

A Couple of Cases That Made My Heart Sink

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Declaration of Conflicts of Interest

☒ none

Learning objectives

- Risk factors for Abdominal aortic aneurysm (AAA) and Thoracic aortic aneurysm (TAA)
- Who should be screened for aneurysms
- What is the evidence and duration for triple therapy post Myocardial Infarction (MI)/ Percutaneous coronary intervention (PCI)

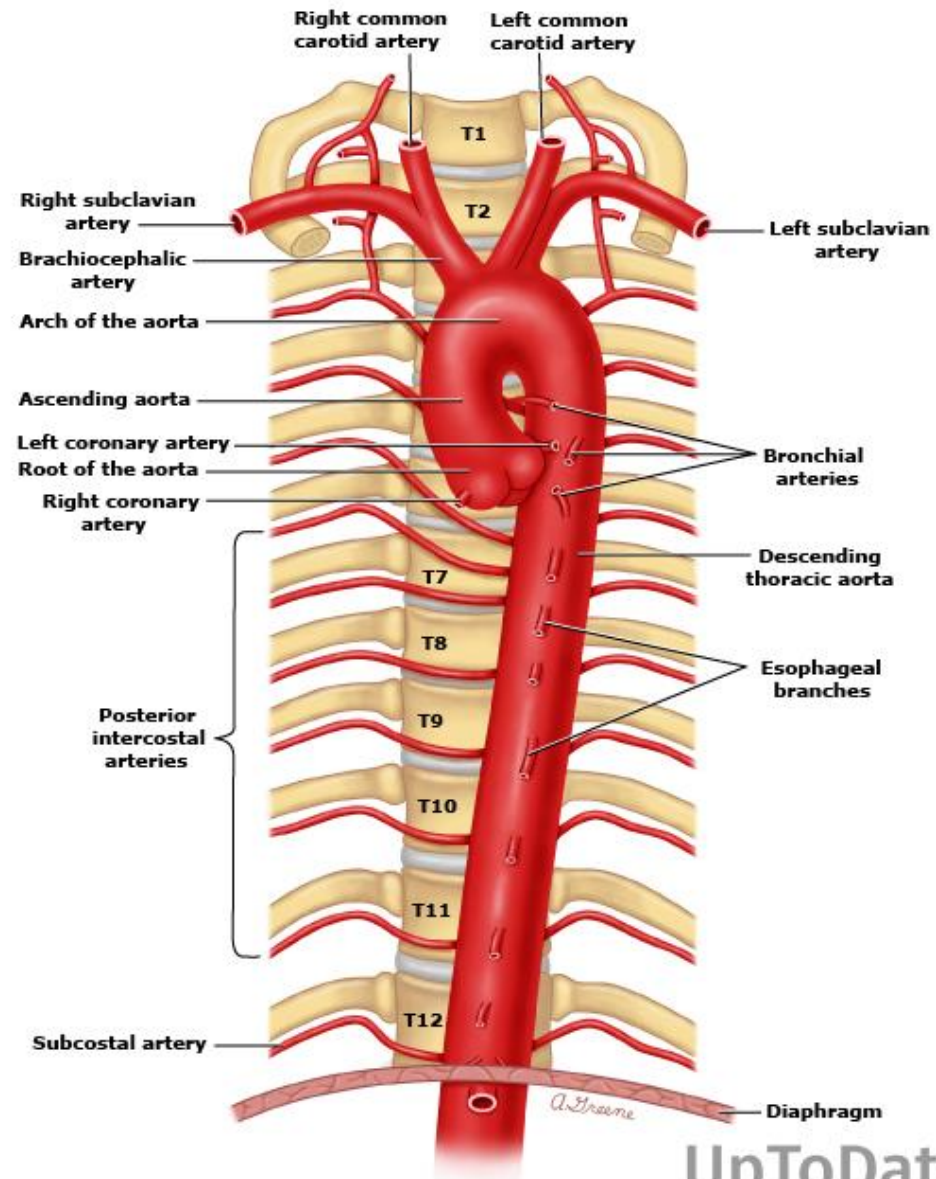
Case of a 45-55 year old female

- Past Hx: renal colic and C sections, nonsmoker
- Sudden onset chest pain followed by seizure like activity with a brief period of unresponsiveness presented to the ER
- Was talking to the ER doc, no neurologic deficits but BP dropped to 80/40
- Sent for urgent CT / CTA to assess for possible cerebral vascular event vs seizure

