

A SUCCESSFUL DISSOLUTION OF AN OBSTRUCTIVE PROSTHETIC MITRAL VALVE THROMBUS: SEQUENTIAL TWO AND THREE DIMENSIONAL TRANSESOPHAGEAL ECHOCARDIOGRAPHY EXAMINATION

KHALIFA SELMI, MD, PHD, ISKANDER SLAMA, MD, RAMI TLILI, MD, SAMI MILOUCHI, MD, AIDA MOKADDEM, MD AND MOHAMED RACHID BOUJNAH, MD

DEPARTMENT OF CARDIOLOGY, CLINICAL ECHOCARDIOGRAPHY LABORATORY, MONGI SLIM UNIVERSITY HOSPITAL - LA MARSA, SIDI DAOU, TUNISIA

KEY WORDS: Thrombosis · Mitral valve prosthesis · 2D and 3D transesophageal echocardiography.

A 51-year-old man presented to other hospital with onset dyspnea on exertion. Earlier he had aortic and mitral valve replacement with a bileaflet mechanical prosthesis. Later he developed obstructive prosthetic mitral valve thrombosis (OPMVT). He underwent urgent surgery, with removal of the prosthetic mitral valve and thrombus. Latest, he had a transient ischemic attack. This time he was given intravenous diuretics and heparin, and was transferred to our hospital. Clinical history and physical examination suggested probable prosthetic valve thrombosis. Because of poor transthoracic echocardiography, we resorted to two-dimensional and real-time three-dimensional transesophageal echocardiography (2D TEE, RT-3DTEE)¹ and these showed that one leaflet (L2) was opening

fully, while the other leaflet (L1) was completely blocked by a small thrombus (Fig. 1A and B, Supplementary movie 1 and 2). The mean mitral gradient was 23 mmHg, and pressure half-time was 296 msec. We opted for medical treatment² using intravenous heparin for ten days followed by oral anticoagulation adjusted to a target international normalized ratio (INR) of 3.0-3.5. Aspirin 100 mg daily was initiated with the heparin. Daily INR was started for close monitoring of anticoagulation. The patient's presenting symptoms resolved. Weekly follow-up TEE was carried out. At the end of fourth week this showed normal function of mitral prosthesis, as well as resolution of the small thrombus mentioned (Fig. 1C and D, Supplementary movie 3 and 4). Medical treatment under TEE monitoring, with spatial

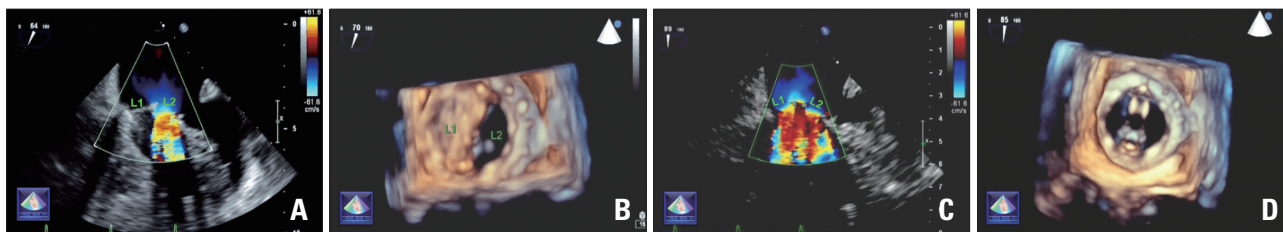


Fig. 1. Two dimensional transesophageal echocardiogram (2D TEE) showing one leaflet (L1) blocked, while the second leaflet (L2) is opening with accelerated color flow velocity (A). Real time three dimensional transesophageal echocardiogram (RT3DTEE) view from left atrium revealing one leaflet (L1) blocked, while the second leaflet (L2) is opening (B). 2D TEE after successful treatment leaflets excursion are normal with normal color flow velocity (C) and RT3DTEE (D).

• Received: July 24, 2013 • Revised: August 29, 2013 • Accepted: November 12, 2013

• Address for Correspondence: Khalifa Selmi, Department of Cardiology, Mongi Slim University Hospital - La Marsa, PO Box 29, Sidi Daoud 2046, Tunisia
Tel: +216-98-485-726, Fax: +216-71-379-040, E-mail: khalifa.selmi@gmail.com

• This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

assessment of the OPMVT gathered by RT3DTEE, may be considered as a first-line treatment of OPMVT.

REFERENCES

1. Krim SR, Vivo RP, Patel A, Xu J, Igo SR, Zoghbi WA, Little SH. *Direct assessment of normal mechanical mitral valve orifice area by real-time 3D echocardiography.* *ACC Cardiovasc Imaging* 2012;5:478-83.
2. Lengyel M, Horstkorte D, Völler H, Mistiaen WP; Working Group Infection, Thrombosis, Embolism and Bleeding of the Society for Heart Valve Disease. *Recommendations for the management of prosthetic valve thrombosis.* *J Heart Valve Dis* 2005;14:567-75.