



**KANSAS INITIATIVE FOR  
STROKE SURVIVAL**  
A PROJECT BY AND FOR KANSANS

Phone (913) 588-1554 • Fax (913) 945-8892

# Stroke From Arterial Dissection

“First Tuesdays” Lecture Series

# Introduction and Goal of “First Tuesdays”

- Sabreena Slavin MD – Vascular Neurologist and Neurohospitalist at KU School of Medicine
- Didactic lecture series as part of the Kansas Initiative for Stroke Survival
- Updates in Practice and FAQ’s on Acute Stroke Care
- 20 minute didactic, 10 minutes for questions/discussion.

# Review of Acute Stroke Interventions

- IV alteplase (tPA) for all patients who have **disabling symptoms** of acute stroke
- Mechanical thrombectomy: **only for large vessel occlusions (LVO)**. Only hospitals with capabilities (eg: comprehensive stroke center) can perform thrombectomy.
  - A higher NIHSS (10 or more) can be indicative of a large vessel occlusion.
  - Diagnosed with CTA head/neck

# Cervical artery dissection

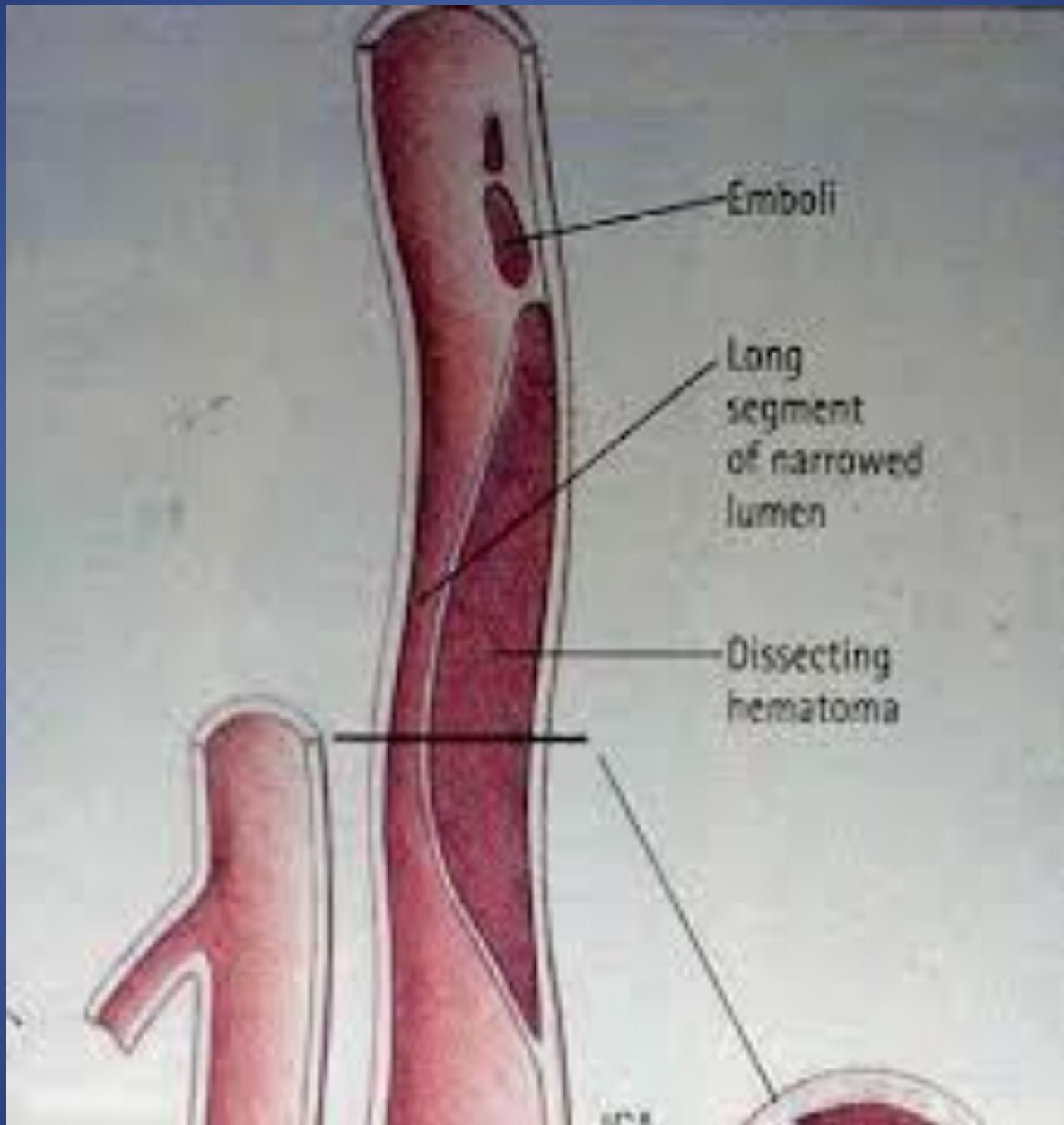
- Can involve cervical portion of internal carotid artery or vertebral artery
- Represents about 1/5 of stroke causes in patients younger than 45
- Clinical symptoms
  - head/neck/facial pain
  - cerebral and/or retinal symptoms
  - Horner's syndrome (less common)

