EDITORIAL

The heart in aortic stenosis: increasing the number of complications

El corazón en la estenosis aórtica: aumentando el número de complicaciones

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With the increase in life expectancy, aortic stenosis (AS) is today one of the most frequent cardiovascular diseases, affecting approximately 5% of the population over 65 years of age. (1) Advances in structural interventional techniques and surgical management have considerably reduced valve replacement morbidity and mortality in previously considered high-risk patients (2), with the consequent progressive expansion of early intervention indication. (3) In asymptomatic patients, a reduction in left ventricular ejection fraction (LVEF) below 50% (4) is currently considered an indication for intervention, based on epidemiological data that show an increase in the incidence of cardiovascular events in patients undergoing conservative treatment. Although it is clearly established that patients with AS and low LVEF present ventricular contractility abnormalities, it is also worth noting that the presence of normal LVEF does not imply the absence of dysfunction, manifested as heart failure, which frequently persists even after valve replacement. Recent echocardiographic studies have demonstrated a reduction in longitudinal strain in patients with severe AS and preserved LVEF. (5) Similarly, late gadolinium-enhanced cardiac magnetic resonance imagining frequently demonstrates focal areas of late enhancement, indicative of fibrosis, whose presence and magnitude are independently associated with prognosis in these patients. (6)

Despite technological progress in non-invasive imaging tests, the evaluation of ventricular contractility in patients with AS represents a challenge in clinical practice. Common noninvasive scores used for ventricular function assessment, such as LVEF and longitudinal strain, are altered by preload and afterload. In AS, afterload evaluation is complex, since it requires including the effect of vascular and valvular resistances, in addition to geometric changes in the left ventricle.

In this issue of the Argentine Journal of Cardiology, Migliore et al. examine in detail 184 patients with severe AS and a control group to determine the prevalence of abnormal contractility in different groups classified according to LVEF. (7) The authors use a series of complex parameters derived from methods that employ non-invasive and widely available technology: M-mode and 2D echocardiography, pulsed and continuous Doppler, carotid Doppler, and blood pressure measurements, which is remarkably valuable. Their results demonstrate what was previously suspected, but could not be determined: 1) In patients with severe AS and reduced LVEF there are both increased afterload and abnormal contractility; 2) In patients with severe AS and low normal EF (50-59%), the level of myocardial contractility is also decreased in 55% of cases; 3) The prevalence of abnormal contractility decreases but still persists in patients with normal or elevated LVEF.

The Vacheron Constantin 57260 model is widely regarded as the most complex watch in the world. It is a mechanical pocket watch that presents 57 complications. Today this watch is priced above US$ 10 million, which is well above the value of its metal components. But, similarly to the masterful work of Migliore, its value is determined by the number of complications.

Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material)

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