Primary mitral regurgitation - echo evaluation

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Case presentation

Valve guidelines

Our patient is a 57 year old woman referred to our clinic for the evaluation of the mitral regurgitation (MR). Since her childhood she was told that she has a murmur, but she was never send to an echo exam. Several months ago she noted dyspnea on exertion. On the physical exam holosystolic murmur was noted at the apex. She was in sinus rhythm. Laboratory values were within normal values.

Transthoracic echocardiogram (TTE) showed normal left ventricle (LV) systolic function. The ejection fraction of the LV was 65%, with no regional wall motion abnormalities, and enlarged left atrium. With 2D TTE a flail leaflet in the region of the prolapsing posterior mitral cusp in the region of the P2 scallop and severe MR was registered. The MR color Doppler jet was excentric toward the interatrial septum. The left ventricle systolic function was preserved. The patient underwent three-dimensional transoesophageal echocardiography to investigate the precise anatomy of the mitral valve complex. The anatomical analysis was done by post-processing prior the reconstruction. During surgery, a rigid ring was implanted and Gerbode plastic of the large P3 segment was performed-which turned out to be the prolapsing scallop with “flail”. Echocardiography is important in assessing mitral valve disease.

Discussion

Our patient has an evidence of flail mitral leaflet and severe consequent MR. According the Carpentier classification the MR was type II. This patient represents one of the most common form of primary MR. “Mitral regurgitation is the second-most frequent indication for valve surgery in Europe.”

“MV surgery is recommended for symptomatic patients with chronic severe primary MR and LVEF greater than 30 %”, what remains current from the previous recommendation.

Reconstruction surgery was an option in this case. Intraoperative 3D TEE usually impacts the outcome of the repair, and provides additional information for the repair strategy. According to the surgeon who performed the reconstruction of the flail leaflet, large P3 was identified- which occupied the majority of the posterior mitral annulus circumferention, and not the P2 scallop as it was previously reported according to the comprehensive echo finding. The flail leaflet corresponded on TTE and TEE with the position of P2, but instead of it, the enlarged P3 scallop was the diseased part of the MV. Annuloplasty of the MV with rigid ring was implanted and Gerbode plastic of the P3 segment was performed. In patients with flail leaflet, an LVESD of 40–44 mm has been reported to predict a worse outcome compared with LVESD <40 mm.

Before dismissal, TTE revealed no residual MR. “Patients with a predictably complex repair should undergo surgery in experienced repair centers with high repair rates, low operative mortality and a record of durable results.”

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Today, there are transcatheter MV interventions widely accepted to correct primary MR. The indications for MV surgery are to be discussed by the heart team before the intervention.

Lessons from the guidelines: “Echocardiography is essential to assess the etiology of MR, as well as valve anatomy and function. An integrative approach is needed to assess the severity of mitral regurgitation. Indication for intervention in primary MR is guided by symptoms and risk stratification that includes the assessment of ventricular function and size, atrial fibrillation, systolic pulmonary pressure and left atrial size. Mitral valve repair is the preferred method, but mitral valve replacement should be considered in patients with unfavorable morphological characteristics.”1,5

References

Sažetak
Savremeno lečenje akutnog infarkta miokarda sa ST elevacijom komplikovanog srčanim zastojem na terenu

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