

## **Rheumatic Heart Disease with Mitral Valve Stenosis**

**Ms. Kalyani Taksande<sup>1</sup>, Ms. Deepali Ghungrud<sup>2</sup>, Mrs. Indu Alwadkar<sup>3</sup>, Roshan Umate<sup>4</sup>, P. A. Deshkar<sup>5</sup>, Samruddhi Gujar<sup>6</sup>**

- 1] GNM 2<sup>nd</sup> year Florence Nightingale Training College of Nursing, Sawangi Meghe, Wardha Datta Meghe Institute of Medical Sciences (DU), Wardha  
Email ID: kalyanitaksande001@gmail.com, Mobile No. 7387868390
- 2] Nursing Tutor, Florence Nightingale Training College of Nursing, Sawangi Meghe, Wardha Datta Meghe Institute of Medical Sciences (DU), Wardha  
Email: ghungrudeepali@gmail.com, Mobile No. 7387348333
- 3] Principal, Florence Nightingale Training College of Nursing, Sawangi Meghe, Wardha Datta Meghe Institute of Medical Sciences (DU), Wardha  
Email: indualwadkar@gmail.com, Mobile No. 9960278995
- 4] Research Scientist, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi (M), Wardha, Maharashtra, India.
- 5] Dept. of Computer Technology, Yeshwantrao Chavan College of Engineering, Nagpur . Email: [prarthana.deshkar@gmail.com](mailto:prarthana.deshkar@gmail.com)
- 6] Dept. of Medical Surgical Nursing, Shrimati Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences, Sawangi (M), Wardha, Maharashtra, India.

### **ABSTRACT**

**Background:** Overall prevalence rate of rheumatic heart disease determine near about 1.5-2/1000 in all age groups, in India near about 2.0 to 2.5 million rheumatic heart disease patients in the country. In rheumatic heart disease, heart valves have been permanently damaged by rheumatic fever due to bacterial streptococcal infection. In rheumatic heart disease, the heart valve is permanently damaged due to may under-treated or untreated streptococcal infection, such as strep throat or scarlet fever. In this condition, patients have infection and inflammation due to a lack of immune response in the human body. This can result in ongoing heart valve damage.

**Case presentation:** A 35-years old female was admitted to Acharya Vinoba Bhave Rural Hospital on dated 7/10/021 with chief complaints of breathlessness on exertion for one month, rheumatic fever, joint pain, weakness, nausea vomiting. She has the same complaints in 2005. There is no history of diabetes mellitus, hypertension, thyroid, or tuberculosis. The patient obstetric history was not good. For that, she has taken treatment in another hospital but now she is admitted to Acharya Vinoba Bhave Rural Hospital for the above complaints. After physical examination, blood and radiological investigation doctor identify a case of rheumatic heart disease with severe mitral valve stenosis.

**Conservative management:** Medical treatment started such as Tab. Lasilactone, tab. Digoxin, Inj. Heparin, and Tab. Paracetamol was given and all treatment was given under the supervision of an expert physician result was good. Mitral valve replacement (with replacement) surgery was done by an authorized person.

**Conclusion:** After surgery patient was stable and he was recovered earlier. Due to expert team management and good nursing care patients are discharged from the hospital with satisfaction.

**Keywords:** Mitral valve stenosis, Rheumatic heart disease, Breathlessness, rheumatic fever

### **INTRODUCTION**

15.6 million people are harmed globally as a result of (RHD) According to the World Health Organization, 79 percent of cases of rheumatic heart disease were identified in less developed countries, with an estimated frequency of 2.5–3.2 cases per 1000 all-age population, compared to 0.3 occurrences per 1000 population in industrialized countries. In America and Western Europe, rheumatic fever has an annual prevalence rate of about = 10/100,000, although it is more common (>10/100,000) in Eastern Europe, the Middle East (the highest), Asia, and Australasia. [1,2]

Rheumatic Fever, rheumatic heart disease, and their mortality rates differed greatly between nations and within demographic segments within the same country; globally, rheumatic heart disease accounts for roughly 2% of deaths from cardiovascular illnesses. [3,4]

#### **CASE HISTORY**

A medical case was taken by Acharya Vinoba Bhawe Rural Hospital, Datta Meghe Institute of Medical Sciences, (Deemed to be University), Sawangi (Meghe), Wardha, Maharashtra, India. This complicated ICU case was taken care of nicely by the hospital because of expert conservative management by physicians and quality nursing care.

#### **PATIENT INFORMATION**

We report a 35 years-young woman who has been referred to our A.V.B.R. Hospital admitted to a cardiac ward with complaints of breathlessness on exertion for one-month, rheumatic fever, joint pain, weakness it began recently, and became increasingly worse. On physical examination under cardiac auscultation, loud S 1 was heard, ECG showing left atrial enlargement. Her blood pressure was 165/100 mm of Hg and a regular pulse rate of 84 beats per minute. On radiological investigation mitral valve score was M-3, T-3, S-1, C-0. no clot vegetation. The right atrium and right ventricle dilated with reversal mitral regurgitation. Mitral valve thick. PML (posterior mitral leaflet) restricted movement.

Color Doppler echocardiogram was done. A chest radiography CT scan and MRI were done. The patient belonged to a middle-class family. Her family members had no complaints of communicable and non-communicable diseases. She maintained a good interpersonal relationship with family members and relatives and neighbors also. But due to this condition, she had symptoms like irritability, anxiety, and restlessness.

