Anuloaortic ectasia and Marfan syndrome

- **Aneurysmal aorta (AE)**: Distension of the proximal ascending aorta and aortic arch (in 5%–10% of patients).
- **Aortic root dissection**: Early endocarditis, aneurysmal and rupture of aortic root dissection.
- **Marfan syndrome**: Aortic root dissection, annuloaortic ectasia, and dissection.

Association between aneurysmal aorta and Marfan syndrome

- **Aneurysmal aorta**: In 5%–10% of patients with Marfan syndrome.
- **Aortic root dissection**: Associated with Marfan syndrome.
- **Marfan syndrome**: Associated with aneurysmal aorta.

**Clinical presentation**

- **Aneurysmal aorta**: Increased pulse pressure, murmur of aortic regurgitation, chest pain, and syncope.
- **Aortic root dissection**: Severe chest pain, syncope, and sudden death.
- **Marfan syndrome**: Acute aortic dissection, aortic root dissection, and aortic root aneurysm.

**Signs on imaging**

- Echocardiography: Visualization of aneurysmal aorta and aortic root dissection.
- CT imaging: Visualization of aneurysmal aorta, aortic root dissection, and Marfan syndrome.

**Management**

- **Aneurysmal aorta**: Medical management and surgical intervention.
- **Aortic root dissection**: Medical management and surgical intervention.
- **Marfan syndrome**: Medical management and surgical intervention.

**Outcomes**

- **Aneurysmal aorta**: Increased risk of aortic dissection and aortic root dissection.
- **Aortic root dissection**: High risk of mortality.
- **Marfan syndrome**: High risk of mortality.

Aortic valve regurgitation

- **Aortic valve regurgitation (AR)**: Aortic valve disease involving the aortic valve cusps. AR is the second most common associated lesion.

Signs of AR

- **Aortic root dilatation**: AR causes dilatation of the aortic root.
- **Sinus and diastolic triangular coaptation defect on MDCT**: AR causes a triangular coaptation defect on MDCT.

**Symptoms**

- **Symptoms of AR**: Fatigue, shortness of breath, and angina pectoris.

**Signs on imaging**

- **Echocardiography**: Visualization of AR and a triangular coaptation defect.
- **CT imaging**: Visualization of AR and a triangular coaptation defect.

**Management**

- **Medical management**: Diuretics, beta-blockers, and angiotensin-converting enzyme (ACE) inhibitors.
- **Surgical intervention**: Aortic valve repair or replacement.

**Outcomes**

- **AR**: Increased risk of congestive heart failure and mortality.

Acute aortic dissection with diastolic prolapse of intimal flap into the left ventricle

- **Acute aortic dissection**: Aortic valve regurgitation involves the aortic root.
- **Diastolic prolapse of intimal flap**: Intimal flap prolapses into the left ventricle during diastole.
- **Acute aortic dissection**: Increased risk of mortality.

**Clinical presentation**

- **Clinical presentation of acute aortic dissection**: Severe chest pain, syncope, and sudden death.

**Signs on imaging**

- **Echocardiography**: Visualization of acute aortic dissection and intimal flap prolapse.
- **CT imaging**: Visualization of acute aortic dissection and intimal flap prolapse.

**Management**

- **Medical management**: Medical management of acute aortic dissection.
- **Surgical intervention**: Aortic valve repair or replacement.

**Outcomes**

- **Acute aortic dissection**: Increased risk of mortality.

Degenerative aortic valve disease

- **Degenerative aortic valve disease**: Aortic valve regurgitation involves the aortic root.
- **Clinical presentation**: Fatigue, shortness of breath, and angina pectoris.
- **Signs on imaging**: Visualization of degenerative aortic valve disease.
- **Management**: Aortic valve repair or replacement.

**Outcomes**

- **Degenerative aortic valve disease**: Increased risk of congestive heart failure and mortality.

Interesting Case

- **Interesting Case**: Aortic valve regurgitation involves the aortic root.
- **Signs on imaging**: Visualization of aortic valve regurgitation.
- **Management**: Aortic valve repair or replacement.

**Outcomes**

- **Interesting Case**: Increased risk of mortality.