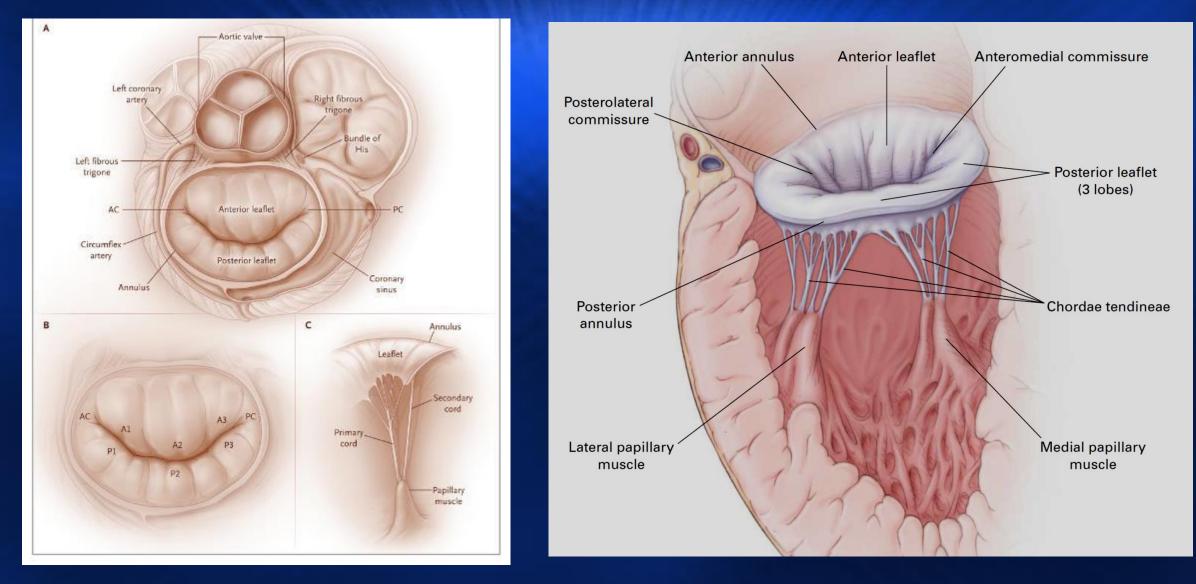
Mitral Valve Disease



Primary Mitral Valve Disease

MAC **Rheumatic MS** SBE 30 Beats 1 FR 6Hz 132/56 Barlows Commissural Prolapse P2 Prolapse AL REPORT Milen - - - -

Management of Valvular Heart Disease

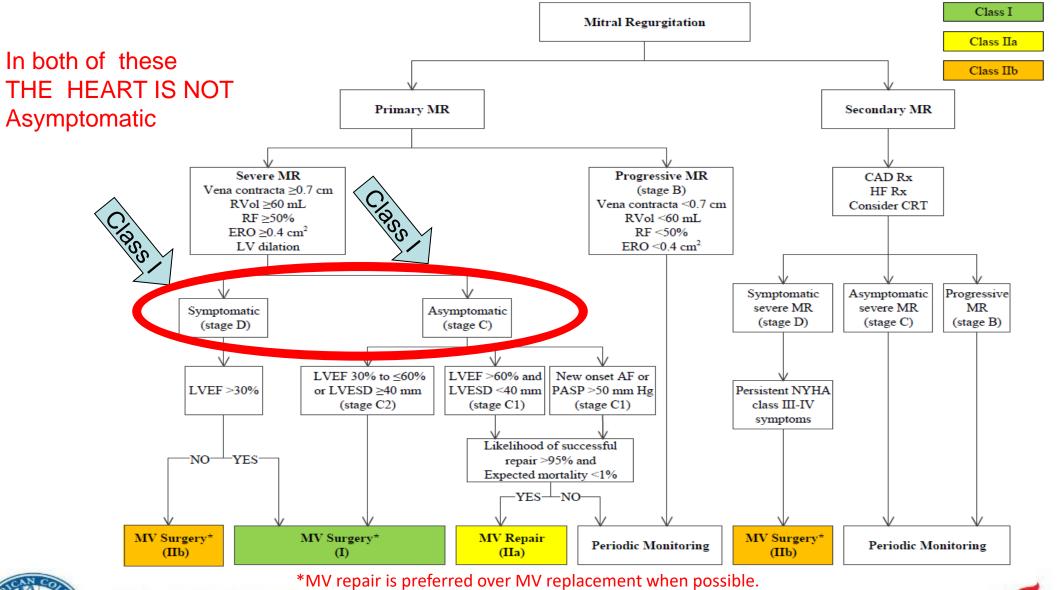
Is the Heart Symptomatic? Timing of Restorative Surgery

