# Prevalence and echocardiographic characteristics of mitral annular disjunction in patients with mitral valve prolapse

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**Introduction:** Mitral annular disjunction (MAD) is a structural abnormality of the mitral annulus fibrosus and is defined by a separation between the atrial wall-mitral valve junction and the left ventricular attachment. Mitral annular disjunction can cause hypermobility of the mitral valve apparatus and is often associated with mitral valve prolapse (MVP). The aim of this study was to investigate the frequency and echocardiographic characteristics of MAD in MVP patients
**Methods:** 260 patients with MVP (56±16 years, 58.8% male, fibroelastic 89%, Barlow disease 11%) were included.

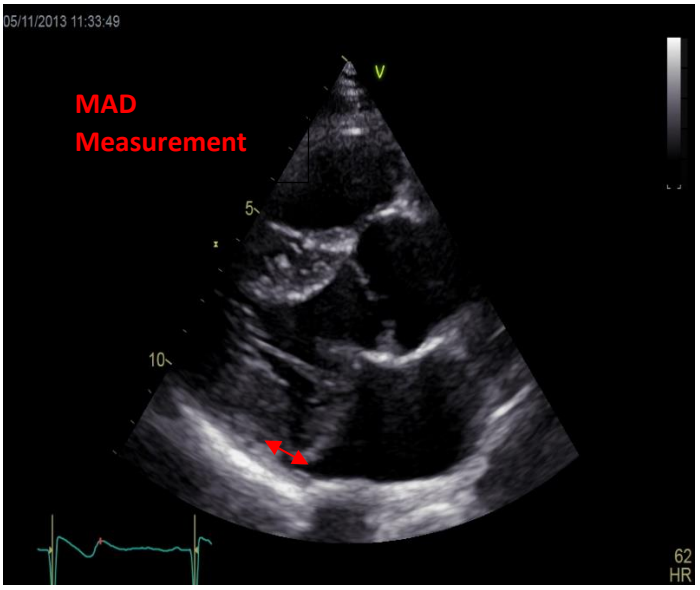


**Figure 1** : MAD measurement

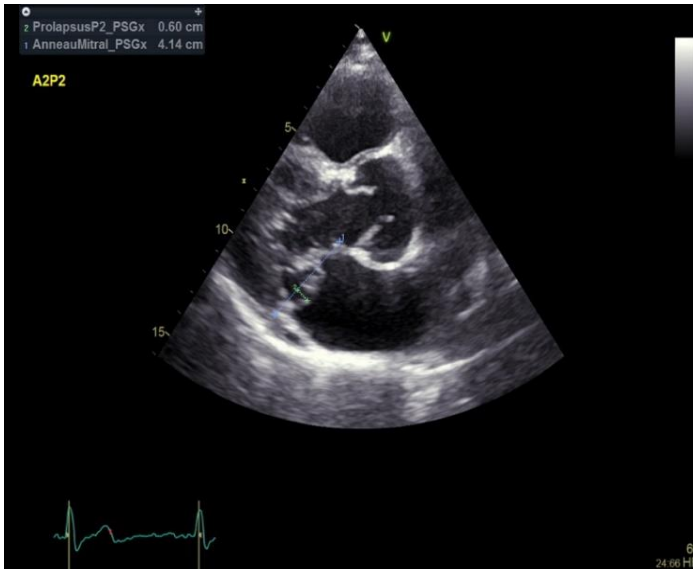


**Figure 2** : A2P2 Bileaflet prolapse

**Results**: For all patients we found :

- left atrial end-systolic volume: 59±32 ml/m²;
- mitral regurgitation grade 4: 42,7%
- left ventricular end-diastolic diameter: 62±59 mm
- tricuspid regurgitation gradient: 30±13 mmHg

Echocardiographic parameters were compared between the patients with (MAD+, n=102, 39.2%, mean value of MAD 8.6±3.7 mm) and without MAD (MAD-).

MAD+ was more associated with Barlow disease (16,6% vs 6,9% ; p=0,001) and bileaflet prolapse (57,7% vs 26,5% ; p=0,03). Mitral regurgitation grade 4 was less frequent in MAD+ group (34,3% vs 48,1% ; p=0,002)

**Conclusion:** In conclusion, MAD was present in about 1/3 of MVP. MAD is mostly associated with bileaflet prolapse and Barlow disease. There was a lower proportion of MR grade 4 in patients with MAD.

**Keywords:** Mitral annular disjunction; Mitral regurgitation; Mitral valve prolapse; Transthoracic echocardiography.