Image in cardiology

Transapical Off-pump Neochord Implantation for Mitral Regurgitation Recurrence

Implante transapical sin bomba de neocuerdas tras recurrencia de regurgitación mitral

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Figure 1.

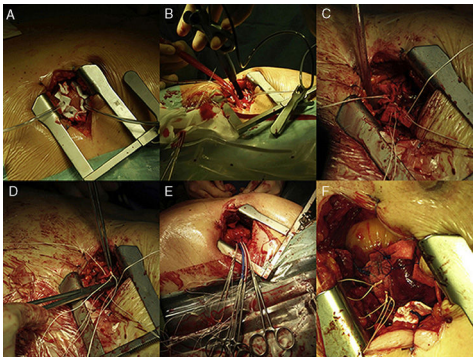

Figure 2.

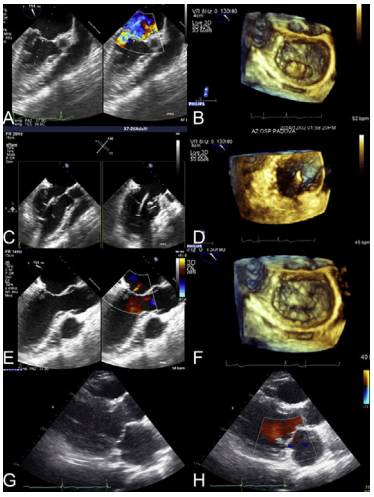

Figure 3.

Recently, transapical off-pump mitral valve repair with Neochord implantation (TOP-MINI) using the NeoChord DS-1000 device (NeoChord, Eden Praire, United States, Figure 1) has been proposed to correct degenerative mitral regurgitation. The surgical procedure is illustrated step-by-step in Figure 2 and it is performed under 2- and 3-dimensional transesophageal echocardiography guidance.

We present the first TOP-MINI procedure in a symptomatic 58-year-old patient with reappearance of severe mitral regurgitation 4 years after conventional mitral valve repair with an annuloplasty band and implantation of 2 neochordae to treat a posterior mitral leaflet flail at P2 segment (Figures 3A and 3B, videos 1 and 2 of the supplementary material). The patient was enrolled in our institutional prospective registry approved by the local Ethics committee. The patient signed informed consent.

A successful TOP-MINI procedure was performed with 5 Neochords implanted on the posterior mitral leaflet (Figures 3C-3F, videos 3 and 4 of the supplementary material). The patient was discharged home after 5 postoperative days.

At 6 months, the patient was asymptomatic and transthoracic echocardiography showed the absence of any residual mitral regurgitation (Figures 3G-3H, videos 5 and 6 of the supplementary material).

The TOP-MINI procedure is approved in Europe for patients with degenerative mitral valve disease independently of their risk profile. We proposed this therapeutic option because, in our experience, it is associated with extremely low complication rates and high success rates in patients with posterior mitral leaflet disease limited to P2 segment. In this specific case, the presence of a previously implanted annuloplasty band also provided an extra support for the repair by diminishing the stress on the repaired leaflet and possibly increasing durability.

CONFLICTS OF INTEREST

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SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found in the online version available at doi:10.1016/j.rec.2015.09.020.

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