Mid-term Results Of Minimally Invasive Mitral Valve Surgery With Concomitant Maze-IV Procedure

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Introduction

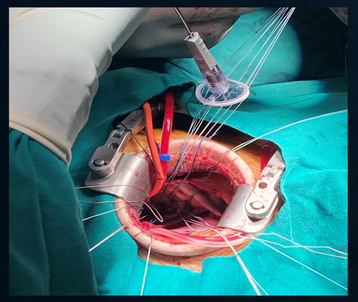
Novel surgical ablation techniques for atrial fibrillation facilitate concurrent minimally invasive procedures. This study describes our mid-term results of mitral valve surgery with concomitant Maze IV procedure.

Patients and methods

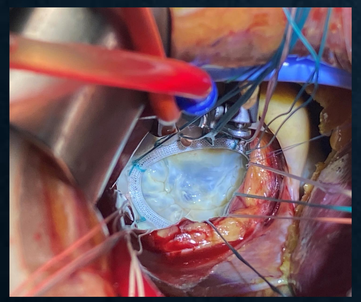
- Total 68 patients
  - 12 Mitral valve replacement (MVR) + Maze IV
  - 56 Mitral valve repair (MVP) + Maze IV
- From July 2016 to September 2020
- Mean follow-up 38 months, evaluation ECG and TTE

Surgical techniques

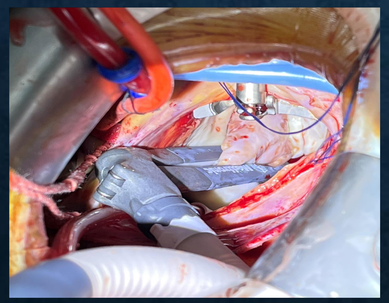
- Right-side mini-thoracotomy
- Mitral valve replacement + Maze IV
- Leaflet resection + Ring annuloplasty for MVP + Maze IV



Right-side mini-thoracotomy



MVP



Maze IV procedure

Results

Preoperative clinical profile

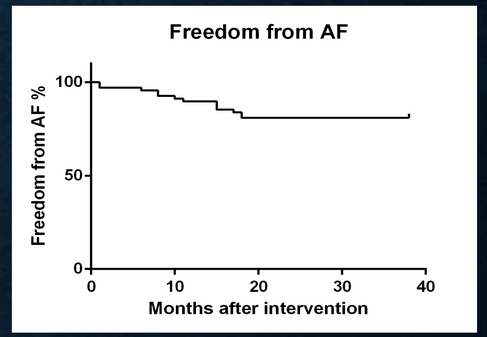
Variables	Number of patients, n (%)
Male sex	26 (38.2)
Age, years, mean ± SD	55.6 ± 5.67
BSA, m², mean ± SD	1.8 ± 0.2
STS-PROM, mean ± SD	3.4 ± 1.8
Mitral valve etiology	
Rheumatic disease	56 (82.4)
Degenerative disease	12 (17.6)
Long-standing persistent AF	68 (100)
Comorbidities	
NYHA class	
II	38 (55.9)
III-IV	30 (44.1)
High blood pressure	9 (13.2)
Smoking	15 (22.1)
Never smoking	53 (77.9)
Diabetes	27 (39.7)
COPD	15 (22.1)
Stroke	5 (7.4)
Myocardial infarction	1 (1.5)
Congestive heart failure	18 (26.5)
Preoperative parameters	
Mitral valve stenosis (valve area, cm^2)	1.1 ± 0.3
Mitral valve regurgitation	
EROA (mm^2)	45.2 ± 3.4
Regurgitant volume (ml/beat)	64.3 ± 2.7
LVEF (%)	54 ± 11

Operative data

Variables	Number of patients, n (%)
Procedure time, min, mean±SD	
Cardiopulmonary bypass	63.8 ± 14.5
Aorta clamping	41.9 ± 13.6
MVR + Maze IV	56 (82.4)
MVP + Maze IV	12 (17.6)
Postoperative echography	
LVEF (%)	51.3 ± 8.5
Residual regurgitation	
Mild	2 (2.9)
More than mild	0 (0.0)
Operative mortality	0 (0.0)
Early morbidity	
MACCE	0 (0.0)
Major bleeding	0 (0.0)
Parietal Reintervention	0 (0.0)
Pacemaker implantation	0 (0.0)
Infections	5 (6.5)
UTI	3 (5.1)
Pneumonia	2 (1.4)
Acute kidney injury	8 (11.8)
ICU stays (days)	4.7 ± 3.2
Hospital stays (days)	26.8 ± 5.6
Freedom from AF at discharge	58 (85.3)

Mid-term results (38 Months)

Variable	Number of patients, n (%)
All death	0 (0.0)
Regurgitation more than mild	0 (0.0)
Structural valve deterioration	0 (0.0)
Freedom from AF	55 (80.9)
Under antiarrhythmic medication	14 (20.8)
NYHA class	
I-II	56 (82.4)
III-IV	12 (17.6)



Conclusion

Mitral valve surgery with concomitant Maze IV procedure can be successfully performed through minimally invasive approach with satisfying mid-term results

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