Classic and non-classic forms of mitral valve prolapse

Mitral kapak prolapsının klasik ve klasik olmayan formları

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ABSTRACT

Objective: To investigate the significance of the established distinction between classic and non-classic forms of mitral valve prolapsed (MVP).
Methods: We included in this prospective study all patients examined in our preventive cardiology outpatient clinics during the biannual period October 2004-October 2006. We examined in total 10.818 patients, 238 of whom (2.2%) were diagnosed for MVP. We noted relevant demographic and clinical data (gender, age of diagnosis, symptoms, need for hospitalization) and performed statistical comparisons between patients with the classic and those with the non-classic form. Follow-up controls were performed three years afterwards.
Results: Patients with the classic form had an earlier age of first diagnosis, more prominent symptoms, and more frequently diagnosis for other disorders (atrial septal defect, ventricular septal defect, Marfan syndrome, Ehlers-Danlos syndrome) than the rest of the patients; however, there were no significant differences as far as certain major complications (stroke, death, submission to surgery) were concerned.
Conclusion: The classic form of mitral valve prolapse is more tightly associated with morbid complications, and a more frequent follow-up control in this group of patients may be useful. *(Anadolu Kardiyol Derg 2012; 12: 2-4)*
Key words: Mitral valve prolapse, prognosis, treatment, follow-up

ÖZET

Amaç: Klasik ve klasik olmayan mitral kapak prolaps (MVP) formları arasındaki belirlenen farkın önemini araştırmaktır.
Yöntemler: Ekim 2004-Ekim 2006 iki yıllık periyot boyunca prevensiyon kardiyoloji polikliniklerde muayene olan tüm hastalar bu prospektif çalışmamıza dahil edildi. Toplamda 10.818 hasta muayene edildi, bunların 238 (%2.2)' ine MVP tanısı konulmuştu. İlgili demografik ve klinik verileri (cins, tanı yaşı, semptomlar, hastaneye yatış ihtiyacı) kaydedildi ve klasik ve klasik olmayan formlu hastalar arasında istatistiksel karşılaştırma yapıldı. Üç yıl sonra takip kontrolleri elde edildi.
Bulgular: Klasik formlu hastalarda ilk tanı yaşı daha erken, daha belirgin semptomlar ve kalan hastalardan daha sık diğer bozukluklar (atriyal septal defekt, ventriküler septal defekt, Marfan sendromu, Ehlers-Danlos sendromu) vardı; ancak, bazı majör komplikasyonlar (felç, ölüm, cerrahi müdahale) söz konusu olduğu halde önemli farklılıklar yoktu.
Sonuç: Mitral kapak prolapsının klasik formu, morbid komplikasyonlarla daha sık ilişkili idi ve bu grup hastalarda daha sık takip kontrolü faydalı olabilir. *(Anadolu Kardiyol Derg 2012; 12: 2-4)*
Anahtar kelimeler: Mitral kapak prolapsı, prognoz, tedavi, takip

Introduction

Mitral valve prolapse (MVP) is a relatively common (prevalence between 0.6 and 2.4%) (1-4) heart disorder, easily diagnosed nowadays by echocardiography. It is characterized by a systolic billowing of one or both mitral valve leaflets (more than 2 mm) into the left atrium. MVP can be clinically silent or present itself with manifestations such as dizziness, dyspnea, pre-syncope and syncope episodes, as well as thromboembolic events (strokes) (5-7). It can also be combined with other disorders, such as atrial septal defect (ASD), ventricular septal defect (VSD), Marfan syndrome or Ehlers-Danlos syndrome (8, 9).

An established classification of MVP distinguishes between a classic form, when the above-mentioned billowing is accompanied by a thickening (more than 5 mm) of one or both leaflets, and a non-classic form, when no such thickening is present (2).

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In this study, we deal with the characteristics (clinical and demographic) of patients with MVP, mainly focusing on the differences between those with the classic and those with the non-classic form, thus examining the necessity and clinical significance of this distinction.

Methods

We included in this prospective study all patients examined in our preventive cardiology outpatient clinics during the biannual period October 2004-October 2006. We examined in total 10.818 patients, 238 of whom (2.2%) were diagnosed for MVP, based on the echocardiographic diagnostic criterion of systolic billowing of one or both mitral valve leaflets (more than 2 mm) into the left atrium. Exclusion criteria were the diagnoses of heart failure, coronary artery disease, any kind of heart valve disease and chronic obstructive pulmonary disease. Among the patients included in the study, we referred for echocardiography those with family history of mitral valve prolapsed or heart valve disease, heart-related symptomatology or audible heart murmurs.

Echocardiography was performed by the same investigator (I.K). We also noted their demographic (age, gender) and clinical data (symptoms, accompanying disorders). For the patients diagnosed for MVP we focused on the differences between the classic and the non-classic form. We applied a three-year follow-up control for all patients, checking for the occurrence of major complications (stroke, death, submission to surgery) and for the general condition of patients. We did not have any written consent forms signed, as the patients willingly presented for the preventive cardiological control and no diagnostic interventional methods or therapeutic applications were utilized for the study.

