



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

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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
- 30 minutes for didactic + questions/discussion.

Cervical artery dissection

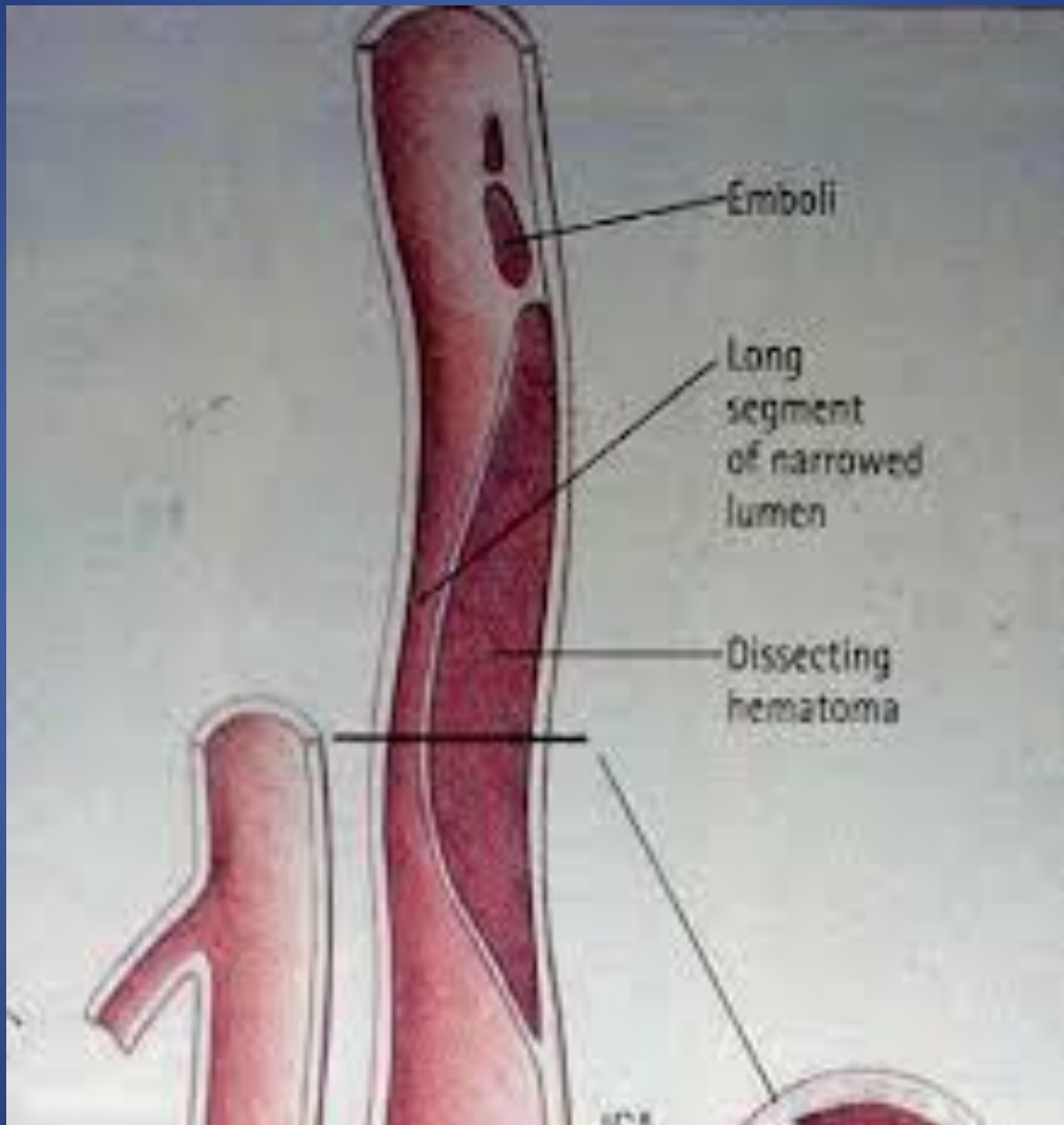
- Can involve cervical portion of internal carotid artery or vertebral artery
- Intracranial arteries (intracranial ICA or large vessels) can have dissection too, but usually iatrogenic and rarely spontaneous
- Represents about 1/5 of stroke causes in patients younger than 45
- Clinical symptoms
 - head/neck/facial pain
 - cerebral and/or retinal symptoms
 - Horner's syndrome (less common)

