

Ischemic Stroke as an Uncommon Complication of Cor Triatriatum

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Cor triatriatum (CT) is a rare congenital heart disease characterized by a fibromuscular membrane that divides the left atrium into two distinct chambers and mostly manifests during infancy mimicking mitral valve stenosis. We present the uncommon case of cardioembolic ischemic stroke in an adult man on the grounds of an otherwise asymptomatic CT with intra-atrial thrombus formation, which was established by means of transesophageal echocardiography and cardiac magnetic resonance imaging. Because exact diagnosis and surgical treatment is feasible, we suggest CT as a rare, but potentially treatable source of cerebral embolism in adult patients with stroke and dilated left atrium. **Key Words:** Cor triatriatum—cardioembolic stroke.
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Cor triatriatum (CT) is a rare congenital heart disease characterized by a fibromuscular membrane that divides the left atrium into two distinct chambers.¹ Whereas most cases present during infancy, some others remain asymptomatic until late adulthood and their diagnosis might be missed.^{2,3} Clinically, both infant and adult patients present mostly with symptoms mimicking mitral stenosis as a result of the obstructive function of the intra-atrial membrane.^{4,5} There are only a few reports of cerebral embolism related to CT.⁶⁻¹⁰ Atrial fibrillation (AF) is a quiet frequent accompanying feature that makes the identification of the true cause of cerebral embolism rather challenging.^{4,9,10}

A 55-year-old man presented with severe hemiparesis and aphasia. He had a history of hypertension, hyperlipidemia, and AF, treated with warfarin. Repeated transthoracic echocardiograms demonstrated a significant dilatation of the left atrium (55 mm) and a slight concentric hypertrophy of the left ventricle. Admission international normalized ratio was 1.9 allowing the initial assumption of an acute cardioembolic infarction (Fig 1, A) on the grounds of AF. Transesophageal echocardiography was performed to exclude intracardial thrombus formation. A hyperchoic membrane dividing the left atrium into two communicating chambers was visualized and the diagnosis of CT was set. No thrombotic material and normal flow velocities were found in the normal-sized auricula. However, a 3.5- × 1.3-cm large thrombus was attached to the basis of the anterior cusp of the mitral valve and the free wall of the left atrium. It was identified as an obvious source of cerebral embolism (Fig 1, B). Within the following weeks the patient improved significantly. At this point cardiac magnetic resonance imaging clearly demonstrated CT, but showed no intra-atrial thrombus (Fig 1, C) allowing the assumption of clot disruption under effective anticoagulation (international normalized ratio > 2.5). Follow-up transesophageal echocardiography after cardiosurgical

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Received May 9, 2008; revision received June 26, 2008; accepted July 1, 2008.

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1052-3057/\$—see front matter

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doi:10.1016/j.jstrokecerebrovasdis.2008.07.007

