Imaging

MR Visualization of Retrograde Aortic Flow Pattern in a Patient with Recurrent Embolic Strokes

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A 76-year-old patient with a history of recurrent left-hemispheric strokes within the last two years was referred for ECG-gated CT angiography (CTA) of the chest for the assessment of aortic plaque burden as a potential source of embolic stroke episodes. CTA revealed significant atherosclerotic plaques in the descending aorta as well as a moderate aortic isthmus stenosis with kinking (**A–C**). Significant carotid artery stenosis was excluded by contrast-enhanced MRA. Additional time-resolved three-dimensional phase-contrast MRI showed a retrograde flow pattern towards the supra-aortic vessels (**D–F**) suggesting recurrent embolism from the plaques in the descending aorta (see also supplementary online video, www.karger.com/doi/10.1159/000338540).

This case illustrates that visualization of flow patterns with time-resolved three-dimensional phase-contrast MRI provides additional information in patients with embolic strokes in whom ECG-gated CTA revealed significant plaque burden in the aortic arch and descending aorta.

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