Assessement of mitral valve regurgitation

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Mitral regurgitation (MR) is the second most common valvular lesion seen in adult Caucasians. It may be caused by primary valvular pathologies such as congental heart disease, rheumatic heart disease or mixomatous degeneration and this form of MR is known as organic or primary. Secondary or functional MR is a consequence of ishemic heart disease, dilated cardiomiopathy or severe left atrial dilatation.

Echocardiography as the most widely available cardiac imaging modality is routinely used to assess patients with suspected or known MR. Two-dimensional (2D) transthoracic echocardiography (TTE) is recommended as a first-line imaging modality in valvular regurgitation. On the other hand three-dimensional echocardiography (3D) can provide additional information in patient with complex valve lesions. 2D TEE is indicated when TTE is insuficient or when further diagnostic refinement is required. Furthermore, it has a role in preoperative and intraoperative evaluation when mitral valve surgery is being considered, and is not indicated for routine follow-up.

The mechanism of MR is a very important component of the echocardiographic examination especially when MV repair is required. In theese circumstances the Carpentier 's functional classification which describes leaflet motion in relation to the mitral annular plane is used. Type 1 describes normal leaflet motion, type 2 excessive leaflet motion above the annular plane into the left atrium and type 3 describes leaflet restriction.[1,2]

Severity of mitral regurgitation is based on qualitative, semiqantitative and quantitative assessment. Qualitative assessment includes color flow imaging and continuous wave Doppler signal intensity of MR. Anterograde velocity of mitral inflow (mitral to aortic TVI ratio), systolic flow reversal in pulmonary veins and vena contracta are used in MR semiquantitative assessment. Quantitative assessment which is the most important for grading the severity of MR includes Doppler volumetric method and PISA method.

Transthoracic echocardiography as a useful modality for assessment of mitral valve morphology and severty of MR plays an important role in treatment of patients with mitral valve disease. Newer echocardiographic modalities such as 3D imaging may be valuable diagnostic tool in management of mitral valve disease.

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LITERATURE

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