

Physician - Valvular Diseases and Surgery

[MSB-11]

Arrhythmia Course After Surgical Treatment of Mitral Annular Disjunction

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Türk Gogus Kalp Dama 2024;32(Suppl 2):MSB-11

Doi: 10.5606/tgkdc.dergisi.2024.msb-11

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Received: September 04, 2024 - Accepted: September 29, 2024

Objective: This study aimed to investigate the course of arrhythmia in patients with mitral annular disjunction (MAD) based on 24-h Holter electrocardiogram.

Methods: In this retrospective study, 140 patients who underwent mitral valve surgery for type 2 dysfunction between ?? 2017 and May 2024 were reviewed. Forty-five patients with MAD were identified. A history of arrhythmia was identified in 30 (18 females, 12 males; mean age: 38.5±13.76 years) of these 45 patients.

Results: The mean cardiopulmonary bypass time was 134.2 min, and the mean cross-clamp time was 99.1 min. One patient died due to low cardiac output. Control echocardiograms performed one month later showed no severe mitral regurgitation. The prevalence of supraventricular arrhythmia was 17.1% prior to surgery and 3.9% postoperatively. The prevalence of ventricular arrhythmia was 8.1% prior to surgery and 2.8% postoperatively. The relationship between MAD distance and the occurrence of arrhythmia was investigated. A notable correlation was observed between MAD exceeding 10 mm and a reduced prevalence of ventricular arrhythmia, with statistical significance ($p<0.05$).

Conclusion: Mitral annular disjunction can lead to severe arrhythmic episodes and sudden death. In the presence of MAD over 10 mm, surgical treatment may reduce the incidence of ventricular arrhythmias. Surgical treatment of MAD decreased the incidence of arrhythmia; therefore, early operation may be considered in the presence of severe arrhythmic events, even if mitral regurgitation is not severe.

Keywords: Arrhythmia, MAD, mitral valve surgery, mitral annular disjunction.

Table 1. Preoperative findings

Findings	Data (n:30)
Sex (Female)	18 (60%)
Age	38,5 (\pm 13,76)
Hypertension	10 (33%)
Diabetes mellitus	1 (3,3%)
Chronic obstructive pulmonary disease	1 (3,3%)
Arrhythmia history	30 (100%)
NYHA class	NYHA 3: 17 (56,6%) NYHA 4: 13 (43,3%)
LVEF (%)	58,43
LVEDD (mm)	58,03
LVESD (mm)	38,04
LA-Diameter (mm)	48,62
Mitral regurgitation	Moderate to severe: 8 (26,7%) Severe: 22 (73,3%)
Tricuspid regurgitation	None: 4 (13,3%) Mild: 24 (80%) Moderate: 2 (6,7%)
Preoperative T-wave inversion	14 (46,6%)
Preoperative supraventricular arrhythmia	17.1%
Preoperative ventricular arrhythmia	8.1%
Preoperative ICD history	2 (6,7%)
Preoperative ablation history	2 (6,7%)

Table 2. Intraoperative findings

Findings	Data (n=30)
Sex (Female)	18 (60%)
Age	38.5 \pm 13.76)
Hypertension	10 (33%)
Diabetes mellitus	1 (3.3%)
Chronic obstructive pulmonary disease	1 (3.3%)
Arrhythmia history	30 (100%)
NYHA class	NYHA 3: 17 (56.6%) NYHA 4: 13 (43.3%)
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