

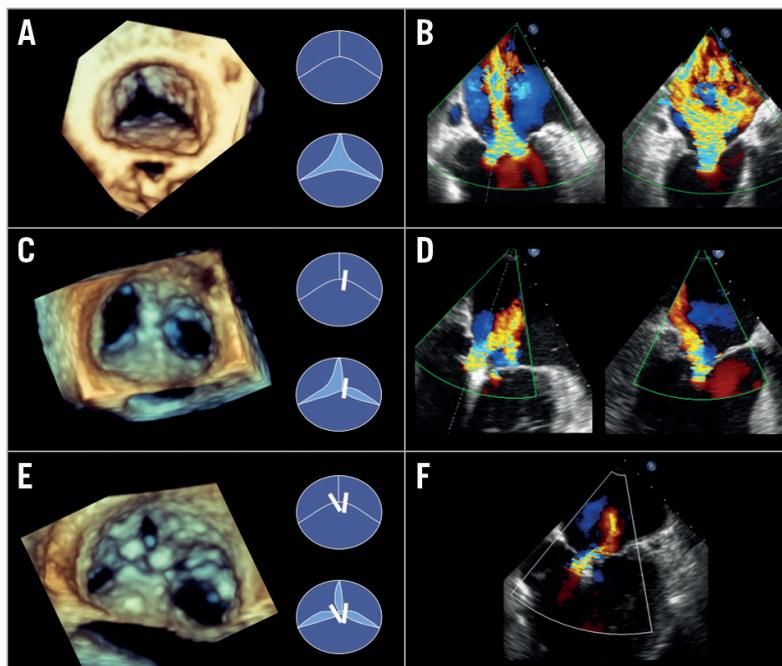
# Triple orifice as a novel strategy in interventional reconstruction of a mitral pseudo cleft



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An 84-year-old male with a history of ischaemic cardiomyopathy was admitted with advanced NYHA Class IV symptoms. Transoesophageal echocardiography revealed a severe functional mitral regurgitation (MR) with a pseudo cleft in the P2 segment (**Panel A, Panel B**). Surgical repair was not possible due to his comorbidities (EuroSCORE 54.41%), thus an interventional approach using the MitraClip® system (Abbott Vascular, Santa Clara, CA, USA) was chosen by the Heart Team.

A clip was positioned in the A2/P2 region perpendicular to the commissure and lateral to the cleft, resulting in stabilisation of the cleft and reducing MR to moderate (**Panel C, Panel D**). The patient was discharged three days after the procedure with NYHA Class II symptoms.

Eighteen weeks later, the patient was re-admitted with severe dyspnoea. Echocardiography revealed moderate to severe MR (**Panel D**). Placing a second clip parallel to the first clip did lead to a significant reduction in mitral regurgitation but also caused an excessive rise of transmitral gradient. Therefore, we placed the second clip with a 45-degree angle to the first clip in order to create a triple orifice (**Panel E**). MR was reduced from moderate

to severe to mild with a mean transmitral gradient of 5 mmHg (**Panel F**). Two days after the procedure, our patient was discharged with NYHA functional Class I.

To our knowledge, this is the first report of a MitraClip-induced triple orifice in a case of mitral pseudo cleft. By using the cleft itself as an orifice, mitral regurgitation could be effectively reduced without affecting the mean transmitral gradient (**Moving image 1-Moving image 4**).

## Conflict of interest statement

The authors have no conflicts of interest to declare.

## Supplementary data

**Moving image 1.** Atrial view prior to intervention (pseudo cleft in P2).

**Moving image 2.** Ventricular view prior to intervention (pseudo cleft in P2).

**Moving image 3.** Atrial view after 1<sup>st</sup> clip.

**Moving image 4.** Atrial view after 2<sup>nd</sup> clip.

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