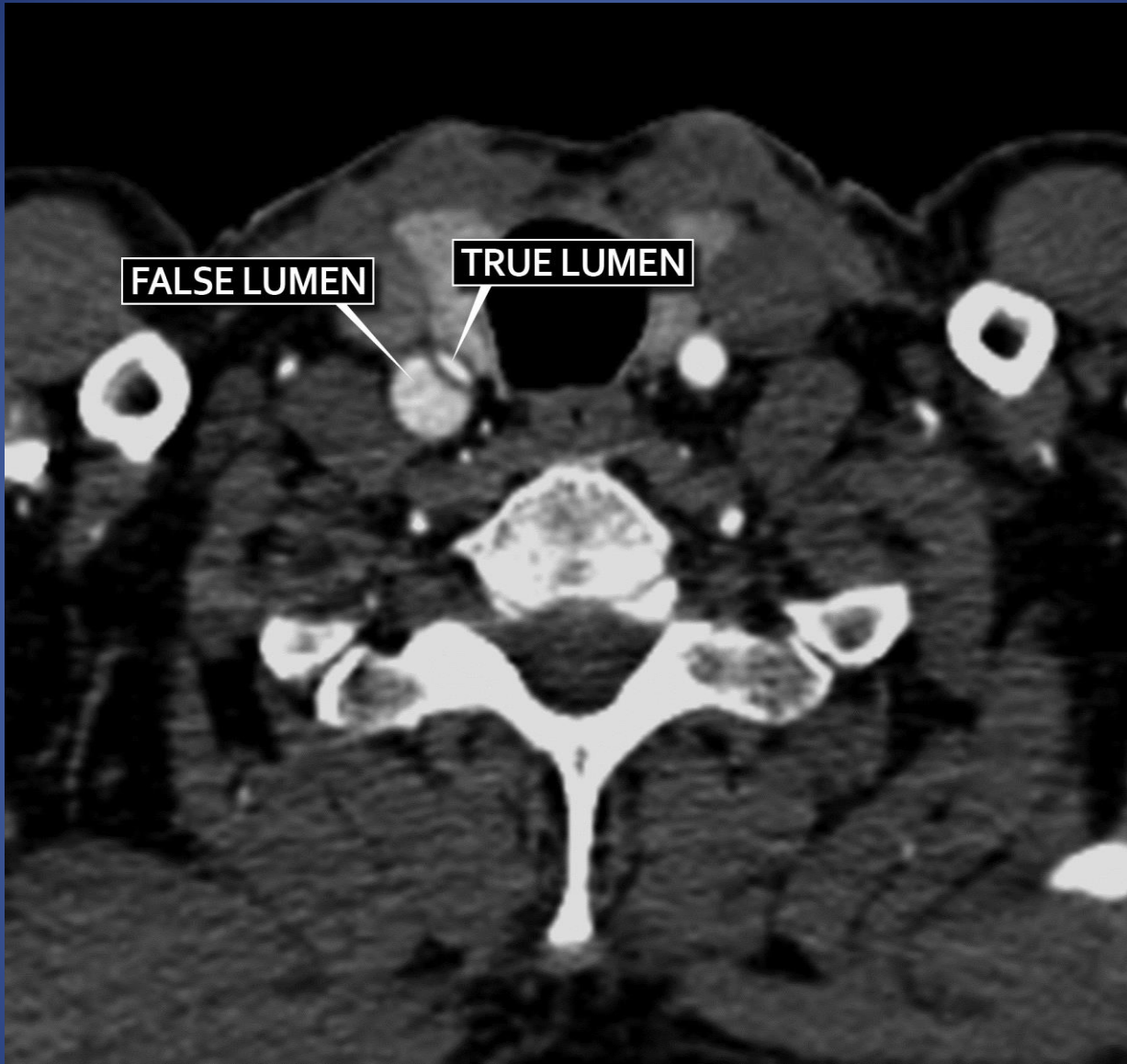
Horner's syndrome

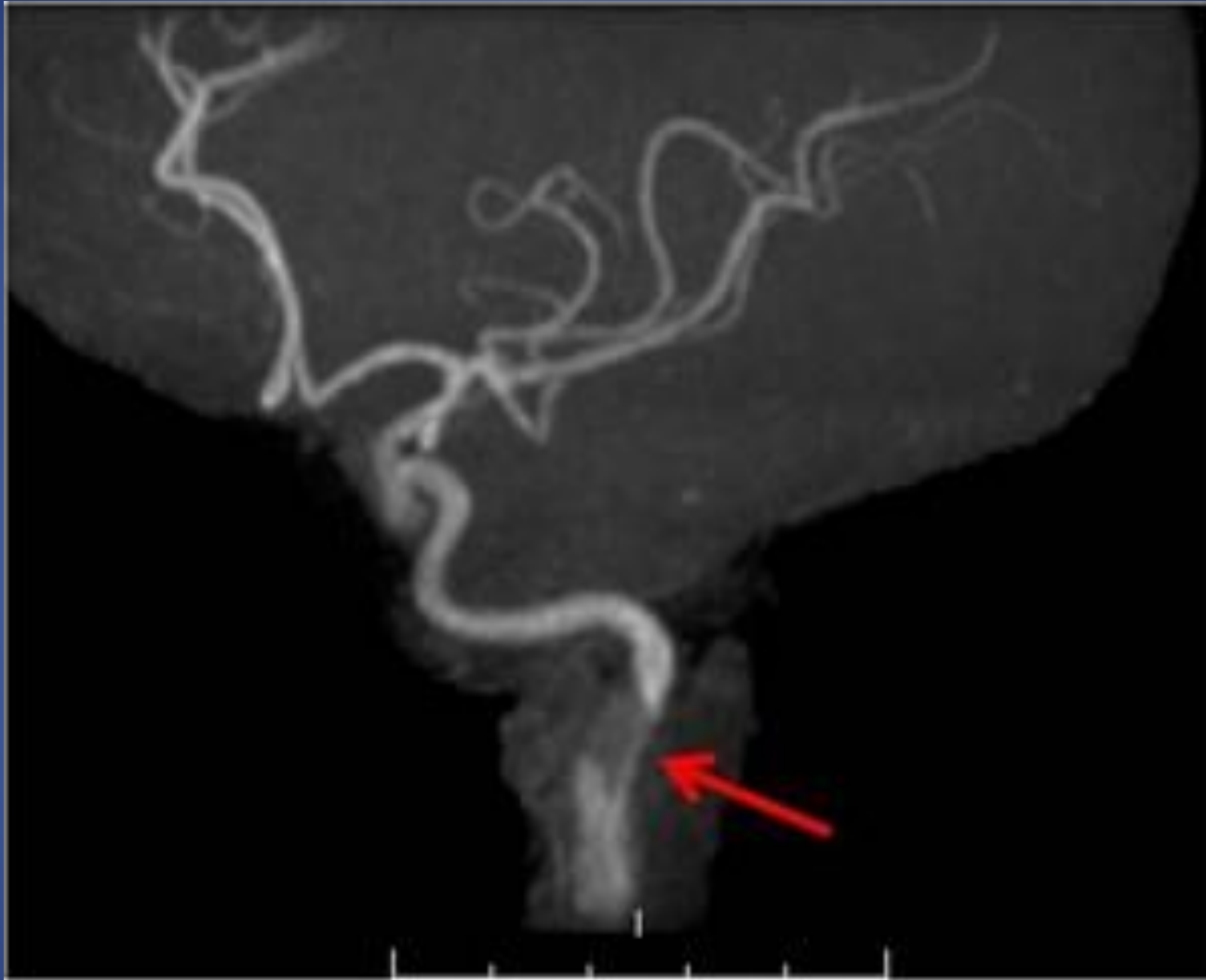


Risk factor of dissection

- Trauma - about half are traumatic
 - neck manipulation
 - coughing/retching
- Connective tissue disorders: Marfan syndrome, Ehlers-Danlos IV, fibromuscular dysplasia (sometimes not definite genetic diagnosis)
- Vasculitis
- Atherosclerotic disease

