

IMAGES IN INTERVENTION

Technical Aspects for Transcatheter Aortic Valve Replacement With the Novel Balloon-Expandable Myval Octacor



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A 83-year-old man with symptomatic, severe aortic valve stenosis was referred for TAVR. Preprocedural multislice computed tomography (MSCT) revealed a trileaflet aortic valve with severe calcification (Figure 1A). A 29-mm, new generation balloon-expandable Myval Octacor transcatheter heart valve (THV) (Meril Life Sciences) was selected (9.4% oversize at nominal volume based on the 604.5 mm² area assessed at the annulus level) (Figure 1B). Compared with the first-generation Myval and SAPIEN 3 (Edwards Lifesciences), Octacor has a 2-row octagonal cell design (instead of a 3-row hybrid honeycomb hexagonal cell geometry) with open cells at the outflow zone to preserve coronary flow and closed cells at the inflow zone to minimize paravalvular leak (PVL). Moreover, Octacor has a higher external PET (as compared to first generation Myval THV) pencil skirt to plug microchannels and further reduce PVL (Figures 1C and 1D). This new design may facilitate uniformity of THV's frames expansion while ensuring a precise deployment because of a lower frame foreshortening (19% to 20% vs 21% to 24% of the first-generation Myval). In addition, Octacor can be oriented during crimping (Octalign technique), according to the specific patient's anatomy (assessed by CT scan), to lower the risk of commissural misalignment.¹

Based on this, 1 of the Octacor posts was aligned to 03:02 o'clock (corresponding to the center of the right

coronary cusp, which is the ideal point of origin of the right coronary artery) through the iris opening and "CrocoDial" compass of the crimper, then was crimped over the balloon (Figure 1E). The Navigator Inception delivery system (Meril Life Sciences) was uploaded within a 14-F sheath (Figure 1F) and advanced over a preshaped stiff guidewire placed in the left ventricle. Because of the 180° rotation of the THV in the human body during TAVR, Octacor's post should land in the opposite direction of the ostium of the right coronary artery, meaning at the commissure site.

To obtain a "high" implantation, the mid radiopaque positioning marker on the delivery catheter was aligned at the level of the annular plane, as depicted by the bottom of the pigtail catheter placed in the noncoronary cusp (Figure 1G). Direct Octacor deployment was performed under rapid pacing. Due to the limited foreshortening of the THV frame, the ventricular end of the Octacor landed at the level of the annular plane ("ground 0" implantation) with the leaflets standing in a "supra-annular" fashion (Figure 1H, Video 1). No PVL or significant conduction abnormalities occurred. Post-TAVR CT assessment revealed optimal commissural alignment with a 5° mean difference angle of distance to the native commissures according to the definition of commissural misalignment (Figures 1I and 1J).²

