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CARDIOEMBOLIC STROKE REVEALING HYPERTROPHIC CARDIIMYOPATHY

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ABSTRACT

We report a 42-year-old male, active smoker with no prior history, admitted for sudden left hemiplegia and aphasia. Brain MRI showed ischemic strokes of different ages, suggesting a cardioembolic source. Cardiac evaluation revealed hypertrophic cardiomyopathy (septal thickness 16 mm) confirmed by MRI, with non-sustained ventricular tachycardia on Holter monitoring. This case highlights hypertrophic cardiomyopathy as an uncommon cause of cardioembolic stroke and underscores the importance of cardiac imaging in etiological assessment

KEYWORDS

Hypertrophic cardiomyopathy, Cardioembolic stroke, Cardiac MRI, Multimodality imaging

MAIN ARTICLE

INTRODUCTION

Hypertrophic cardiomyopathy is a genetic heart disease characterized by left ventricular hypertrophy and variable clinical presentation. Although stroke is an uncommon manifestation, it may be the first sign of undiagnosed hypertrophic cardiomyopathy. We present a rare case of cardioembolic stroke revealing hypertrophic cardiomyopathy.

CASE REPORT

We report a case of a 42-year-old male, active chronic smoker with no notable medical history, was admitted to the neurology department for sudden-onset left hemiplegia and aphasia. Brain MRI revealed ischemic strokes of different ages, suggesting a cardioembolic origin. (Figure 1). The ECG showed left ventricular hypertrophy with secondary repolarization abnormalities. (Figure 2). Transthoracic echocardiography demonstrated a non-obstructive hypertrophic cardiomyopathy (Maron type 2) with a septal thickness of 16 mm. (Figure 3). Cardiac MRI confirmed the diagnosis of hypertrophic cardiomyopathy. (Figure 4). Holter monitoring revealed episodes of non-sustained ventricular tachycardia. (Figure 5). The patient's estimated 5-year risk of sudden cardiac death was 4.9%.

DISCUSSION

Hypertrophic cardiomyopathy is a well-recognized cause of sudden cardiac death and heart failure, but ischemic stroke is a less common and often underappreciated complication. In patients with HCM, cardioembolic stroke can occur even in the absence of traditional risk factors. The most frequent mechanism is atrial fibrillation, which is favored by left atrial enlargement secondary to left ventricular hypertrophy and diastolic dysfunction. [1]. Thrombus formation can also occur in sinus rhythm due to blood stasis in the left atrium or in hypokinetic regions of the left ventricle, particularly in the apical or fibrotic segments. Cardiac imaging, including echocardiography and cardiac MRI, plays a crucial role in identifying these structural abnormalities and assessing thromboembolic risk. [2]. Our case highlights that cardioembolic stroke can be the first manifestation of HCM, emphasizing the importance of thorough cardiac evaluation in patients with cryptogenic stroke. Early

recognition of HCM allows for targeted therapy to prevent recurrent embolic events and to manage arrhythmic risk. [3].

CONCLUSION

Cardioembolic stroke can be the first manifestation of hypertrophic cardiomyopathy. Early cardiac evaluation is essential to guide management and prevent recurrent embolic events

FIGURES

Figure 1: Cerebral MRI showing subcortical and cortico-subcortical signal abnormalities of different ages in the right temporal and right temporo-occipital regions, hyperintense on FLAIR, with some lesions demonstrating diffusion restriction.

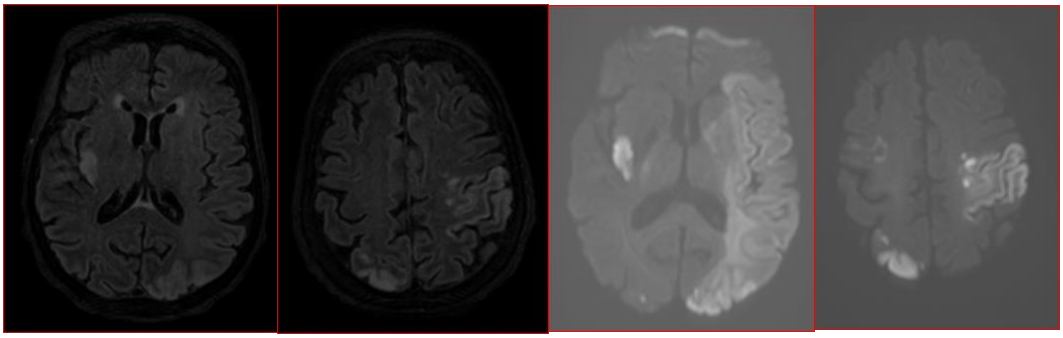


Figure 2: EKG showing left ventricular hypertrophy

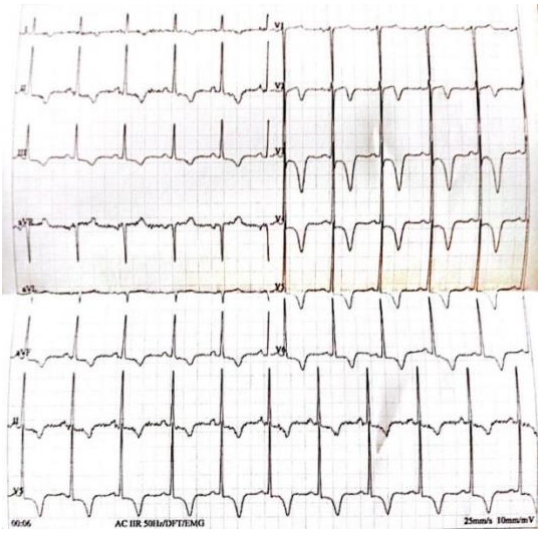


Figure 3: Echocardiography showing ventricular hypertrophy predominantly involving the septal wall

