References

1. Varghese R, Anyanwu AC, Itagaki S, Milla F, Castillo J, Adams DH. Management of systolic anterior motion after mitral valve repair: an algorithm. *J Thorac Cardiovasc Surg.* 2012;143(4 Suppl): S2-7.
2. Kassem S, Jamil H. Papillary muscle-to-anterior annulus stitches: another technique to prevent systolic anterior motion after mitral valve repair. *J Thorac Cardiovasc Surg.* 2011;142:1278-81.
3. Kassem S, Othman M, Polvani G. Paradoxical artificial chords: new technique to prevent systolic anterior motion post mitral valve reconstructions. *J Clin Exp Cardiol.* 2011. S3:002. doi:10.4172/2155-9880.S3-002.

<http://dx.doi.org/10.1016/j.jtcvs.2012.11.088>

Reply to the Editor:

Kassem and Jamil¹ describe 2 approaches for addressing systolic anterior motion (SAM) after mitral valve repair (MVRr). In the first approach they describe an artificial chord from a papillary muscle to the anterior annulus on the ventricular side of the anterior leaflet. The chord serves to stop the migration of excess anterior leaflet into the outflow tract.

The second technique involves placing a diagonal artificial chord from the posterior annulus (anchored into the annuloplasty ring) around the A2 segment of the anterior leaflet between the 5 and 7 o'clock positions. Again this presumably restricts migration of the anterior leaflet into the outflow tract.

My aim in addressing postrepair SAM is to provide a relatively quick, safe, and effective option without affecting coaptation depth and hence long-term repair durability. If significant SAM persists after discontinuation of cardiopulmonary bypass, when possible the treatment should be a relatively quick option to minimize the duration of the additional myocardial ischemic time.²

In theory the methods described by Kassem and Jamil¹ intuitively make sense. However, I have a few concerns:

1. Aside from personal experience, the authors do not provide objective evidence that the measure-

ments they advocate for assessing SAM risk are indeed risk factors for SAM.

2. Placement of the papillary muscle to the anterior annulus artificial chord is often difficult and unlikely to be routinely possible. Furthermore, the difficulty in placing this suture may lead to inadvertent crossing of the artificial chord over normal native chordae, hence affecting chord function. The authors explain that in cases when this is not possible, the diagonal artificial chord option should be considered.
3. The diagonal chord is held in place under the anterior leaflet and may come in contact with native chordae. I would be concerned for constant friction between the artificial chord and well-functioning native primary and secondary chordae and the possible risk for rupture this presents over the long term. I have observed chord rupture with friction between 2 artificial chordae.
4. It is theoretically possible that an excessively short diagonal chord may lead to valve restriction during diastole.

Clear evidence exists that a short coaptation-septal distance and posterior leaflet height greater than 15 mm indeed increases the risk for SAM. Hence, my preference for effectively shortening the posterior leaflet with 1 artificial chord rather quickly addresses both of these risk factors without affecting coaptation depth. I applaud the authors for their novel techniques in addressing SAM and providing additional options to the surgeon.

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References

1. Kassem S, Jamil H. Papillary muscle-to-anterior annulus stitches: another technique to preventing systolic anterior motion after mitral valve repair. *J Thorac Cardiovasc Surg.* 2011;142:1278-81.

2. Varghese R, Anyanwu AC, Itagaki S, Milla F, Castillo J, Adams DH. Management of systolic anterior motion after mitral valve repair: an algorithm. *J Thorac Cardiovasc Surg.* 2012;143(Suppl):S2-7.

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MORE INFORMATION ABOUT THE PATTERN OF LYMPHATIC SPREAD COULD IMPROVE THE EFFECTIVENESS OF SURGERY FOR ESOPHAGEAL CANCER **To the Editor:**

We read with interest the article by Li and colleagues¹ recently published in the *Journal*. They investigated the distribution of lymph node metastasis in thoracic esophageal squamous cell carcinoma. This is an important topic because several articles have shown the relation between nodal involvement and worse prognosis of these patients.^{2,3}

To achieve a homogeneous sample, the authors included in the analysis only patients who underwent R0 resection without neoadjuvant therapy, which could modify nodal metastasis pattern.⁴

The authors found paratracheal lymph nodes as the most frequently involved (15.9%), followed by middle paraesophageal (14%), paracardial (11.2%), and lower paraesophageal (11%) lymph nodes.

In our previously published article,⁴ we found paraesophageal lymph nodes as the most frequently involved (31.9%) in a similar subsample (patients who underwent R0 resection for thoracic esophageal squamous cell carcinoma without neoadjuvant therapy), followed by paracardial (19.8%), perigastric (16.4%), and subcarinal (11.2%) lymph nodes.

Despite small differences in percentages (perhaps due to more superficial esophageal cancer presented by Li and colleagues), the results of both articles^{1,4} suggest that a map of the distribution of nodal metastasis might provide useful information to plan the operative technique and adequate