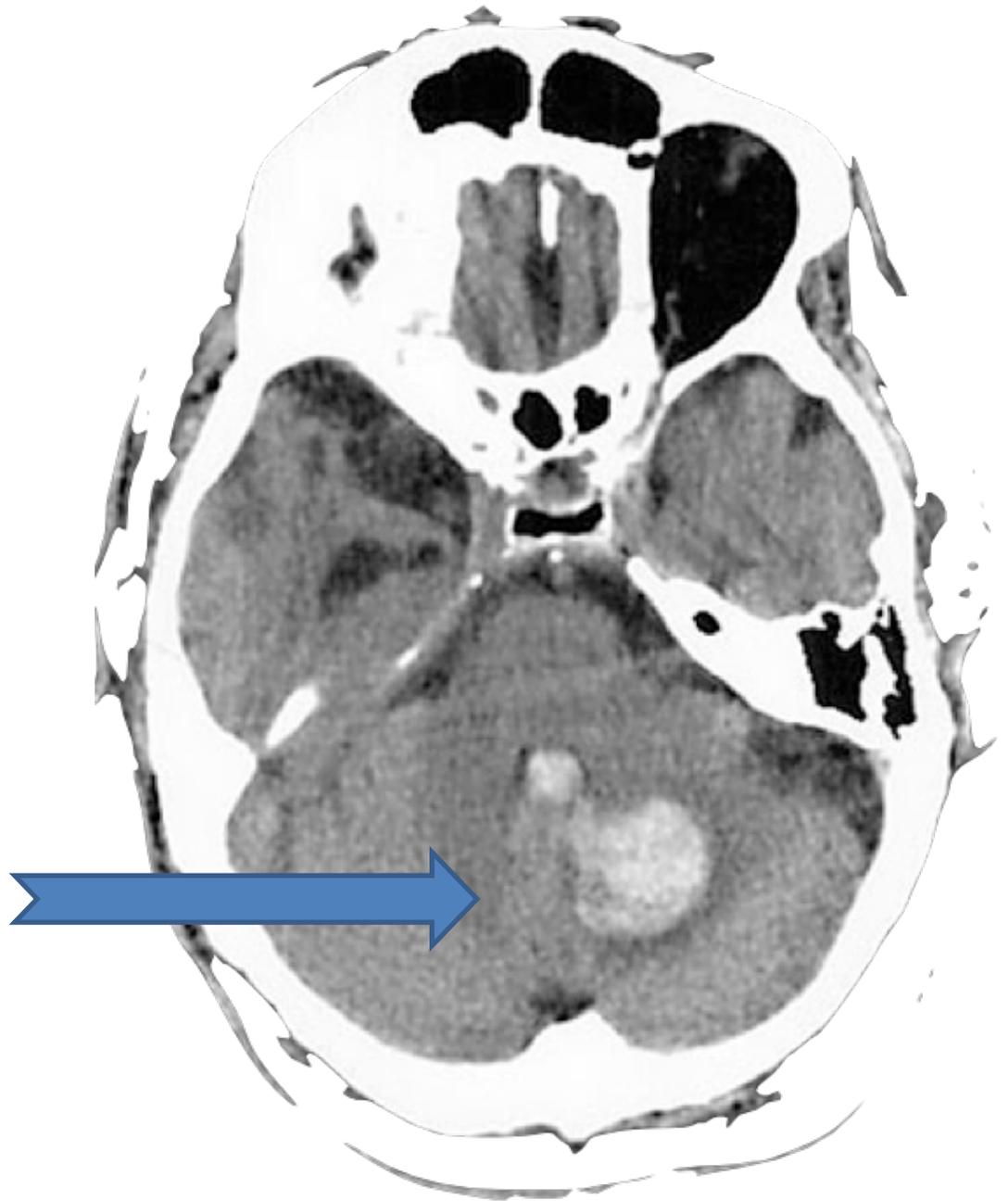
## History:

- 68 year old male with history of AFib and HTN
- S/P right total knee replacement. Admitted to med/surg unit, on PCA pump.
- Coumadin was stopped prior to surgery and restarted evening after surgery.

## Presentation:

- 2<sup>nd</sup> P/O day patient began to complain of a headache. Late in evening that same day he had an episode of vomiting; RN noted patient to be less responsive, would not respond to commands. Different from previous assessment.
- Rapid Response called. CCU RN arrived – NIHSS = 7 (Change in LOC and ataxic on right side).

# Case #2 Cont.





## Case #2 Cont.

### Actions/Workup:

- Pt sent for stat CT which revealed a 3.5 cm left cerebellar ICH .
- After CT- immediately transferred to CCU for 1:1 care, then taken to OR for craniotomy after neurosurgery reviewed films.
- CCU care- routine ICH protocol, s/p crainy.
- CT-A of vertebrobasilar system unremarkable
- Echo unremarkable
- Transferred to stroke unit (PCU) post op day 4

## Case #2 Cont.

### Outcome:

- Cause of ICH not completely clear, most likely afib, but in an unusual location.
- Transferred to ARU on post op day 7, then home after 2 ½ weeks.
- Deficits nearly resolved with a bit of unsteadiness



## Case #2 Discussion

### Stroke Coordinator Role

- Review Rapid Response-(inpt stroke response) process; confirm appropriate documentation of LSN & actions.
- Follow-up with med/surg RN as needed; with education to entire med/surg unit as a review.
- Compliment surgical RNs, and RR team; educate where appropriate.
- Review neurosurgery (MD) response to stat consult and surgery team response.
- Monitor transitions in care throughout hospital
- Assist CCU/PCU staff with appropriate ICH –s/p crainy care per CPGs.