# Horner's syndrome



# Risk factor of dissection

- Trauma - about half are traumatic
  - neck manipulation
  - coughing/retching
- Connective tissue disorders: Marfan syndrome, Ehlers-Danlos IV, fibromuscular dysplasia





Nautiyal et al, *PLoS Med* 2005



# Treatment

- Acute treatment safety with tPA?
- Anticoagulation vs. antiplatelet
- What is the timeline of treatment?

# Is IV tPA safe for dissection?

- Meta-analysis of 180 patients with cervical artery dissection (carotid or vertebral) who received intravenous or intra-arterial thrombolysis:
- sICH rate was 3.1%, overall mortality was 8.1%, rate of excellent outcome with 3 month mRS 0-1 was 41%
- Compared with age/stroke-severity matched patients with stroke from all causes, safety data for thrombolysis in dissection is similar as thrombolysis in all cases.

# Acute mechanical thrombectomy for dissection?

- Patients in the Merci device registry: 10 patients with arterial dissection out of 980
  - 6 out of 10 had successful recanalization (denoted by at least 50% recanalization or better).
  - No sICH or periprocedural stroke occurred.
  - 8 out of 10 had favorable functional outcome (mRS 0-2) at 90 days.

# Long term prevention: antiplatelet vs anticoagulation?

- Patients with carotid or vertebral dissection were randomized to antiplatelet vs. anticoagulation.
- Results: 3 patients in antiplatelet group had recurrent stroke vs. 1 patient in anticoagulation group had recurrent stroke + 1 patient with anticoagulation had major bleeding.
- No statistically significant difference between groups

# Which to choose?

- Studies do show trends favoring anticoagulation to prevent recurrent stroke, but not statistically significant.
- No major studies comparing single vs dual antiplatelet
- Based on provider preference
- Situation which would favor anticoagulation: free-floating thrombus

# Duration of treatment

- 3-6 months in absence of underlying condition
- No clear guidelines to stop treatment - signs of healing dissection on imaging can be used as guide

# Endovascular stenting for dissection?

- Involves stenting the dissected portion of the artery
- May be useful in cases where drug therapy fails or with expanding dissection lesion
- One study showed that recurrent neurological events post stenting was low at 1.4%.

# Bottom Line

- Recognize carotid dissection! Can present only as head/neck pain post trauma without any neurological deficits; low threshold for CTA.
- If stroke-like symptoms, can consider tPA and acute endovascular intervention.
- Long term treatment is usually with either antiplatelet or anticoagulation for 3-6 months.



# Questions?

- Call for help anytime!
- KU BAT phone: 913-588-3727
- <http://www.kissnetwork.us/>
- [sslavin2@kumc.edu](mailto:sslavin2@kumc.edu)