

## Mitral Valve Prolapse in Patients with Panic Attacks in Korea

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*Of 86 Korean patients with recurrent spontaneous panic attacks, not one had definite mitral valve prolapse (MVP). With a very low prevalence of MVP in the general Korean population, this finding suggests that MVP may not be specifically associated with panic attack.*

**Key Words:** Panic attack, mitral valve prolapse, Koreans

Since DaCosta described in 1871 the syndrome bearing his name, clinicians have diagnosed an admixture of cardiac symptoms and panic symptoms under such terms as irritable heart, soldier's heart, effort syndrome or neurocirculatory asthenia (Wooley 1976). The discovery of two new diagnostic entities of mitral valve prolapse (MVP) and panic disorder has the potential to clarify the diagnosis.

MVP is a generally benign cardiac abnormality occurring in 5 to 10% of the general population in Western countries (Markiewicz *et al.* 1976; Darsee *et al.* 1979). It has an autosomal dominant genetic transmission and is prevalent in women (Devereux *et al.* 1982). Although most people with MVP are asymptomatic, symptomatic patients may experience tachycardia, arrhythmia, palpitations, syncope, fatigue, dyspnea or atypical chest pain similar to the anxiety state (Davereux *et al.* 1976; Boudoulas *et al.* 1984).

It has been reported that many patients with panic disorder have MVP (Pariser *et al.* 1979; Venkatesh *et al.* 1980; Kantor *et al.* 1980; Shader *et al.* 1982; Grunhaus *et al.* 1984; Teaman *et al.* 1984). Collectively in studies cited immediately above, about 30 to 40% of the patients with panic disorder were found to have definite MVP.

Also patients with MVP may complain of panic attacks when they are experiencing tachycardia or arrhythmia. These symptoms may be perceived by the

patient as a panic attack rather than a cardiac attack. It is also possible that the cardiac symptoms of MVP, caused and perpetuated by anxiety, can lead to panic disorder and agoraphobia in psychologically predisposed individuals. In addition, actual tachycardia or arrhythmia may trigger a panic attack in patients with MVP. With these findings and a significantly higher prevalence rate of MVP in patients with panic disorder and agoraphobia, some have suggested a true biological association between MVP and panic disorder. They speculated that both are manifestations of a basic generalized disturbance of the autonomic nervous system or that MVP is a specific biological marker for the anxiety state (Boudoulas *et al.* 1984).

However, recent studies have reported a lower rate of MVP in patients with panic disorder, one closer to the approximately 5-10% found in the general population (Kathol *et al.* 1980; Shear *et al.* 1984). Besides, Hartman *et al.* (1982) reported that, of the 141 patients with MVP, only 22(16%) had been found to have panic disorder. Nevertheless, these findings do not necessarily mean that there is no true association between the two clinical entities.

To supply further data, the authors conducted a clinical study to see how MVP is related to panic attacks in Korean patients.

### METHOD

Eighty-six patients who were experiencing recurrent spontaneous panic attacks were interviewed by the authors at the Yonsei University Medical Center in Seoul in the Republic of Korea. They were 37 men

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and 49 women. Their ages ranged from 17 to 58 years, the mean being 39.3 years.

Psychiatric evaluation included careful history taking of present illness, family history and past history, thyroid function tests, EKG and blood chemistry (for diagnosis of either panic disorder or agoraphobia with panic attack). According to DSM-III (1980), the inclusion criteria were: 1) At least three panic attacks within a 3-week period in circumstances other than during marked physical exertion or in a life-threatening situation. The attacks were not solely precipitated by exposure to a circumscribed phobic stimulus. 2) Discrete periods of apprehension of fear, and at least four of the following symptoms during the attack: dyspnea, palpitations, chest pain or discomfort, choking or a smothering sensation, dizziness or vertigo, a feeling of unreality, paresthesia, hot and cold flush, sweating, faintness, trembling or shaking, fear of dying, going crazy, or doing something uncontrolled during an attack. 3) The attacks are not due to a physical illness or another mental disorder. 4) Agoraphobia may or may not be associated.

The age at symptom onset ranged from 24 to 55 years, the mean being 32.8 years. Diagnostically 35 patients had panic disorder alone and 51 patients had panic attacks with agoraphobia. Panic attacks were successfully controlled by imipramine (37.5 mg to 250 mg per/day) in 57 cases, moderately controlled in 25 cases and uncontrolled in 4 cases during the treatment period of two weeks.

