

Psychological Disturbances in Preadolescents and Adolescents with mitral Valve Prolapse

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Abstract

This study was carried out on 100 patients from preadolescents and adolescents diagnosed as idiopathic MVP. All patients and control group were studied by history, clinical examination, plain X-ray chest echocardiography examination and psychological assessment. MVP was found to be more common in females than in males and the prevalence of both anxiety and depression was higher in females than in males. Palpitation and dyspnea were the most significant presenting symptoms of anxiety in patients group as compared to control group. Palpitation, fear, numbness and dizziness were significantly prevalent in older age group while nightmare and urinary symptoms were more prevalent in younger age group. As regard depression symptoms, agitation, sleep disturbance and decline of school performance were significantly prevalent in patients group as compared to control group. Suicidal ideation was prevalent in older age group. Anxiety was the most prevalent psychological disturbance in patients with MVP and combined anxiety and depression was significantly higher in older age group. A highly significant correlation was found between the presence of anxiety and the presence of depression. Presence of cardiac symptoms in the form of palpitation, dyspnea and dizziness were significantly related to the presence of anxiety, while palpitation and dizziness were significantly related to the presence of depression in the patients with MVP.

Introduction: Mitral valve prolapse is defined as the abnormal motion of one or both leaflets of the mitral valve into the left atrium during left ventricular systole. The term mitral valve prolapse syndrome refers to the occurrence of symptoms that result from various forms of neuroendocrine or autonomic dysfunction in patients with mitral valve prolapse in whom the symptoms cannot be explained on the basis of valvular abnormality alone (Boudoulas et al., 1990).

Individuals in whom the diagnosis is accidentally made on routine examination are usually asymptomatic. However, asymptomatic patients may become symptomatic as they become older (Devereux et al, 1976).

It has been suggested that many of the symptoms of MVP are related to dysfunction of the autonomic nervous sys-

tem which occurs frequently in MVP syndrome (Gaffney et al, 1979).

At present there is still widespread disagreement as to the degree of association between mitral valve prolapse and psychological symptoms (Liberthson et al, 1986).

Psychiatric symptoms which are found in mitral valve prolapse include anxiety disorders, panic attacks, agoraphobia, depression and even psychosis (Katon and Roy-Byrns, 1989).

The basis of these symptoms is obscure, and it is uncertain if they are truly features of the syndrome although they may precede its clinical recognition (Devereux et al 1976).

The aim of this work is to study the prevalence of psychological disturbance mainly anxiety and depression in the pre-

adolescent and adolescent patients with mitral valve prolapse .

Subjects and Methods: The study was carried out between October 1991 and May 1994. Two groups of subjects were studied in one of the semi-private hospitals in Cairo (Al-Haram hospital for medical insurance:

I. Study group: 100 consecutive patients preadolescents and adolescents diagnosed clinically and echocardiographically as idiopathic MVP in the out patients pediatric and adult cardiology clinics.

The following groups of patients were excluded from the study:

1. Patients with secondary mitral valve prolapse.
 2. Patients with clinical diagnosis of MVP but echocardiographically free.
 3. Patients diagnosed as MVP by echocardiography without clinical features.
- II. Control group: 100 normal individuals preadolescents and adolescent from the same age group. They constituted a proper match for the study group.

- All patients and control groups were subjected to thorough clinical assessment including:

- A full history and clinical examination.
- Plain X-ray chest
- ECG
- Echocardiographic examination.
- Psychological assessment.

The patients and the control group have been divided into 4 groups according to their age:

Group I 65 patients with MVP from 15-18 years.

Group II 65 control with MVP from 15-18 years.

Group III 35 patients with MVP from 9-14 years.

Group IV 35 controls with MVP from 9-14 years.

The assessment of anxiety was done by using the Zung self-rating anxiety scale. (Zung, 1974) in group I & II and by the Children Anxiety Scale (CAS) (El-Nayal and Abdel Latif, 1991) in group III & IV.

The assessment of depression was done by the application of Zung self-rating depression scale in group I & II (Zung, 1965) and by the Children Depression Scale (CDS) (Kovacs , 1985) in group III & IV.

