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Letter to the Editor

Mitral regurgitation: many reasons, multiple myocardial conditions, and several surgical options

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We read the article "Cardiomyopathy in young adults with classic mitral valve prolapsed" by Malev et al[1] with great interest. In this study, they revealed that the left ventricular global strain was reduced in classic mitral valve prolapse patient group compared with those in healthy and non-classic mitral valve prolapse patient groups. Furthermore, as profibrotic cytokines, transforming growth factor-β1 and -β2 levels of the classic mitral valve prolapse group were found to be higher compared with the control groups.

With its prevalence of 2–3%, mitral valve prolapse is the most common reason for mitral regurgitation requiring surgical intervention.[2] Degenerative valvular disease, rheumatic heart disease, dilated cardiomyopathy, coronary artery disease, and mitral valve prolapse may cause mitral regurgitation.[3] Mitral valve prolapse is divided into two histological phenotypes, including diffuse myxomatous degeneration and fibroelastic deficiency.[2] There are differences between these subgroups in terms of both morphological features and clinical course. Myxomatous degeneration is usually diagnosed at a young age, and the requirement of surgery for mitral regurgitation occurs during the middle ages. In fibroelastic deficiency, patients generally present at an older age with acute or sub-acute mitral regurgitation resulting from chordal rupture. This diversity in the reasons for mitral regurgitation may lead to discrepancies in the myocardial conditions, independent of the severity of mitral regurgitation. In the guidelines, under the title of primary mitral regurgitation, all types of mitral regurgitation – namely, rheumatic, degenerative, Barlow's disease, and fibroelastic deficiency – are mentioned;[3] however, clinical courses of patients with different mitral regurgitation aetiopathogenesis are not similar. Owing to the differences in patients' age, left ventricular systolic functions and structures are not similar in rheumatic and degenerative mitral regurgitation when surgical intervention is required. In addition, the present study has revealed the fact that the myocardium is depressed due to the overproduction of profibrotic cytokines in classic mitral valve prolapse. Furthermore, left ventricular enlargement was also demonstrated in mitral valve prolapse patients. Previously, we also showed in bi-leaflet classic mitral valve prolapse that the left ventricule was enlarged independently from mitral regurgitation.[4] Left ventricular internal diameters determined in our study were higher than those in the present study, due to differences in patient selection criteria. In our study, left ventricular end-diastolic diameters of 50% of the patients with mitral valve prolapse were found to be above the normal limits (⩾57 mm), in spite of the absence of significant mitral regurgitation. Left ventricular internal diameters are essential parameters for the timing of surgical intervention in mitral regurgitation. Moreover, in grading chronic mitral regurgitation, increased left ventricular diameters support the presence of severe mitral regurgitation. Increased left ventricular diameters in classic mitral valve prolapse may lead to overestimation of mitral regurgitation and premature timing for surgical intervention. Therefore, being aware of this phenomenon may affect the decision about the timing of surgery in patients with mitral valve prolapse complicated with mitral regurgitation in clinical practice. The diversity in the clinic of mitral regurgitation is not limited to the discrepancies of the myocardial condition. On the other hand, surgical options also vary according to the aethiopathogenesis of mitral regurgitation and related morphological features of the mitral apparatus.[3] In recent years, mitral valve repair operations have become an important alternative to valve-replacement surgery. The experience of the centres is extremely important in surgical repair.

Therefore, in studies aiming to determine the optimal timing and treatment of mitral regurgitation, it may be reasonable to seek clear answers to net questions creating more specific study groups among patients with mitral regurgitation.

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