

## DISEASES OF THE AORTA

1. Atheromas  $\geq 4$  mm thick in the ascending aorta or arch increase risk of recurrent stroke.
2. U.S. Preventive Services Task Force recommends one-time screening for AAA with u/s for men 65 - 75 yrs who have smoked. ACC/AHA guidelines include this plus the recommendation that men  $\geq 60$  yrs who have first-degree relative with AAA undergo PE & u/s screening.
3. Asymptomatic patients with AAA  $> 4$  cm in diameter should undergo semi-annual surveillance with abdominal u/s.
4. Statins may reduce rates of AAA enlargement by anti-inflammatory effect. Smoking has the strongest reversible association with AAA.
5. Elective repair should be performed if AAA is  $\geq 5.5$  cm in diameter or when progression is much faster than expected ( $\geq 0.5$  cm/yr).
6. Endovascular repair of AAA has shorter hospital stay and lower 30-day morbidity & mortality than open repair but greater in-hospital costs (mainly stent cost). It does not, however, improve quality of life beyond 3 months or survival beyond 2 years and, compared with open repair, carries a higher rate of complications and need for re-intervention, more long-term monitoring, and higher long-term cost.
7. Operative morbidity/mortality are higher for TAA and thoraco-abdominal aneurysm repair compared with AAA; 20% risk of stroke or paralysis and a short-term mortality rate of up to 10%.
8.  $\beta$ -blockers or ARBs slow the aortic root dilation in Marfan syndrome.
9. In patients with Marfan syndrome, elective surgical repair should be performed when the aortic root is 45 to 50 mm in diameter.
10. Pregnancy increases risk of aortic dissection in Marfan patients.
11. Takayasu arteritis affects young women; arterial inflammation of the aorta & major tributaries, causing thickening, stenosis & aneurysmal dilation. Late manifestations include arm or leg claudication and distal ulceration. Involvement of: *carotids or vertebrales* causes headache, vertigo, syncope & visual impairment; *coronary ostia* causes angina; and *mid aorta* causes renovascular HTN.
12. Acute aortic syndrome should be considered in any patient who presents with the abrupt onset of severe pain within the thorax.
13. "Classic" findings of acute aortic syndrome, including tearing pain, pulse deficit, and ECG & CXR abnormalities, are often absent.
14. Type A acute aortic syndromes (originating in ascending aorta) are surgical emergencies.  $\approx 1-2\%/hr \times 48$  hrs mortality without surgery.
15. Type B acute aortic syndromes (originating distal to the left subclavian artery) are usually treated medically. The goal is HR 60 - 80/min and lowest mean arterial pressure that allows vital organ perfusion. Surveillance imaging is reasonable at 1, 3, and 6 months from the index event and every 6 - 12 months thereafter if aneurysmal dilatation is present.

## Indications for Repair of Thoracic Aortic Aneurysms

Symptoms (hoarseness, dysphagia, back pain)

Severe dilation

Ascending aortic diameter >50-60 mm

Descending aortic diameter >60-70 mm

Descending aortic diameter in patients with high surgical risk:  $\geq 70$  mm

Rapid growth rate ( $\geq 10$  mm per year) in aneurysms <50 mm in diameter

Dissection

## Clinical Features of the Marfan Syndrome

### Eye

Superior lens dislocation (ectopia lentis)\*

### Skeleton

Arm span exceeding height (ratio >1.05)

Erosion of lumbosacral vertebrae due to dural ectasia\*

Joint hypermobility

Long digits (arachnodactyly)

Reduced elbow extension (<170 degrees)

Scoliosis

Sternal deformity (carinatum type)

Tall stature

Thumb sign (distal phalanx protrudes beyond border of clenched fist)

Wrist sign (thumb and fifth digit overlap when around the wrist)

### Oral Cavity

Crowded dentition

High palate

Mandible malocclusion

### Cardiac

Aortic dissection\*

Aortic root dilatation\*

Mitral valve prolapse

### Pulmonary

Spontaneous pneumothorax

### Central Nervous System

Dural ectasia\*

\*Asterisks represent the most specific findings

## Indications for Interventional Therapy in Type B Acute Aortic Syndromes

Occlusion of a major aortic branch with visceral or limb ischemia

Progressive dilation or extension despite appropriate medical therapy

Contained aortic rupture of type B dissection

Penetrating atherosclerotic ulcers >20 mm diameter and >10 mm depth

Penetrating atherosclerotic ulcers associated with hematoma