



Mitral Valve Prolapse With Rheumatic Mitral Regurgitation- A Threatening Risk for Sudden Cardiac Death- A Case Report

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ABSTRACT: Mitral valve prolapse (MVP) is an abnormal movement of one or two of mitral leaflets into the left atrium during ventricular systole. Rheumatic heart disease frequently results in isolated mitral regurgitation without concomitant mitral stenosis. Recently, it has been noted that there is a high incidence of mitral valve prolapse and rheumatic heart disease, which suggests that it may be due to post-inflammatory changes in valvular tissue resulting from rheumatic fever.

KEY WORDS: Mitral valve prolapse, Rheumatic heart disease, Mitral regurgitation, ACE inhibitors

I. CASE REPORT

A 15 year old male presented to our ER with history of shortness of breath on routine activities. He was diagnosed with acute rheumatic fever 5 years ago which later was diagnosed as Rheumatic heart disease with severe mitral valve regurgitation and patient is on penicillin given at outside hospital.

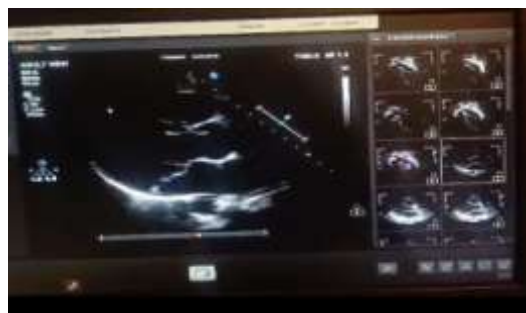
On examination patient was afebrile, pulse rate 90/min, blood pressures 100/80, oxygen saturations 97%..shape of the chest was normal, LV type of apex, hyperdynamic on 5th intercostals space along mid clavicular line. Heart sounds S1 softly heard. S2 +, A2>P2. Grade III/VI pansystolic murmur heard which increases during expiration and radiating to axilla. JVP normal. Bilateral air entry present in both lungs.

ECG showed normal sinus rhythm

Chest xray showed mild cardiomegaly

A 2DEcho was done which showed CRHD, Mitral Valve Prolapse, chordal rupture, AML prolapsed,, restricted PML with eccentric jet. Dilated LA LV with LVEF58% Patient was admitted, treated with penicillin 12 lakh units once every 3weeks deep IM and tablet LISINOPRIL 5mg OD.

Patient improved symptomatically and was discharged.



II. DISCUSSION

Mitral valve prolapse (MVP) is an abnormal movement of one or two of mitral leaflets into the left atrium during ventricular systole. Rheumatic heart disease frequently results in isolated mitral regurgitation without concomitant



mitral stenosis. Recently, it has been noted that there is a high incidence of mitral valve prolapse and rheumatic heart disease, which suggests that it may be due to post-inflammatory changes in valvular tissue resulting from rheumatic fever. Rheumatic heart disease is a systemic immune condition that occurs as a result of complication of rheumatic fever after beta hemolytic streptococcal infection of the throat. Patients usually develop anxiety, panic attacks, exercise intolerance, palpitations, fatigue, atypical chestpain, orthostasis, syncope.

The most useful method of diagnosing is by echocardiogram.

Patients are prone to severe mitral regurgitation, infective endocarditis, atrial fibrillation, sudden death.

Prompt diagnosis and management is very crucial in decreasing the mortality and morbidity.

ACE inhibitors play a may role in reducing the afterload , decreasing systemic arterial resistance, and improving ventricular function.

III. CONCLUSION

We report a case of a 15 year old male who had history of acute rheumatic fever 5 years ago which later progressed to rheumatic heart disease with severe mitral regurgitation and now has additional mitral valve prolapse. Patient has been treated with ace inhibitors and penicillin. Patients with MVP have high chances to land into cardiac failure ,arrhythmias and sudden cardiac arrest. Prompt diagnosis and management is crucial for preventing morbidity and mortality.

REFERENCES

- [1]. Seckeler MD, Hoke TR. The worldwide epidemiology of acute rheumatic fever and rheumatic heart disease. *Clin Epidemiol.* 2011 Feb 22;3:67-84. [PMC free article] [PubMed]
- [2]. Rothenbühler M, O'Sullivan CJ, Stortecky S, Stefanini GG, Spitzer E, Estill J, Shrestha NR, Keiser O, Jüni P, Pilgrim T. Active surveillance for rheumatic heart disease in endemic regions: a systematic review and meta-analysis of prevalence among children and adolescents. *Lancet Glob Health.* 2014 Dec;2(12):e717-26. [PubMed]
- [3]. Reményi B, Wilson N, Steer A, Ferreira B, Kado J, Kumar K, Lawrenson J, Maguire G, Marijon E, Mirabel M, Mocumbi AO, Mota C, Paar J, Saxena A, Scheel J, Stirling J, Viali S, Balekundri VI, Wheaton G, Zühlke L, Carapetis J. World Heart Federation criteria for echocardiographic diagnosis of rheumatic heart disease--an evidence-based guideline. *Nat Rev Cardiol.* 2012 Feb 28;9(5):297-309. [PMC free article] [PubMed]
- [4]. Nalliah CJ, Mahajan R, Elliott AD, Haqqani H, Lau DH, Vohra JK, Morton JB, Semsarian C, Marwick T, Kalman JM, Sanders P. Mitral valve prolapse and sudden cardiac death: a systematic review and meta-analysis. *Heart.* 2019 Jan;105(2):144-151. [PubMed]
- [5]. Gripari P, Mapelli M, Bellacosa I, Piazzese C, Milo M, Fusini L, Muratori M, Ali SG, Tamborini G, Pepi M. Transthoracic echocardiography in patients undergoing mitral valve repair: comparison of new transthoracic 3D techniques to 2D transoesophageal echocardiography in the localization of mitral valve prolapse. *Int J Cardiovasc Imaging.* 2018 Jul;34(7):1099-1107. [PubMed]
- [6]. Slipczuk L, Rafique AM, Davila CD, Beigel R, Pressman GS, Siegel RJ. The Role of Medical Therapy in Moderate to Severe Degenerative Mitral Regurgitation. *Rev Cardiovasc Med.* 2016;17(1-2):28-39. [PubMed]
- [7]. Scordo KA. Mitral valve prolapse syndrome. Nonpharmacologic management. *Crit Care Nurs Clin North Am.* 1997 Dec;9(4):555-64. [PubMed]
- [8]. Parwani P, Avierinos JF, Levine RA, Delling FN. Mitral Valve Prolapse: Multimodality Imaging and Genetic Insights. *Prog Cardiovasc Dis.* 2017 Nov-Dec;60(3):361-369. [PMC free article] [PubMed]
- [9]. Slipczuk L, Rafique AM, Davila CD, Beigel R, Pressman GS, Siegel RJ. The Role of Medical Therapy in Moderate to Severe Degenerative Mitral Regurgitation. *Rev Cardiovasc Med.* 2016;17(1-2):28-39. [PubMed]
- [10]. Adams DH, Rosenhek R, Falk V. Degenerative mitral valve regurgitation: best practice revolution. *Eur Heart J.* 2010 Aug;31(16):1958-66. [PMC free article] [PubMed]