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Similar to the Original: Accessory Mitral Valve

A 57-year-old female patient was admitted to the cardiology unit following an inferior myocardial infarction. In her past medical history, there was no known coronary or valvular heart diseases. Immediate right coronary artery stenting was performed, while other coronary arteries had non-critical lesions. A post-MI transthoracic echocardiography (TTE) revealed a cardiac structure originating from the left ventricular outflow tract (LVOT), exhibiting a motion pattern identical to that of the anterior mitral leaflets throughout the cardiac cycle (Figure 1A-C). Transesophageal echocardiography revealed an elongated structure with the same echogenicity as the mitral leaflets (Figure 2A and B). The structure was observed to be attached to the left ventricle inferoapical with a thin chordae (Figure 2C). Further examination using a 3-dimensional TEE true-vue image (from a ventricular perspective) revealed that the tip of the structure had a rough zone, while the body had a clear zone similar to the original mitral leaflet (Video 1). Finally, cardiac magnetic resonance imaging confirmed the accessory mitral leaflet's structure (Video 2). Although mild-to-moderate aortic and mitral regurgitation were observed, this structure did not result in obstruction in the LVOT. Therefore, the patient has been undergoing medical treatment due to insignificant clinical and echocardiographic consequences.

Accessory mitral valve is a rare congenital anomaly. This accessory structure is frequently associated with the LVOT and may result in LVOT obstruction or aortic valve regurgitation due to turbulent flow. Furthermore, since it is a congenital anomaly, it may coexist with other congenital anomalies, particularly bicuspid aortic valve. In many cases, it is identified incidentally as the cause of a murmur in asymptomatic individuals. Treatment decisions should be made on an individual basis, taking into account the severity of the consequences.

E-PAGE ORIGINAL IMAGE

Use of AI for Assistance: Microsoft Clipchamp was only used for adding the anatomical landmark in Video 1.

Informed Consent: Written informed consent was obtained from the patient for the publication of this case.

Declaration of Interests: The author has no conflicts of interest to declare.

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Video 1: Three-dimensional transesophageal echocardiographic "True Vue" imaging of the accessory leaflet was oriented from the ventricular side of the mitral apparatus. In diastole, a rough zone of the accessory leaflet, which serves as an attachment point for the chordae, could be discernible similar to the coaptation lines of the mitral leaflets. In systole, a clear zone of the accessory leaflet, identical to the body part of the mitral leaflets, could also be discernible.

Video 2: Cardiac magnetic resonance cine imaging reveals the position and mobility of the accessory mitral leaflet compared to the original anterior mitral leaflet.

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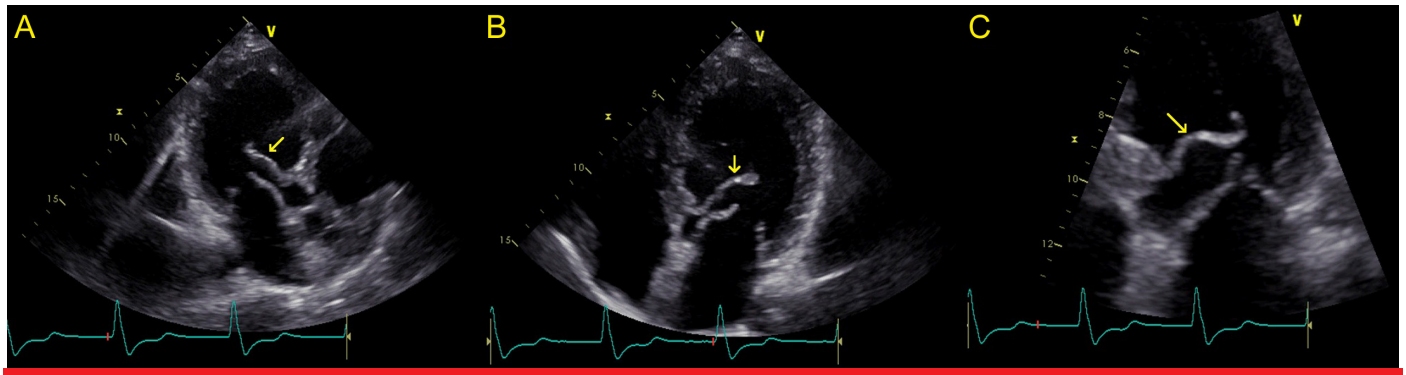

Figure 1. The transthoracic echocardiographic appearance of the accessory mitral valve (yellow arrows) in apical 3-chamber view (A), apical 4-chamber view (B), and a zoomed image in apical 4-chamber view (C).

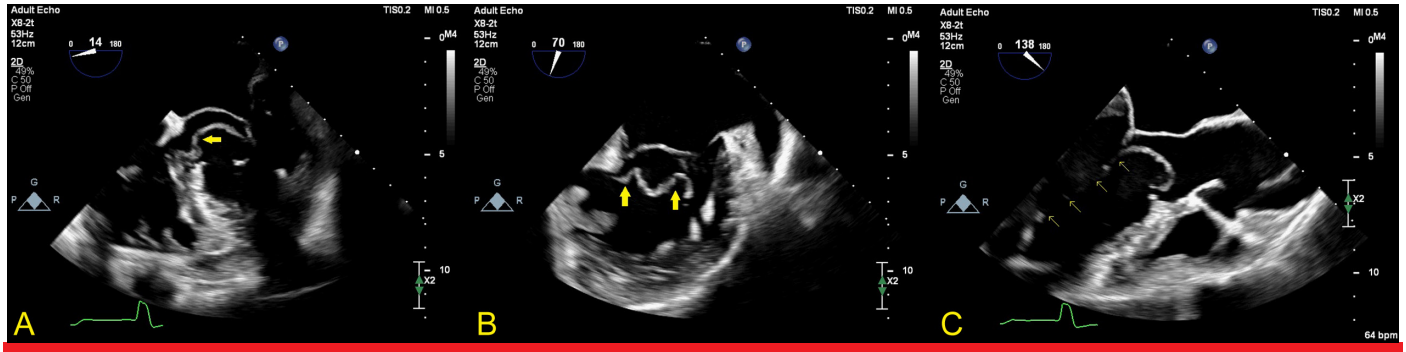

Figure 2. The transesophageal echocardiographic appearance of the accessory mitral valve (yellow arrows) in 0˚ 4-chamber (A) and bicommissural (B) views. The 135˚ long-axis view shows the accessory leaflet during systole and the course of its chordae from the tip of the leaflet to the ventricular wall (C) (4 thin yellow arrows).