Statistical analysis

All analyses were done using SPSS version 11.5 software (SPSS Inc, Chicago, IL, USA).

To compare variables between the groups, we used the Chi-square test for categorical variables and an unpaired Student's t-test for continuous parameters. We used the comparison of percentages for small samples of patients. The threshold for statistical significance was set at a value for $p<0.05$.

Results

We included in the study 238 patients, 89 with the classic and 149 with the non-classic form, ranging from 6 to 67 years, mean 17.9±4.1 years. Overall, 211 patients (88.65%) had no knowledge of their disorder and thus our examination set the initial diagnosis. We found significant differences as far as several parameters are concerned. More specifically, patients with classic MVP had a higher female/male ratio (female 68.53% vs. 53.69%, $p<0.05$) and presented with more frequent symptoms including dizziness, palpitations, pre-syncope episodes (36 patients vs. 32 patients, $p<0.01$), more documented supraventricular arrhythmias (3 vs. 2, $p<0.01$), more frequent serious symptoms including syncope episodes, requiring hospitalization (10 vs. 5, $p<0.01$), more documented ventricular arrhythmias (2 vs. 1, $p<0.01$), as well as accompanying disorders-including ASD, VSD, Marfan syndrome and Ehlers-Danlos syndrome (8 patients vs 9, $p<0.01$) than patients with non-classic MVP.

In regard to the aforementioned syndrome patients we have to note that they presented with a variety of the expected typical characteristics, more specifically MVP, arachnodactyly, muscular atrophy and ectopia lentis for the Marfan patients, and MVP, skin and joint hyperextensibility (8), ectopia lentis and high-graded myopia for the Ehlers-Danlos patients.

The mean age of diagnosis tended to be earlier for patients with the classic form (17.4 years vs. 18.1 years, $p<0.05$). Patients with the classic form had analogically more frequently audible systolic clicks (28 vs. 30, $p<0.01$) and more prominent regurgitation (a total of 56 regurgitation crosses vs. 56, $p<0.01$) than the rest of the patients.

On the contrary, no significant differences were found as far as number of strokes (one vs. two), submissions to surgery (1 vs 2) for mitral regurgitation and deaths (zero) were concerned.

The aforementioned data are depicted in Table 1.

Table 1. Demographic and clinical characteristics of patients with classic and non-classic forms of MVP

Variables	Classic form (n=89)	Non-classic form (n=149)	p*
Gender, female, n (%)	61 (68.53)	80 (53.69)	<0.05
Age of diagnosis, years	17.4±3.9	18.1±4.0	<0.05
Symptoms, n (%) (dizziness, palpitations)	36 (40.44)	32 (21.47)	<0.01
Serious symptoms, requiring hospitalization, n (%)	10 (11.23)	5 (3.35)	<0.01
Supraventricular arrhythmias, n	3	2	<0.01
Ventricular arrhythmias, n	2	1	<0.01
Accompanying disorders, n (%)	8 (8.98)	9 (6.04)	<0.01
ASD, n	5		
VSD, n	1	7	
Marfan syndrome, n	1	1	
Ehler-Danlos syndrome, n	1	-	
Systolic click, n	28	30	<0.01
**Mitral valve regurgitation	56+	56+	<0.01
Stroke, n	1	2	NS
Submission to surgery for mitral insufficiency, n	1	2	NS
Deaths, n	0	0	NS

Data are presented as mean±SD, numbers and percentages
*Chi-square and unpaired Student's t test
**The degree of mitral regurgitation was expressed in crosses (+) and measured additively within each group
ASD - atrial septal defect, MVP - mitral valve prolapse, VSD - ventricular septal defect

Discussion

Our study recruited prospectively a large sample of patients and was based on a three-year follow-up control pattern. Thus, we consider that the question regarding the clinical significance of the distinction in classic and non-classic form of MVP has been properly addressed. We concluded, that with the exception of certain major complications (stroke, death, submission to surgery), the classic form of MVP is associated with a higher degree of morbidity in comparison to the non-classic form, as this can be expressed through frequency and severity of symptoms, frequency of hospitalization and connection to accompanying disorders, including ASD, VSD, Marfan and Ehlers-Danlos syndrome.

As, to the best of our knowledge, there are no other prospective studies specifically dealing with the issue, we could only find points of agreement with other authors (2, 5-7) regarding the general features of MVP, such as prevalence of female gender or variety and complexity of accompanying symptoms (8, 9).

Conclusion

The findings of our study indicate a more serious clinical profile for the classic form of MVP. This practically means the need for augmented clinical suspicion for accompanying pathologies in patients of this category, perhaps with the suggestion for more frequent follow-up controls. A planned extension of this study, which through larger intervals of follow-up controls at 5 and 10 years will provide us with more information concerning associated incidents of stroke, submission to surgery or death, will expand our knowledge concerning the overall morbidity of each form of MVP and probably lead us to definite conclusions regarding the handling of these patients.

Conflict of interest: None declared.

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