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Relationship between Aortic Stenosis and Fragmented QRS

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Introductıon: Fragmented QRS (fQRS) is accepted as a marker of myocardial scar caused by depolarisation defect. In recent studies, it was showed that fQRS is an indicator of ischemia and infarct. In ischemic cardiomyopathy, Brugada syndrome and arrhythmogenic right ventricular dysplasia, fQRS is predictor of arrhythmia attacks and mortality. In mitral stenosis fQRS is seen more frequent than healthy people and it is predictive of severe mitral stenosis, myocardial dysfunction and inreased pulmonary arterial pressure. The aim of our study is to assess the relationship between fQRS and severity of valve stenosis, left ventricular hypertrophy, decompanse diastolic heart failure and atrial fibrillation in aortic stenosis patients.
Meterial and Method: We evaluated aortic stenosis patients with the mean gradient over 20 mmHg in aortic valve. Patients with mitral stenosis, tricuspit stenosis, history of myocardial infarction, documented severe coronary arterial disease, nonischemic dilate cardiomyopathy, pacemaker ritm, electrolit disturbances and right or left bundle branch block were excluded. The study included 59 patients. For all patients12 leads ECG was recorded. Complete echocardiography performed, peak and mean transaortic systolic gradients, aortic jet velocity, septum and posterior wall thicknesses, diameter of ascendan aorta, left atrial size, ejection fraction and maksimum systolic pulmonary arterial pressure of patients were recorded. Electrocardiographies are assessed by two cardiologists unaware of the echocardiography results. Finally, patients divided into two groups as fQRS established group and others. Echocardiographic and clinical findings of the groups were compared.
Results: The study included 59 patients. Mean age of the patients was 69±14,8 years. 27 subjects (45%) were men, 32 (55%) were women. fQRS was found in 44 (74%) subjects' ECG. Age, gender, ejection fraction, septum and posterior wall thicknesses, left atrial size, aortic dimension, atrial fibrillation ratio and peak systolic transaortic gradients were similar in two groups. In fQRS group, median systolic transaortic gradient was significantly higher (median 35, interquartile range 20 vs. median 25, interquartile range 21, p=0.042). Decompansated diastolic heart failure ratio was 36.3% in fQRS group but only %6.6 in non-fQRS group (p= 0.025). Mean maximum systolic pulmonary arterial pressure was 43 mm Hg in fQRS group and 32 mm Hg in non-fQRS group (p=0.035).
Conclusıon: In our study, 74% of aortic stenosis patients had fQRS in their ECGs. Aortic stenosis patients with fQRS had higher mean systolic transaortic gradients, higher ratio of decompansated heart failure and maximum systolic pulmonary arterial pressures than non- fQRS aortic stenosis patients.

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Impact of Rheumatic Mitral Stenosis on Aortic Elastic Properties

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Aım: Mitral stenosis has profound effects on circulation and hemodynamics. However data about the impact of mitral stenosis on aortic elastic properties are lacking. We sought to determine the association between mitral stenosis and aortic elastic properties by using strain and distensibility as a surrogate.
Methods: Sixty six patients with echocardiographic documentation of rheumatic mitral stenosis and, age and sex matched 25 healthy subjects were enrolled to the study. Aortic elasticity parameters including strain and distensibility was measured by means of echocardiography.
Results: The mean age of the patient and control groups were 41.8±12 and 38.9±5 years respectively (p=0.12). There was a significant impairment in distensibilty and strain in the patient group compared to control group (0.276±0.167 ve 0.491±0.260, p=0.001; 6.54±3.18 ve 9.19±4.78,p=0.015). There was a strong correlation between distensibility and left atrium diameter (p<0.001; R= -0.39), left atrial volume index (p<0.001; R= -0.56), mitral valve area (p<0.001; R=0.40) mean transmitral gradient (p=0.022; R= -0.18). Strain was also associated with left atrium diameter (p=0.002; R= -0.32), left atrial volume index (p<0.001; R= -0.41), mitral valve area (p=0.002; R=0.31) and mean transmitral gradient (p=0.035; R= -0.18)
Conclusıon: Mitral stenosis is associated with impaired aortic elasticity. Further studies are need to be disclose the clinical significance of this finding.

