

## “Mushroom Thrombus” a Unique Post Transcatheter Mitral Valve Replacement (Valve in Valve) Early Complication. The Role of Echocardiography

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### Abstract

The incidence of prosthetic valve thrombosis post transcatheter mitral valve replacement remains largely unknown. Although it may occur more frequently than after transcatheter aortic valve replacement, only isolated cases have been reported up to now. This unique large mushroom thrombus post trans catheter mitral valve replacement (TMVR) case is first of its kind reported ever. 3D transesophageal as well as transthoracic echocardiography play very important role in early diagnosis and for treatment decision.

**Keyword:** Mushroom Thrombus; Post TMVR; 3D TEE

### Introduction

The incidence of prosthetic valve thrombosis post transcatheter mitral valve replacement remains largely unknown.

### Case Report

A 53-year-old lady follow up case of rheumatic heart disease, post MVR; bioprosthetic valve (Epic #25) implanted 6 years ago. She developed progressive breathlessness for last 3 months NYHA (New York heart association) class III. Transthoracic as well as transesophageal echocardiography (TEE) suggested dysfunction prosthetic valve with flail leaflet leading to severe mitral regurgitation (Figure A).

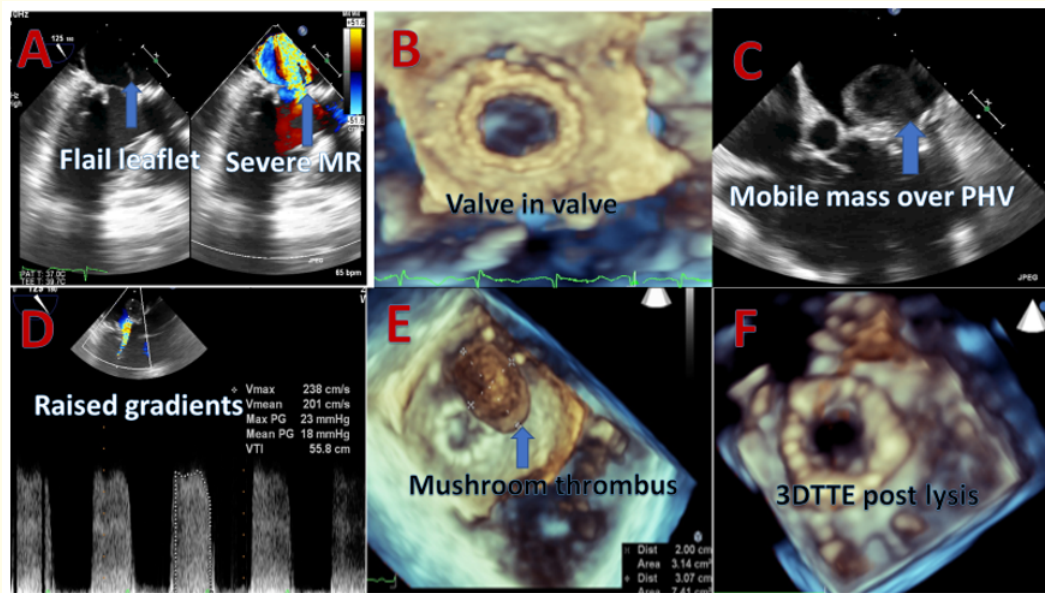
Patients with contraindication or high risk for surgical treatment and failed surgical bioprosthesis or annuloplasty; Transcatheter mitral valve replacement (TMVR) is a good therapeutic option [1,2].

She was implanted 23 mm bioprosthetic Meril's My valve (valve in valve) via percutaneous transcatheter technique right femoral vein under 3D TEE guidance (Figure B). Result was satisfactory (Mean pressure gradient 3 mmHg) with no residual mitral regurgitation.

After 1 month follow up, she had some breathing difficulty for which transthoracic echocardiography and 2DTEE were done which showed a mobile hyperechogenic mass hanging over prosthetic valve (Figure C) with significant gradients across mitral inflow, mean gradients were 18 mmHg (Figure D) 3D transesophageal echocardiography from left atrial side view showed a unique mushroom like mo-

bile mass hanging over prosthetic valve, measuring ~20 X 30 mm, arising from rim of prosthetic valve and wrap around posteriorly also (Figure E). Thrombus was severe enough to significant obstruction across mitral inflow and mean gradients across PHV were 18 mmHg.

In view of significant gradients and obstruction of color flow across valve; thrombolysis was done with streptokinase bolus followed by intravenous continuous infusion. Post thrombolysis assessment done after 24 hours, echocardiography reviewed showed significant reduction in gradients (MPG 6 mmHg) and disappearance of mass. 3D trans thoracic echocardiography revealed normal functioning of valve with no mass as seen previously (Figure F).



On review of literature, the incidence of prosthetic valve thrombosis post TMVR remains largely unknown. Although it may occur more frequently than after transcatheter aortic valve replacement, only isolated cases have been reported up to now [3,4]. This unique large mushroom thrombus post TMVR case is first of its kind reported ever.

### Discussion and Conclusion

The incidence of THV thrombosis after TMVR remains largely unknown. Until unless systemic echocardiographic follow-up is not performed, this complication may remain undiagnosed.

Mild raised trans mitral gradients on trans thoracic gradients usually overlook the post TMVR thrombus that’s why systemic TEE may be necessary during follow-up of these patients and must be mandatory in patients with elevated trans mitral gradients.

Early or late subclinical prosthetic valve thrombosis may occur after TMVR and long-term anticoagulant therapy may therefore be necessary in combination with antiplatelet therapy despite the increased bleeding risk.

### Conflict of Interest Declaration

This is an original manuscript and has not been previously published or submitted into another journal.

Dr Hemant Chaturvedi and Dr. Ravinder Singh Rao declare that they have no financial disclosure and no conflict of interest to be disclosed.

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