

The authors reported no conflicts of interest.

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mitral valve surgeons should be expected to successfully repair both anterior and posterior leaflet pathology, but the same expectation should not be applied to less experienced surgeons.

We believe that a conservative and safe interpretation of such highly contextualized reports is that the safety of anterior mitral leaflet repair is conditional to the surgeon's and the center's expertise. Variable performance across centers and volume as a useful surrogate have been demonstrated for a long time in cardiac surgery,² specifically including mitral valve repair.³ If one desires to generalize the outcome of a report from an expert center, we must make active efforts toward case regionalization. This is all the more pertinent in mitral valve pathology where the vast majority of the US population lives within a reasonable distance from a referral center and regionalization may be feasible.⁴

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REPLY: NO SECRETS WITH THE ANTERIOR MITRAL LEAFLET

Reply to the Editor:

Mitral valve repair is the procedure of choice in patients with severe mitral regurgitation caused by degenerative mitral valve

disease. Although resection and creation of artificial chordae provide generally equivalent results in those with posterior leaflet prolapse,¹ this dictum does not hold for anterior leaflet prolapse. Like Drs Lawrie² and Bolling,³ virtually all experienced surgeons rely on artificial chordae (with an annuloplasty) to correct anterior leaflet prolapse.^{3,4} Other approaches to the anterior leaflet have important drawbacks. Anterior leaflet resection is almost never appropriate, as this approach reduces the surface area of the anterior leaflet and diminishes the probability of creating a competent, non-stenotic mitral valve. Chordal transfer generally requires detachment and transposition of a portion of the posterior leaflet, an unnecessarily complex procedure. Finally, the edge-to-edge technique can leave patients with some degree of mitral stenosis.

When creating artificial chordae, certain principles apply. Chordae should not cross the valve's midline in their path from the papillary muscle head to the free edge of the leaflet. We generally recommend affixing the chordae to a posterior papillary muscle head, as this moves the point of coaptation away from the left ventricular outflow tract and reduces the risk of systolic anterior motion. Many patients with isolated anterior leaflet prolapse have a small and restricted posterior leaflet; in such patients, we favor a complete annuloplasty ring that is undersized by 1 or 2 sizes to create enough posterior support for the coaptation. Finally, great care must be taken to ensure proper chordal length. If premeasured loops are employed, chordal length is based on the length of a normal chord to an adjacent region of the anterior leaflet. If free-hand chordae are created, it is useful to judge chordal length by considering a reference point that is not diseased; the P1-A1 region often suffices in this regard.

By following these principles, the surgeon can virtually always achieve an excellent mitral valve repair in the patient with anterior leaflet prolapse.

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Dr Gillinov reported consultant to Edwards Lifesciences, Medtronic, CryoLife, Abbott, Johnson & Johnson, and ClearFlow. Dr Wierup reported consultant to Edwards Lifesciences, Medtronic, and CryoLife. Dr Burns reported consultant to Medtronic.

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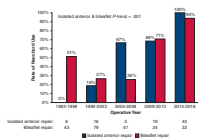
in response to our series comparing outcomes between propensity-matched patients undergoing degenerative anterior and posterior mitral repair over a 27-year period.²

We congratulate Dr Lawrie for his practice’s impressive series using neochordal techniques for 301 anterior and 451 posterior leaflet repairs, with no differences in recurrent mitral regurgitation, reoperation, or survival.³ Our current approach to anterior leaflet repairs is similar in using at least 2 polytetrafluoroethylene neochords with a semi-rigid partial ring annuloplasty, whereas we typically approach posterior leaflet disease with neochords and/or resection in conjunction with annuloplasty. Also mirroring Dr Lawrie and his colleagues, our use of neochords for anterior repair increased significantly over the study period (P trend $<.001$; Figure 1). Over the past decade, we have used neochords for every isolated anterior repair except one in 2013 (52/53, 98%), in which annular reefing and anterior leaflet debridement was performed.

We first used neochords in 1994 and have continued to use them in addition to Carpentier techniques, depending on valvular anatomy and pathology. Most importantly, success in all types of mitral valve repair (isolated anterior, bileaflet, and isolated posterior) is driven by the avoidance of residual and recurrent mitral regurgitation. These favorable outcomes by Dr Lawrie³ and others^{4,5} further reinforce our data that isolated anterior, bileaflet, and isolated posterior repair should be aggressively pursued over replacement for degenerative mitral disease.

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REPLY: EXCELLENT AND EQUAL OUTCOMES FOR ANTERIOR AND POSTERIOR LEAFLET MITRAL REPAIRS ARE EQUALLY



ACHIEVABLE... IF YOU EQUALLY ELIMINATE MR

Reply to the Editor:

We appreciate the comments¹ by Dr Lawrie regarding his experience with anterior leaflet mitral valve repair,

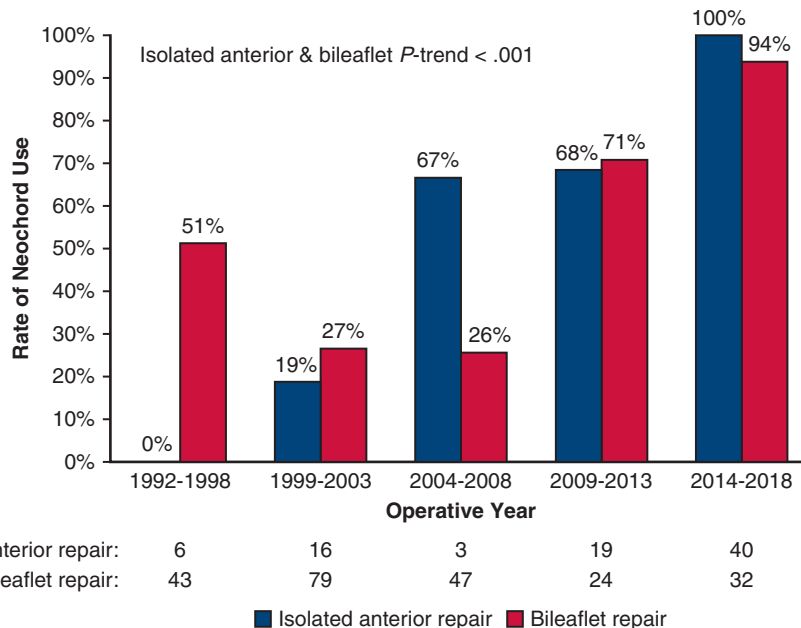


FIGURE 1. Trends in neochord use for isolated anterior (blue) and bileaflet (red) mitral repair over time. Number of each repair type is shown below the column graph. The Cochran–Armitage test of trend was used to separately evaluate isolated anterior and bileaflet repair.