Three-dimensional transoesophageal echocardiography of an aberrant chordae tendineae causing aortic valvular regurgitation

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An asymptomatic 48-year-old gentleman underwent assessment for an incidental murmur. Three-dimensional (3D) transoesophageal echocardiography (TOE) demonstrated the presence of an aberrant chordus arising from the anterior mitral valve leaflet tip and extending through the aortic valve before inserting into the aortic sinus on the valvular side of the left main stem ostium (Panels A, B, D and E). There was no attachment to the aortic valve or abnormality of the aortic valve cusps. Colour Doppler 2D TOE demonstrated moderate aortic regurgitation secondary to the aberrant chordus impeding the closure of the right-coronary cusp of an otherwise normal tricuspid aortic valve (Panels C and F). The mitral valve was functionally normal with no significant mitral regurgitation. Left ventricular (LV) dimensions and function were normal. All other cardiac chambers and valves were normal.

The patient was managed conservatively with serial transthoracic echocardiography reserving surgical intervention for any future deterioration in aortic regurgitation. He remains well at 2-year follow-up with no progression of the aortic regurgitation.

This is the first documented report of an aberrant chordus passing through the aortic valve inserting into the aortic sinus and causing aortic regurgitation and demonstrates the use of 3D echocardiography to demonstrate complex spatial relationships of abnormal intracardiac structures and their association with the cardiac valves. In this case, 3D TOE clearly showed the attachment of the aberrant chordus to the mitral valve and aortic sinus and demonstrated that aortic regurgitation was secondary to impeded closure of an otherwise normal aortic valve which had no attachment to the chordus passing through it.