accomplished via suture or graft-based techniques⁴ (Table 1). Combining annuloplasty with a papillary muscle intervention may support: (1) a reduction in septal-lateral annular dilatation; (2) movement of the anterolateral papillary muscle closer to the annulus; (3) correction of the lateral displacement and apical restriction of the posterior papillary muscle; and (4) alleviation of chordal tethering forces, which affect the balancing forces necessary for proper leaflet closure and competence.^{2,3} Furthermore, supporting the subvalvular apparatus by targeting the papillary muscles allows for consideration of a true-sized ring placement for annular support, which may help avoid the untoward effects of augmented posterior leaflet tethering, and functional mitral stenosis, that can occur with restrictive annuloplasty.⁵

Addressing the mechanisms underlying ischemic mitral regurgitation is critical to applying the optimal surgical strategy. Although combined annuloplasty and papillary muscle interventions targeting the annular and subvalvular distortions present in ischemic mitral regurgitation are promising, the reported data are from small, single-center, retrospective or observational studies. Multicenter registries and future randomized trials are warranted to define the durability of these procedures.

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<http://dx.doi.org/10.1016/j.jtcvs.2015.03.011>

WE NEED A BETTER WAY TO REPAIR ISCHEMIC MITRAL REGURGITATION

Reply to the Editor:

We very much appreciate the interest of Mihos and Santana in our study, “Predicting Recurrent Mitral Regurgitation After

Mitral Valve Repair for Severe Mitral Regurgitation.” We developed a model that demonstrates good discrimination in identifying patients with severe ischemic mitral regurgitation (MR) who, with repair, will survive 2 years without moderate or severe MR. We agree with their concept of a pathophysiologically guided approach to surgical mitral valve repair, including the use of various papillary muscle interventions possibly to improve the durability of reduction annuloplasty repair for ischemic MR. Although there have been individual reports of subvalvular approaches to mitral repair in this setting, these have not been subjected to large scale trials across multiple centers. We agree that additional work is needed to ensure adequate and durable correction of severe ischemic MR with repair techniques tailored to the anatomy and physiology of individual patients. We have a limited but improving understanding of why and when MR recurs after repair for severe ischemic MR. Patients who have the appropriate preoperative pathophysiology would serve as the best subjects for new repair techniques that can be rigorously tested in a randomized fashion.

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ORIENTATION OF BILEAFLET MECHANICAL AORTIC VALVE PROSTHESES FOR OPTIMAL EVALUATION BY TRANSTHORACIC ECHOCARDIOGRAPHY

To the Editor:

Transthoracic echocardiography remains the first step in the noninvasive assessment of prosthetic valve function. Adequate visualization of leaflet mobility and surrounding structures are essential parts of the routine echocardiographic evaluation of prosthetic valves. Many prosthetic components, however, particularly those of mechanical valves, do not transmit ultrasound and generate artifacts