Thoracic aortic diseases

Thoracic Aortic aneurysm	Thoracic Aortic dissection
When the diameter of aorta exceeds 4 cm or 1.5 times normal Factors that affect the size : Age ,gender , body size , blood pressure	Tear involves inner and middle layers of the aortic wall leading to false lumen with the middle layer Rare , but fatal and requires high index of suspicion
Types : 1-True : enlargement of the inner lumen by vessel wall expansion -fusiform -saccular 2-False : lumen enlargement by perforation of all part of the vessels wall forming a sac in communication of the inner lumen	Types : Stanford classification Type A : involving the ascending Type B : spare the ascending aorta
Risk factors : Smoking , HTN , male gender , increase age ,high BMI , family history , COPD , abnormal aortic valve , connective tissue diseases(marfan syndrome , ehlers danlos syndrome) , syphilis , autoimmune diseases , these risk factors leads to atherosclerosis or degeneration of connective tissue proteins > decrease the compliance and stiffness of the aorta .	Risk factors : Same as aneurysm Previous aneurysm + iatrogenic causes Trauma Cocaine abuse
Clinical features Usually asymptomatic and found incidentally on imaging	Clinical features Chest pain in 90%

Chest pressure Thoracic back pain If it is in the root > murmur Symptoms of compression on the nearby structures : Superior vena cava syndrome , hoarseness , dysphagia , bronchial obstruction , cough , wheezes Distal embolization Sudden severe pain if rupture happens	Sudden severe sharp tearing , radiated to the back between the scapula Pulse deficit New AR murmur Blood pressure differential between arms Less common presentation : Pain that radiate to the abdomen and lower extremities Inferior MI Mesenteric ischemia Spinal ischemia Renal impairment
Diagnosis : **CXR :** wide mediastinum **ECHO :** transthoracic : aortic root Transesophageal : ascending and descending **CTA** : the best test **MRA** **Aortography**	Diagnosis : CT Transesophageal ECHO MRI CXR has limited sensitivity especially in type B Lab tests are not specific
Medical treatment : Smoking cessation , blood pressure control , no heavy lifting , lipid profile optimization Surgical treatment : Symptomatic aneurysm regardless diameter Growth rate => 1cm /year TAAs	Treatment Initial management if the patient not in shock or in hypotension state I.V beta blockers^ + opiate +-I.V vasodilator * ^ HR should be <60 *used if Systolic Blood pressure >120

>=5.5 cm >4.5 cm in marfan syndrome >5 cm in pt with bicuspid valve Ascending aorta : If the valve is healthy >Using dacron graft If the valve is affected > Bentall procedure Replace the valve + graft for the (root , ascending aorta) + reimplantation of the coronary arteries into the graft Descending : Open or endovascular repair (TEVAR)	Type A : open surgery Type B : Uncomplicated : medical treatment Complicated : endovascular treatment Complications include Limb or mesenteric ischemia Progression of dissection Aneurysm expansion Uncontrolled HTN

Acute aortic syndrome =

Aortic dissection

Intraluminal hematoma

Penetrating atherosclerotic ulcers

Traumatic aortic injury

Good luck