Rikki-Tikki-Tavi for aortic regurgitation

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Readers of this issue of the *Journal* will find interest in this article from Luo and colleagues¹ about transapical transcatheter aortic valve insertion with a new second-generation transcatheter valve insertion system, the J-Valve system (JC Medical, Inc). Luo and colleagues¹ present standard outcome measures that are of interest (and somewhat concerning), but it is the use of the valve in the setting of aortic valve regurgitation that is most intriguing to me.

In this study, 21 patients underwent transapical transcatheter aortic valve insertion with the J-Valve system. Procedural success was obtained in 91% of patients and was defined according to Valve Academic Research Consortium 2 (VARC-2) criteria, which included absence of procedural mortality, correct positioning of a single prosthetic heart valve, and intended performance of the prosthetic heart valve (eg, mean aortic valve gradient <20 mm Hg).¹ Similar procedural success rates have been reported for other second-generation valves, such as the Engager (Medtronic, Minneapolis, Minn) valve (94%) and the JenaValve (JenaValve Technology Inc, Irvine, Calif) valve (90%).^{2,3}

The combined clinical efficacy of the J-Valve after 12 months was 76%, which is again similar to that reported for the JenaValve (81%).⁴ In the study of Luo and colleagues,¹ reduced efficacy was mostly driven by findings from 5 patients who had mean aortic valve gradients of more than 20 mm Hg, which is concerning. It should also be noted that the median aortic valve gradient across the J-Valve increased during follow-up, from 12 mm Hg postoperatively to 15 mm Hg at 6 months and finally to 17 mm Hg at 12 months. Such an increase has not been reported with the JenaValve, for which the mean aortic valve gradient remained relatively stable from postoperative to 12 months of follow-up (14.1-14.8 mm Hg).⁴

My main interest in this study relates to the 4 patients with pure or dominant aortic valve regurgitation who underwent J-Valve insertion. In this group of patients, procedural success was 100% (no valve-in-valve insertions for residual aortic regurgitation), and echocardiography at 12 months of follow-up demonstrated no valvular or paravalvular regurgitation. These outcomes are excellent and should be compared with those reported by Roy and colleagues⁵ in

Rikki-Tikki-Tavi and the cobra.

Central Message

The J-Valve appears effective in treating pure or dominant aortic valve regurgitation. Increasing mean aortic valve gradients were noted during follow-up, however, and further study is warranted.

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41 patients who received the CoreValve (Medtronic) for native aortic valve regurgitation. In the CoreValve study, procedural success was only 74%, with 19% of the patients receiving valve-in-valve insertion for residual aortic regurgitation.

Why do I associate the J-Valve with Rikki-Tikki-Tavi, a short story by Rudyard Kipling (from *The Jungle Book*)? Rikki-Tikki is a valiant mongoose (the transcatheter valve) who fights Nag the cobra (aortic stenosis) in the classic mongoose-cobra battle (valve insertion for aortic valve stenosis). It is the unconventional fight, however, between Rikki-Tikki and Nagaina in the cobra's den (valve insertion for aortic valve regurgitation) for which Rikki-Tikki's true greatness is celebrated, for "very few mongooses, however wise and old they may be, care to follow a cobra into its hole."⁶ Notwithstanding the allegory, further study is warranted.

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