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Title	Reconstruction of 3D Abdominal Aorta Aneurysm from Computed Tomographic Angiography Using 3D U-Net Deep Learning Network
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Paper topics	

Abstract

(1) Background: An abdominal aortic aneurysm (AAA) is a swelling (aneurysm) of the aorta that occurs when the wall of the aorta weakens. An AAA is a potentially life threatening condition, especially if it eventually ruptures, causing severe bleeding. (2) Methods: We developed an automated segmentation method for 3D AAA reconstruction from computed tomography angiography (CTA) based on the 3D U-NET deep learning network approaches for AAA and AAA with thrombus on training dataset classified as 8 normal, 14 aneurysm volume, and 38 thrombus aneurysm volume with the data augmentations app, i.e., scaling, random crop, gray scale variation, axial y flip, and shear, were added to the training model, achieving better performance. (3) Results: The results confirm that the proposed method can provide accuracy in terms of the Dice Similar Coefficient (DSC) scores of 0.9244 for training performance and 0.9881 for testing evaluation with the 3D U-Net model.