

# WORLD CONGRESS ON RHEUMATIC HEART DISEASE

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**Title:** A CASE REPORT: BIOLOGICAL MITRAL VALVE REPLACEMENT IN A 12 YEAR OLD GIRL

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**Background & Aims:** Rheumatic heart disease is the leading cause of Cardiovascular disease in the young in low - middle income countries. There are limited cardiac surgeries on the continent with a lot of controversy on mechanical versus biological valve replacement. The biological valves having a low valve related mortality, good function and less severe embolic phenomenon seem to be the optimal option for valve replacement in the young.

**Methods:** A 12 year old girl presented with a 6 year history of joint pain, migratory associated with inability to walk at times. She also has a history of fevers on and off associated with sore throat and recurrent throat and chest infections. She was being treated as an outpatient with mild relief at various hospitals. She presented at outpatient department with fatigue on exertion and difficulty in breathing. On cardiovascular examination she has grade 3 systolic murmur radiating to the apex. Trans thoracic Echo revealed Rheumatic heart disease with severe Mitral Regurgitation- mitral valve anterior leaflet had one third tip thickened with the posterior mitral valve shortened and retracted with poor coaptation. The patient was admitted and started on antifibrinolytics in preparation for Mitral valve replacement.

**Results:** The patient under general anaesthesia with invasive monitors under aseptic technique. The anterior chest, abdomen and thighs were cleaned and draped with sterile towels. Median sternotomy was done. Pericardium was found and while opening adherent to the epicardium. So separation of the pericardium from epicardium was done and all Aorta, SVC and IVC was freed. Cannulation of the Ascending Aorta, bicaval and right upper pulmonary vein was done. The cross clamp was placed on the distal ascending aorta with the heart arrested in diastolic and antegrade cold cardioplegia. The Right atriotomy and interstitial incision was done. The mitral valve was assessed through interatrial opening and the mitral valve was found to be thickened and posterior leaflet was retracted. The resection of the anterior leaflet was done with preservation of posterior leaflet. Then Biological mitral valve 29 was placed. The interatrial opening was closed. Re-warming started, De-airing was done and right atriotomy closed. The aortic cross clamp was removed and the patient heart was started on spontaneous to normal sinus rhythm. The patient slowly weaned from bypass. Protamine was given and haemostasis was satisfactory. One chest drain was inserted on the anterior mediastinum and directed to the left pleural. Pericardial pacing wire to the Right atrium and ventricle were placed. T- Cronin 2.0 sutures were used to close the sternum and the pre-sternal soft tissues were closed with Vicryl and Monocryl. The patient was transferred to ICU and haemodynamically stable.

**Conclusions:** The challenge in choosing type of heart valve is that there is not much evidence on the type of heart valve affecting survival or quality of life, especially in children. Mechanical valves require lifelong anticoagulation with warfarin, which in young girls who will grow into reproductive age, could be teratogenic and adherence to medication become challenging. The less severe outcomes of biological valve of reduced thromboembolic phenomena, good functional ability and good survival rate all contributed to optimizing the quality of life for our 12 year old girl patient.