In 1982, Kanji Inoue, a Japanese cardiac surgeon, developed the concept that a thickened and deteriorated mitral valve could be widened as a synthetic balloon. This concept was similar to the one used in the surgical closed mitral commissurotomy. Subsequently, the double-balloon technique was introduced in Saudi Arabia as an alternative method to the valvoplasty with Inoue balloon. Nowadays, the Inoue technique became the most used method for the accomplishment of percutaneous mitral valvoplasty. In comparison to the double-balloon technique, it has similar efficacy with the additional benefit of presenting lower peri-procedures risks. If contrasted with the surgical mitral commissurotomy, mitral valvoplasty with balloon shows similar or superior successfull rates, with equivalent restenosis averages. Randomized studies, which compared the mitral valvoplasty with balloon to the surgical closed commissurotomy, have demonstrated that the percutaneous technique overpasses surgery for it results in a larger valve area with a superior duration at long term.

In this edition of the Archives, Cardoseo et al. present the immediate and the latest results of the percutaneous mitral valvoplasty in patients with mitral stenosis, in a series of 330 consecutive patients that were followed during $47 \pm 36$ months, evaluating the factors related to the procedure success, restenosis and the latest adverse clinical events. The authors have concluded that mitral valvoplasty with balloon is an effective procedure, since more than 60% of the patients were free of events at the end of the follow-up. The echocardiographic score below 8 points was the only variable with independent predictive value for immediate success. The multivariate analysis also showed that the pre-procedure mitral valve area and the presence of accentuated mitral calcification were the only independent predictors of post-procedure restenosis. With regard to the occurrence of adverse cardiovascular events, more advanced age; less pre-procedure mitral valve area; and major value of medium transvalve mitral gradient in the immediate post-procedure were considered as independent indicators. It is a highly laudable, observational study because it portrays the results of mitral valvoplasty in an essential number of patients, who were followed during a notable long period. If the procedure’s efficacy had already been established through the randomized studies, its effectiveness in the so called “real world” is now unequivocally documented.

It should be noted that the echocardiographic score performs a central role for the initial and long term success prediction of applicants to the percutaneous mitral valvoplasty. Directly, through the aforesaid score, or individually, by means of one of its components, such as the presence of calcification, the appropriate selection of patients goes through the echocardiographic evaluation of the mitral valve. However, other factors can be determinant for the clinical success, at long term, of patients submitted to percutaneous mitral valvoplasty. The presence of atrial fibrillation, for example, in other studies, appeared to be a marker of adverse clinical outcomes, especially the cerebrovascular in these patients. In conformity, studies prove that the percutaneous mitral valvoplasty with balloon can reduce the occurrence of embolic ischemic cerebral vascular accident in patients with severe mitral stenosis and sinus rhythm.

Although the mitral valve morphology is the most important factor that determines the outcome after the procedure, the percutaneous mitral valvoplasty can be a choice for selected cases in which the anatomical factors are not ideal and that; however, there is a surgical high risk. Asymptomatic patients with severe mitral stenosis can also benefit from mitral valvoplasty, when the valvar anatomy is favorable and presents pulmonary hypertension and/or high risk of thromboembolic events associated with the atrial fibrillation.

It has been 30 years since the description of the technique and publication of the first results of patients submitted to percutaneous mitral valvoplasty. In this period, small technique variations were incorporated, but the method remains essentially unmodified. Percutaneous mitral valvoplasty was shown to be equal or even superior in clinical results when compared to the surgical commissurotomy. The correct preoperative evaluation, by echocardiographic score, is fundamental to the identification of subjects who will present a higher immediate and long term benefit. The results herein presented, which are from the lengthened follow-up of patients with severe mitral stenosis and submitted to the percutaneous mitral valvoplasty, show that this, following the example from other procedures of the Interventionist Cardiology, is a less invasive alternative than the conventional surgery; however, it is really effective for the handling of this disease. Fortunately, the technical advance has allowed medicine to choose for minimally invasive options, with preservation or improvement of the results.
References