Symptoms
LV enlargement
LV dysfunction
LAE - Atrial Fib
Pulmonary Hypertension



Ao

Indications for Surgery for Mitral Regurgitation





Helping Cardiovascular Professionals Learn. Advance. Heal.



Isolated Mitral Valve Surgery: The Society of Thoracic Surgeons Adult Cardiac Surgery Database Analysis

Gammie et al Ann Thorac Surg 2018 ;106:716-272

Isolated Mitral Valve Surgery: The Society of Thoracic Surgeons Adult Cardiac Surgery Database Analysis

James S. Gammie, MD, Joanna Chikwe, MD, Vinay Badhwar, MD, Dylan P. Thibault, MS, Sreekanth Vemulapalli, MD, Vinod H. Thourani, MD, Marc Gillinov, MD, David H. Adams, MD, J. Scott Rankin, MD, Mehrdad Ghoreishi, MD, Alice Wang, MD, Gorav Ailawadi, MD, Jeffrey P. Jacobs, MD, Rakesh M. Suri, MD, Sleven F. Bolling, MD, Nathaniel W. Foster, BS, and Rachael W. Quinn, PhD

Division of Cardiac Surgery, University of Maryland School of Medicine, Ballineen, Maryland, Department of Cardiochened Surgery, Mound State Medical Cortex, New York, New York, Department of Cardiocaetar and Theoretic Surgery, West Vignita, University, Morganizera, West Vignita, Dave Chainal Research Instance, Darban, North Carolian, Division of Cardiochened, Surgery, Benery, University, Altana, Georgia Department of Theoretic and Cardiovascular Surgery, Caevaland Clinic, Cleveland, Ohn University, alt Vignita, Charletteville, Vignita, University of Wichegue, Ann Ache, Michigan Al, Californich Heart Institute, S. Petersberg, Florida, and Department of Cardiocaetar Surgery, Johns Hopkins Al, Californic Heart Institute, S. Petersberg, Florida, and Department of Cardiocaetar Surgery, Johns Hopkins Al, Californich Heart Institute, S. Petersberg, Florida, 2010.

Background, Data from The Society of Thoracic Surgeous Adult Cardia: Surgery Database were analyzed to identify trends in patient characteristics and outcomes of mitral value operations in North America.

Methods. All patients with isolated primary mitral valve operations with ar without incurspit valve repair, surgical atrial fibrillation ablation, or atrial septial defect closure performed July 2011 to September 2016 were identified. A subgroup analysis assessed patients with degenerative leadle products (CP).

Results. Isolated primary stifted value operations were performed as 87.21 d points at 11.25 centers, increasing by 24% between 2011 (n = 14,142) and 2016 (a = 17,947). The most common eikology was DLP (62.75); 4.15% had functional minal regurgitation. Prospectively, 4.72% of patients had an ejection fraction less than 60% and 34.2% had stift if behildson. Over a study of the star 35% 2010; to 85%, declining from 87.1% (2011) to 83.2% 2010; ye \approx 0.0600; Repair mes were related to tablogy ODE. 82.8% chematic, 12.5%. Of the 29.970 mittal valve replaxments, 16.2% were preceded by an attempted repair. Repair techniques included prostletic annuloplasty (91.3%), leafter resertion (16.3%), and artificial coef implantation (22.7%). Bioprosthetic valves tweet implanted with Increasing traquency (2011, 65.4%; 2016, 75.5%; p < 0.02011. Lass-invasive operations were performed in 23.0% and concomitant incurple valve repair in 15.7%. Unadynated operative mortality was 3.7% (replacemental and 1.3% (repairs).