In all patients, M Mode echocardiography was performed using the standard real time technique as employed by the Department of Cardiology of Yonsei University Medical Center. The tracings were read by an experienced cardiologists who had no knowledge of the clinical findings. The criteria required for the diagnosis of MVP were: 1) absolute posterior motions of continuous mitral leaflet interfaces in midsystole (late systolic prolapse) or throughout systole (holosystolic prolapse) and 2) a greater than 2-mm displacement of mitral leaflet echo behind the valve's C-D line.

## RESULTS

Echocardiographs revealed no definite evidence suggestive of MVP in any of the 86 patients. There is no available data on the prevalence rate of MVP in the general population in Korea. However, at Yonsei University Medical Center, of the 2,820 patients who underwent echocardiography in 1984 for physical examination in the Department of Cardiology, only 5 patients were diagnosed as having definite MVP and only one was diagnosed as having probable MVP. This

suggests that the prevalence of MVP may be very low in the general population of Korea.

## DISCUSSION

Panic disorder is not a rare condition in Korea. The authors have previously reported on 100 Korean patients with panic disorder and their clinical characteristics (Min and Lee, 1985). Also an unpublished epidemiological study which was carried out on Kangwha Island by a group of investigators including the authors, showed the life-time prevalence rate of panic disorder to be 1.4% in the general population (Lee *et al.* 1985). Nevertheless, we found here that none of our 86 Korean patients with panic attacks had MVP. Although MVP has not been studied in the general population in Korea, the data suggest that these two clinical entities may be dissociated.

Four previous studies to investigate the relationship between MVP and panic disorder reported similar findings. Kathol *et al.* (1980) found that only one of 18 patients (6%) with panic disorder in a psychiatric referral population had MVP. Shear *et al.* (1984) found that two of 25 patients (8%) with panic attacks had definite echocardiographic evidence of MVP. This prevalence rate is similar to that of the general population. In addition, Hickey *et al.* (1983) found that, in 50 patients with agoraphobia screened by echocardiography for MVP, not one case was detected. Mavissakalian *et al.* (1983) found that, of 46 female agoraphobic patients, 15% had MVP. The criteria used in this study is stringent, as Shear *et al.* (1984) maintained that use of more stringent criteria for MVP seemed appropriate in view of their strong correlation with other biological features of MVP, such as high family incidence, typical body habitus and low blood pressure. Hartman *et al.* (1982) used an unbiased sample of subjects with MVP and found a prevalence of panic disorder similar to the approximately 5%. In addition, Hickey *et al.* (1983) tested 103 patients with MVP for the presence of anxiety symptoms and found no significant difference from those of patients with other heart disease or from those of patients presenting in primary care.

If MVP, symptomatic or asymptomatic, is a genetic condition, the low prevalence of MVP in Korean patients with panic attacks is to be expected considering the low prevalence in the general population. Therefore the existence of panic disorders and agoraphobia with panic attacks in Koreans without MVP which meet the DSM-III criteria suggests that panic attacks may not be the expression of a genetically determined biological defect which also is underlying MVP.

Several lines of similar evidence suggest that patients with panic disorder who have MVP do not differ substantially from panic disorder patients without it. Similarly, antidepressant therapy was equally effective in panic disorder with or without MVP (Grunhaus *et al.* 1984; Gorman *et al.* 1981 a). A family study (Crowe *et al.* 1980) has shown that, though familial morbidity risk for panic disorder is as high as any in the psychiatric genetic literature, panic disorder is independent of a diagnosis of MVP in the probands, and that panic disorder is inherited in a similar pattern whether or not MVP was present in the index case. A similar negative finding was reported on agoraphobia (Mavissakalian *et al.* 1983). Finally Gorman *et al.* (1981 b) reported that the presence or absence of MVP had no influence on the induction of a panic attack by sodium lactate. In view of this evidence, routine screening of patients with panic attacks for MVP may not be warranted, and psychiatric treatment of panic disorders should not be different for a patient with MVP. In this study, imipramine also proved to be very effective for panic attacks in patients without MVP.

Our study suggests that panic disorder without MVP is a universal one regardless of ethnic differences and that the two conditions might be dissociated. Furthermore, a panic attack might not be the expression of a genetically determined biological defect with also underlying MVP. However it is also possible that there exists another form of spontaneous panic attack triggered by the arrhythmia of MVP as part of the MVP syndrome, and that the symptoms of panic attack by this autonomic dysregulation in MVP is similar to those without MVP (Shader *et al.* 1982; Boudoulas *et al.* 1984).

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