Supramitral membrane mimicking posterior mitral valve prolapse

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A 61-year-old female was referred to surgery for severe aortic stenosis, severe mitral regurgitation (MR) and a sinus of Valsalva aneurysm. MR seemed to originate from posterior leaflet (PL) prolapse (Fig. 1A and B). Surgery revealed a supramitral membrane (Fig. 2A and B) adherent to the PL and the left atrial wall, and only isolated annular dilatation was observed (Videos 1 and 2).

Figure 1: (A) Transthoracic echocardiogram revealed a filamentous structure resembling the posterior leaflet (P1/P2; arrow), prolapsing into the left atrium, and causing moderate to severe mitral regurgitation (MR). (B) Transoesophageal echocardiogram (TOE) confirmed the presence of severe MR and the abovementioned structure (a large vegetation was also hypothesized). The central regurgitation jet raised some doubts about the mechanism of the MR.

Figure 2: (A and B) During surgery, a fenestrated supramitral membrane (asterisk), attached to the mitral annulus and left atrial wall, was identified. After complete removal of the membrane, the mitral valve was inspected and found to be structurally normal. The saline test did not identify any prolapsing segment, and only isolated annular dilatation was found (Carpentier type I). A 32-mm Carpentier-Edwards Physio® annuloplasty ring was implanted and the valve became competent. The complete absence of regurgitation was confirmed by TOE. The aneurysm of the sinus of Valsalva was repaired with a bovine pericardial patch and the aortic valve replaced by a mechanical prosthesis. The patient was easily weaned from bypass and had an uneventful recovery. AL: anterior leaflet; PL: posterior leaflet.
Video 1: Transthoracic echocardiogram revealed a filamentous structure resembling the posterior leaflet (P1/P2; arrow), prolapsing into the left atrium, and conditioning moderate-severe mitral regurgitation (MR).

Video 2: Transoesophageal echocardiogram (TOE) confirmed the presence of severe MR and the abovementioned structure (a large vegetation was also hypothesized). The central regurgitation jet raised some doubts about the mechanism of the MR.