

A Thirty Five Year Survival with Medtronic Hall Tilting Disc Valve in Mitral Prosthesis

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Abstract: We report a case of 59 year female known case of Chronic Rheumatic heart disease - severe Mitral Stenosis, who underwent Mitral valve replacement (Medtronic hall tilting disc valve) in 1988, mitral prosthesis⁴ have proved excellent durability and its good hemodynamic performance in many patients, in literature there is no evidence of durability of this prosthesis longer than 35years, our patient lives a happy fulfilling (NYHA class II) with no evidence of hemolysis, symptomatic embolization and major or minor bleeding.

Keywords: Medtronic hall tilting disc valve, Mitral stenosis, mitral valve

1. Case Report

59yr/female diagnosed to have rheumatic fever at the age of 10yr, who underwent Mitral valve replacement - at age 24yrs, with Medtronic Hall tilting disc valve (functional class IV).³

At latest follow up 35yrs patient has normal life NYHA Class II, BNP - 82ng/ml no hemolysis, on warfarin therapy, INR maintaining between 2.7 – 3.5. on Auscultation loud opening click, flow systolic murmur is present in Aortic position. Echocardiogram show Atrial Fibrillation, Chest X ray – Left Atrial Enlargement & mild Left ventricular configuration. [fig.1]

Two - Dimensional Echocardiogram show mitral prosthesis, evidence of Left atrial enlargement [fig.2a], color Doppler examination at prosthesis level typically shows multiple peripheral diastole flow jets [fig.2b] coming laterally continuous Doppler wave showed normal gradient (amplitude) across the valve¹, with no paravalvular leaks, fluoroscopy confirmed the same findings too, well - functioning valve [fig.3].

Medtronic Hall tilting disc was introduced to clinical practice in year 1977, the same year as the St. Jude medical bi - leaflet valve, both are widely regarded as safe, reliable devices both have a very low susceptibility of valve thrombosis.²



Figure 1: Chest X - ray of the patient showing left atrial enlargement and mild Left Ventricular Configuration



Figure 2(a): Two - Dimensional Echo Cardio - graphic Examination showing Medtronic hall tilting disc mitral

prosthesis, Left Atrial Enlargement.

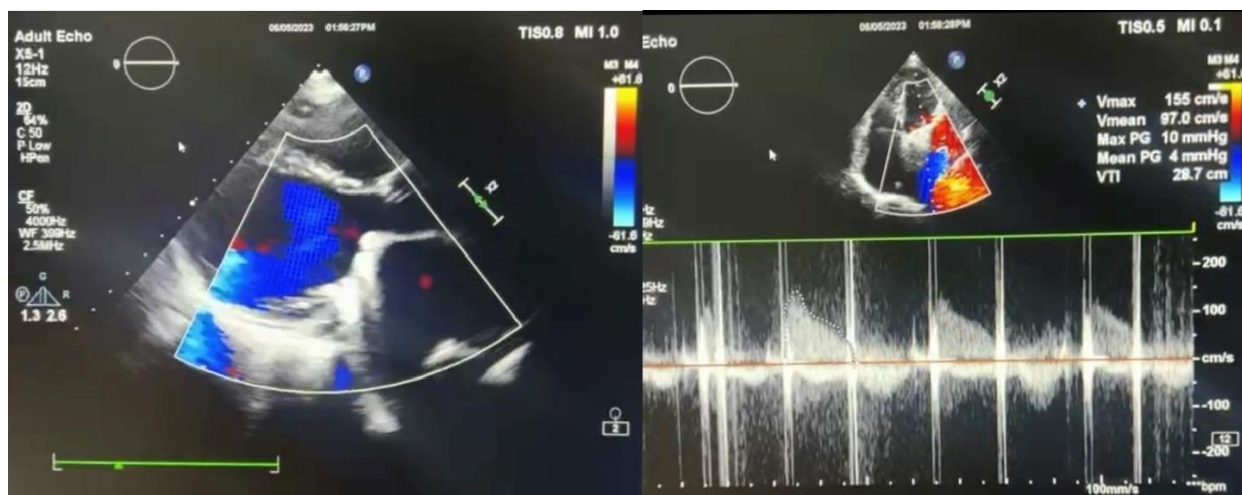


Figure 2(b): Color Doppler Study at the level of Medtronic Hall tilting disc mitral prosthesis: multiple peripheral diastolic flow jets are seen.



Figure 3: Fluoroscopic pictures of Medtronic Hall tilting disc valve.

2. Comment

Long term survival of the individual patient is the primary goal of cardiac valve replacement. The role of complication and survival rate of mitral prosthesis depends on left atrial size, cardiac index, presence of coronary heart disease & left ventricular ejection function.

This tilting disc to bi-leaflet valves marked a new era in treatment of valvular diseases and drastically altered the natural history of the patient, at present there is no single valve “ideal valve” That is appropriate for every single patient in future solutions will probably combine more accurate computational tools that capture the complex environment of prosthesis like molecular engineering that will enhance functionality of valve.

Overall, our patient demonstrates that Medtronic Hall has excellent durability, very good hemodynamic performance, low thrombogenicity leading to good long-term survival in spite of having INR maintenance on the lower side.

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