

## Coronary artery disease.

### ▣ Coronary Artery Bypass Grafting: (CABG)

- Triple vessel disease
- Lf main coronary artery disease
- Unstable angina ,failed Mx therapy
- Complications of PTCA
- Life threatening complications of MI
- Anomalies of Coronary arteries.

#### CABG techniques:

- Median sternotomy
  - Cardiopulmonary bypass
  - Cardioplegic arrast
  - Mammary artery, reversed saphenous vein, radial artery
1. Perfect target for LIMA is LAD
  2. Perfect target for Radial artery is severely narrowed coronary artery otherwise spasm in radial artery will occur.
  3. **Total arterial revascularization:** This means that the blood vessel harvested to create a bypass vessel is also an artery rather than a vein.

## Thoracic aortic disease

1. Aortic aneurysm
  - Mainly asymptomatic, found incidentally on imaging.
  - Murmur could be heard if there is involvement of the aortic valve

- Classification:
  - Thoracic aneurysm
  - abdominal aneurysm
  - Thoracoabdominal
- Cystic medial degeneration

### Risk Factors

- Smoking
- COPD
- HTN
- Male gender
- Older age
- High BMI
- Abnormal aortic valve (e.g., bicuspid valve)
- Family history

### Presentation

- Aneurysm
  - Most asymptomatic
  - Superior vena cava syndrome
  - Hoarseness
  - Bronchial obstruction
  - Dysphagia
  - Hemoptysis
  - Paralysis/paraplegia
  - Lower extremity embolism

- Multiple imaging methods could be used to but the most widely used one is CT scan

- Tx:

Medical treatment are limited

- Medically;
  - BP control
  - Smoking cessation
  - No heavy lifting
- Surgical;
  - Ascending ; replace valve
  - Arch; graft
  - Descending ; graft , stent

### Treatment – Indications for Intervention

- Aortic size
  - Ascending diameter  $\geq 5.5$  cm
  - Growth rate  $\geq 1$  cm/yr (avg ascending 0.07 cm/yr; descending 0.19 cm/yr)
- Symptomatic aneurysm
- Traumatic rupture
- Pseudoaneurysm
- Large saccular aneurysm
- Mycotic aneurysm
- Aortic coarctation
- Bronchial compression
- Aortobronchial or aorto-esophageal fistula

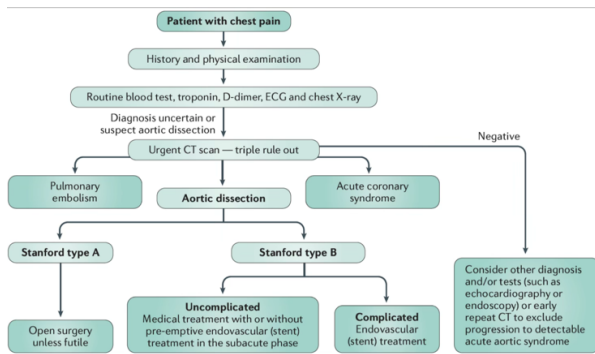
For ptn with marfan and other syndromes ; 4.5 cm < is indication for surgery

## 2. Acute aortic syndrome

- Aortic dissection mainly will take about this
- Intramural hematoma
- Penetrating atherosclerotic ulcer
- Traumatic aortic injury

### Aortic dissection

- 40% mortality
- High clinical suspicion as many ptn come only with chest pain (90%)
- Asymptomatic
- Classification:
  - Type A ; ascending, upto 30% misdiagnosed
  - Type B; other parts
  - Mortality from aortic rupture, tamponade, acute MI, acute aortic valve regurge.
- Up to 33% of type A present with symptoms of end organ malperfusion.
- CT is the gold standard



### Estimation of Pretest Risk of Thoracic Aortic Dissection

#### High Risk Conditions

- Marfan Syndrome
- Connective tissue disease\*
- Family history of aortic disease
- Known aortic valve disease
- Recent aortic manipulation (surgical or catheter-based)
- Known thoracic aortic aneurysm
- Genetic conditions that predispose to AoD†