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Early Outcome of Mitral Valve Repair for Mitral Regurgitation

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Mitral valve repair is considered to be the ideal treatment for both ischemic and degenerative diseases.
All 58 patients who had mitral valve repair for mitral regurgitation from 2010 to 2012 were prospectively followed for up to 24 months (mean 16.3±6.4, range 6-24). Mean age was 62.46±11.07 (33-82). Clinical, hemodynamic and operative variables were evaluated for their association with operative and follow up mortality and morbidity. There were 30 ischemic and 26 degenerative mitral disease. Two patients were operated for IHSS. Six patients (23%) had isolated anterior mitral leaflet prolapse, eight patients had (30%) had isolated posterior leaflet prolapse and 12 patients (46%) had bileaflet mitral leaflet prolapse. Mean Euroscore was 9.41±3.3 and logistic Euroscore was 20±16.3.Operative mortality for ischemic mitral disease was 13.4% (4/30) and 4% (1/26) for degenerative mitral valve disease. Pulmonary hypertension, high regurgitant volume and ERO were predictors for operative mortality. Follow up was complete in 44% of patients. Among them 11 patients had control echocardiography. During the follow up none of the patienst had severe reccurrent MR. Moderate MR was found in one patient with ischemic MR. Six patients had trivial MR.
In conclusion, mitral valve repair for ischemic mitral disease in high risk patients is durable and can be performed with acceptable mortality. Mortality is much lower in degenerative mitral disasea and repair is also durable in those patients.

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Immediate and Long-term Results of Percutaneous Mitral Balloon Valvuloplasty in Patients with Previous Closed Mitral Commissurotomy

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Background: Percutaneous balloon mitral valvuloplasty (PBMV) should be considered as the first-line therapy in most patients with mitral valve stenosis.
Purpose: To evaluate acute clinical, hemodynamic, echocardiographic, and long-term outcomes of PBMV in patients with a previous closed mitral commissurotomy (CMC).
Method: Twenty-one rheumatic mitral stenosis patients with histories of CMC were studied between 1994 and 2010. The PBMV was performed with an Inoue balloon, and the ideal balloon size was measured according to the patient's height. All patients underwent standard transesophageal (TEE) and transthoracic (TTE) echocardiographic examinations before and after the PBMV. Follow-up was scheduled every 6 months during the first year, and yearly thereafter.
Results: The PBMV was successful in all of the patients (mean age 44.86±6.48 years). The Wilkins score was 8.95±1.687, and the procedure time was 30.21±10.23 minutes, with a mean of 2.45±1.14 for the balloon inflation. The baseline characteristics are shown in Table 1. After the procedure, the post-PBMV mitral valve area (MVA) was significantly larger, with a low mean transmitral gradient (MVA 1.20±0.25 vs. 1.82±0.33 p<0.01, mean transmitral gradient 12.10±5.54 vs. 5.81±2.31 p<0.01). The pulmonary capillary wedge pressure (PCWP) significantly decreased after PBMV (25.62±8.6 vs. 13.95±6.87, p<0.01). The duration of follow-up was 83.4±39.5 months, and there were no mortalities. Five patients of 21 underwent mitral valve replacement (MVR), and one had a second PBMV due to restenosis. At the final follow-up appointment, the resting MVA was 1.57±0.47 cm2, and the mean transmitral gradient was 8.33±4.45 mmHg.
Conclusıon: PBMV is an effective therapy, with excellent immediate results in patients with previous CMCs; however, long-term results revealed more restenosis than expected. Additionally, the need for MVR was high.

Baseline characteristics

Patient	n=21
Age(years)	44.86±6.48
Female/male	20/1
NYHA	2.71±4.63
MVA(cm2)	1.20±0.25
Mean transmitral gradient(mmHg)	12.1±5.54
Left atrium(cm)	4.79±0.6
Ejection Fraction(%)	54.8±12.1

NYHA:New York Heart Association MVA:Mitral valve area

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Acute Improvement of P Wave Dispersion after Transcatheter Aortic Valve Implantation

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Purpose: The predisposition to atrial fibrillation (AF) in aortic stenosis (AS) has been demonstrated in several studies. P wave dispersion has been performed in the assessment of the risk for atrial fibrillation. This study aimed to determine the acute

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