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The surgical experience of paravalvular leakage after mitral valve replacement

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Aim: Paravalvular leak (PVL) is a common type of nonstructural valve dysfunction that occurs early and late after mitral valve replacement (MVR). The aims of this study were to review the previous studies and introduce our surgical experience regarding mitral PVL.

Methodology & Theoretical Orientation: We reviewed previous studies of mitral PVL regarding etiology, risk factors and surgical results.

Findings: Infective endocarditis, annular calcification and technical error would be associated with occurrence of early PVL. However, the causes of late PVL are not fully understood. The known risk factors of PVL were heavy annular calcification, continuous suture technique, age, male and previous history of MVR. Among them, the only correctable factor was suture technique. When the interrupted suture technique was used for MVR, major mitral PVL-free rate at 10 years was 96.2% (previously reported incidence: 5-17%). In the previous studies, the operative mortality of the first surgery for mitral PVL was around 5-10%. That would be acceptable when considering the high-risk profile of the patients. However, the incidence of recurrent PVL was around 30% during long-term follow-up and the operative mortality for recurrent PVL was very high (35.2%). During the operation for mitral PVL, leak site repair technique, if it could be performed, would be a good surgical option to prevent recurrent PVL compared to re-replacement in our data.

Conclusion & Significance: Surgery has been accepted as a gold standard therapy for PVL with acceptable operative mortality. However, operative mortality of recurrent PVL was around 30%. We must find the appropriate surgical technique to prevent recurrent PVL.

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