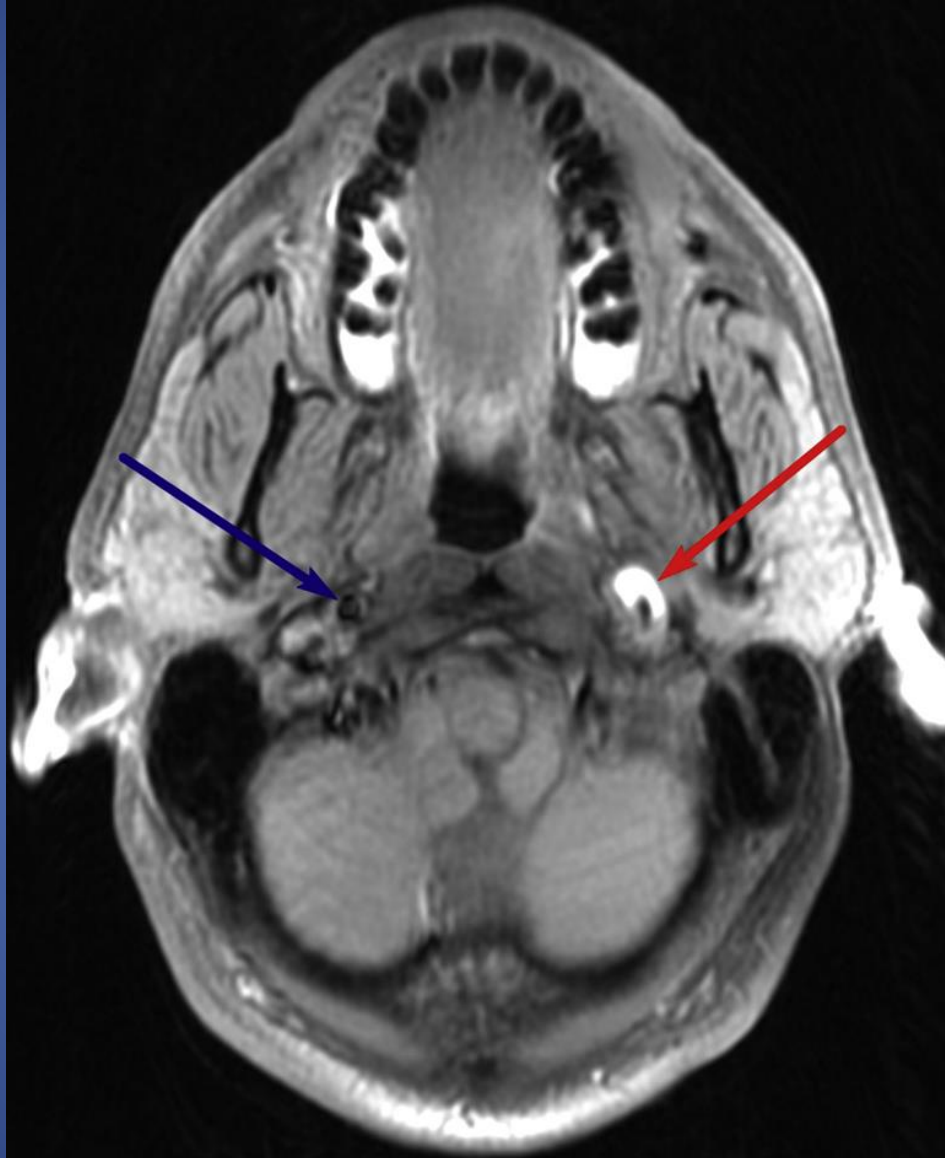






Weinberg, I. (2011, January) "Carotid Dissection"
<https://angiologist.com/arterial-disease/carotid-dissection/>

MR angiogram with contrast with fat-saturation images are highly sensitive and specific



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?