CTA report

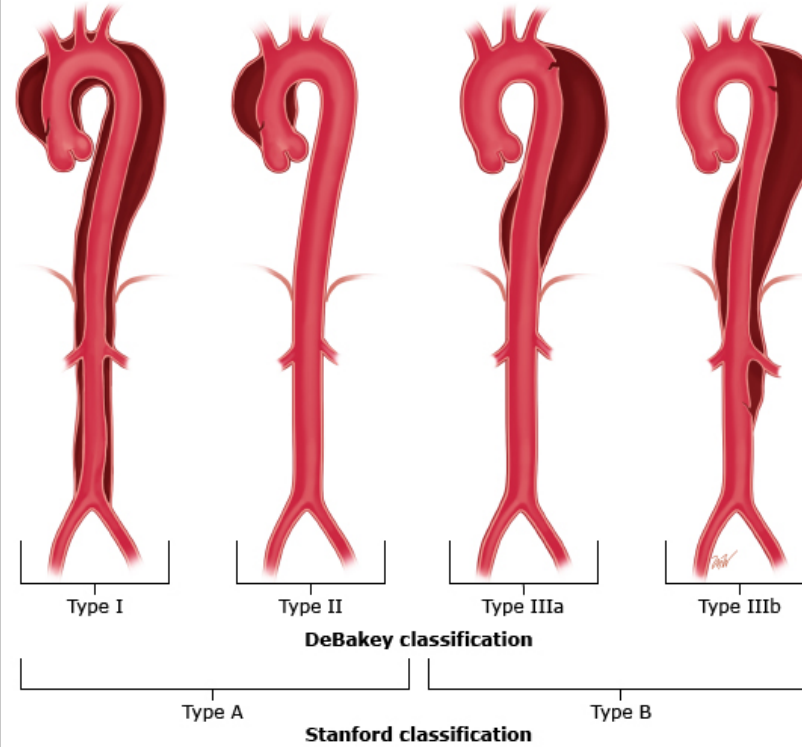
- CTA of the neck showed an extensive Stanford Type A aortic dissection
- The dissection extended into the innominate artery, rt common carotid artery which showed severe stenosis at the carotid bulb
- There was also extension into the left common carotid artery
- The dissection involved the entire aorta and extended into both common iliac arteries

Normal thoracic aorta



Stanford Classification

Classification of aortic dissection



In the DeBakey classification of aortic dissection:

- Type I involves the ascending aorta, arch, and descending thoracic aorta and may progress to involve the abdominal aorta.
- Type II is confined to the ascending aorta.
- Type IIIa involves the descending thoracic aorta distal to the left subclavian artery and proximal to the celiac artery.
- Type IIIb dissection involves the thoracic and abdominal aorta distal to the left subclavian artery and distal to the celiac artery.

In the Stanford classification of aortic dissection:

- Type A involves the ascending aorta and may progress to involve the arch and thoracoabdominal aorta.
- Type B involves the descending thoracic or thoracoabdominal aorta distal to the left subclavian artery without involvement of ascending aorta.

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Outcome of my patient

- She had a replacement of her Aortic hemiarch and ascending aorta with repair of the aortic valve at South Lake

Post Op Complications

- Atrial fibrillation – on propranolol and digoxin
- Thyrotoxicosis – likely post op stress- on methimazole and propranolol
- Hypertension – on amlodipine, ramipril and doxazosin
- An ultrasound ruled out renal artery stenosis
- Seizures were ruled out, dx syncope at onset of dissection

Follow up and other considerations

- Both of her children have had normal Echocardiograms per cardiology
- She has a follow up at the UHN Aortic aneurysm clinic

Risk factors for Aortic Dissection

- Long standing arterial hypertension- smoking dyslipidemia
- Connective tissue disorders – marfans, Ehler Danlos syndrome, hereditary fibrillinopathies
- Hereditary vascular diseases
- Vascular inflammation – like giant cell arteritis
- Deceleration trauma
- Iatrogenic factors - from previous catheterization/ valvular surgery

