

P2 scallop prolapsus resulting from chordae tendineae rupture detected by three-dimensional echocardiography

Wypadanie segmentu P2 płatką zastawki mitralnej w następstwie pęknięcia struny ścięgnistej wykryte w echokardiografii trójwymiarowej

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Mitral regurgitation (MR) is a common valvular disease that can arise from disorders of any part of the mitral apparatus. This valvular disease can be due to a primary or a secondary abnormality of the mitral apparatus. Ruptured mitral chordae tendineae are increasingly reported as an important cause of MR. Chordae rupture has been more commonly associated with anterior leaflet in patients with rheumatic mitral valve disease, and posterior leaflet in patients with a floppy mitral valve. A 28 year-old man was admitted to our department because of shortness of breath and palpitations. He had no history of any disease or drug use. A physical examination revealed thrill of the cardiac apex which was shifted leftward and inferiorly. A loud systolic murmur (grade III/IV) was heard at the apex radiating to the left. Neither signs of pulmonary congestion nor any other symptoms of overt heart failure were found. A 12-lead ECG showed normal sinus rhythm. Two-dimensional (2D) transthoracic echocardiography revealed posterior leaflet prolapse (Fig. 1A). To clarify this pathology, 2D and 3D transoesophageal echocardiography (TEE) was carried out. 2D TEE showed posterior leaflet prolapse and ruptured chordae tendineae (Fig. 1B). 2D colour Doppler TEE demonstrated severe MR due to posterior mitral valve prolapse and chordae rupture of P2 scallop (Fig. 1C). 3D TEE zoom modality view evaluated the accurate determination of the shape and the location of posterior mitral valve prolapse and ruptured chordae tendineae (Fig. 1D). A classification of the floppy mitral valves encountered in congenital MR has been proposed by Carpentier et al. (*J Thoracic Cardiovasc Surg*, 1976; 72: 854–866). These lesions can affect any level of the mitral valve and subvalvular apparatus. Chordae tendinae rupture is one of the major causes of MR. Detailed examination of the leaflet is necessary to verify which scallop is actually prolapsing. Echocardiography is a powerful tool to define the mechanisms of chordae tendinae rupture and to identify the suitability of patients for a valve operation. The advent of 3D TEE may be giving physicians the ability to visualise the mitral anatomy in any desired plane.

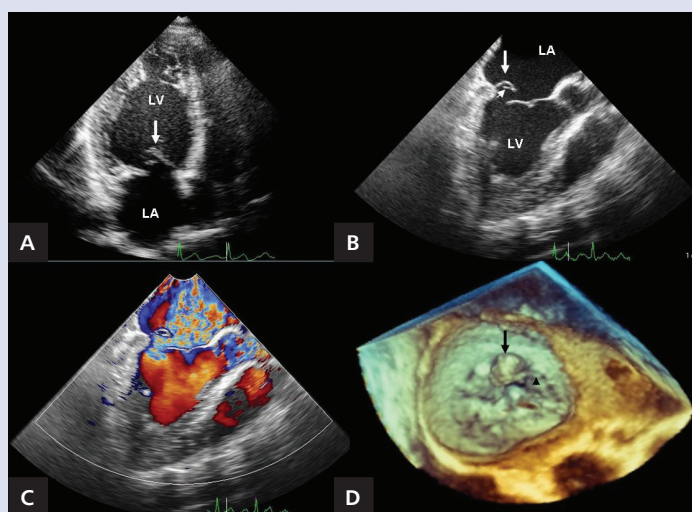


Figure 1. Two-dimensional transthoracic echocardiography revealed posterior leaflet prolapse (A). 2D TEE showed posterior leaflet prolapse and ruptured chordae tendineae (B). 2D colour Doppler TEE demonstrated severe mitral regurgitation due to chordae rupture of P2 scallop (C). 3D TEE zoom modality view showed the location of posterior mitral valve prolapse and ruptured chordae tendineae (D); thin arrow — ruptured chordae tendineae; thick arrow — P2 scallop prolapsus; LA — left atrium; LV — left ventricle

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Conflict of interest: none declared