

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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The Effect of Isometric Exercise on the Heart in Mitral and Aortic Regurge as Assessed by Colour Doppler Flow Imaging

Thesis

Submitted in partial fulfillment for the requirement of-
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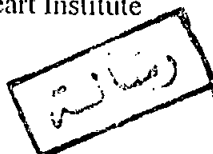
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Abstract

Thirty patients with isolated mitral regurgitation (MR) and 30 patients with isolated aortic regurgitation (AR) were subjected to color Doppler flow imaging (CDFI) before and immediately after isometric exercise handgrip, which was imposed for 1 minute.

CDFI examinations were performed in parasternal long-axis and apical long-axis views to measure the baseline regurgitant jet area (RJA) and to reassess RJA after the exercise, for both MR and AR patients.

The results demonstrated a significant increase in mitral (58.47%) and aortic (69.76%) regurgitant jet area induced by isometric exercise, so that isometric exercise may increase the magnitude of MR or AR. The results also revealed a direct correlation between the severity of the regurge lesions and the ability of isometric exercise to increase the RJA.

Also, another direct correlation was found between the age of the patients with either MR or AR and the percent increase in RJA, in response to isometric exercise.

Therefore, patients with MR and/or AR should avoid heavy physical efforts that may lead to isometric exertion, e.g. sports like lifting, wrestling etc., occupations including carrying heavy objects; like bags, pushing cars...etc.

LIST OF ABBREVIATIONS

AF	Aortic flow
AML	Anterior mitral leaflet
Ao.	Aorta
AOP	Aortic pressure
AR	Aortic Regurgitation
ARF%	Aortic regurgitation fraction
As. Ao.	Ascending aorta
AV	Aortic valve
CDFI	Color Doppler Flow Imaging
CSA	Cross-sectional area
CW	Continuous wave
EDM	Early diastolic murmur
EDP	End-diastolic pressure
EDV	End-diastolic volume
EF	Ejection Fraction
ESV	End-systolic volume
ET	Ejection Time
FCR	Flow Convergence Region
FS	Fractional shortening
H	Height of the jet
JA	Jet Area
JA/ LA	Jet Area / Left Atrial Area
JH/LVOH	Jet height/ left ventricular outflow tract height
L	Length of the jet
LAA	Left Atrial Area
LV	Left ventricle
LVEDP	Left ventricular end-diastolic pressure
LVOT	Left ventricular outflow tract
MF	Mitral flow
MHz	Mega Hertz

(CONT.)

MR	Mitral regurgitation
MRF%	Mitral Regurgitation Fraction
MV	Mitral valve
OA	Orifice area
PCG	Phonocardiogram
PCG-MA	Phonocardiogram – Mitral area
PCG-PA	Phonocardiogram - Pulmonary area
PF	Pulmonary flow
PFV	Peak flow velocity
PML	Posterior mitral leaflet
PW	Pulsed wave
RJA	Regurgitant Jet Area
RSV	Regurgitant stroke volume
RV	Right ventricle
SV	Stroke volume
SVR	Systemic Vascular Resistance
TV	Tricuspid valve
V.t.dt.	Integral of the continuous wave Doppler time-velocity trace over the diastole.
VCF	Velocity of Circumferential Shortening
W	Width of the jet

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