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Perspective

The Epidemiological Role of Mitral Valve Regurgitation

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DESCRIPTION

Understanding the structure of the mitral valve and the changes caused by intrinsic valvular abnormalities or other heart disorders is still developing. We can now see and measure the mitral valve in three dimensions because to developments in cardiac imaging. Understanding the patho-morphological mitral annulus, leaflet, and left ventricular myocardial alterations that result from myxomatous mitral valve disease has improved in particular. Furthermore, during percutaneous procedures, there has been a deeper understanding of the relevance of mitral clefts and cleft-like indentations.

It is widely known from three-dimensional echocardiography that the typical mitral annulus has a saddle-like form and that this shape dynamically varies during the cardiac cycle. Pathologies such as myxomatous mitral valve disease and ischemic cardiomyopathies have been linked to changes in mitral annulus size and function. The mitral annulus dilates in both directions in patients with myxomatous mitral valve disease. Although it keeps its dynamic variations throughout the cardiac cycle, it loses its regurgitation-prevention function due to the decoupling of annular and ventricular contraction 10. In patients with ischemic cardiomyopathies, the mitral annulus only enlarges in the anteroposterior direction and remains adynamic throughout the cardiac cycle. Recent advances have increased our understanding that mitral annulus remodelling differs not only between main and secondary mitral regurgitation, but also between primary aetiologies such as Barlow's disease and fibroelastic deficiency.

Epidemiology of mitral regurgitation

Up to 50% of patients with moderate to severe mitral regurgitation who are referred for surgical assessment are reportedly denied surgery, according to studies. When those who have not been referred for intervention are counted, the number of patients who are undertreated is probably larger, and this does not account for the huge number of patients with serious mitral regurgitation who remain undetected. The observed difference between the number of individuals with significant mitral regurgitation in epidemiological studies and the number of isolated mitral valve surgeries performed each year provides one point to the scope of this undertreated population. The fact that isolated and combined aortic valve surgeries (excluding transcatheter procedures) are performed 1.6 times more frequently than mitral valve operations, despite a two- to three-fold higher prevalence of mitral valve disease, lends credence to the notion that mitral valve operations are likely underperformed. However, there are other reasons why people may be denied treatment. These include socioeconomic issues such as limited access to care and treatment, as well as clinical ones such as late referral for intervention and the existence of co-morbidities that exclude intervention.

Patients in affluent countries are often older and have quiescent rheumatic illness at the time of valve surgery, whereas those in developing countries are typically younger and have active, progressive, or recurring rheumatic disease, which would necessitate reoperation. Furthermore, because industrialised nations have the means to comply with mechanical replacement, there aren't many disparities in results between mitral valve repair and replacement. Despite these variations, it has been proposed that mitral valve replacement would be advantageous for both groups. In reality, a different trial found no differences in late mortality or the need for reoperation, and the repair group's risk of complications connected to valves was noticeably reduced.

CONCLUSION

This is despite the lower average age of the repair group, which also had a high prevalence of regurgitation, and the fact that only a few repair cases were performed per year per surgeon.

This is consistent with recent papers reporting that the durability of mitral valve replacement for rheumatic disease has improved and is equivalent to the exceptional durability of repairs for degenerative disease in the current period. Although significant effort has been put towards boosting mitral valve repair in individuals with degenerative mitral valve disease, perhaps the approach should be towards expecting valve repair in all patients if possible.

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