On admission her condition was critical that why she was admitted to the cardiac ward, that time her vital sign was normal but systolic and diastolic blood pressure was 150/100 mm of Hg. Overall, this condition was managed by administration of intravenous fluid, blood transfusion, and antibiotic treatment. Blood investigation and MRI and CT scan were done; MRI and CT scan report impression was brain lesion in cerebellum.

#### **DIAGNOSTIC EVALUATION:**

The laboratory test was conducted and results were: Hemoglobin (Hb) 11.5 gm /dl (12.1-15.1 gm/dl), and total leukocyte count was 10400 cell/m<sup>3</sup> (5000-11,000 cell/m<sup>3</sup>), routine urine investigation result was, creatinine 0.5 mg/dl (0.6-1.4 mg/dl), and urea level was 14 mg/dl (8-40 mg/dl), sodium 142 (135-145 mEq/l) and potassium 4.3 mEq/l (3.5-4.8 mEq/l). In color Doppler it was found that aortic valve thickened, Trileaflet, with restricted opening

#### **CONSERVATIVE MANAGEMENT**

After admission to the cardiac ward, a comfortable bed was provided to the patient, cardiac monitoring started, vital signs were checked. Blood pressure measure 2 hourly checked. The bladder was catheterized as per the doctor's orders and maintained intake and output strictly. Doctors tried to treat this condition with the help of conservative management, Tab Dytor 10mm OD, Tab Ramistar 1.25 mg, Tab Lanoxin. But the only operation was the next choice for the cardiac surgeon to handle this case. Now the cardiac surgeon has planned for cardiac surgery i.e. mitral valve replacement therapy.

#### **NURSING MANAGEMENT**

At the cardiac ward, the patient was under strict observation of on-duty staff. Intravenous fluid administered as per calculation. Intake and output were maintained 2 hourly. Vital signs were recorded strictly. Now the cardiac surgeon has tried to temporarily manage this case with medicine but mitral valve replacement is essential as early as possible. Overall, her response was satisfactory for treatment, and after stability, the patient was shifted to the cardiac ward from ICU.

#### **DISCUSSION**

Rheumatic fever has irreversibly damaged the heart valve in rheumatic heart disease. [5] Rheumatic fever is a heart-related inflammatory disease that can affect different connective tissues, including the heart, joints, brain, and skin. Rheumatic heart disease (RHD) causes heart valves to become inflamed and scarred over time. This can cause the heart valve to constrict or leak, making it more difficult for the heart to work properly. This can take a long time to manifest and can lead to cardiac failure. [6,7,8]

The majority of people in the community have recurrent group A streptococcus infections, which cause the immune system to react against the human body's tissues, causing inflammation and scarring of the heart valves, as well as damage. The inflammation and scarring of heart valves caused by rheumatic fever led to rheumatic heart disease. [9,10]

RHD condition can be managed by accurate treatment of streptococcal sore throat, in this condition if the patient did not receive the treatment in early-stage and if it is not diagnosed may lead to serious complications. Due to the economic burden family members not getting sufficient time or money to access a healthcare facility, not having sufficient data to seek care due to lack of information by health care personnel, and low awareness of having the risk

of infectious disease of untreated 'throat'. Healthcare personnel may also not have adequate information, how to identify and treat a streptococcus throat properly. [11,12]

Many times, patients are not diagnosed with rheumatic heart disease and it will be diagnosed at a far late stage of disease when the damage of the heart valve is very severe. In endemic countries much rheumatic heart disease- there is little or no access to life-supporting and life-saving heart valve surgery.<sup>7</sup> Rheumatic heart disease can be very costly and overall, it is very challenging for rheumatic heart disease patients to regularly visit a healthcare facility, to manage this situation, sometimes many rheumatic heart disease patients may not be willing to receive the injection due to discomfort or fear of side effects events. Three-dimensional echocardiography allows for a more precise assessment of the degree of rheumatic mitral stenosis. Because the image plane at the mitral tips is aligned well, three-dimensional echocardiography facilitates detection of the deep section of the orifice. [13,14]

Mitral annular calcification, Fabry's disease, Whipple's disease, radiation-associated valve disease, methysergide therapy, mucopolysaccharidosis, endomyocardial fibrosis, carcinoid valvular disease, and systemic autoimmune diseases such as rheumatoid arthritis, systemic lupus erythematosus, and Addison disease are all common causes of severe mitral Hemodynamic problems can be caused by a variety of heart conditions. Ball valve thrombi and atrial myxomas are two examples. [15]

#### **CONCLUSION**

There are so many risk factors that will be responsible for rheumatic heart disease. The community population should be aware of the risk factors of RHD. For the prevention of the severity of disease, knowledge is one of the most important keys which is responsible for the prevention of diseases. By the education, women will be taking health care of their family members and themselves also. The information they need to achieve the maximum potential for daily living against rheumatic heart disease. Acute rheumatic fever can be managed appropriately if it is detected as early as, so many complications can be prevented. If it is diagnosed and treated immediately. In the first visit of the patient, it was difficult to detect the diagnosis of the final disease. When a patient comes to the hospital for a second visit, the patient shows the appropriate symptoms to diagnosis the final disease. Once acute renal failure is considered, appropriate radiological and laboratory blood investigation and cardiac investigation should be done. Early diagnosis of disease and its medical treatment due to that patient can recover earlier in the community.

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#### **ETHICAL APPROVAL**

Not applicable

#### **PATIENT INFORM CONSENT**

While preparing the case report and for publication patient's informed consent has been taken.

#### **CONFLICT OF INTEREST**

The author declares that there are no conflicts of interest.

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