

## Critical Analysis of Mitral Valve Prolapse Syndrome below Forty Years

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**Abstract:** Mitral valve prolapsed is a clinicopathological entity characterized by billowing or prolapsed of one or both leaflets into the left atrium during systole which seems to arise from an alteration in leaflet and chordal structure. MVP is a primary dominantly inherited condition. Midsystolic click and late systolic murmur that moves dynamically with various postural maneuvers is the hall mark of this syndrome. Conventionally as a most common congenital heart disease, next to Bicuspid aortic valve. It is common in females, mostly asymptomatic, complication like progressive Mitral Regurgitation, infective endocarditis, congestive cardiac failure, sudden cardiac death also seen.

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### I. Introduction

This study is about critical analysis of various clinical presentations, signs and symptoms and echocardiographic findings and complications of Mitral valve prolapse syndrome below 40 years and its incidence regarding age and sex among the study group.

### II. Aim Of The Study

1. To assess the Age and Sex incidence.
2. To study the presentations, variable signs and ECHO findings.
3. And to find the complication of Mitral Valve Prolapse syndrome.

### III. Materials And Methods

This study was conducted in Govt. hospital, Coimbatore Medical college and hospital, Coimbatore. The study was done for about a period of one year from March 2014 to March 2015. The patients who were referred for cardiac symptoms to cardiology outpatients department from medical units and paediatric departments are included in this study. Patients below the age of forty; females, males, children were included; Middle and lower class people from various background.

All the patients are fully questioned for detailed history. In addition to general symptoms, cardiac symptoms like chest pain, palpitations, dyspnoea, syncope, focal neurological deficits were carefully evaluated. Past history was taken to rule out the existence of hypertension, congenital heart disease, Rheumatic fever, syphilis, congestive heart failure. Treatment history like any operation, previous admission, drugs taken for any cardiac illness taken; family history mainly focussed to assess the 1<sup>st</sup> degree relatives with symptoms were taken. If the relatives are available they also examined.

Next careful general examination was done to find pectus excavatum, scoliosis, reduced anteroposterior diameter, straight thoracic spine, features of Marfan syndrome. Blood pressure both arms were taken. Lying and standing BP also checked. All cases were examined carefully for the evidence of cardiac failure/associated anomalies of the heart, focal neurological deficits, infective endocarditis, arrhythmias. Auscultation of heart was performed in lying supine, left lateral position and standing. Other maneuvers like leg raising, Valsalva, after isometric exercise also performed. Efforts were made to find pulmonary hypertension/ASD/AR/TR/Dissection, Aneurysm of aorta and to differentiate HOCM.

Blood test/urine tests were done for Diabetes Mellitus / Renal disease. Haemogram to rule out anaemia was done. X chest postero anterior view was taken all patients to assess cardiac size, pulmonary vascularity, aortic morphology thoracic anomalies and mitral annular calcification. All 12 lead ECG was done to find various changes (like ST segments, T Wave changes, Ventricular premature beats) that occur in MVPs.

Echocardiography was done in all these cases to confirm the diagnosis. Both M-mode and two Dimensional ECHO were done. 2D Echo was done in all four views mainly parasternal long axis view. Redundancy or excess valve tissues at the valve ring were noted. Even though prolapsed of the other valves like tricuspid, aortic valve can occur, concentrated only on mitral valve.

About 2000 cases were attended in cardiology department, during the period of March 2014 to March 2015.

**IV. Observation**

From March 2014 to March 2015, about 2000 new cases were attended in our cardiology department for various cardiac problems. Out off these 102 cases were found to be mitral valve prolapse syndrome. In this , eighty cases were primary mitral valve prolapse syndrome. So ,the incidence of Mitral valve prolapsed syndrome is 4 percent. Common in females . Age group between 10-30 years.

All the eighty patients presented with symptoms. This however is due to the fact that the study was done in the Cardiology department where refered cases alone are seen. Some cases incidentally found (17) Mitral valve prolapsed syndrome. If they have symptoms in the history,also included in this study.

No past history of hypertension , Ishemic heart disease,Diabetes Mellitus,infective endocarditis in these cases. No significant family history suggestive of MVPs in the 1<sup>st</sup> degree relatives except in five cases ( 6 percent).