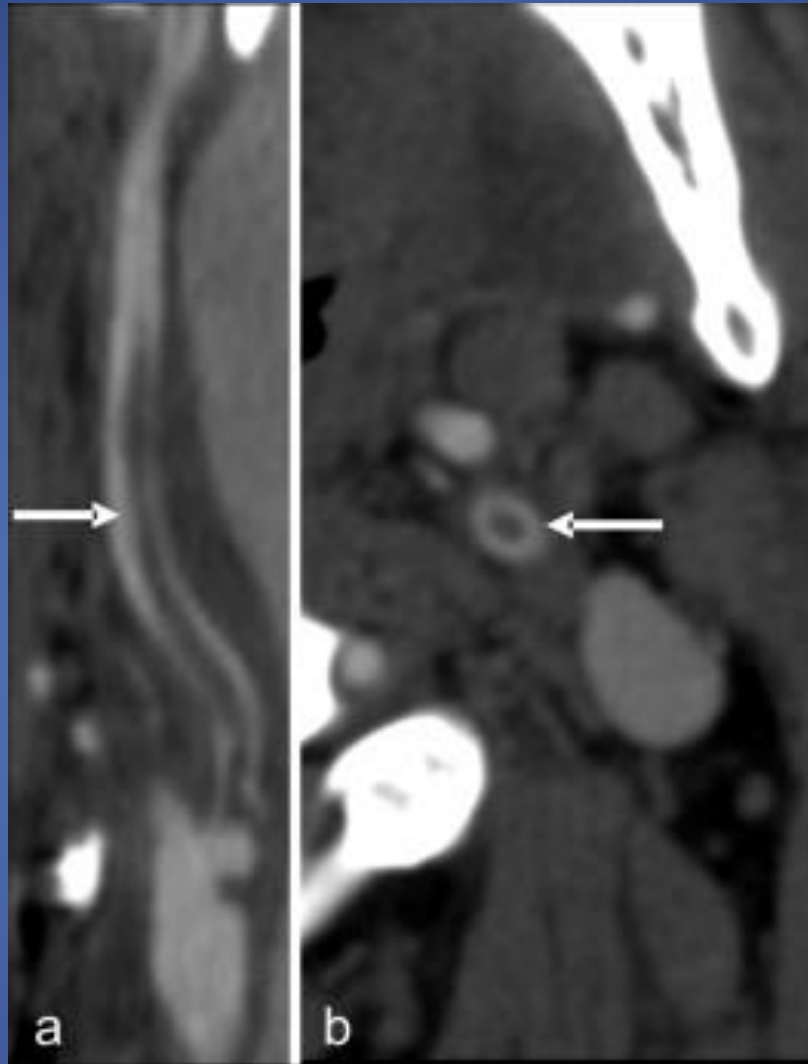
- In CADISS trial, patients with carotid or vertebral dissection were randomized to antiplatelet vs. anticoagulation
- Results: 3 patients in antiplatelet group had recurrent stroke vs. 1 patient in anticoagulation group had recurrent stroke + 1 patient with anticoagulation had major bleeding
- No statistically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

Antiplatelet vs anticoagulation continued

- Meta-analysis of RCT's comparing antiplatelet vs anticoagulation in 444 patients
- The patients in the antiplatelet group showed a higher rate of ischemic stroke within 3 months ($RR = 6.73$ [95% CI , 1.22–37.15])
- No difference between groups was found for the outcomes of TIA, intracranial hemorrhage, or major extracranial bleeding

Which to choose?

- No major studies comparing single vs dual antiplatelet
- More recently, practice is favoring anticoagulation. Heparin drip would be initial choice followed by transition to DOAC if stable neurologically
- Situation which would favor antiplatelet: any hemorrhage or extension of dissection to intracranial segment
- Situation which would favor anticoagulation: unstable or “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 repeat imaging as outpatient 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%.

Conclusions

- Recognize carotid dissection in emergency setting. Can present only as head/neck pain post trauma (or without trauma) without any neurological deficits; low threshold for CTA. MRA with contrast and "fat sat" images are best noninvasive modality.
- If stroke-like symptoms, consider tPA and acute endovascular intervention.
- Long term treatment favors oral anticoagulation for 3-6 months.

Questions?

- Call for help anytime!
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