

Evidence Discussion (PVD 6.7)

Aortic and Arterial Dissection and Other Aortic Conditions

Aortic and arterial dissection is usually a result of vessel wall damage due to uncontrolled hypertension or physical trauma. Some connective tissue and genetic disorders also carry a higher risk for vessel dissection. Emergent cases usually present with symptoms of impending vessel rupture, organ malperfusion or hemodynamic instability.¹ For these cases, advanced imaging is required for surgical planning. Additional imaging of anatomic regions with suspected involvement are considered necessary in these cases. Acute dissection cases without these features may be observed with medical management until stable.²

A chronic arterial dissection will often degenerate into an aneurysm over time. Multiple major studies have been conducted to recommend criteria for intervention based on size and anatomic considerations.^{3,4,5} Individuals with certain genetic syndromes including Marfan, Loeys-Dietz and Ehlers-Danlos Type IV may be at risk for accelerated vessel degeneration and should undergo more frequent surveillance.^{6,7}

Due to the complex anatomy associated with arterial dissection, CT/MR imaging is recommended over duplex imaging for thoracic, abdominal and visceral artery dissections. Duplex imaging may still be useful for carotid monitoring depending on the extent of vessel involvement.^{8,9}

Asymptomatic arterial dissections not associated with the aorta should undergo regular surveillance for the first year after detection. No further imaging has found to be of benefit if findings remain stable.^{10,11}

Penetrating aortic ulcers are frequently found in the setting of severe aortic atherosclerosis and may carry a significant rupture risk. Frequent surveillance for the first year after detection is indicated to determine if intervention is necessary. If the penetrating aortic ulcer remains stable after twelve months, the frequency of imaging may be reduced to annually until intervention is indicated.¹²

References:

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