MITRAL VALVE PROLAPSE IN THE ELDERLY*

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MITRAL valve prolapse, a frequent cause of valvular disease, is known by many other names, including the billowing mitral valve leaflet syndrome, prolapsing mitral valve leaflet syndrome, floppy valve syndrome, Barlow's syndrome, and many other synonyms. This entity has been known for a long time but not until 1961 did Reid¹ propose that both the midsystolic click and the late systolic murmur were of mitral valvular origin. Barlow and his colleagues² were the first to identify the specific clinical syndrome including the systolic click, the late systolic murmur, T wave changes in the electrocardiogram, and angiographic evidence of mitral valve prolapse. This syndrome appears frequently in women in a ratio of 2:1 and usually in the younger age groups.³,⁴ Recently we have encountered six elderly patients between 72 and 82, four men and two women (see the table).

DISCUSSION

The mitral valve prolapse syndrome is a clinical entity that has no specific etiology and is considered idiopathic. Several characteristic mitral valve pathologic findings have been noted in a subset of patients who required surgical valve replacement or who died suddenly. Grossly, mitral valve leaflets are voluminous, thickened, and have an increased transparency. Microscopically, the fibrosa layer of the cusp which provides the basic support of the leaflet has an increased myxomatous ground substance.⁵ The cause of the myxomatous transformation of the mitral valve is not known. Many authors believe that it is a nonspecific reaction to many types of disease because of its association with such other diseases as Marfan's syndrome, skeletal abnormalities, and atrial septal defects.

Most individuals with mitral valve prolapse have no symptoms, and the diagnosis is often made from auscultatory findings. The most frequently

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PATIENTS REPORTED

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Sex</th>
<th>Symptoms</th>
<th>Assoc. disease</th>
<th>Systolic click</th>
<th>Systolic murmur</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.A.H.</td>
<td>82</td>
<td>M</td>
<td>None</td>
<td>Ca of lung</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>J.W.</td>
<td>79</td>
<td>F</td>
<td>P.A.T. &amp; Palpitations</td>
<td>Kyphoscoliosis</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>R.G.</td>
<td>76</td>
<td>F</td>
<td>Palpitations Chest pain Fatigue Anxiety</td>
<td>Scleroderma</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>H.G.</td>
<td>80</td>
<td>M</td>
<td>Fatigue Palpitation</td>
<td>Coronary bypass surgery ASHD</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>A.S.</td>
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<td>M</td>
<td>Palpitation Chest pain Fatigue</td>
<td>Rheumatoid arthritis</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>M.R.</td>
<td>74</td>
<td>M</td>
<td>None</td>
<td>ASHD</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

reported symptoms have been palpitations, chest pain, dyspnea, fatigue and lassitude, anxiety, hyperventilation, and syncope.6

Palpitations have been observed in about 50% of all patients with this condition. These may appear after exertion or even at rest during the night. At times, a paroxysmal supraventricular tachycardia is the cause of the palpitations. These can be treated or prevented by the use of a beta-blocker agent, usually propranolol. Chest pain is not an uncommon feature of this syndrome. Frequently, this is mistaken for angina and leads the patient to the cardiologist. Angiography is performed to rule out coronary artery disease, and very often mitral valve prolapse is confirmed.

Dyspnea and fatigue occur in about 40% of patients with mitral valve prolapse. However, in most instances no cause is found which upsets the patient. Occasionally, when mitral regurgitation occurs, one of the complications of this syndrome, true pulmonary congestion is found, but this is rare.

Neuropsychiatric symptoms such as anxiety, psychoneurosis, psychosis, and hyperventilation are not rare and difficult to control.

The physical examination is the most important step in the diagnosis of this syndrome. The appearance of the patient may give a clue, i.e., straight back, kyphoscoliosis and pes excavatum. These are often associated with this condition and leads one to suspect it. The most frequent physical finding is an isolated nonejection midsystolic click, best heard at the apex and along
the lower left sternal border in proximity to the mitral valve apparatus. The click may be absent, single, or multiple and may occur in mid, late, or occasionally even in early systole. Thus, on one examination the patient may not have an audible click whereas the following day or week on reexamination it may be heard clearly. The midsystolic click is often accompanied by a late systolic murmur. In some patients, only the murmur is heard and the click is absent. The murmur is thought to be due to mitral valve prolapse if it extends to or through the second sound. If the murmur begins before the click and ends prior to the second sound, a separate origin of the murmur should be suspected and looked for. Some patients may have neither the murmur nor the click, but, because of some of the symptoms, an echocardiogram is performed and the diagnosis is established. The auscultatory findings may be modified or varied by physiologic, postural, or pharmacologic maneuvers. In the supine position the systolic click and murmur may be absent. Standing and placing the patient in the lateral decubitus position will bring out the murmur and click. The click occurs earlier in the straining phase of the Valsalva maneuver and following inhalation of amyl nitrate. Changes in left ventricular volume provide the most logical explanation for alteration in the appearance of the click and murmur.

The electrocardiogram is not very helpful in diagnosing this entity. The only significant findings may be ST and T wave abnormalities in several leads, with or without slight ST depression. Occasionally, an arrhythmia may be heard but the most common finding is paroxysmal supraventricular tachycardia.

The introduction of echocardiography during the 1960s was the catalyst for more extensive study of mitral valve prolapse. It is important to perform an echocardiogram on patients who present with a systolic click and murmur or either one alone.Normally, mitral leaflets register a slow continuous anterior movement on the echocardiogram during mid and late systole. In mitral valve prolapse, late systolic prolapse of one or both leaflets can be directly visualized as posterior movement interrupting the normal anterior motion. The most specific echocardiographic pattern identified in the mitral valve prolapse syndrome is abrupt movement in midsystole of one or both mitral leaflets posteriorly toward the left atrium. The echocardiogram can also detect endocarditis, a complication of mitral valve prolapse.

Angiography is considered by some to be more specific than echocardiography in diagnosing the click murmur syndrome. It is not frequently utilized because it is an invasive procedure, but when there is difficulty with the echocardiogram it is mandatory for confirmation.
Fig. 1. Echocardiogram posterior leaflet—Case I

Fig. 2. Echocardiogram anterior leaflet—Case VI

Fig. 3. Echocardiogram posterior leaflet—Case II
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There is general agreement that this entity is a benign condition. However, there are several complications, i.e., sudden death, bacterial endocarditis, spontaneous rupture of the chordae tendineae, and progressive mitral regurgitation. Fortunately, these are infrequent and rarely encountered. The only thing to remember is to treat all patients with an antibiotic before any dental or surgical procedure is contemplated.

Treatment of mitral valve prolapse consists primarily of reassuring the patient that this condition is not too serious. In addition, attention must be given to the chest pain and arrhythmias for which propranolol is helpful.

It is not unusual for mitral valve prolapse to be recognized late in life and it may well have been present for a long time but may not have been detected in early life. Some suggest that major deviations in the structure of the mitral valve in the elderly accelerate the wear and tear over many years resulting in prolapse, hence its occurrence in the later years of life.11

ACKNOWLEDGMENT

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REFERENCES