Three-dimensional echocardiography and operative imaging of a false tendon connecting the left atrial wall to the anterior mitral leaflet

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A 55-year-old woman was referred to our hospital for mitral valve regurgitation. An echocardiogram showed an anterior mitral leaflet prolapse and moderate mitral regurgitation, but neither elongation nor chordae cutting was observed. A tendon-like structure from the left atrial side of the foramen ovale to the anterior mitral leaflet (AML) was detected (Panels A and B). During systole, the left atrium was filled with blood and the atrial size was enlarged, the false tendon was stretched by enlarged left atrium and the portion of the AML where the band was connected had pulled back. In addition, the rough zone of the AML overrode the plane of the mitral valve orifice. During diastole, the size of the left atrium was reduced so that the tendon was not stretched, but the opening of the AML was limited to the length of the tendon. Intraoperatively, a false tendon, connecting the left atrium to the AML, was detected. The thickness and length were similar to those of the mitral chorda from the surgeon’s viewpoint: left atrial approach (Panels C and D). Ring annuloplasty following the resection of the false tendon was performed for the dilated mitral annulus. Microscopic examination (EVG × 40) showed the fibrous tissue and a small amount of muscle tissue, to be similar to the normal chorda (Panel E). Mitral regurgitation due to a false tendon is extremely rare. This is the first report of three-dimensional echocardiographic and intraoperative imaging of a false tendon involving the left atrium.

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