

IMAGES IN INTERVENTION

# Balloon Valvuloplasty for Evolut R Infolding

## Useful Transesophageal Echocardiographic Monitoring for Diagnosis and Efficacy



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An 89-year-old man with symptomatic severe aortic stenosis underwent 29-mm Evolut R (Medtronic, Minneapolis, Minnesota) implantation under general anesthesia. During the procedure, the Evolut R was deployed using the left subclavian artery approach. However, systemic hypotension persisted. Intraoperative transesophageal echocardiography using the EPIQ7/X8-2t system (Philips Medical Systems, Andover, Massachusetts) instantaneously revealed infolding distortion (Figure 1A) with large proximal flow convergence at the distortion point (Figure 1B), leading to massive paravalvular leakage. Fluoroscopy when changed from the perpendicular to the right anterior oblique view demonstrated infolding distortion extending in the longitudinal direction to the end of skirt (Figure 1C). Subsequently, the heart team performed balloon valvuloplasty using a 20-mm Z-MED balloon (B. Braun Medical, Bethlehem, Pennsylvania)

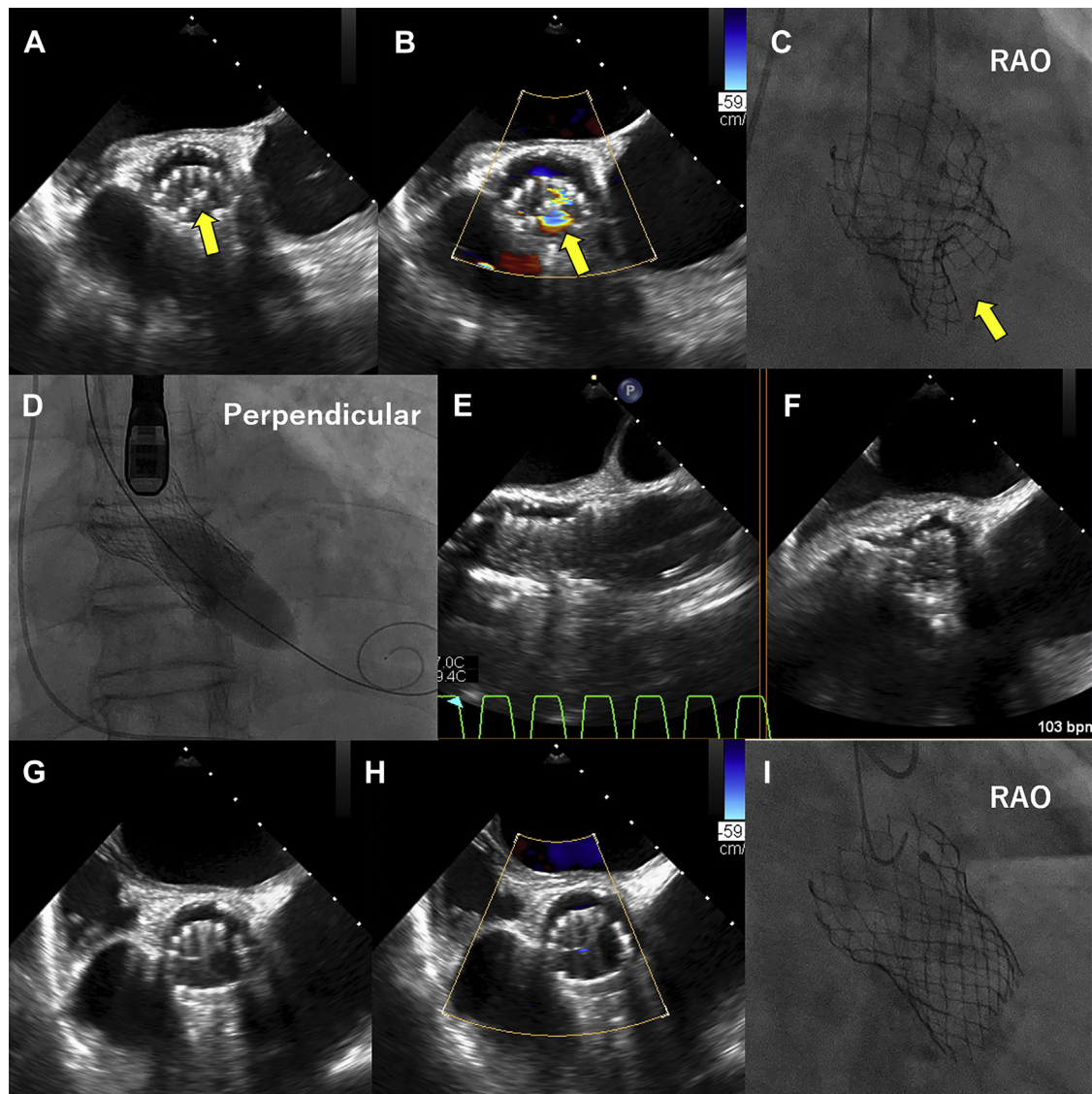
(Figures 1D to 1F, Online Videos 1 and 2), which transformed the infolding distortion into the normal round shape, with reduced proximal flow convergence and no paravalvular leakage (Figures 1G to 1I). Thereafter, the patient's hypotension normalized.

Some cases have reported CoreValve infolding (1,2), but there are no reports of Evolut R infolding. Transesophageal echocardiography can instantaneously diagnose infolding distortion with valve dysfunction compared with fluoroscopy in the right anterior oblique view. The efficacy of balloon valvuloplasty was also evidenced.

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**FIGURE 1** Evolut R Infolding Before and After BAV on TEE and Fluoroscopy

Short-axis transesophageal echocardiographic (TEE) image obtained intraoperatively after Evolut R deployment, showing Evolut R infolding (**arrow, A**) with large proximal flow convergence at the distortion point (**arrow, B**). (**C**) Fluoroscopic right anterior oblique (RAO) view showing Evolut R infolding (**arrow**). Balloon inflation during post-balloon valvuloplasty (BAV) with a fluoroscope in the perpendicular view (**D**) and TEE long-axis (**E**) and short-axis (**F**) views ([Online Videos 1 and 2](#)). TEE images after BAV; the infolding distortion was transformed to the appropriate round shape, with normal valve motion (**G**) and reduced proximal flow convergence (**H**). Fluoroscopy in the RAO view also shows fixed infolding distortion (**I**).

## REFERENCES

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**KEY WORDS** balloon valvuloplasty, Evolut R, infolding, transesophageal echocardiography