

Anterior Leaflet Prolapse. To repair or Not to repair?

Guglielmo Actis Dato¹ and Giulia Actis Dato²

¹Azienda Ospedaliera Ordine Mauriziano di Torino

²Maastricht UMC+

September 2, 2022

Abstract

A larger use of mitral valve repair is recommended in case of mitral regurgitation. Anterior leaflet repair is generally more difficult than posterior. Presence of atrial fibrillation or dysfunction of left ventricle appears to be independent preoperative factors of failure in case of involvement of the anterior leaflet. In experienced hands anterior leaflet repair can be effective and safe and should theoretically not limit a conservative technique instead of a replacement. This would therefore lead to being more aggressive in the treatment of this pathological condition in the earlier stages of the disease.

Author name: Actis Dato Guglielmo M., MD, Actis Dato Giulia, MD

Affiliation: Cardiac Surgery, Mauriziano Hospital Umberto I, Turin, Italy

Short Title: Anterior Leaflet Repair

Corresponding author details: Cardiochirurgia, Ospedale Mauriziano, largo Turati, 10125 Torino, Italia

Stajanovic and coll. compared data of 74 patients operated on for mitral valve repair in anterior leaflet prolapse with a randomly assigned 74 cases of posterior repair of mitral valve in a period of 11 years in the same Center (1).

Repair of the mitral valve historically represents a cornerstone of cardiac surgery in its beginnings. Hundreds of thousands of patients were operated on beating heart for rheumatic disease in case of valve stenosis through commissurotomy (2). In the following years advent of extracorporeal circulation, has also become possible repair in cases of mitral insufficiency (3). This stimulated surgeons to perform this type of surgery on an increasing number of patients with good results (4). Valve repair in the event of failure related to a posterior leaflet disease has been standardized during the 1990s. This has allowed to obtain excellent results especially when associated with annuloplasty by using a ring (5). Vice versa, anterior leaflet disease historically suffered from a lower incidence of success in the follow-up and this discouraged the use of repair techniques in the past. Undoubtedly, surgical techniques necessary to obtain a good immediate and remote result after an anterior leaflet repair are more complex and not always easily reproducible as they are less standardized. Minimum intervention volume to be performed by a surgeon who deals with this type of pathology is considered to be at least 25 repairs per year. David and collaborators demonstrated that isolated anterior mitral prolapse repair in a median follow-up of 10 years is a significant predictor of recurrent regurgitation and re-operation even when performed by a single, more experienced surgeon (6). Particular care should therefore be taken when interpreting insignificant differences in the risk of re-operation after mitral repair in the anterior and posterior leaflet. With this paper Stojanovic and collaborators encourage a wider use of anterior leaflet repair if performed in specialized centers of excellence and with significant surgical volumes. Nevertheless presence of atrial fibrillation or dysfunction of left ventricle appears to be independent preoperative factors of failure in case of involvement of the anterior leaflet.

This would therefore lead to being more aggressive in the treatment of this pathological condition in the earlier stages of the disease. Authors should be congratulated for having highlighted and encouraged to always evaluate the potential benefit of mitral repair even in the presence of a defect involving the anterior leaflet.

In experienced hands anterior leaflet repair can be effective and safe and should theoretically not limit a conservative technique instead of a replacement.

1 Stojanovic I et al. Clinical and echocardiographic predictors of the anterior mitral leaflet repair failure. *J Card Surg* 2022

2 Bajaj SS, Fann JI. History of Surgery for Mitral Stenosis: John Mayow to Charles Bailey. *Ann Thorac Surg*. 2022 Jun;113(6):2097-2101.

3 Kay JH, Tsuji HK, Redington JV, Yokoyama T. Surgical Treatment of Mitral Insufficiency *Calif Med*. 1967 Oct; 107(4): 311–314.

4 Actis Dato GM, Zingarelli E, Flocco R, Tomasello A, Del Ponte S, Punta G, Forsennati P, Casabona R. A 43-year follow-up after mitral valve repair. *J Cardiovasc Surg (Torino)*. 2009 Jun;50(3):415-6.

5 Deloche A, Jebara VA, Relland JY, Chauvaud S, Fabiani JN, Perier P, Dreyfus G, Mihaileanu S, Carpentier A. Valve repair with Carpentier techniques. The second decade. *J Thorac Cardiovasc Surg*. 1990 Jun;99(6):990-1001; discussion 1001-2.

6 David TE, Armstrong S, McCrindle BW, Manlhiot C. Late outcomes of mitral valve repair for mitral regurgitation due to degenerative disease. *Circulation*. 2013 Apr 9;127(14):1485-92.