



## Neochord anterior leaflet treatment to facilitate transcatheter mitral valve replacement with 3D real-time echocardiography

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## CARDIOVASCULAR FLASHLIGHT

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### Neochord anterior leaflet treatment to facilitate transcatheter mitral valve replacement with 3D real-time echocardiography

Andres Beiras-Fernandez<sup>1</sup>, Tobias Friedrich Ruf<sup>2</sup>, Jean-François I. Obadia<sup>3</sup>, Thomas Münzel<sup>2\*</sup>, Felix Kreidel<sup>2</sup>, and Ralph Stephan von Bardeleben<sup>2</sup>

<sup>1</sup>Department of Heart and Vascular Surgery, Heart Valve Center, University Medical Center Mainz, Mainz, Germany; <sup>2</sup>Center of Cardiology, Heart Valve Center, University Medical Center Mainz, Mainz, Germany; and <sup>3</sup>Hopital Cardiothoracique Louis Pradel, BP Lyon Montchat, Lyon Cedex 03 69394, France

\* Corresponding author. Tel: +496131 17 7250, Fax: +496131 17 6615, Email: tmuenzel@uni-mainz.de

Transapical repair with neochord implantation (Neochord DS1000; Neochord, USA) has emerged as a novel therapy for primary/degenerative mitral valve disease (Panel A). Recently, mitral valve replacement with Tendyne (Abbott, USA) was granted CE approval. The Tendyne valve is a trileaflet porcine pericardial valve within a self-expanding covered stent implanted and tethered through the left ventricular apex. Implantation of the Tendyne valve may result in neo left ventricular outflow tract (LVOT) obstruction in the presence of a long anterior mitral leaflet, an elongated anterior chordae,

and/or a dynamic septum bulge. We hypothesized that grasping and manually tethering of the anterior mitral valve leaflet (AML) with 1-2 ePTFE neochords would result in a reduced risk of neoLVOT obstruction. The procedure was done in a multi-morbid 69-year-old male with severe mitral regurgitation. Surgery as well as percutaneous edge-to-edge therapy had previously been ruled out due to increased surgical risk and a short posterior mitral leaflet, respectively. Through a reduced anterior lateral thoracotomy, the apex was exposed. Two chords were placed in the central segment of A2 and adjusted to pull the anterior leaflet (Panels B and C, [Supplementary material online, Videos S1 and S2](#)). One of the chords tore the AML in a lagoon split. Through the same transapical access, the introducer sheath of the Tendyne system with a 24-mm Tendyne valve was inserted and the valve deployed in optimal position, with the remaining neochord still tethering AML (Panels D–G, [see Supplementary material online, Videos S3 and S4](#)). After a short period of forward failure resulting from insufficient left ventricular filling, the valve proved competent with normal gradients and no neoLVOT compromise ([Supplementary material online, Videos S5 and S6](#)). Follow-up at 6–12–18 months showed excellent valve performance.

[Supplementary material](#) is available at *European Heart Journal* online.

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