Conclusions. Patients undergoing primary isolated mitral value operations commonly have ventricular dysfunction, axial fibrillation, and heart failure. Although contemposary extremes are excellent, earlier grideline-directed veteral and increased frequency and quality of repair may further improve remulies of mitral value operations.

> (Ann Thorac Surg 2018; m.m.ml © 2018 by The Society of Thoracic Surgeons

87,214 patients with Isolated Mitral Valve operations 2011-2016
60.7% were Mitral Valve Prolapse (MVP)
Preop: 47.3% had EF<60% and 34.2% in AF
Overall mitral valve repair rate 65.6%

	Center Volume ^a ($n = 1,020$)				Case Volume ^b ($n = 36,948$)			
Total Isolated MV Surgery Volume	Centers n (%)	Avg Repair Rate (% [95% CI])	Avg O/E Ratio (95% CI)	Avg STS PROM Score (95% CI)	Cases (n)	Repair Rate (%)	Mortality (%)	STS Risk Score (Median [IQR])
≤23 cases per year	972 (95.3%)	66.9 (65.1-68.7)	1.03 (0.80-1.25)	1.97 (1.89-2.05)	21,987	75.9 ^c	1.60 ^c	0.94 (0.48–2.02) ^c
>23 cases per year	48 (4.7%)	90.0 (87.0-93.0)	0.50 (0.38-0.61)	1.38 (1.27-1.48)	14,961	92.2	0.61	0.64 (0.36-1.30)

^a Repair rates, observed to expected (O/E) ratios, and The Society of Thoracic Surgeons (STS) risk scores were averaged across centers within respective volume category. ^b Repair rates, mortality, and STS risk scores were averaged across cases within respective volume category. ^c Mean comparisons between 22.75 or fewer cases per year and more than 22.75 cases per year within each column are significantly different (p < 0.0001) calculated by χ^2 and Wilcoxon-Mann-Whitney U test.

Surgical volume was divided into two groups at the 95th percentile of annual volume.

Avg = average; CI = confidence interval; IQR = interquartile range; MV = mitral valve;

STS PROM = The Society of Thoracic Surgeons predicted risk of mortality.

DLP case volume per year	Number of centers
0	106
> 0 to 6	763
> 6 to 25	213
> 25 to 50	28
> 50 to 100	11
> 100	4

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Conclusions

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Methods. All patients with isolated primary mitral valve operations with or without tricuspid valve repair, surgical atrial fibrillation ablation, or atrial septal defect closure performed July 2011 to September 2016 were identified. A subgroup analysis assessed patients with degenerative leaflet prolapse (DLP).

Results. Isolated primary mitral valve operations were performed on 87,214 patients at 1,125 centers, increasing by 24% between 2011 (n = 14,442) and 2016 (n = 17,907). The most common etiology was DLP (60.7%); 4.3% had functional mitral regurgitation. Preoperatively, 47.3% of patients had an ejection fraction less than 60% and 34.2% had atrial fibrillation. Overall mitral valve repair rate was 65.6%, declining from 67.1% (2011) to 63.2% (2016; p < 0.0001). Repair rates were related to etiology (DLP, plantation (22.7%). Bioprosthetic valves were implanted with increasing frequency (2011, 65.4%; 2016, 75.8%; p < 0.0001). Less-invasive operations were performed in 23.0% and concomitant tricuspid valve repair in 15.7%. Unadjusted operative mortality was 3.7% (replacements) and 1.1% (repairs).

Conclusions. Patients undergoing primary isolated mitral valve operations commonly have ventricular dysfunction, atrial fibrillation, and heart failure. Although contemporary outcomes are excellent, earlier guideline-directed referral and increased frequency and quality of repair may further improve results of mitral valve operations.