**Age Distribution**

1-10 years		11-20 years		21-30 years		31-40 years	
Male	Female	Male	Female	Male	Female	Male	Female
2	4	13	27	11	14	6	3

Category	Total number of cases	Percentage
Below 20 years	46	57.5%
Above 20 years	34	43.5%

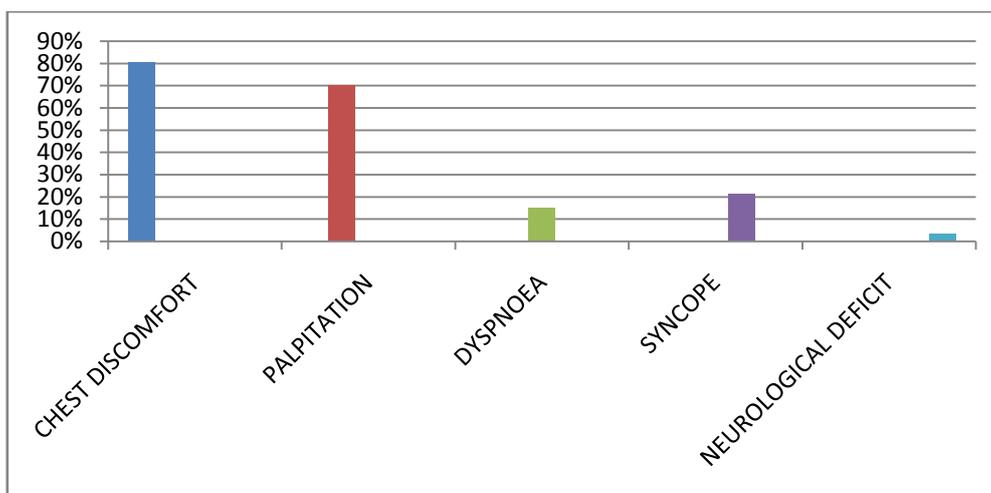
**Sex Distribution**

CATEGORY	NO OF CASES	TOTAL	PERCENTAGE
<b>FEMALE</b>			
Below 20 years	31	48	60%
Above 20 years	17		
<b>MALE</b>			
Below 20 years	15	32	40%
Above 20 years	17		

**Symptoms Distribution**

SYMPTOMS	CASES	PERCENTAGE
CHEST DISCOMFORT	68	80.50%
PALPITATIONS	56	70%
DYSPNOEA	12	15%
SYNCOPE	17	21.25%
NEUROLOGICAL DEFICIT	3	3.5%

Out of these 80 cases 65% of the patients (52 cases) were presented with more than one symptom.



**Clinical Findings**

Clinical examination showed findings in favour of Marfan’s syndrome in 5 cases. Narrow Anteroposterior diameter in 5 cases. Scoliosis 1 cases,pectus excavatum 5 cases. Total number of cases with chest wall abnormalities are 12 cases (13.5 percent).

**Various Signs**

SIGNS	CASES	PERCENTAGE
Total cases with click(with or without murmur)	57	71.25
Total cases with murmur(with or without clicks)	41	51.5
Click alone	39	48.75
Murmur alone	23	28.75
Both present	18	22.5

**Types Of Murmur Murmur Changes With Dynamic Auscultation**

Murmur 41 Cases	Cases (Of The 41)	Percentage
Late Systolic Murmur	24	58.5
Mid Systolic Murmur	14	31.5
Holo Systolic Murmur	3	7

**Complications**

Congestive cardiac failure (CCF)	10%
Infective endocarditis (IE)	1.25%
Stroke	3%
IE +CCF+STROKE	1.25%

**V. Conclusions**

**Age and Sex:**

In our study ,the incidence of mitral valve prolapsed syndrome is 4 percent It is more common in young females than males. The incidence is 67.5% in the age group 1-20 years. Maximum incidence of mitral valve prolapsed syndrome is in 10-20 years age group.Familial incidence is uncommon in our study.

**Clinical Presentation**

All the cases are primary mitral valve prolapses. All the patients presented with symptoms. Chest pain is the most common symptom 80.5% followed by palpitation 70%.

Click is the commonest sign. It is the most diagnostic of all.

Murmur may be mid or late or holo systolic. It may be musical or non musical (Honking/whooping). The click and the murmur that move dynamically with postural maneuvers is diagnostic of Mitral Valve prolapsed syndrome.

In ECG,T wave changes is a common finding. Appearance of Question mark turned 90 degree clockwise or “HAMMOCK” appearance of C-D segment in M-mode is the hallmark of MVPs,in Echocardiogram. The prolapsed may be late or pansystolic in 2D ECHO. ECHO is also useful in the assessment of complications.

**Complications**

Congestive cardiac failure was present in 10 % of cases. Thromboembolism was noted in 3.5% of cases and 1.25% of cases are presented with infective endocarditis.

All the above complications are common in females than males.

This shows, in every patients particularly young people, with unexplained ventricular premature contraction/stroke/congestive cardiac failure, We must suspect MVPs and do dynamic auscultation, Echocardiography.

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