The psychiatric diagnosis depended on the criteria of the DSM-III R (1987).

Results: 1- Age and Sex

Patients groups: 100 patients with clinical evidence of MVP were included in this study. Their ages ranged between 9-18 years with a mean age 14.17 ± 2.45 years. 67 of them were females with mean age of 14.76 and 33 were males with a mean age of 14.52. The ratio of female to male was 2:1.

Control group: 100 normal individuals, their ages ranged between 9-18 years with a mean age of 14.65 ± 2.39 years. 64 of the control group were females with a mean age of 14.56, and 36 were males with a mean age of 14.43. The ratio of female to male in the control group was 1.78:1.

The patient and control groups were divided into four groups according to their ages. The age and sex of each group are shown in Table (1).

2. Psychological disturbance:

-Anxiety was evident in 62% of cases ($n=62$) and 45% of control ($n=45$) [$P < 0.05$ = significant].

-61.5% of patients group 1 ($n=40$) and 63% of patients group 3 ($n=22$) [$P > 0.05$].

Table 1 Age and Sex distribution in different Patient and Control groups

Diagnostic group	Sex				Age	
	Male		Female		Male	Female
	No.	%	No.	%	Mean	Mean
Patient group 1	21	32.3	44	67.6	16.42+-1.07	16.02+-1.09
Control group 2	24	37	41	63	15.87+-0.89	16.34+-1.03
Patient group 3	12	34.3	23	65.7	11.50+-1.24	11.95+-1.4
Control group 4	12	34.3	23	67.7	11.50+-1.56	12.00+-1.38

Table 2 Distribution of anxiety and depression in Patients group according to sex

Sex	Cases with anxiety	Cases without anxiety	Cases with depression	Cases without depression
Male (n=33)	19 57.6%	14 42.4%	14 42.4%	19 57.6%
Female (n=67)	43 64%	24 36%	32 47.8%	35 52.2%
	P>0.05		P>0.05	

The table shows no difference between male and female patients as regards the presence of anxiety or depression.

Table 3 The relation of Cardiac symptoms and anxiety symptoms

Cardiac Symptoms	Palpitation	Chest pain	S.O.B.	Fatigue	Dizziness	Syncope
Palpitation	-	p**	p**	p*	p****	p*
Fear	p****	p*	p*	-	p****	-
Nightmares	p****	-	p*	-	p****	-
Sweating	p****	-	-	-	p****	-
S.O.B.	p****	-	-	p*	p**	-
Dizziness	p****	-	p*	-	-	p*
Headache	p****	-	-	-	p*	-
Trembling	-	p*	-	-	-	-
Numbness	p****	-	-	-	-	-
Flushes	p****	-	p**	-	-	-
G.I.T symptoms	-	-	-	-	-	-
Urinary symptoms	-	-	-	-	p*	-

Table 4 The relation of Cardiac symptoms and depression symptoms

	Palpitation	Chest	S.O.B.	Fatigue	Dizziness	Syncope
Agitation	-	-	-	-	-	-
Retardation	p*	-	-	-	p*	-
Sleep distribution	p*	-	p*	-	p*	-
Confusion	p*	-	-	-	p*	p**
Suicidal ideation	-	-	-	-	-	-
Sadness	p**	p*	-	-	p*	p*
Hopelessness	p*	-	-	-	p*	-
Reduced appetite	p*	-	p*	-	p*	-
Crying	-	-	-	p*	-	-
Decline in school performance	-	-	-	-	p*	p*
Fatigue	-	-	-	-	-	-

The table shows that palpitation was implicated in the production of retardation, sleep disturbance, confusion, sadness, hopelessness and reduced appetite). Chest pain was implicated in production of sadness only. S.O.B. was related to sleep disturbance and reduced appetite. Fatigue was related to crying. Dizziness was implicated in the production of agitation, retardation, sleep disturbance, confusion, sadness, hopelessness, reduced appetite and decline in school performance. Syncope was related to confusion, sadness and decline in school performance.

