Imaging Aortic Pathologies in Computed Tomography (CT)

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**Abstract**

Computed tomography (CT) is an increasingly important imaging modality to visualization of aortic pathologies. The aorta is the largest vessel in the body and gives rise to several important arteries that supply surrounding organs, so pathologies of this vessel can prove dangerous. The two main pathologies that affect the aorta are aneurysms and dissections, each of which can rupture and quickly become fatal. Symptoms for these pathologies can vary widely but primarily include pain localized to the area of the aorta that is affected, with risk factors encompassing several heart conditions as well as genetic factors. The prognosis for aortic conditions has improved as a result of CT technology but is still relatively grim, with treatment options including invasive and minimally invasive surgical interventions along with medicinal management and screening for the rest of the patient’s life. CT provides several options for improving visualization of the pathology including valuable post-processing and reconstruction images that can maximize detail and allow for quicker and easier diagnoses, improving patient prognosis, and the use of ECG gating to virtually eliminate motion artifact from the heart that can obscure or mimic pathology. The continuous advancements in CT technology are only becoming more readily available, creating an expectation that the prognosis for these serious conditions will continue to become more favorable.

*Keywords:* Computed Tomography, Aorta, Dissection, Aneurysm, Post-Processing, Image Reconstruction, ECG Gating