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Valvular Heart Disease

PHENOTYPES OF MITRAL VALVE PROLAPSE AS A CAUSE OF SUDDEN DEATH: A CASE-CONTROL STUDY

Poster Contributions
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Background: Description of Sudden Death (SD) complicating Mitral Valve Prolapse (MVP) come mainly from case reports or autopsy series. Our aim was to identify MVP phenotypes associated with SD.

Methods: This international multicenter study included 42 patients who received an implantable cardioverter-defibrillator after surviving SD for which MVP was the only detectable potential structural cause. Clinical, echocardiographic and electrocardiographic features were compared to 84 matched MVP controls.

Results: Twenty-eight cases (67%) were female of age 45±15 years. At MVP diagnosis, Left Ventricle Ejection Fraction was 62±5%, 29 patients (69%) had mild to moderate mitral regurgitation. Compared to controls, more SD cases had 1) familial SD history (4 vs 19%, P=0.006); 2) syncope (4 vs 59%, P<0.0001) and palpitations symptoms (33 vs 93%, P<0.0001); 3) bileaflet MVP (56% vs 88%, P=0.0003), myxomatous diffuse disease (67% vs 100%, P<0.0001), mitral annulus disjunction (12% vs 100%, P<0.0001) and deep MVP (0.6±0.3 vs 1.3±0.3cm, P<0.0001); 4) more frequent ventricular ectopic beats (2±4% vs 11±8%, P=0.002), couplets (43±120 vs 681±128, P=0.003) and non-sustained ventricular tachycardia (2±4 vs 57±55, P=0.002) on 24 hours Holter interrogation; 5) more premature ventricular contractions from posterior papillary muscle area (10±22% vs 64±30%, P<0.0001) and less from right/left ventricular outflow tracts (47±46% vs 8±21%, P=0.0003); 6) greater corrected QT dispersion (27±9ms vs 62±17ms, P<0.0001) and 7) left diastolic (51±5mm vs 55±5, P<0.0001) and systolic (33±4mm vs 37±5mm, P<0.0001) ventricular enlargement.

Conclusion: We identified MVP phenotype associated with SD, including symptomatic women with familial history of SD, bileaflet and deep myxomatous MVP, associated with annular disjunction and ventricular enlargement in a context of frequent and complex ventricular arrhythmias arising from papillary muscle or fascicular origin.