P*=<0.05:significant

P**=<0.01:highly significant

P***=<0.001:very highly significant

-Depression was found in 46 % of cases (n=46) and 40% of control (n=40) [P>0.05].

49.2% of patients group I (n=32) and 40% of patients group 3 (n=14) [P>0.05].

-Combined anxiety and depression was clear in 38% of cases (n=38) and 35% of control (n=35) [P>0.05].

43% of patients group I (n=28) and 28.6% of patients group 3 (n=10) [P<0.05= significant].

Sex distribution is presented in table 2

Discussion: In recent years, what had been a gap between psychiatry and cardiology has been closed to form an interface to cover areas of both immediate and future interest to clinicians in many fields (James, 1987).

Cardiovascular symptoms and psychiatric symptoms have always been closely related. Patients with anxiety neurosis have complaints of a moderate to severe degree of dyspnea, palpitation, chest pain, nervousness, anxiety or fatigue (Pariser et al, 1978). Several studies have reported the presence of MVP in 30-40% of all heart anxiety neurosis patients (Egle et al 1988).

MVP is a common cardiac disorder. It has been studied extensively in adult populations but less is known about it in children and adolescents. Arfken et al

(1990) reported that the prevalence of MVP between 9-14 years of age was 4.2%. In the same line El Said et al. (1982) estimated that 4.5% of randomly collected non-cardiac Egyptian middle aged persons have clinical and echocardiographic diagnosis of MVP.

In the current study, MVP was found to be more common in females than in males with a ratio of 2:1. This result was consistent with Arfken et al. (1990) who reported a ratio of 2.7:1 of female to male among children with MVP between 9-19 years.

This high frequency among females was explained by the findings that they were more complaining, more egocentric and more anxious about the physical changes that occur to them in the period of adolescence.

As regards the sex distribution among patients with MVP who had anxiety or depression, this study revealed that there was no difference between male and female patients but the prevalence of both anxiety and depression was significantly higher in female than in male. This was consistent with Kasmini et al. (1993) and Ghareeb (1992), they found that these disorders were more common in girls than boys specially during the period of adolescence.

The study showed that palpitation

and dyspnea were the most significant presenting symptoms in the patients group as compared to the control group, while the rest of anxiety symptoms showed no difference between the patients and control group. That might be due to the possibility of overlapping between anxiety symptoms and cardiac symptoms. On the other hand, our results showed that palpitation, fear, numbness and dizziness were significantly prevalent in patients group 1 (older age), while nightmare and urinary symptoms were more prevalent in patients group 3 (younger age). As regards depression symptoms, agitation, sleep disturbance and decline in school performance were significantly prevalent in the patients groups as compared to control groups. Suicidal ideation was significantly prevalent in group 1 (older age) than group 2. An explanation for this might be that thoughts of suicide were usually beyond the ideas and thinking of children of young age. Suicide is considered one of the most significant health problems of adolescence (Katchadourian, 1977).

It is clear from the study that anxiety was the most prevalent psychological disturbance in patients with MVP compared with controls. No significant difference in the prevalence of anxiety and depression between patients group 1 and patients group 3, but the prevalence of combined anxiety and depression was significantly higher in patients group 1 than patients group 3.

This finding was in agreement with Hamada et al. (1990) who found that patients with anxiety disorders had an incidence of (33.3%) of MVP. Also Dager et al. (1988) postulated a relationship between anxiety disorders and MVP.

In contrast to our results, Bowen et al (1991) failed to confirm the association between MVP & anxiety disorders, also

Carney et al. (1990) revealed that MVP was significantly associated with major depressive disorder and panic disorders.

In addition, we have found a highly significant correlation between the presence of anxiety and the presence of depression in our patients with MVP. These results were in parallel with Osada (1993) who reported the presence of anxiety and depression in patients with MVP.

This revealed that the presence of cardiac symptoms in the form of palpitation, dyspnea and dizziness were significantly related to the presence of anxiety in the patients with MVP. This finding is consistent with Barrett et al. (1991), while the presence of palpitation and dizziness were significantly related to the presence of depression. These results were in agreement with Kashani et al. (1982) who demonstrated a strong association between cardiac symptoms and the presence of depression in children between 6-18 years.

