

## Image in cardiology

**A.F. Doubell\*, J. Swanevelder#, H. Weich\* and P. Herbst\***

\*Division of Cardiology, Stellenbosch University and Tygerberg Hospital, South Africa

#Department of Anaesthesia, Glenfield Hospital, Leicester, United Kingdom

**Address for correspondence:**

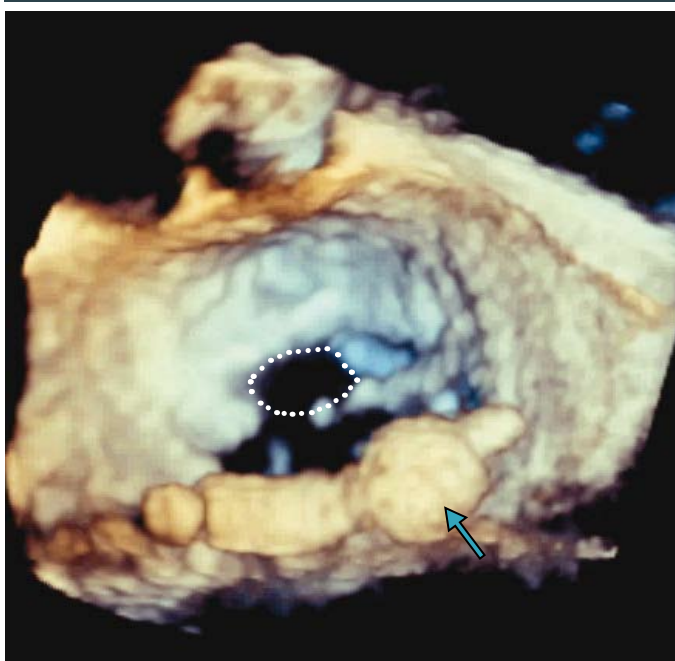
Prof Anton Doubell  
Division of Cardiology  
Tygerberg Hospital  
Tygerberg  
7505  
South Africa

**Email:**

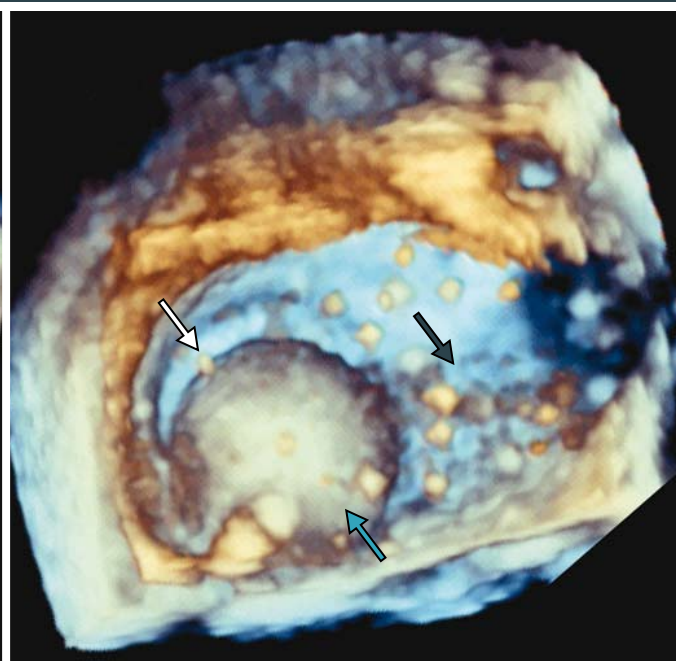
afd@sun.ac.za

Mitral balloon valvuloplasty is an important intervention in the armory of the cardiologist, offering a safe and effective percutaneous option in the treatment of patients with mitral stenosis. Echocardiography is an integral component of the pre-procedural assessment of these patients allowing for accurate assessment of valvular anatomy to select cases suitable for balloon valvuloplasty and to exclude cases where the procedure is contraindicated due to left atrial thrombi.<sup>(1,2)</sup> Identifying suitable valvular anatomy is done mainly by trans thoracic echocardiography (TTE), most often by referring to the Wilkens score, whilst the exclusion of atrial thrombi requires transesophageal echocardiography (TEE). TEE is also useful to evaluate commissural anatomy<sup>(3)</sup> (commissural anatomy is an important predictor of procedural success)

The figure demonstrates the positioning in the left atrium (A) and inflation across a stenotic mitral valve (B) of an Inoue balloon during a percutaneous mitral balloon valvuloplasty.



**A:** The light blue arrow marks the partially inflated distal component of the balloon. The dotted line marks the orifice of the stenotic valve. Below the orifice is an area of artifact representing loss of echo-signal in a segment of the posterior leaflet.



**B:** The light blue arrow marks the fully inflated proximal (atrial) component of the balloon seen occluding and stretching the mitral orifice. The white arrow indicates the anterior leaflet, bulging under the strain of the inflated balloon. At this stage of the procedure the postero-medial commissure (dark-blue arrow) is still fused.

and to monitor the procedure in the cardiac catheterisation laboratory. The latter is often utilised in pregnant patients to minimise radiation associated with fluoroscopy and in patients requiring anaesthesia such as children. Potential advantages offered by intra-procedural TEE include improvement in the safety margin during atrial septal puncture, immediate assessment of the success of the procedure including commissural separation and accurate assessment of any cardiac complications such as the degree and mechanism of mitral incompetence. The role of 3D echocardiography in pre-procedural assessment and/or intra-procedural monitoring of these patients has not yet been well defined.<sup>(4)</sup> The images shown here are, to our knowledge, the first published 3D echocardiography images of balloon

inflation taken during mitral balloon valvuloplasty. The procedure was performed on a 14 year old male patient who required general anaesthetic during the procedure. The images show the partially inflated balloon prior to the dilatation of the valve in panel A and the fully inflated balloon straddling the stenotic valve in panel B. Procedural success was achieved without complications.

## REFERENCES

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