## Case Review #3

### Presentation:

- 1045: 40 y/o white female arrived by POV to community hospital. Patient had been cooking and became dizzy with difficulty speaking. Onset 15 min PTA. Patient arrived with L facial droop and mild left pronator drift. GCS 15- alert & cooperative

### Emergency / Initial Workup:

- 1050: MD exam; Oxygen at 2L per NC. IV saline Lock; cardiac monitor routine lab draw
- 1051: NIHSS = 2
- 1055: To CT with RN on cardiac monitor
- 1105: Returned to ED
- 1119: CT Negative per Radiology
- 1132: Consult with Neurologist at level 1 stroke center; Agree to IV tPA, Level 1 center accepts patient.

## Case #3 Cont.

### Emergency / Actions:

- 1140: IV tPA Inclusion/Exclusion Criteria reviewed by MD; informed consent obtained.
- 1142: Patient begins seizing; 2<sup>nd</sup> consult with neurologist at level 1 center obtained.
- 1154: IV tPA initiated.
- 1155: Versed, Vecuronium given IV. Patient intubated for transfer due to being combative & confused in post ictal state.
- 1224: Transferred to level 1 stroke center by ambulance.

## Case #3 Cont.

Transferred to level 1 center for acute stroke and seizures. She was intubated and sedated; IV tPA continued en route.

### Receiving facility/ Workup:

- Upon arrival, patient was examined by on-call neurologist
- Initial NIHSS =3.
- Patient was admitted the CCU using post-IV tPA stroke order set.
- Failed the RN Swallow Screen and kept NPO until further evaluation by SLP.
- MRI showed moderate R frontal MCA territory infarct.
- MRA was negative for significant stenosis.

## Case #3 Cont.

### Receiving facility /Workup (cont.):

- Echocardiogram showed small PFO.
- Lower extremity Doppler ultrasound was negative for DVT.
- Hypercoag labs were negative.
- Also received assessments from PT, OT, and MSW.
- Etiology for stroke was cryptogenic.

## Case #3 Cont.

### Outcome:

- Discharged to home on aspirin and simvastatin; with orders for outpatient PT and ST.
- At the time of discharge, her NIHSS was 0.
- She was seen one month later, in follow-up with outpatient neurology and had essentially complete recovery from her stroke and no further seizures.
- Returned to work with no residual effects from her stroke. She has shared her story with our community in hopes others will recognize the early signs & symptoms of stroke and take action.

## Case #3 Discussion & Stroke Coordinator Role

- **Partnership protocols & transfer agreements are *CRITICAL***
  - *What does this mean?*
  - *Ensuring consistency of medical protocols.*
  - *Do both sides know what to expect?*
  - *Who is legally in charge of patient?*
  - *Are there any valid reasons to deviate from protocol?*
- **Transporting a patient with IV TPA infusing?**
  - *Planning for who is appropriate for monitoring/ transporting if tPA needs to be running during transport?*

## Case #3 Discussion & Stroke Coordinator Role

- **Transport time from sending to receiving facility?**
  - *Establishing an ETA prior to depart,*
  - *When do you call the stroke code at the receiving facility?*
  - *Addressing transport delays if they occur.*
- **Key elements upon arrival at receiving facility and during admission:**
  - *Reviewing tracer from ED intake through unit admit → feedback to ED, Radiology, Stroke team and others as appropriate.*
  - *Continuing the care through discharge: what still needs to be done? Is additional work up needed?*
  - *Ensuring appropriate referrals for follow up care after discharge.*

## Case #3 Discussion & Stroke Coordinator Role

- **Follow-up communication between sending and receiving facility?**
  - *Who needs follow up communication?*
  - *Options for how to ensure.*

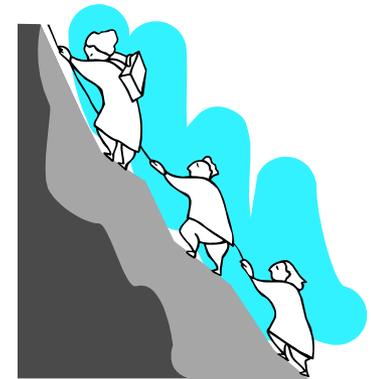
### **OPEN QUESTIONS?**

**For this case or Coordinator Role**

## Summary

Whether you work on the front lines  
or behind the scenes,

Your hard work really matters....to  
every stroke patient that is cared for at  
your organization.



*And don't forget.....It takes a village!*