Risk Factors for AAA

- Older age
- Male
- Smoking
- Positive family history- occurs in 10-20% of people with a positive family history
- Other associated risks: hypertension, CAD, PAD

Who to screen for AAA

- One time ultrasound for males around age 65 -80
- Sensitivity is 95-100%
- Specificity is around 100%
- Number needed to screen is 305
- The incidence is decreasing probably due to reduction in smoking and better control of risk factors
- Per the Canadian Society for Vascular Surgery

What about females?

- UK study did not show reduced mortality at 5 yrs
- Canadian modelling evaluation suggested the number needed to screen is 588
- The Canadian society for Vascular surgery says the reduce prevalence is off set by the increased dissection rate at smaller diameters
- They suggest one time screening for women 65-80 years old who smoke or have CAD (weak evidence)

AAA and the Markov model

CMAJ Feb 5/24 196 (4) E112-E120

- Screening reduced deaths in males by 84.9%, and 81% in females
- Elective AAA repair has a mortality of 1-5%
- Ruptured AAA has a prehospital and perioperative mortality of 50%
- This data is based on open repair and predates endovascular repairs
- Definition of AAA in the studies is defined as a diameter > 3cm

Conclusion in the CMAJ article

- Screen males 65-75 years old
- It is probably cost effective to screen women age 65-75 especially if they are smokers or who have CAD

Screening First Degree Relatives

- The Canadian Society for Vascular surgery suggests one time screening for first degree relatives >55 years of age

A leopard is perched on a thick, textured tree branch, looking towards the camera. The background is filled with dense green foliage and tree trunks, suggesting a natural habitat. A teal-colored text box is overlaid on the right side of the image.

Screening Guidelines for TAA

Don't Exist

Case of a 70-80 year old woman

- Presented to ER with a 7 day history of epigastric pain
- Initial trop 0.45, peak 1.59, no EKG changes
- Past hx: multiple PE on home O2 and a DOAC
- COPD, quit smoking over 25 yrs ago, GERD, gastroparesis, hypothyroid, no DM
- She was treated in ICU with nitro drip, ASA, Clopidogrel
- Her pain was still 4/10 so she was sent to RVH for a cath

Cath results and treatment

- LAD had a 95% proximal blockage and some distal ones
- These were treated with 3 drug eluting stents (DES)
- Circumflex was 35% blocked
- Right coronary artery (RCA) was 50% blocked
- Proximal diagonal was 99% stenosed and felt to be the culprit, she had 2 DES inserted
- Comments were made about very friable vessels and severely calcified

Follow up medical management

- DOAC (apixaban)
- ASA
- Clopidogrel

Triple therapy for 1 m

- Then DOAC and clopidogrel for 11 months

And of course she fell....



My
heart

Indications for Combined Antiplatelet and Anticoagulant Therapy

“Triple Therapy”

Indications for Oral Anticoagulant

- Atrial fibrillation
- Venous thromboembolism
- Valvular heart disease

Indications for Dual Antiplatelet Therapy (DAPT)

- Recent acute coronary syndrome
- Recent coronary artery stent placement

**The Goal is to Reduce the Risk of
Cardiac Ischemic Events and
Minimize the Risk of a Bleed**

Risk Factors that Increase Bleeding Risk to After PCI to Very High

- Age >65
- Hypertension
- Previous bleeding history

What does open evidence say?

- Triple therapy provides benefit primarily in patients with a compelling indication for oral anticoagulant therapy by reducing the risk of early stent thrombosis & recurrent ischemia
- The benefit is greatest immediately post PCI especially in high risk patients which includes those with a STEMI, complex stenting or prior thromboembolic events
- Triple therapy is associated with significant risk of a major bleed compared to dual therapy
- dual therapy is noninferior to triple therapy for prevention of ischemic events for most patients post PCI

- Brief triple therapy up to a week or until hospital discharge can be considered in selected high risk patients
- Thoughts on why my patient was treated with triple therapy for 1 month instead of 1 week



Questions?