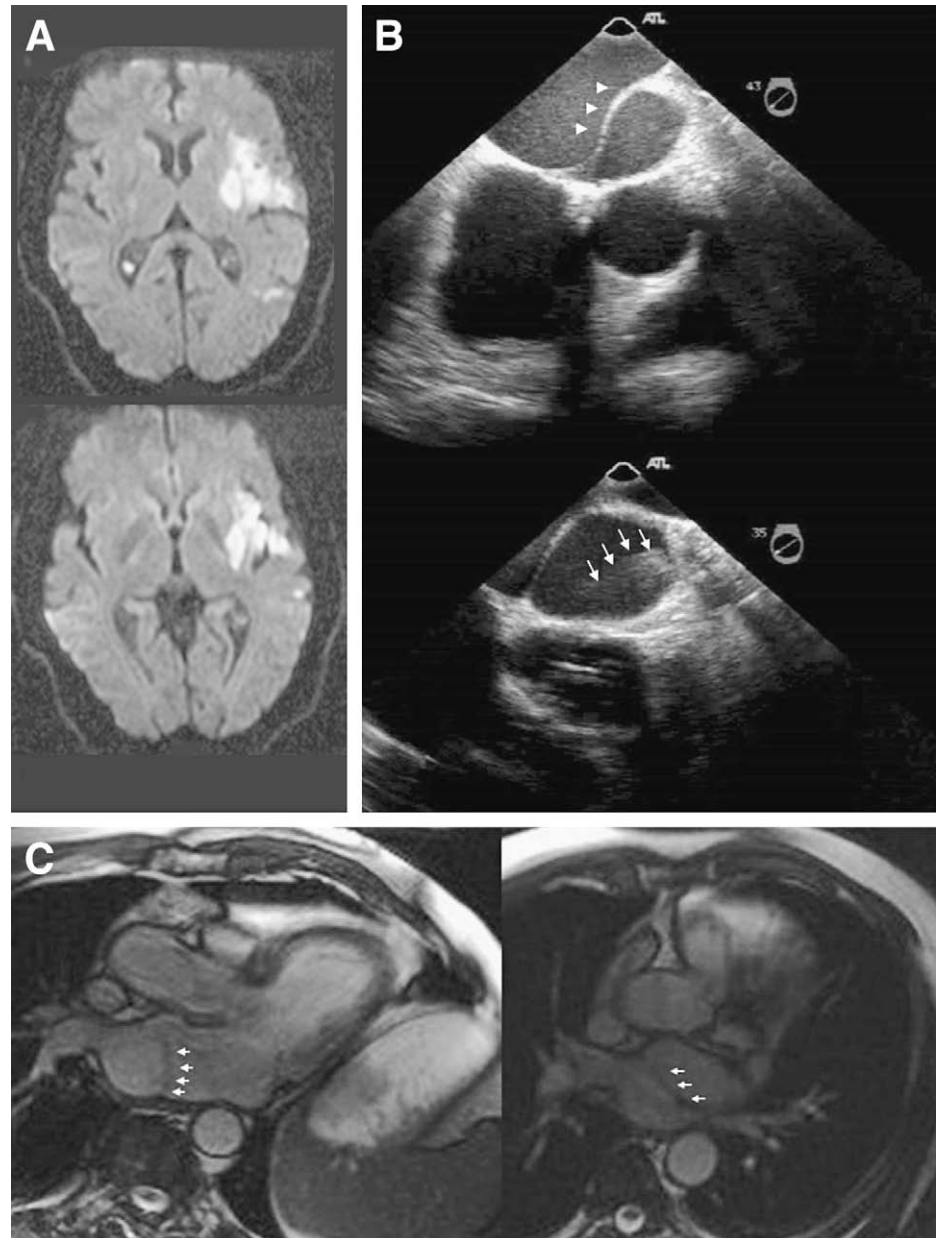


Figure 1. (A) Diffusion-weighted magnetic resonance imaging (MRI) shows an acute ischemic lesion in the territory of the left middle cerebral artery. (B) Transesophageal echocardiography reveals a membrane (arrowheads) and thrombotic material (small arrows) in the enlarged left atrium establishing intra-atrial thrombus formation in a case of CT. (C) MRI in fast white blood technique demonstrates a membrane (white arrows) that separates a left atrium into two communicating chambers supporting the diagnosis of CT.

intervention with total membrane excision revealed no membrane rests, nor thrombotic material within the left atrium. However, AF persisted.

Conclusion

This constellation of findings suggests the direct association between stroke and this rare congenital heart disease as a result of the obstructing effect of the membrane that reduces blood flow between both chambers of the left atrium. The fact that, in addition to AF and atrial dilatation, our patient presented no signs of pulmonary hypertension or overloading of the right ventricle and remained cardiologically asymptomatic make the differential diagnostic approach of this case intriguing. Currently, diagnosis of CT

can be easily achieved by means of transesophageal echocardiography or cardiac magnetic resonance imaging and surgical treatment is feasible. It should, therefore, be considered as a rare, but potentially treatable source of embolism in adult patients with stroke and a dilated left atrium.

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