



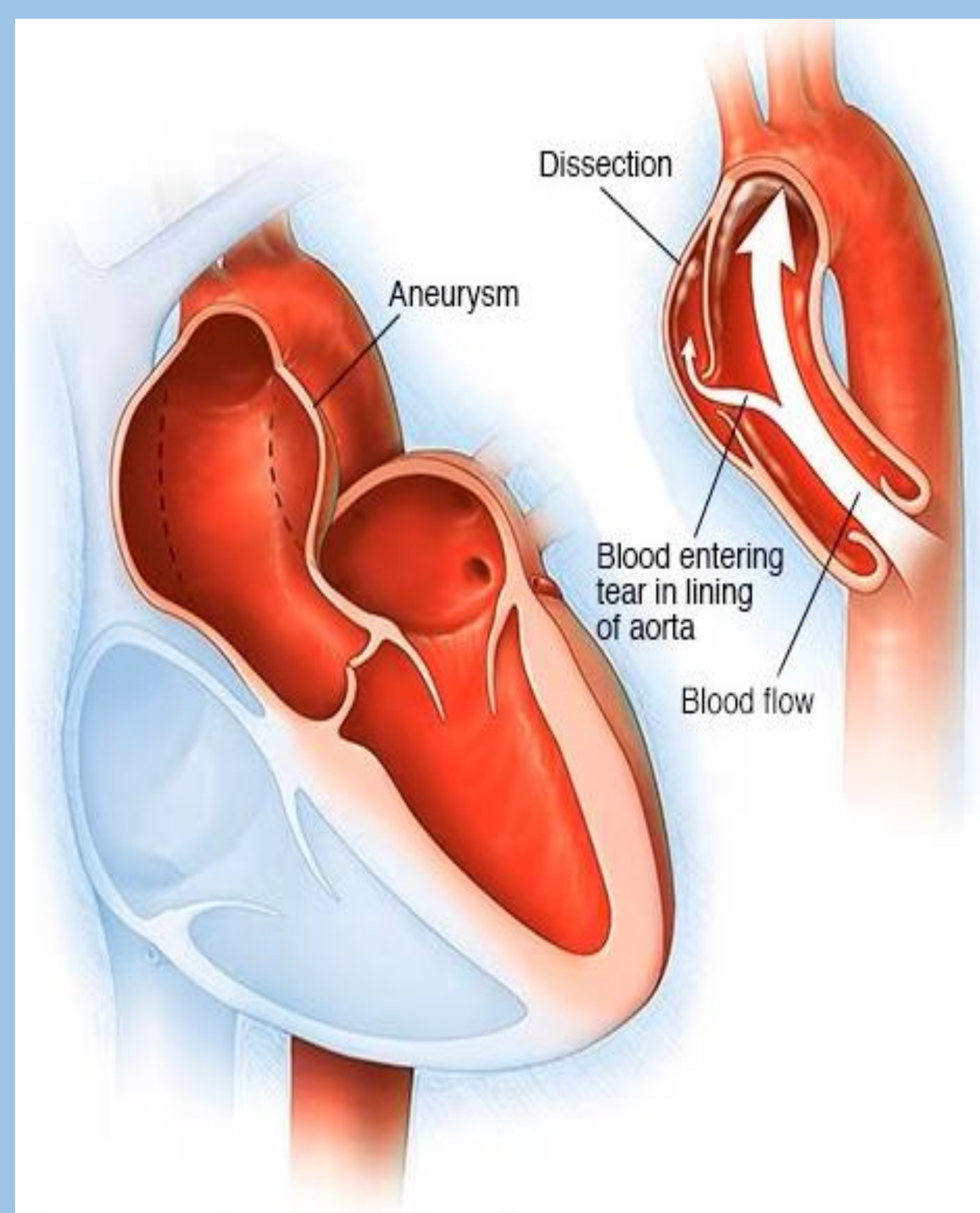
# S32 The Use of CT in Diagnosing Aortic Dissection

Objectives: 1. Define Aortic Dissection 2. Explain why is CT the best modality for diagnosis



## Define Aortic Dissection

- A condition in which a tear opens in the inner layer of the body's main artery.
- Blood rushes into the tear causing the inner layer and outer layer to split
- The dissection can also rip the outer layer of the artery causing blood to leak out and can be deadly
- An Aortic dissection can start as an aortic aneurysm or a weak spot in the artery that starts to bulge
- Relatively uncommon
- If diagnosed early, the chance of survival is high



