A 63-year-old man presented with dyspnea on exertion and syncopal episodes. Transesophageal echocardiography (TOE) confirmed severe aortic stenosis (peak gradient 98 mm Hg; valve area 0.4 cm²; aortic annulus 23 mm). Severe respiratory disease precluded cardiac surgery.

A 29-mm CoreValve implantation (Medtronic, Minneapolis, Minnesota) with prior valvuloplasty (23-mm Crystal balloon, BALT, Montmorency, France) was performed with transfemoral access under local anesthetic. Inspection of the loaded valve on the delivery catheter suggested that the struts at the outflow portion of the loaded valve were very close together and potentially overlapping, but suitable for deployment.

A 4-mm depth of frame implant below the native annulus was achieved, but the frame was constrained. After full deployment, it was very difficult to detach the frame from the delivery catheter without considerable manipulation, and 1 of the frame hooks appeared twisted. Fluoroscopy also showed a dark radiopaque line running from the top of the frame all the way to the inflow portion where it appeared to have folded on top of itself.

An aortogram showed severe paravalvular aortic regurgitation (AR). Under careful fluoroscopic and TOE guidance, the valve was crossed retrogradely. The inflow and valve sections of the frame were post-dilated (25-mm Crystal balloon), which partially improved the frame expansion and reduced the severity of AR.

A computed tomography scan showed extensive distortion and crimping along the valve’s longitudinal axis (Figs. 1 to 5).

Transthoracic echocardiography at day 5 confirmed moderate paravalvular AR. No further valve intervention is planned.
Conclusions

The valve distortion is thought likely to be due to a fold generated on the inflow end of the valve during loading onto the delivery system. This can be due to nonconcentric loading or uneven crimping of the inflow end of the valve into the inflow cone. The fold typically resolves during deployment but may persist if deployed into an annulus with a high degree of constraint (e.g., small annulus, high ellipticity of the annulus, high degree of calcification, no pre-dilation, bicuspid native valve).

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