MITRAL VALVE PROLAPS, CLINICAL, ELECTROCARDIOGRAPHIC, AND ECHOCARDIOGRAPHIC FEATURES

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MITRAL VALVE PROLAPSE CLINICAL, ELECTROCARDIOGRAPHIC, AND ECHOCARDIOGRAPHIC FEATURES AMONG PATIENTS SEEN IN BASRAH.

SUMMARY:

Mitral valve prolapse is clinical syndrome characterized by systolic murmur and chest pain which is atypical for angina .

It is highly variable clinical syndrome. The aim of this study is to study the clinical, electrocardiographic and echocardiographic feature of patients seen among Basrah.

228 patients (pts) were studied prospectively 98 pts were male 130 pts were female history was taken, electrocardiography and echocardiography were done for all pts.

Mitral valve prolapse was more common in young age (86.9%), the systolic murmur was the commonest presenting features occurred 82% . Interestingly uncommon and serious complications had been observed in this study like, cerebrovascular accident 5 (1.79) pts, transient ischemic attack 3 (0.6%) pts.

The ECG was abnormal in 42.1% . Thick redudant valve more the 5 mm thickness observal 21.05% arrythmia occur more frequent in those pts with thick redundant valve and those with hemodynamicaly significant mitral regurgitation than those patients with normal thickness valve leaflent.

INTRODUCTION:

Mitral valve prolapse or floppy valve syndrome is clinical syndrome characterized by systolic murmur with or without click and chest pain which is atypical for angina.[1,2]

It was believed to be benign condition, but it may progress to significant mitral regurgitation and ventricular dilatation in some individuals.[1,2,3]

Serious complication like infective endocarditis, cerebrovascular accident, arrythmia and sudden death may occur.[3]

Mitral valve prolapse is common but highly variable clinical syndrome result from divers mechanism of mitral valve apparatus. It may be primary or secondary to other cardiac disease like rupture chordae tendineae, papillary muscle dysfunction, or connective tissue disorder like marfan syndrome[3].

There are several subset of these patients who differ in regard to the etiological, hemodynamic, and clinical sequel of abnormal valve.

Echocardiography is very sensitive tool for diagnosis of MVP.[4]

2D echocardiography allow more precise evaluation of MVP. than M Mode Echo because the valve leaflet visualized in many different cardiac windows.[5,6]

The aim of this paper is to study the clinical, electrocardiographic and echocardiographic features of MVP in our patient.

This is the first study conducted in our city in Basrah.

PATIENTS AND METHODS:

Two hundred twenty eight patients (pts) with mitral valve prolapse (MVP) were studied prospectively from the period of February 1996 to December 1999. 98 pts. were male, 130 pts. were female those who were

- Table V -
Show the correlation of arrhythmia with the echo finding.

Echo finding	Total No. of pts.	No. of arrythmias	%
Normal thickness leaflets	168	36	21.4
Thick redundant leaflets	48	18	37.5
Hemodynamically significant mitral regurgitation	12	3	25

- Table VI -
Illustrate the associated diseases in the pts.

Associated conditions	No. of pts.	%
Rhumatic fever (recent or past history)	30	13.1
Cardiomyopathy (DCM)	9	3.9
Atrial septal defect	9	3.9
Ischemic heart disease	6	2.6
Ventricular septal defect	5	1.97
Marfanoid feature	5	1.97
W.P.W. syndrome	3	1.3
Total	67	28.8

refered for echo clinic in Altahrir Hospital and in private clinic. Complete history, physical examination and electrocardiography were performed for all pts. M Mode and 2D echocardiography with 3.5 Mhz probe for adult and 5 Mhz probe for children were done, the probe was perpendicular mitral apparatus, with pt. in supine and left decubitus position.

Long axis view, short axis view, and apical four chamber view on 2D echocardiography, and on M mode different section at the level of left atrium, mitral valve, and papillary muscle were studied. Valve leaflet thickness, mobility, redundancy and displacement to left atrium were inspected.

Post sagging of C-D segment on M Mode Echo, of more than 2mm, arching of one or both leafleton long axis, or posterior bowing of leaflet on apical four chamber view were taken as diagnostic criteria for mitral valve prolapse.[6] Valve leaflet thickness more than 5mm consider as thick leaflet.

Left atrium size and left ventricle dimension were measured. Left ventricle diastolic dimension above 6cm was used as criteria for hemodynamically significant mitral regurgitation, in absence of other causes of left ventricular dysfunction.[6]

Doppler studies, transesophageal echocardiography, 3D echo and holter monitoring were not done because of lacking facilities.

Review of history, physical and were requested and new chest x-ray, ECG echo, were done when were indicated, during follow up.

T-test had been used in statistical analysis.

RESULTS:

This study show that MVP is more common in young age (10-49) years 198 (86.8%) pts. , it is more common in female 130 (57.1%) pts. than in male 98 (42.9%) pts. (see table I).

