



Interventricular Septal Aneurysm: Reconsidering the Risk

심실중격류: 위험성 재고

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See the article, “A Thrombus within an Interventricular Membranous Septal Aneurysm Leading to Cerebral Infarction: A Case Report”, in volume 85 on page 210-214 (<https://doi.org/10.3348/jksr.2022.0151>).

Cardio-embolic stroke (CES) accounts for 20%–30% of all ischemic strokes and 30% of strokes in individuals under 45 years. Due to persistent underlying pathologies, CES carries a poorer prognosis compared to other stroke types. Its recurrence rate within 1 week is 6.5%, with in-hospital and 5-year mortality rates reaching 27.3% and 80%, respectively (1).

While atrial fibrillation (AF) is the most common cause of CES, a diverse range of etiologies exist, including:

- Structural abnormalities: cardiomyopathy, acute myocardial infarction, patent foramen ovale, and tumors.
- Arrhythmias: AF, sick sinus syndrome, and atrial flutter.
- Valvular diseases: rheumatic valvular disease, mitral stenosis, mitral annular calcification, infectious and thrombotic endocarditis.
- Heart-related procedures: coronary artery bypass graft and cardiac catheterization.

Among these, AF encompasses 50% of CES cases and affects 9% of the general population (1, 2).

Cardiac imaging plays a crucial role in identifying etiologies in CES cases associated with structural abnormalities, valvular diseases, and heart-related procedures. While echocardiography reigns supreme, cardiac CT and MRI can be utilized for more precise and objective evaluation. In AF cases, imaging is essential for detecting intra-atrial thrombi, consistent with its pathophysiology.

The active application of cardiac imaging modalities has unveiled additional, previously unrecognized CES etiologies. Szabo et al. (3) identified Cor triatriatum sinister as a CES cause

in a young woman, while Di Pasquale et al. (4) reported CES alongside myocardial calcium oxalate deposition in a rare case of cardiac oxalosis.

The case reported by Kim et al. (5) highlights the significance of multi-modality imaging. While echocardiography initially failed to capture the thrombotic aneurysm, cardiac CT clearly revealed it. Similarly, Salazar et al. (6) reported a CES case and recommended regular echocardiographic follow-up after detecting an interventricular septal aneurysm. Interestingly, Kowalski et al. (7) even described CES in a 6-year-old child with a thrombosed interventricular septal aneurysm.

While interventricular septal aneurysms often arise from spontaneous closure of perimembraneous ventricular septal defects, other etiologies can obscure the exact cause during retrospective evaluations (8). This emphasizes the age-agnostic nature of this condition, potentially affecting individuals from infancy to adulthood. Despite not being traditionally included among classic CES etiologies, interventricular septal aneurysms should warrant immediate medical attention upon detection, as an associated thrombus poses a definitive risk for CES.

The increasing recognition of interventricular septal aneurysms as potential CES etiologies underscores the importance of diligent investigation and comprehensive care to prevent recurrent strokes and improve patient outcomes.

Conflicts of Interest

The author has no potential conflicts of interest to disclose.

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