بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Short and intermediate Term Outcome Post Right Ventricle to Pulmonary Artery Conduit Surgery

Thesis

Submitted for Partial Fulfillment of Master Degree in Cardiology

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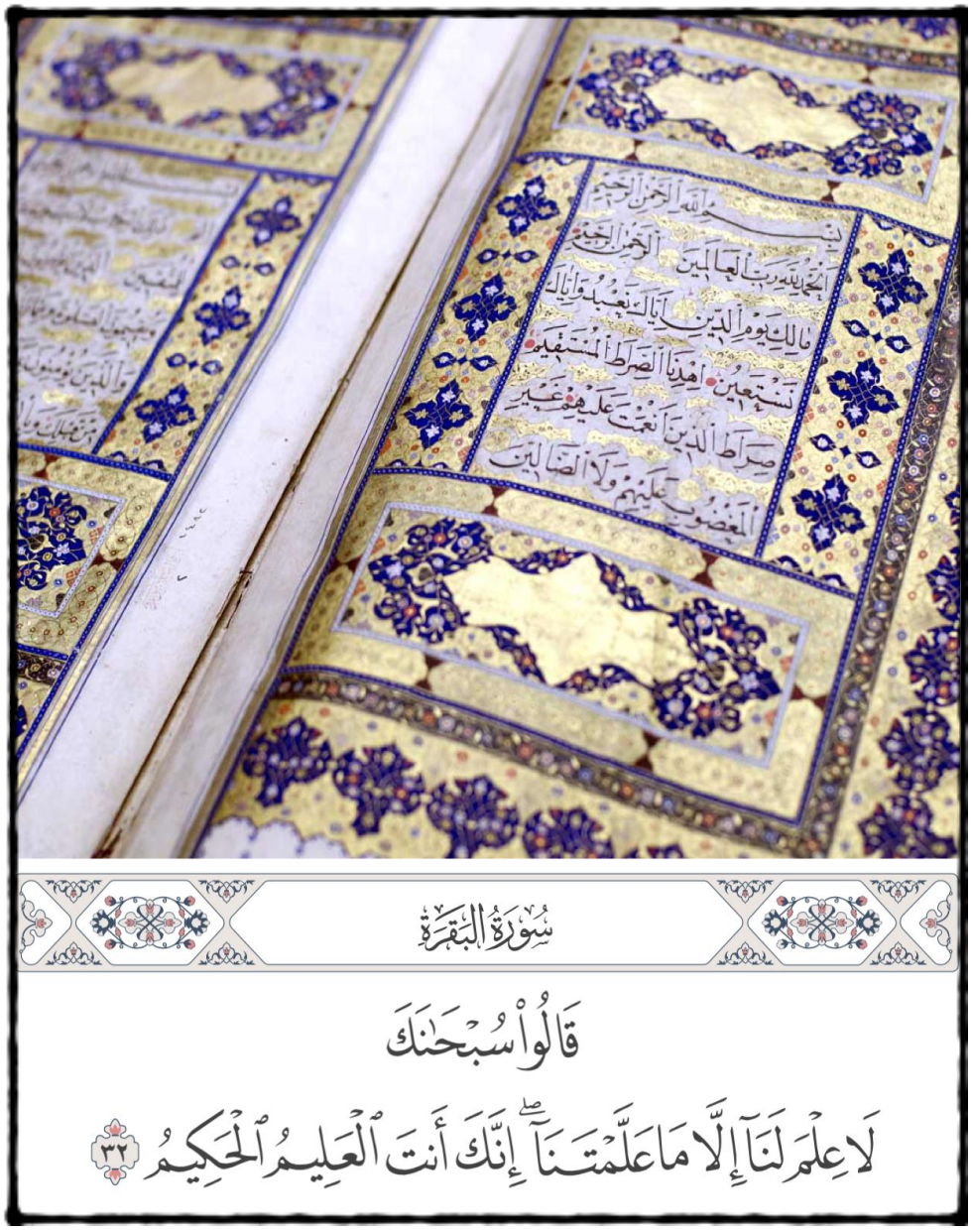

They said, "Glory be to You! We have no knowledge except what You have taught us. It is you who are the Knowledgeable, the Wise."

