Usefulness of 3D transoesophageal echocardiography for guiding wires and closure devices in mitral perivalvular leaks

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Sixty-three-year-old male patient. Previous history of rheumatic valvular disease. He underwent multiple mitral and aortic valve replacements. Nowadays, he presents a periprosthetic mitral leak. He underwent a leak closure by using a percutaneous approach. During the procedure, the superiority of 3D TEE over 2D TEE was confirmed for wires and device positioning, excluding interference with the prosthesis discs and evaluating the residual periprosthetic regurgitation.

KEYWORDS
Leak;
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Sixty-three-year-old male patient. Previous history of rheumatic valvular disease. He underwent multiple mitral and aortic valve replacements (the last one 4 years ago: mitral and aortic Sorin Bicarbon 25 and 21, respectively). Six months before hospital admission, he suffered from a functional class worsening (NYHA II–III). In the complementary

Figure 1  Leak in the medial mitral annulus, involving less than a quarter of the complete circumference of the mitral ring.
examinations, it is of note the existence of haemolytic anaemia and severe mitral periprosthetic regurgitation when evaluated by means of 2D and 3D transoesophageal echocardiography (TEE). There was a leak in the medial mitral annulus (Figures 1–4), involving less than a quarter of the complete circumference of the mitral ring. The leak was located at 12:00 and 3:00 according with the Meloni’s and Foster’s classification. As he was a very high-risk patient for surgery, it was decided to perform a percutaneous leak closure, using an anterograde approach. During the procedure, the superiority of 3D TEE over 2D TEE was confirmed for wires and device positioning, excluding interference with the prosthesis discs and evaluating the residual periprosthetic regurgitation.

In patients with excessively high surgical risk, percutaneous closure of perivalvular leaks may be considered an alternative

Figure 2  In the first attempt to cross the leak, the wire crossed through the leak and the closure device interfere with the motion of the medial prosthetic disc, without clear 2D image.

Figure 3  In the 3D image we confirm that the device was wrong positioning with the closure device over the prosthesis with interfere of the correct motion of the valve, the device was repositioning in two times.
treatment. The patient had a good in hospital outcome. After 1 month follow-up, the results of the procedure remained without any modification.

In this patient, the usefulness of 3D transesophageal echocardiography is clearly shown.

Supplementary data

Supplementary data are available at European Journal of Echocardiography online.

References