Table II demonstrate that systolic murmur with or without click was the commonest presenting feature 87 (82%) pts., followed by chest pain 72 (31.57%) pts. and palpitation 51(22.36%) pts.

An interesting finding that serious and rare complication had been observed in this study; and these include:

Cerebrovascular accidents were reported in 5 (1.7%) pts., all of them were young , and they hadn't any other risk factors for Cerebrovascular accidents. 3 (0.6%) pts. had transient ischemic attacks, again all of them young and they hadn't other risk factor for cerebral ischemia.

Deep venous thrombosis was reported in 2 (0.87%) pts. both of them are young, mobile, and hadn't other risk factors for thrombosis. 1 (0.43%) pt. get extensive anterior myocardial infarction. He is only 35 years, and his coronary angiography show blockage of anterior descending coronary artery.

Table III show that abnormal electrocardiographic findings occurred in 96 (42.1%) pts. Biphasic or inverted T wave in inferior or inferiolateral leads was the commonest abnormality occurred in 39(17.1%) pts. followed by premature ventricular complexes in 30 (13.1%) pts. ventricular tachycardia occurred in 6 (2.6%) pts.

Echocardiographic features of valve leaflet were normal thickness in 168 (73.15%) pts., thick redundant leaflet more than 5mm thickness in 48(21%) pts. (see table IV).

thick redudant valve leaflet , than those with normal thickness valve (37.5%, 21%, respectively) and this is statistically significant (P-value < 0.05). Despite those with haemodynamical significant mitral regurgitation had frequent arrythmias but this is statistically not significant (P value > 0.05).

Skeletal deformity or marfanoid features were very infrequent finding was seen only in 5 (1.95%) pts. (see table VI).

Table VI show that 67 (28.8%) pts. only associated with other diseases and the commonest was Rhumatic fever occur in 30 (13.1%) pts. follow by cardioimpopating occur in 9 (3.9%) pts.

DISCUSSION:

This study demonstrate that MVP is common in young age group, and it is more common in female than in male. This consistant with other studies. [1,2,3,9]

The commonest presenting feature was late systolic murmur with or without systolic click, this followed by chest pain, and this is consistant with other studies.[9,10,14]

Palpitation occurred in 20% pts. of my study, this consistant with other study, but in contrast with Rokicki finding (40%).[9,10,14]

His high figure can explained by two facts: 1st he include holter monitor result that we didn't use, 2nd he studied pediatric age group only.

Cerebrovascular accidents reported in 5 (1.75%) pts. , this is very significant finding , and being all pts. are young , and they hadn't any other risk factors for stroke. This rise question; Is MVP a dependent risk factor of stroke?

Zupproli-A administer 0.7% pts. with stroke in his study.

Orencia-AJ suggest two fold increase in risk of stroke in pts. with MVP.[12]

I think this need further studies.

There was no report of any case of sudden death in this study.

Martini B and his group report 42 years female with sudden death, her holter monitor show ventricular fibriation.[15]

Corrado D study demonstrate that 10% of sudden cardiac death in young were due to mitral valve prolapse.[16]

This high percentage can be explained by the fact; that his study was selective and postmortem study.

I hadn't report any case of infective endocarditis in my study.

Zupproli-A reported 0.1% pts. in his study.

Deveroux found that erythromycin is a coast effective , oral prophylaxis for infective endocarditis in pts. with MVP.[17]

Ventricular arrythmias had been seen in 15.7%, this consistant with other studies, Ventricular tachycardia occurred in 2.6% , again this consistant with other.[10,12,14]

An echocardiographic finding of thick redundant valve leaflet were detected in 2 1.6% pts., this consistant with Rokiki-W study.[10]

Hemodynamically significant mitral regurgitation occurred in 5.25% pts., this consistant with Rokiki-W study.[10]

Interesting observation , that this study show; arrythmias were more frequent in those pts. with thick redudant valve leaflet than those with normal thickness valve leaflet this consistant with Vukovici finding.[18]

Arrythmia also occur more frequently in pts. with hemodynamically significant mitral regurgitation 25% pts. , this consistant with other studies[18,19], but this is statistically not significant in our study because of low sample size.

CONCLUSION:

The previous idea that MVP is benign phenomena[1,2,3] that pts. only need reassurance [1,2,3], may be not always.

Those pts. are reliable to serious complication, like hemodynamically significant mitral incompetence, heart failure, serious arrythmias and even sudden death.

Medical treatment with B blocker infective endocarditis prophylaxis may advice[17], surgical interference in form of valvoplasty or valve replacement may be indicated in selected cases. [9]

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- Table I -
Illustrate the sex and age distribution.

Age groups	Female	Male	Total	%
0-9	6	3	9	3.94
10-19	21	33	54	23.68
20-29	57	21	78	34.21
30-39	39	27	66	28.94
40-49	6	9	15	6.57
50 - > 50	1	5	6	2.63
Total	130	98	228	100

- Table II -
Show the presenting features*.