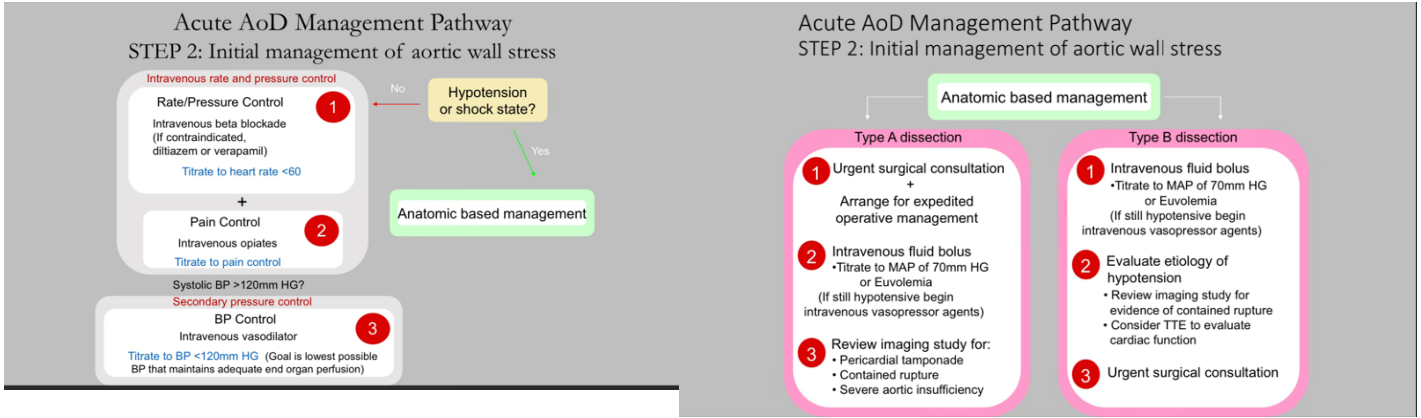
#### High Risk Pain Features

Chest, back, or abdominal pain features described as pain that:

- is abrupt or instantaneous in onset.
- is severe in intensity.
- has a ripping, tearing, stabbing, or sharp quality.

#### High Risk Examination Features

- Pulse deficit
- Systolic BP limb differential > 20mm Hg
- Focal neurologic deficit
- Murmur of aortic regurgitation (new or not known to be old and in conjunction with pain)



# Valvular disease

## 1. Aortic stenosis

CXR; dilated ascending with normal heart size.

severity	Mean gradient(mmHg)	Aortic valve area (cm2)
mild	<25	>1.5
moderate	25-45	1-1.5
severe	>45	<1
critical	>70	<0.7

### Management

- **Medical;** Medical treatment essentially is reserved for patients who have complications of AS such as heart failure, infective endocarditis, or arrhythmias.
- **Surgical;** The primary management of symptomatic patients with valvular AS is interventional

## 2. AR

Acute AR can lead to pulmonary edema and congestion due to poor accommodation to inc EDP

CXR ;  
Enlarged thoracic aorta with cardiomegaly

### Managment:

- Medical :
  - Acute AVR; medical treatment should be bridge to surgery
  - Chronic AVR;
    - Asymptomatic + if LV EF is normal;only medical treatment.
    - If mild AR + normal LV EF ; endocarditis prophylaxis

- Surgical; AV replacment
  - If symptomatic
    - Enlarged heart
    - ECG changes + inc LV overload
  - If asymptomatic
    - LV EF < 50%
    - Lv EF normal but LV dilatation ( end diastolic > 75 mm, End systolic > 55mm)

TAVR is resonable alternativ of surgical AVR in high risk ptn.

### 3. MS

Mitral valve replacement requires higher INR combarred to Aortic replacment.

Usually rheumatic causes  
2/3 in women

Hemoptysis can be one of the syptoms due to ruptured bronchial vessels

Tx;

#### **Medical ;**

- Asymptomatic mild MS yearly follow up
- CHF
- Arrhythmia

#### **Mitral ballon valvuplasty;**

- CHF unresponsive to medical therapy
- Asymptomatic pulmonary artery pressure > 50 mm hg.

#### **Surgical;**

- Mitral area < 1cm
- Symptomatic + pripheral embolism

### 4. MR

Always repair

Dilated annulus ; reduction

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