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List of Abbreviations

Abb.	Full term
AR	Aortic regurge
AV	Aortic vale
CCHD	Critical congenital heart diseases
CHF	Congestive heart failure
CMR	Cardiac magnetic resonance
CPET	Cardiopulmonary exercise testing
CT	Computed tomography
DORV	Double outlet right ventricle
D-TGA	Dextro transposition of great arteries
ECG	Electrocardiography
FAC	Fractional area change
GUCH	Grown up congenital heart diseases
HLA	Human leukocytic antigen
IVR-ASO	Intraventricular baffle repair - arterial switch operation
L-TGA	Levo transposition of great arteries
MAPCAs	Major aorta pulmonary collaterals
MPG	Mean pressure gradient
MSCT	Multi-slice computed tomography
PA	Pulmonary artery
PAH	Pulmonary arterial hypertension
PC	Personal computer
PDA	Patent ductus arteriosus
PPG	Peak pressure gradient
PR	Pulmonary regurgitation
PS	Pulmonary stenosis
PTFE	Polytetraflouroethylene
PV	Pulmonary valve

List of Abbreviations Cont...

Abb.	Full term
PVR	Pulmonary vascular resistance
REV	Réparation à l'Etage Ventriculaire
RV	Right ventricle
RVH	Right ventricle hypertrophy
RVOT	Right ventricle outflow tract
RVOTO	Right ventricle outflow tract obstruction
SCD	Sudden cardiac death
STS-EACTS	The Society of Thoracic Surgeons (STS) and the European Association for Cardio-Thoracic Surgery
TA	Truncus arteriosus
TAPSE	Trans-annular systolic peak excursion
TOF	Tetralogy of Fallot
TR	Tricuspid regurgitation
VSD	Ventricular sept defect

INTRODUCTION

Surgery for congenital heart disease has progressed by leaps and bounds in the last few decades, but the right ventricular outflow tract continues to pose a challenge to the congenital heart surgeon.

A considerable proportion of congenital heart defects have a component of right ventricular outflow tract (RVOT) abnormality. This may be in the form of a simple stenosis or a more complicated atresia, discordant ventriculo-arterial connection, absent pulmonary valve or rarely a common systemic and pulmonary outflow as in truncus arteriosus (TA). Pulmonary stenosis (PS) is relatively easily treated by opening the stenosed pulmonary valve (PV), resecting the obstructive muscle and if necessary further enlarging the narrowed portion with a patch of autologous pericardium. Since a portion of the natural right ventricle (RV) to pulmonary artery connection is preserved, the outflow tract can be expected to enlarge in keeping with the growth of the patient and recurrent stenosis is therefore uncommon [1].

Absence of continuity between the RV and pulmonary artery either because of atresia or discordant arterial connection calls for a more complicated intervention. Valved conduits were first used by Ross and soon after by Rastelli in the early 1960's, and since then have remained the principal choice of treatment for RV to PA discontinuity [2-3].

Valved conduits do a great job simulating the natural right ventricular outflow, however they have one major drawback: they don't grow. This means that once a patient receives a conduit, re-operation for conduit replacement is inevitable. Growth may not be a relevant issue in the older patient who has reached full physical development, however, conduit stenosis necessitating replacement usually develops as a result of intimal peel formation, anastamotic stricture or calcific degeneration of the conduit valve [4].

In spite of that, conduits have been known to function satisfactorily for upwards of ten years in the older patient. When used in neonates and young children however, conduit longevity is markedly shortened because of a combination of progressive body-weight / conduit size mismatch and a poorly understood accelerated degeneration of the conduit valve. In this age group conduit replacement may be required within a few months of implantation [5].

Aim of the Work

To describe short and intermediate term outcome in congenital heart disease patients undergoing surgical repair using artificial right ventricle to pulmonary artery conduits.