Acute mitral regurgitation

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Acute mitral regurgitation (MR) is a serious condition leading to acute heart failure and death if not recognized and treated on time. A targeted history and physical examination is important to recognize the new onset MR and its clinical consequences such as pulmonary congestion and cardiogenic shock. Organic causes of acute MR result in structural changes of the valve including leaflet perforation and paravalvular leakage from endocarditis, chordal rupture in myxomatous valvular disease, and papillary muscle rupture due to myocardial infarction (MI). Functional mitral regurgitation results from abnormalities of the left ventricle (LV). Examples are decompensated dilated cardiomyopathy, acute dilatation of the LV seen in Takotsubo, peripartal and toxic cardiomyopathy, but the most common is ischemic MR with multiple mechanisms such as posterior leaflet displacement, LV and annular dilatation, papillary muscle discoordination and impaired closing forces¹. Organic causes frequently require surgical repair or valve replacement; whereas functional causes may improve after the nonsurgical treatment of underlying myocardial ischemia, infarction, or cardiomyopathy. The electrocardiogram is usually nonspecific (except in ischemic MR) and the systolic murmur is often short, low pitched and hidden. Echocardiography is essential in diagnosing and can differentiate the etiology. The severity of the MR can be underestimated due to rapid equalization of left atrial (LA)–LV pressures and inadequate color flow visualization. Medical therapy includes vasodilators (normotensive patients), inotropes (dobutamin and milrinone) and diuretics. Intraaortic balloon pump may be used in cardiogenic shock, but there are promising results with using venoarterial extracorporeal membranous oxygenation (ECMO) as in our case with chordal rupture in 73-year-old patient (**Figure 1**). There are some concerns about pulmonary congestion (white lungs) due to increased afterload produced by ECMO but it can be prevented by short ECMO support (urgent cardiac operation after initial stabilization), avoidance of positive fluid balance and high ECMO flow².

FIGURE 1. Chordal rupture and flail posterior leaflet in 73-year-old woman admitted in emergency department because of acute heart failure (pulmonary edema and cardiogenic shock).

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LITERATURE

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