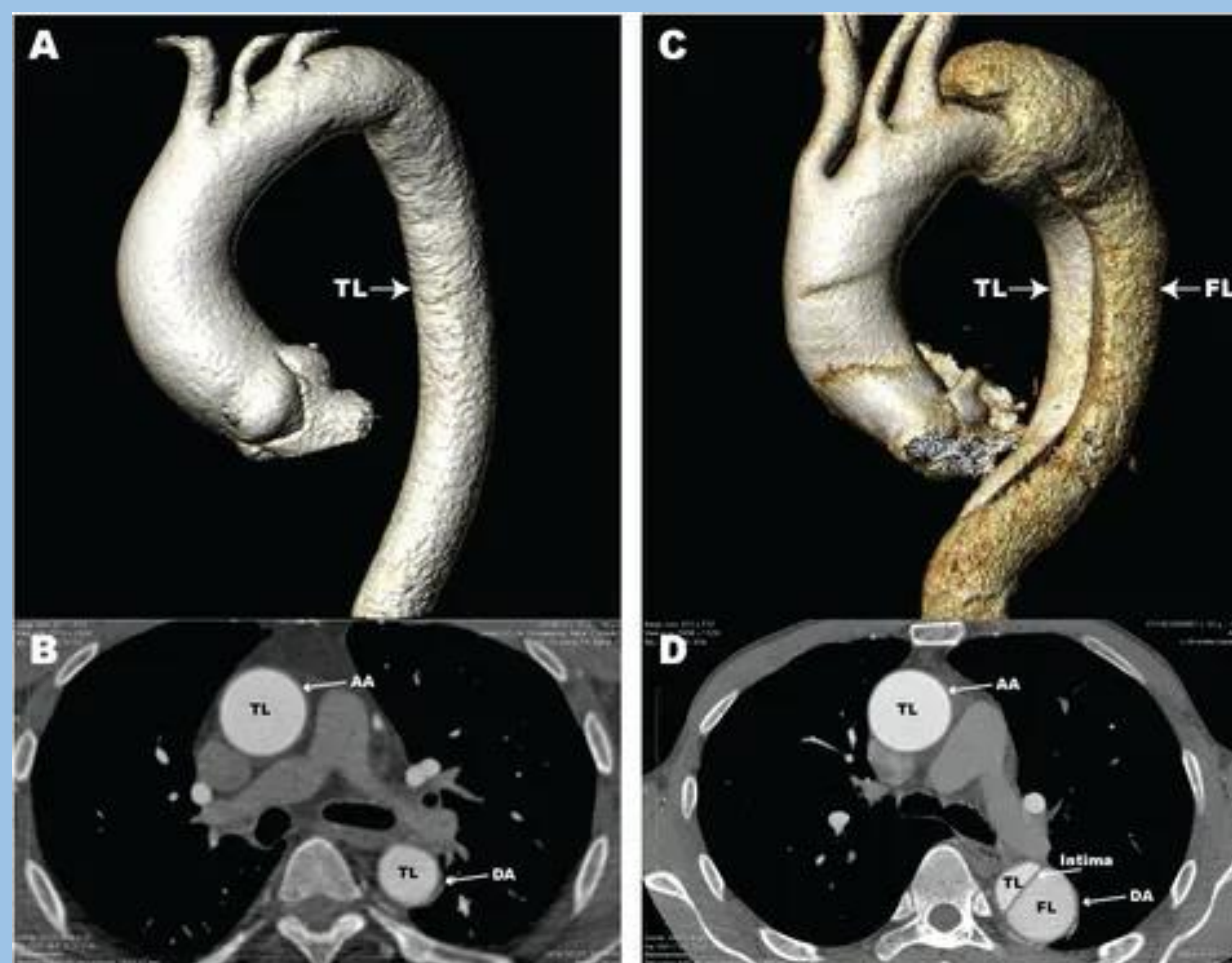
## Symptoms

- Sudden severe chest or upper back pain
- Sudden severe stomach pain
- Loss of consciousness
- Shortness of breath
- Symptoms similar to a stroke i.e., vision problems, difficulty speaking, and weakness or loss of movement on one side of the body
- Weak pulse in one arm or thigh compared to other
- Leg pain
- Difficulty walking



## Computed Tomography Angiography (CTA) for Aortic Dissection

- A CT scan of the head and neck with the use of injected contrast dye
- An IV is inserted into a vein in the arm or hand
- Saline and contrast material is injected in a specific set time
- The scan is started right after the injection
- When the contrast is seen in the aorta on the technologist's screen, the scan then goes through the entire chest