Presenting Feature	No. of pts.	%
Systolic murmur with or without click	187	82
Chest pain	72	31.57
Palpitation	51	22.36
Cerebrovascular accident	5	2.19
Transient ischemic attack	3	1.3
Deep venous thrombosis	2	0.87
Syncopal attack	5	2.19
Heart failure	2	0.87

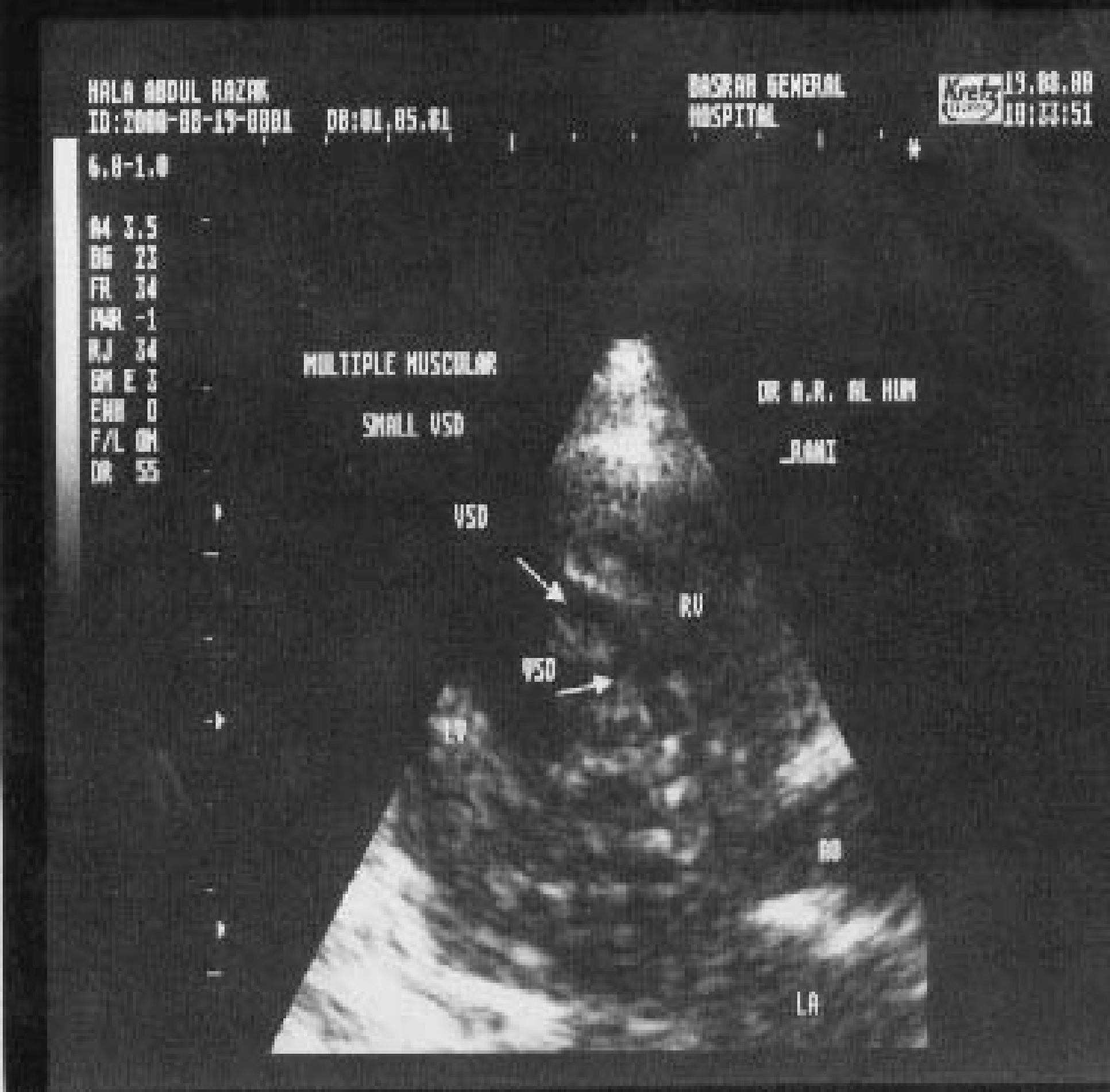
* Patient may had more one compliant.

- Table III -
Illustrate the ECG findings of the patients.

ECG findings	No. of patients	%
Biphasic or inverted T wave in INF. or inferiolateral leads	39	17.1
Atrial fibrillation	12	5.25
Supraventricular tachycardia	9	3.9
Premature ventricular complex	30	13.1
Ventricular tachycardia	6	2.6
Total No. of pts. with abnormal ECG	96	42.1

- Table IV -
Démonstrate the finding of Echocardiography.

Echo findings	No. of patients	%
Normal thickness displaced leaflet	108	73.68
Thick redundant valve leaflet	48	21.05
Hemodynamically significant mitral regurgitation	12	5.25
Associated tricuspic valve prolapse	3	1.3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