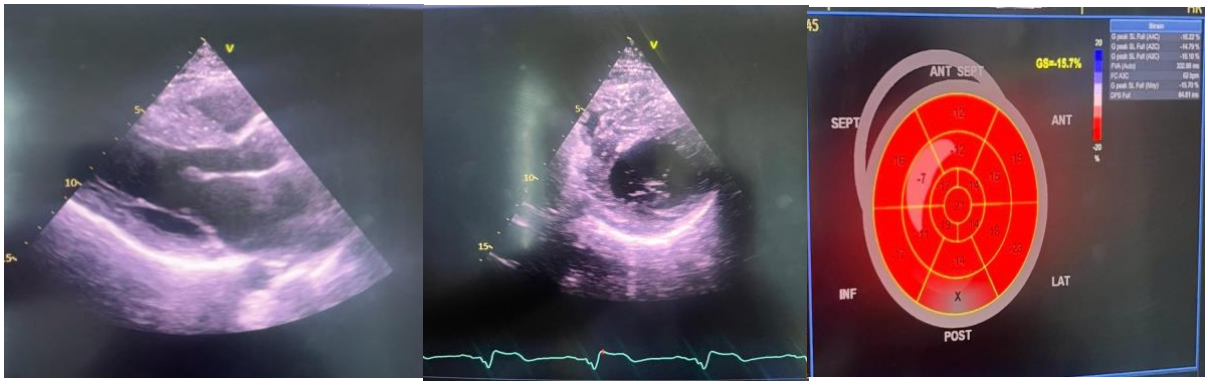


Figure 4: Cardiac MRI showing hypertrophic cardiomyopathy

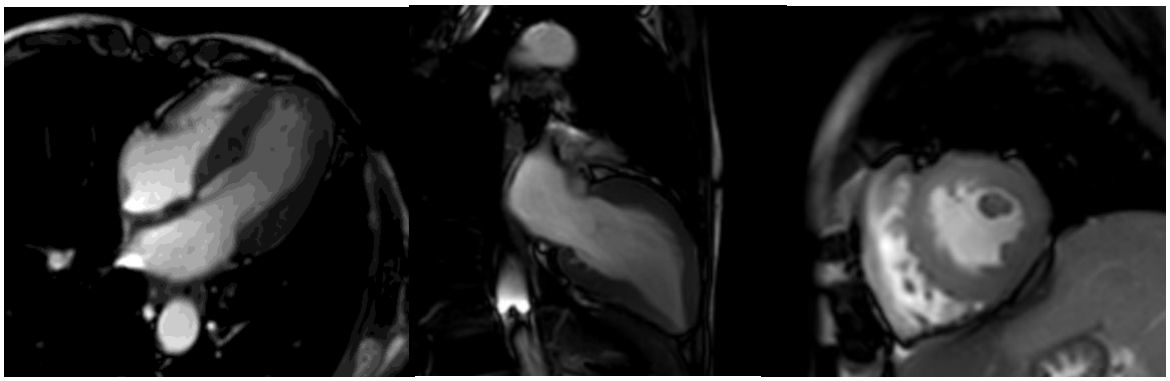
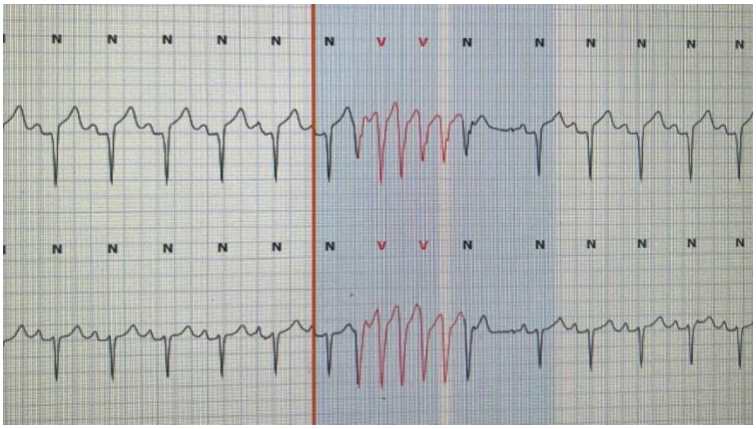


Figure 5: Holter ECG showing an episode of non-sustained v entricular tachycardia



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