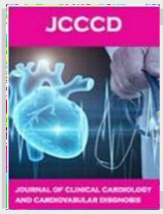


Journal of Clinical Cardiology and Cardiovasular Diagnosis (JCCCD)

OLITES PUBLISHERS
A Global Approach For Research

Open Access

Short Communication

Complications in Mitral Valve Repair: Recognition, Management, and Prevention

Hernandez F[1], Gaggin Y[1], Sugeng G[1], Roger J
Department of Health Services, Hodeidah University, Yemen
***Corresponding Author:** Gaggin Y,Department of Health Services, Hodeidah University, Yemen
Citation: Gaggin Y. (2025).Complications in Mitral Valve Repair: Recognition, Management, and Prevention. 1(1)

Received: June 10, 2025 | **Accepted:** June 16, 2025 | **Published:** June 20, 2025

Abstract
Mitral valve repair has emerged as a preferred treatment option for mitral valve pathologies, offering favorable outcomes and improved long-term results. However, the success of these procedures is not immune to complications. This comprehensive review explores the various complications associated with mitral valve repair, encompassing both surgical and transcatheter interventions.
The abstract delves into the crucial aspects of complication recognition, management, and prevention. Highlighting the importance of early identification, we discuss the diverse spectrum of complications ranging from technical issues during surgery to postoperative concerns such as thromboembolism, infective endocarditis, and paravalvular leaks.

Keywords: thromboembolism, infective endocarditis, transcatheter interventions

Introduction
Mitral valve repair has become a cornerstone in the surgical and interventional management of mitral valve diseases, offering significant advantages over valve replacement in terms of improved long-term outcomes and preservation of cardiac function. Despite the successes and advancements in this field, the journey towards optimal mitral valve repair is not without challenges. Complications, though relatively infrequent, can significantly impact patient outcomes and necessitate prompt and effective intervention.

This comprehensive exploration focuses on the intricate landscape of complications associated with mitral valve repair. The aim is to provide clinicians, prevention strategies form the core pillars of our investigation, acknowledging the critical importance of each stage in mitigating adverse events.

The Mitra clip Device and New Generation System 3.0
Similar to the previous versions (first-generation and NT), the MC XTR device consists of two main steering components: a 24-F steerable guide catheter (SGC) and a steerable clip delivery system (CDS), with the implant attached at its tip. The rotational knobs on the handles controlling the flexion mechanism of the guide catheter and CDS are similar to the previous versions of the system. The changes made in the clip delivery catheter have the objective of facilitating better stability and minimize unintended translation of the clip during rotation of the CDS. The steerable sleeve has also been adapted to facilitate response to the rotation of the M-knob.

Complications Related to the Catheterization
Vascular Complications
Vascular complications following large-bore venous puncture are infrequent compared to large diameter arterial sheaths, nevertheless, optimal access site management in percutaneous MV repair is fundamental. Vascular access complications may occur due to the proximity of the vein to the femoral artery. Inflammatory processes, surgery near the groin may create fibrotic tissue, which could involve both femoral artery and vein. During the 24F sheath's advance, the force applied in the groin may damage the femoral artery.

Journal of Clinical Cardiology and Cardiovasular Diagnosis

Major Bleeding Requiring Transfusion

Although bleeding ranges among the most frequent peri-interventional complications, studies show variable incidences depending on the cohort and definition used, being from 1 to 7.4%.

Ischemic Events: Myocardial Infarction, Pulmonary Embolism, Stroke

Percutaneous MC procedure involves the use of potentially thrombogenic materials through the venous system, transseptal advancement of large-bore catheter devices and beating-heart maneuvering of the clip within complex anatomy of the MV and subvalvular apparatus. However, the rate of the ischemic events as myocardial infarction, pulmonary embolism, and stroke is anecdotic and it is usually multifactorial.

Acute Renal Failure

The MC implantation procedure, does not, in itself, require the administration of contrast medium; therefore the acute renal failure is rare.

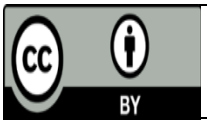
Contrast-Induced Nephropathy (CIN)

The Cardioband implantation procedure itself does not require the administration of contrast medium as anchors positioning is performed under 3D TOE guidance. However, several injections of contrast dye might be needed to assess the coronary artery anatomy and the relationship between the LCA and the first anchors implanted.

References

1. LaPar DJ, Kron IL. Should all ischemic mitral regurgitation be repaired? When should we replace? CurrOpinCardiol. 2011 Mar;26(2):113-7.
2. Baumgartner H, Hung J, Bermejo J, Chambers JB, Evangelista A, Griffin BP, Iung B, Otto CM, Pellikka PA, Quiñones M., American Society of Echocardiography. European Association of Echocardiography. Echocardiographic assessment of valve stenosis: EAE/ASE recommendations for clinical practice. J Am Soc Echocardiogr. 2009 Jan;22(1):1-23; quiz 101-2.
3. Bridgewater B, Hooper T, Munsch C, Hunter S, von Oppell U, Livesey S, Keogh B, Wells F, Patrick M, Kneeshaw J, Chambers J, Masani N, Ray S. Mitral repair best practice: proposed standards. Heart. 2006 Jul;92(7):939-44
4. Carpentier A, Relland J, Deloche A, Fabiani JN, D'Allaines C, Blondeau P, Piwnica A, Chauvaud S, Dubost C. Conservative management of the prolapsed mitral valve. Ann Thorac Surg. 1978 Oct;26(4):294-302.

Journal of Clinical Cardiology and Cardiovasular Diagnosis



 DOI:10/JCCCD/2025/03