

## Commentary: The mitral repair tool kit



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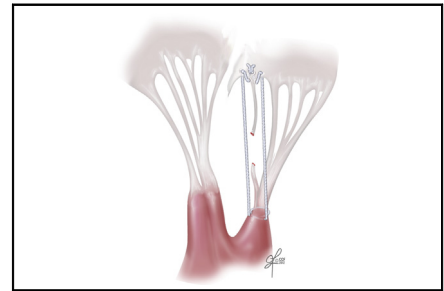
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When considering mitral valve repair for degenerative disease, surgeons often frame the procedure as a series of simple, binary choices: repair versus replace, ring versus band, robotic versus sternotomy, respect versus resect. Given our penchant for creating dichotomies in the field of mitral valve repair, surgeons may look to the article in this issue of the *Journal* by David and colleagues<sup>1</sup> to determine whether it declares a clear winner in the debate of respect (artificial chordae) versus resect (leaflet resection) in repair of the degenerative valve. Seeking a definitive answer to the question of which approach is better, the reader might be surprised to find that David supports both approaches. In fact, his excellent outcomes are attributable to the combination of his surgical skill and excellent judgment in choosing appropriate repair techniques for each valve.

In this article, David and colleagues<sup>1</sup> reports the long-term results of mitral valve repair in 746 patients with degenerative disease. The patients spanned the spectrum of degenerative disease, with the majority having bileaflet prolapse and many having advanced degeneration. Given the variety of lesions, it should not be surprising that repair techniques varied. Of the patients, 75% had a combination of chordal replacement and leaflet resection, whereas only 25% had chordal replacement alone. Of note, patients with “large, voluminous posterior leaflets with prolapse” had both partial resection to reduce leaflet height and chordal placement to correct persistent prolapse. David notes that chordal replacement has extended his ability to offer valve repair to those with complex valvar pathology and multisegment prolapse.

We agree that chordal replacement facilitates mitral valve repair. The 2 most common techniques for chordal replacement are (1) premeasured chordal loops and (2) freehand chordae. Both work well. David describes his



Artificial chordae to correct leaflet prolapse.

### Central Message

Mitral valve repair often requires more than a single repair technique.

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technique for creation of freehand chordae; he creates several chords with a single expanded polytetrafluoroethylene suture. We favor the use of 2 to 5 separate sutures, creating 2 chordae with each suture. Surgeons' most common concern with chordal replacement is determination of chordal length. Premeasured chordal loops facilitate chordal measurement, whereas creation of freehand chordae entails “eyeballing” to determine the chordal length. In general, anterior leaflet chordae will be longer than posterior leaflet chordae. When constructing freehand chordae in the arrested heart, we find that anterior leaflet chordae generally appear to be longer than anticipated, whereas posterior leaflet chordae appear shorter. If systolic anterior motion is an important concern, posterior leaflet chordae should be constructed so that they are intentionally short and thus restrict the posterior leaflet.

Mitral valve repair is feasible in nearly all patients with degenerative disease, and experienced surgeons recognize that successful repair frequently requires a combination of techniques. The correct answer to the question, “Resect or respect?” is therefore often “Both.”

### Reference

1. David TE, David CM, Lafreniere-Roula M, Manlhiot C. Long-term outcomes of chordal replacement with expanded polytetrafluoroethylene sutures to repair mitral leaflet prolapse. *J Thorac Cardiovasc Surg*. 2020;160:385-94.e1.