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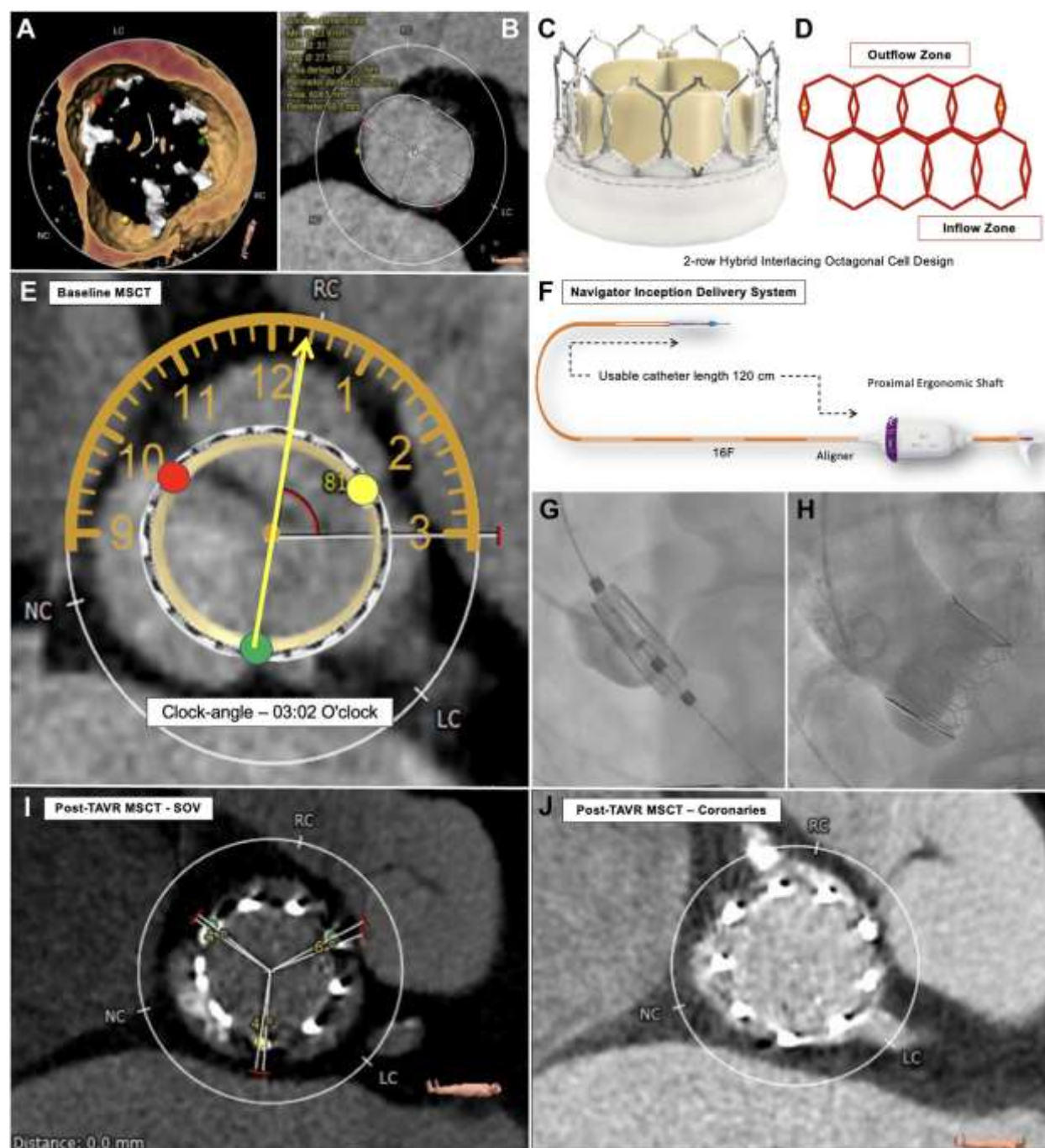
The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

Manuscript received October 18, 2023; accepted November 7, 2023.

ISSN 1936-8798/\$36.00

<https://doi.org/10.1016/j.jcin.2023.11.011>

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FIGURE 1 Preprocedural, Intraprocedural, and Postprocedural Aspects Related to TAVR With Myval Octacor

(A) Baseline multislice computed tomography (MSCT) 3-dimensional reconstruction of tricuspid aortic valve; (B) tracking measures at the annulus level; (C) Octacor with its internal skirt plus external PET pencil skirt; (D) 2-row interlacing octagonal cells design; (E) cross-sectional MSCT image with clockface superimposed; (F) Navigator Inception delivery system; (G) delivery catheter radiopaque marker aligned to the annular plane; (H) transcatheter heart valve frames precisely landed at "ground zero"; (I) post-transcatheter aortic valve replacement (TAVR) MSCT commissural alignment; (J) post-TAVR MSCT coronaries assessment. LC ¼ left coronary cusp; NC ¼ noncoronary cusp; RC ¼ right coronary cusp.

FUNDING SUPPORT AND AUTHOR DISCLOSURES


The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

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KEY WORDS aortic stenosis, commissural alignment, foreshortening, Octacor, TAVR

 **APPENDIX** For a supplemental video, please see the online version of this paper.