post-operative anti-thrombotic therapy are also often consistent, they rely on low level of evidence. This illustrates remaining gaps of evidence that are summarized in Table 4. Appropriate controlled trials are needed to clarify these issues given the number of patients concerned and the potential harms of anti-thrombotic therapy.

Conflict of interest: B.I. has received consultant fees from Abbott, Boehringer Ingelheim, and Valtech and speaker’s fees from Edwards Lifesciences. J.R.-C. has received consultant fees from Edwards Lifesciences and St Jude Medical.

References

The list of references is available in the online version of this paper.

Mechanical alternans from an obstructive thrombosed prosthetic heart valve

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Electrical alternans is a well-known sign of cardiac tamponade in patients with very large pericardial effusions. Historically, mechanical alternans was described in severe end-stage heart failure but is uncommon now with the availability of assist devices. Our patient had mechanical alternans due to an obstructive thrombosed prosthetic heart valve. Left ventricular systolic pressures in alternate beats were 155 and 125 mmHg, indicating a mechanical alternans of 30 mmHg (Panel A) (Supplementary material online, Video).

Patient was aged 50 years and had mitral valve replacement with a Bjork–Shiley valve at age 22 years. There was evidence of extensive pannus and thrombus on the prosthetic heart valve as seen on three-dimensional (3D) transoesophageal echocardiography (Panel B) and on the explanted valve (Panel C). Echo Doppler interrogation showed a normal inflow pattern of a Bjork–Shiley valve, followed by markedly reduced inflow in alternate beats (Panel D). Note also, the left ventricular tracing showed no increase in the diastolic pressure that preceded the alternans beat (Panel A). Two-dimensional and 3D transoesophageal echocardiographic visualization of the intermittent obstruction is shown on video-clips. On echocardiography/Doppler, the ‘normal’ and obstructed beats had gradients of 8 and 13 mmHg, respectively, pressure half-times of 146 and 275 ms, respectively, with calculated mitral valve areas of 1.5 and 0.8 cm², respectively. Fluoroscopy showed a normal 60° opening of the old Bjork–Shiley valve (Panel E) that was markedly reduced preceding the alternans beat (Panel F). The patient was in clinical heart failure. Left ventricular ejection fraction was normal. Throughout her pre-operative course, she was in regular sinus rhythm (Panel D).

The obstructive thrombosed prosthetic heart valve was surgically replaced with a 29 mm St Jude porcine valve.

Supplementary material is available at European Heart Journal online.