



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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MONA MAGHRABY



Assessment of Right ventricular reverse remodeling in infants with critical pulmonary stenosis after balloon pulmonary valvuloplasty using 3D echocardiography

Thesis

*Submitted For Partial Fulfillment of Master Degree in
Cardiology*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبِّحْكَ لَا إِلَهَ إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Contents

Title	Page No.
<i>List of Abbreviations</i>	i
<i>List of Tables</i>	iii
<i>List of Figures</i>	iv
Introduction.....	1
Aim of the Work.....	5
Review of Literature	
Pulmonary Stenosis	6
Balloon Pulmonary Valvuloplasty.....	15
Right Ventricle Imaging	20
Patients and Methods	32
Results.....	45
Discussion.....	74
Limitations of the Study	86
Conclusion	87
Summary.....	88
References.....	91
Arabic Summary	—

List of Abbreviations

Abb.	Full term
2D	Two-Dimensional
3D	Three-dimensional
ASD.....	Atrial septal defect
BPA.....	Ballon pulmonary arterioplasty
BPV.....	Ballon pulmonary valvuloplasty
BSA.....	Body surface area
CHDs.....	Congenital heart defects
CMR	Cardiac magnetic resonance
CPS.....	Critical Pulmonary Valve Stenosis
CTEPH	Chronic thromboembolic pulmonary hypertension
ECG	Electrocardiogram
EF	Ejection fraction
FAC.....	Fractional Area Change
FAC.....	Fractional area change
IQR	Inter-quartile range
IV	Intravenous
LV	Left ventricle
PDA	Patent ductus arteriosus
PFO.....	Patent foramen ovale
PH.....	Pulmonary hypertension
PLAX.....	Parasternal long axis
PS	Pulmonary stenosis
PSAX.....	Parasternal short axis
PV	Pulmonary valve
RAA	Right atrial area
RAO	Right anterior oblique
RT3DE	Real-time 3-dimensional echocardiography

List of Abbreviations Cont...

Abb.	Full term
RV EDV	Right ventricle end-diastolic volume
RV ESV.....	Right ventricle end systolic volume
RV	Right ventricle
RVED.....	RV end diastole
RVEDVi.....	Right ventricle end-diastolic volume indexed
RVEF	RV ejection fraction
RVES	RV end systole
RVESVi	Right ventricle end systolic volume indexed
RVOT.....	Right ventricular outflow tract
SD	Standard deviation
TAM.....	Tricuspid annulus motion
TAPSE.....	Tricuspid annular plane systolic excursion
TV	Tricuspid valve
VSD.....	Ventricular septal defect

List of Tables

Table No.	Title	Page No.
Table (1):	Predicted values (mean ± 2 standard deviation (SDs)) of measured echocardiographic variables expressed by BSA (Haycock formula).....	22
Table (2):	Sample Values for Tricuspid annular plane systolic excursion in Children and Adolescents:	26
Table (3):	Normal range of RV volumes and RVEF have been also established in different studies.....	28
Table (4):	Sample values for Tricuspid annular plane systolic excursion in children and adolescents:.....	39
Table (5):	Demographic data and anthropometric measures of the studied cases.	45
Table (6):	Two dimensional echocardiographic measurement before, immediately after BPV and at 3-6 month follow up	52
Table (7):	Three-dimensional echocardiographic measurement before, immediately after BPV and at 3-6 month follow up	61
Table (8):	RV systolic pressure before and immediately after BPV.....	62
Table (9):	Incidence of Procedure Related complications	63
Table (10):	Comparison between demographic distribution of complicated vs non complicated	65
Table (11):	Incidence of infundibular reaction	66
Table (12):	Co-relation between three dimensional ECHO and two dimensional ECHO in terms of TAPSE and FAC.....	67

List of Figures

Fig. No.	Title	Page No.
Figure (1):	Classification of pulmonary valve stenosis.....	7
Figure (2):	Fusion of the adjacent leaflets along their commissures in valvular pulmonary stenosis.....	8
Figure (3):	Phonographic assessment of pulmonary stenosis.....	11
Figure (4):	Right atrial abnormality is so obvious that the amplitude of the P wave in lead II is above than that of the following QRS complex	12
Figure (5):	The thickened domed PV leaflets in the RV outflow view.	13
Figure (6):	Continuous wave spectral Doppler across the pulmonary valve demonstrates a high velocity of flow, and calculated peak instantaneous and mean gradients across the valve.	14
Figure (7):	Right ventriculogram in antero-posterior	18
Figure (8):	Measurement of end-diastolic right ventricular wall thickness	21
Figure (9):	Diagram (left) and corresponding echocardiographic apical 4-chamber image (right) showing the right ventricular (RV) basal (RVD1) and mid cavity (RVD2) RV dimensions and the RV longitudinal dimension (RVD3).	23
Figure (10):	Examples of right ventricular fractional area change (FAC).....	24
Figure (11):	TAM obtained before optimization	25
Figure (12):	Severe congenital pulmonic stenosis.....	30

List of Figures Cont...

