

Commentary: Looking for support for the MitraClip



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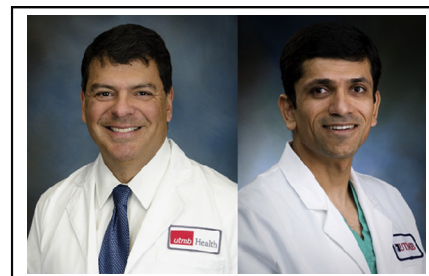
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Treatment options for degenerative mitral regurgitation have evolved from medical management to valve replacement to mitral valve repair, with each step of the way associated with improvement in patient outcomes.¹ In 1991, Alfieri's group² began repairing the mitral valve with a novel edge-to-edge technique. Their description of 35 (out of 299) repairs in which they used this technique had early positive results, especially when the prolapsing leaflet was the anterior leaflet and an annuloplasty ring was used.² Increasing experience suggested an expanded role for this technique, such as bileaflet prolapse (Barlow syndrome) and in the setting of significant posterior annular calcification.³ This surgical technique seemed ripe for translation into a percutaneous approach, with the caveat that a transcatheter technique of stabilizing the annulus in conjunction with the mitral repair would make sense.⁴

The MitraClip System (Abbott Vascular, Santa Clara, Calif) is one such platform for transcatheter edge-to-edge repair in the management of high-risk or inoperable patients with symptomatic degenerative mitral regurgitation. The EVEREST II (Endovascular Valve Edge-to-Edge Repair Study) trial compared MitraClip versus conventional mitral valve surgery and found a significant need for surgery for mitral valve dysfunction in the MitraClip arm at 1 year (20.4% vs 2.2%; $P < .001$).⁵ Another review of the EVEREST II data suggested that anterior leaflet pathology was strongly associated with the subsequent need for mitral valve replacement after the index procedure,⁶ a finding seemingly at odds with the earlier observation of the Alfieri group.² Nevertheless, the Milan group clearly showed an advantage of MitraClip in high-risk or elderly patients, with low operative mortality (2%), freedom from mitral regurgitation of at least 3+ of $80\% \pm 7\%$ at 1 year, and significant improvements in quality of life and 6-minute walk test performance.⁷ Expanding the clinical indications for MitraClip includes considering functional MR⁸ and lowering the risk profile of patients considered.⁹ The former is being addressed by the Cardiovascular Outcomes Assessment of the MitraClip Percutaneous Therapy for Heart



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Central Message

Edge-to-edge repair has a role in the management of degenerative mitral regurgitation especially in the elderly. Limitations to expansion include recurrent mitral regurgitation greater than 3+.

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Failure Patients with Functional Mitral Regurgitation (COAPT) trial.

In this issue of the *Journal*, Buzzatti and colleagues⁹ address the latter. In considering elderly patients outside the high-risk or inoperable group (Society of Thoracic Surgeons predicted risk of mortality $<8\%$), they find that in the first year after the index procedure, patients receiving MitraClip have a benefit in survival, but this benefit has disappeared by the 5-year mark. A significant contribution to the long-term outcomes is the presence of recurrent MR of at least 3+ in MitraClip patients relative to surgical patients. In this study, the 5-year estimate for MR of at least 3+ was 36.9% for MitraClip, compared with 3.9% in the surgical arm.⁹ This compares with the rates of 12.3% and 1.8% seen in EVEREST II,¹⁰ with the caveat that the EVEREST II patients were younger. Nevertheless, for the elderly patient at low or moderate risk, the 1-year results may be sufficient to advocate for the transcatheter approach. What would not be prudent at this time would be to suggest expansion of the technology to the younger low- to moderate-risk cohort. At least not until the original bug in the system is addressed: How do you support the annulus when performing a transcatheter edge-to-edge repair? Until this is accomplished, recurrent MR of at least 3+ will continue to be a problem.

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