

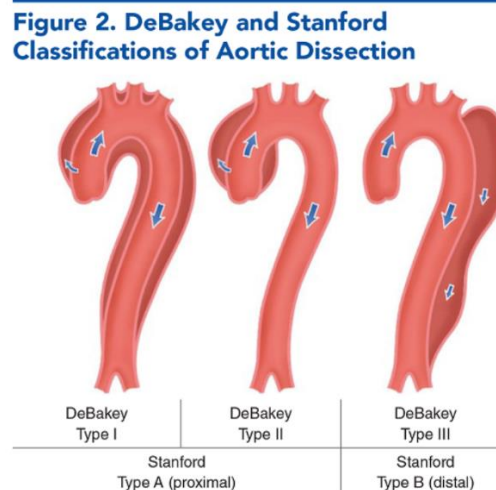
## Emergency Department Clinical Guidelines ED/CCT Acute Aortic Dissection Guidelines

### ***Clinical Context and Purpose***

The purpose of this guideline is to provide a clinical pathway for the emergency department management of patients presenting with acute aortic dissection.

### ***Background***

Acute aortic syndromes include acute aortic dissection, penetrating atherosclerotic ulcer, and intramural hematomas. Aortic dissection is the most common and most deadly, highlighting the importance of making the diagnosis in a timely fashion so that definitive care can be coordinated expeditiously. Aortic dissections arise from a breakdown of the aortic intima or media resulting in hemorrhage extending into and within the aortic wall. There are several systems available to classify aortic dissection e.g. the Stanford and DeBakey Systems based on the involvement of the ascending aorta (see figure):



Depending on the location of the initial intimal tear and its extent, patients may develop different complications including but not limited to cardiac tamponade, acute neurological deficits, and various malperfusion syndromes. Patients with acute aortic dissection should have definitive care coordinated as rapidly as possible to optimize outcomes including transfer to a center with appropriate cardiothoracic surgical capabilities. Immediate critical actions however, should target heart rate and blood pressure control to prevent further propagation of the dissection flap. While the primary goal should focus on transfer for definitive surgical repair, in the setting of shock with cardiac tamponade, and in the absence of immediate surgical management, fluid and/or blood product resuscitation with possible controlled small volume pericardial drainage may be needed to stabilize the patient.

## Emergency Department Clinical Guidelines

### ED/CCT Acute Aortic Dissection Guideline

#### Acute Atraumatic Aortic Dissection

History and exam suggestive of acute aortic dissection:

- Recent cardiothoracic procedure/PCI
- Acute onset chest, abdominal, or back pain AND syncope, or acute neurological deficits
- Malperfusion syndrome
- Acute sympathomimetic use



Critical Actions to Consider:

- Large bore IVs, Continuous Cardiac Monitor, ECG, Chest X-ray, Pre-op labs
- POCUS: useful for identifying large effusion/tamponade and/or dissection flap in critically ill patients to guide management



CT Aorta Demonstrates Acute Aortic Dissection?



Critical Actions to Consider:

- Analgesia PRN
- Control heart rate: goal up to 60 BPM, IV beta blocker or calcium channel blocker e.g. esmolol or diltiazem
- Control blood pressure: goal 100-120 mmHg, e.g. nicardipine infusion
- Emergent Thoracic/vascular Surgical consultation
- Arrange for transfer to facility with appropriate surgical capabilities

If at any point patient develops hemodynamic instability:

- Consider fluids/blood products and/or vasopressors to goal systolic BP 100-120 mmHg
- Consider controlled pericardial drainage until goal BP is achieved

\*Ideally discuss management options with accepting surgical consultant if clinically feasible.

#### Resources/References

Hackett A, et al. Thoracic Aortic Syndromes in The Emergency Department: Recognition and Management. *EM Practice*. 2021. Dec; 23(12):1-28.