Fig. No.	Title	Page No.
Figure (13):	ECG showing right axis deviation, right ventricular hypertrophy and RBBB.....	35
Figure (14):	Parasternal short axis view to measure pulmonary valve annulus and MPA.....	37
Figure (15):	Apical 4c view showing fractional area change.	38
Figure (16):	Measurement of tricuspid annular plane systolic excursion (TAPSE).....	39
Figure (17):	3D TTE, RV quantification, Alignment stage.....	41
Figure (18):	3D TTE, RV quantification six Landmarks at the TV annulus and the RV wall.....	42
Figure (19):	3D TTE, RV quantification, Showing editing the contours in the ED and ES layouts.....	42
Figure (20):	3D TTE showing 3D RV model, 3D EF and indexed volumes.....	43
Figure (21):	Follow up for RV wall thickness indexed levels at different time of measurement, RVFW thickness decrease immediately after BPV but statistically insignificant while it decrease statistically significant at follow up.....	46
Figure (22):	Follow up for RA area Indexed level at different time of measurement.	47
Figure (23):	Follow up for Pulmonary valve Annulus Diameter levels at different times of measurement.....	48
Figure (24):	Follow up for FAC level at different time of measurement.....	49

List of Figures Cont...

Fig. No.	Title	Page No.
Figure (25):	Follow up for TAPSE levels at different times of measurement.	50
Figure (26):	Follow up for PG level at different times of measurement.	51
Figure (27):	Follow up for EDV I levels by 3D echo at different times of measurement	53
Figure (28):	Follow up for ESV I levels by 3D echo at different times of measurement	54
Figure (29):	Follow up for RVEF levels by 3D echo at different times of measurement.	55
Figure (30):	Follow up for TAPSE levels by 3D echo at different times of measurement.	56
Figure (31):	Follow up for FAC levels by 3D echo at different times of measurement.	57
Figure (32):	Follow up for basal RV dimension levels by 3D echo at different times of measurement.....	58
Figure (33):	Follow up for Mid RV dimension levels by 3D echo at different times of measurement.	59
Figure (34):	Follow up for Longitudinal RV dimension levels by 3D echo at different times of measurement.	60
Figure (35):	RV systolic pressure before and immediately after BPV by CATH.	62
Figure (36):	Incidence of procedure related complications.	64
Figure (37):	Correlation between 2D and 3D Echo regarding TAPSE Before BPV.....	68
Figure (38):	Correlation between 2D and 3D Echo regarding TAPSE after BPV immediately	69

List of Figures Cont...

Fig. No.	Title	Page No.
Figure (39):	Correlation between 2D and 3D Echo regarding TAPSE 3-6 months follow up	70
Figure (40):	Correlation between 2D and 3D Echo regarding FAC Before BPV	71
Figure (41):	Correlation between 2D and 3D Echo regarding FAC after BPV immediately	72
Figure (42):	Correlation between 2D and 3D Echo regarding FAC 3-6 months follow up	73

INTRODUCTION

Pulmonary stenosis (PS) is a common congenital heart disease. It accounts for approximately 8 - 12% of all congenital cardiac defects ⁽¹⁾. With an incidence of about 1 per 2000 live births worldwide, its prevalence is 2.3 per 10 000 school children ⁽²⁾.

Patient's presentation may be as asymptomatic with an incidental murmur if mild PS. With severe PS advanced right ventricular dysfunction and failure occur. Even may present with deep cyanosis and acidosis due to critical PS ⁽³⁾.

Critical Pulmonary Valve Stenosis (CPS) is of the life-threatening congenital heart defects (CHDs) present during the neonatal period by cyanosis. It is a duct dependent lesion. Neonates and infants with critical PS with right ventricular (RV) pressure equal to or greater than systemic pressure can be categorized into two distinct groups based on their clinical presentation: (1) critically ill infants with cyanosis whose pulmonary blood flow may depend on ductal patency and require urgent intervention and (2) asymptomatic infants. The anatomic and hemodynamic factors that determine the clinical presentation of infants with critical PS are not well understood ⁽³⁾.

The traditional treatment for pulmonary valve stenosis prior to 1982 was surgical valvotomy. The relief of pulmonary valve stenosis by balloon dilatation during cardiac catheterization was first reported in 1982 ⁽⁴⁾.