So we conclude that anxiety, depression and neurotic behavior are often considered to be components of MVP syndrome in children and adolescents. The presence of MVP should be considered if any of these conditions persist or don't respond to management.

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الإضطرابات السيكولوجية لدى المصابين برخاوة الصمام الميترالي في سن البلوغ وما قبل البلوغ

تشمل عينة هذا البحث مائه مريض تتراوح اعمارهم بين ٩ ، ١٨ سنة من المصابين برخاوة الصمام الميترالي نتيجة التشخيص الاكلينيكي و فحص القلب بالموجات فوق الصوتية، بالاضافة إلى مائه شخص سليم طبيا كمجموعة ضابطة.

تم تقسيم المرضى و الأصحاء إلى ٤ مجموعات

مجموعة (١) ٦٥ مريض تتراوح اعمارهم بين ١٥-١٨ سنة.

مجموعة (٢) ٦٥ من الأصحاء تتراوح اعمارهم بين ١٥-١٨ سنة

مجموعة (٣) ٣٥ مريض تتراوح اعمارهم بين ٩-١٤ سنة.

مجموعة (٤) ٣٥ من الأصحاء تتراوح اعمارهم بين ٩-١٤ سنة.

و قد تم تقييم القلق و الإكتئاب عن طريق مقياسا زونج الذاتيان للقلق و الإكتئاب في مجموعة (١)،(٢) و عن طريق مقياسا القلق و الإكتئاب لدى الصغار في مجموعة (٣)،(٤) .

و ظهر من البحث أن رخاوة الصمام الميترالي تزيد لدى الإناث عن الذكور و تبين أن وجود القلق و الإكتئاب معا أكثر حدوثا لدى الإناث عن الذكور. كما ان القلق كان أكثر الأعراض النفسيه حدوثا

حدوثاً لدى المرضى أما القلق و الإكتئاب مجتمعين فهما الأكثر حدوثاً في السن الأكبر . وقد ظهر أن خفقان القلب و صعوبة التنفس هي الأكثر حدوثاً من بين أعراض القلق في مجموعة المرضى بالمقارنة بالمجموعة الضابطة . بينما كان الخفقان و الخوف و التنميل و الدوخة أكثر حدوثاً في المجموعة ذات السن الأكبر ، أما الكوابيس و التبول اللا ارادى فقد كانت أكثر حدوثاً في المجموعة ذات السن الأصغر . بالنسبة لأعراض الإكتئاب كان التهيج و اضطرابات النوم و الفشل الدراسي أكثر حدوثاً في مجموعة المرضى بالمقارنة بالمجموعة الضابطة . وكما كانت الأفكار الانتحارية أكثر حدوثاً في المجموعة ذات السن الأكبر . وكانت الأعراض القلبية التي اخذت صورة خفقان القلب و صعوبة التنفس و الدوخة مرتبطه ارتباطاً وثيقاً بوجود القلق في مرضى رخاوة الصمام الميترالي بينما كان خفقان القلب والدوخة مرتبطتين بوجود الإكتئاب . و يترتب على هذا ان المرضى في سن البلوغ و سن ما قبل البلوغ الذين يعانون من أعراض القلق و الإكتئاب يجب فحصهم أكلينيكيًا بالموجات فوق الصوتية للقلب لاستبعاد وجود رخاوة الصمام الميترالي . كما ان البحث ركز على ضرورة متابعة مرضى رخاوة الصمام الميترالي من الناحية النفسية لمساعدتهم على تحسين حالتهم الصحية والنفسية .

Epilepsy

Principles of Drug Treatment in Newly Diagnosed Patients:

Choice of drug depends on seizure type.

Single drug therapy, not combination therapy.

Drug should be introduced gradually.

Maintenance dose should be the lowest dose which controls seizures.

Compliance should be emphasized.

If control is poor on the first drug at the highest tolerated dose, treatment should be then changed to monotherapy with another first line drug.

In the event of treatment failure, check:

Compliance

Other medical or psychiatric complications

Diagnosis

Possibility of progressive neurological condition.