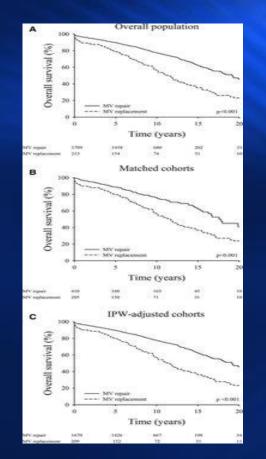
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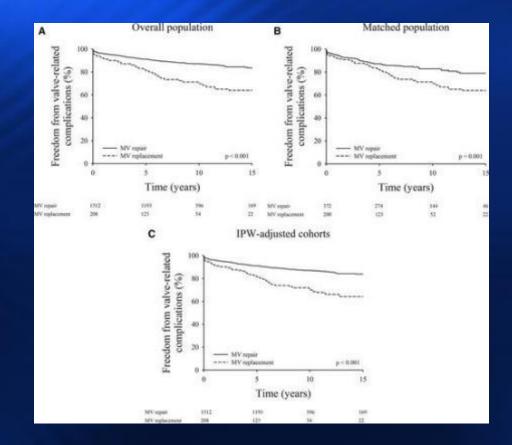
Mitral Valve Surgery at Roper 2021

Isolated Mitral Valve Repair	Total = 48 Minimally-Invasive Surgery = 31 Open Surgery = 17	
Isolated Mitral Valve Replacement	Total = 16 Minimally-Invasive Surgery = 6 Open Surgery = 10	Repair Rate
Concomitant Mitral Valve Repair	Total = 25	97.6%
Concomitant Mitral Valve Replacement	Total = 9	Mortality
Transcatheter Mitral Valve Replacement	Total = 3	Mortality 0%
All Mitral Valve Operations	Total = 101	

Mitral Valve Surgery Repair vs Replacement for Severe Degenerative Mitral Insufficiency

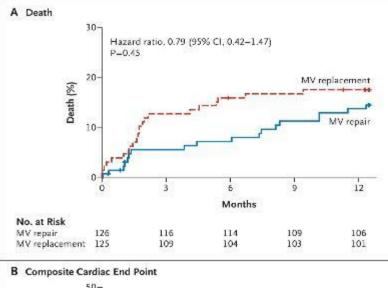


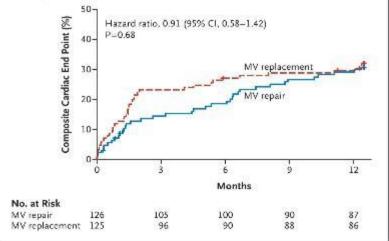
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Siham Lazam. Circulation. Twenty-Year Outcome After Mitral Repair Versus Replacement for Severe Degenerative Mitral Regurgitation, Volume: 135, Issue: 5, Pages: 410-422.

Mitral Valve Surgery Repair vs Replacement for Severe Ischemic Mitral Insufficiency





Acker MA et al. N Engl J Med 2014;370:23-32.

Rate of Recurrence of Mitral Insufficiency at 12 months:

- 32.6% in Repair Group
- 2.3% in Replacement Group

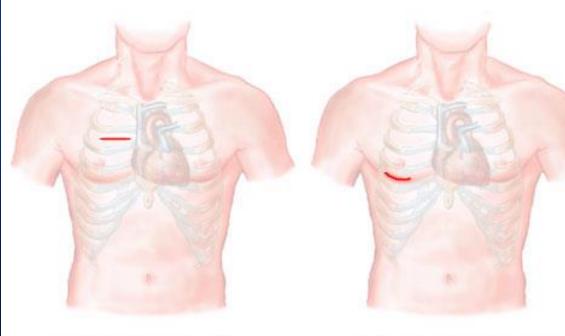
Traditional Heart Surgery via Sternotomy





Minimally Invasive Valve Surgery

PLACEMENT OF INCISIONS DURING HEART VALVE SURGERY



AORTIC VALVE SURGERY Incision is below right clavicle and above right nipple. MITRAL AND INTRACUSPID VALVE SURGERY Incision is below right nipple.





