


CARDIOVASCULAR FLASHLIGHT

Left atrium wall diverticulum: an additional anatomical consideration in atrial fibrillation catheter ablation

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Current image technology with multidetector computed tomography (MCTC) allows the knowledge of anatomical details of structures completely unknown until recently. We describe two patients with left atrium (LA) diverticulums accidentally found in MCTC. The report of this anatomical characteristic is important because LA diverticulums may derive complications in atrial fibrillation (AF) catheter ablation, such as catheter trap and wall penetration.

Patient A was a hypertensive 72-year-old man with left bundle branch block and atypical chest pain. The MCTC showed mild coronary lesions and a diverticulum depicted as a bi-lobulated structure of 10 × 6 mm size and a 4 mm mouth. It was situated in the anterosuperior wall of the LA, very close to the opening of the right superior pulmonary veins (Panel A).

Patient B was an 82-year-old asymptomatic man with diabetes mellitus and regional wall motion abnormalities. The MCTC revealed a myocardial bridge of a marginal branch of the circumflex coronary artery and a diverticulum of 7 × 6 mm with a 3 mm mouth located in the posteriorinferior LA, close to the intratriatrial septum and the limbus of the fossa ovalis (Panel B).

Whether LA diverticulums are more common in patients with AF or even might be a substrate for AF is unknown. Characteristically, they were described as having the same histological construction as that of a normal LA wall, but no pathophysiological explanation is recognized.

Catheter ablation of AF is presently considered a reasonable alternative to pharmacological therapy to prevent recurrent AF in symptomatic patients and the number of procedures is increasing worldwide. However, major complications, such as pulmonary vein stenosis and atrioesophageal fistula have been reported in about 6% of procedures. This report aims to alert electrophysiologists to this particular anatomical variation of LA wall, since its prevalence is unknown and it may cause serious complications when attempting AF ablation.

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