## Explain why is CT the best for diagnosis

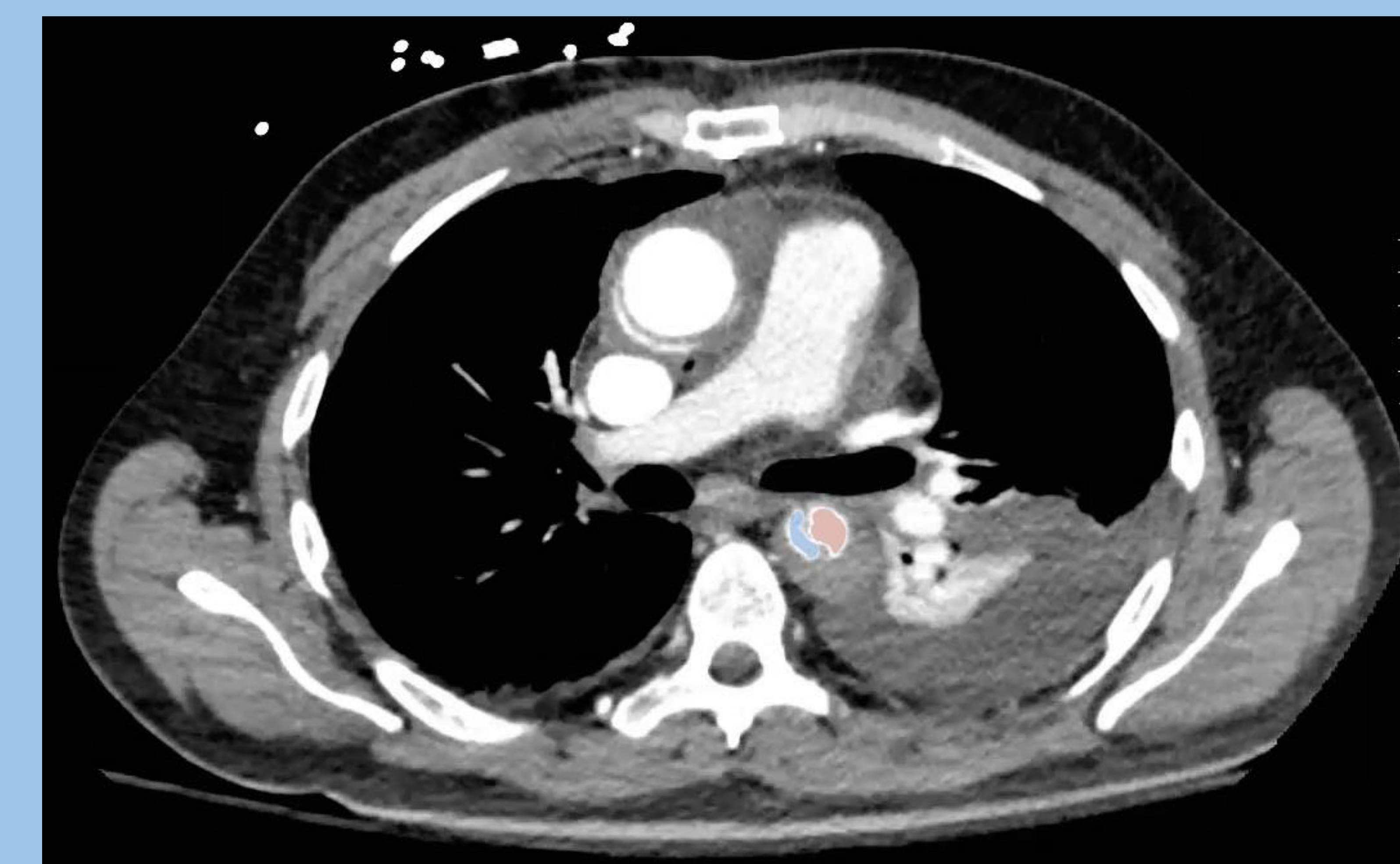
- Creates a 3D cross-sectional image
- Studies conducted quickly and efficiently, especially for acute cases
- Readily accessible at any time of day
- Rapid image stitching
- Shows the branch vessel anatomy and the complex configuration of the dissection
- Shows the calcification of the aortic wall when planning for surgery
- Helps evaluate the aorta for distal complications

## MRI compared to CT

- Acquisition times are longer
- Preferred for a stable patient, chronic conditions, or follow-up appointments
- More susceptible to artifacts from movement
- Requires injection of contrast media
- Images require post-processing and MIP reconstruction
- Lower Spatial Resolution
- Less accessibility
- Claustrophobia
- Unable to use if the patient has ferromagnetic implants, pacemakers, etc.

## TEE (Transesophageal Echocardiography) compared to CT

- Semi-invasive
- Requires sedation
- Quality is based on the tech's ability
- May cause a rise in systemic pressure due to gagging and retching by the patient
- Artifacts caused by reverberation may mimic an intimal flap in the aorta
- Can be performed bedside



## Conclusion

CT is the best for diagnosing aortic dissection because it is quick and efficient for acute cases. It has fewer artifacts from motion and has better spatial resolution. It is also less costly and invasive for the patient.