Current Status of Lulmonary Artery Banding (LAB) in Staged Management Of Congenital Heart Diseases (CHD)

Thesis Submitted for partial fulfillment of master degree in General Surgery

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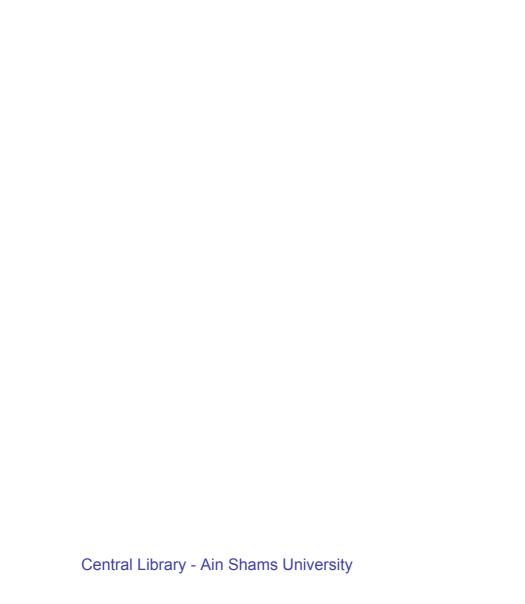
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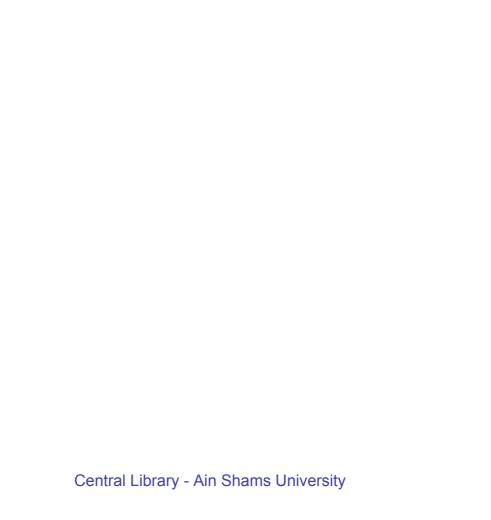
Faculty of Medicine - Ain Shams University

1998





بسم الله الرحيم الله الرحيم "قالوا سبحانك لاعلم لنا إلا ما علمتنا إنك أنت العليم الحكيم" القرة آمة ٢٢



ACKNOWLEDGMENT

Draise Be To Allah Without the Help of Allah, This Work Would Not Have Been Lossible

Words stand short when they come to express my gratefulness to my supervisors.

I would like to express my deepest thanks and profound gratitude to Prof. Ezz El-Din A. Mostafa professor of thoracic and cardiovascular surgery, as it was such a great honor to work under his kind guidance. I would like also to thank him for honest help, constant advice, keen interest and guidance throughout the performance of this work.

I am also really grateful to express my deep gratitude and appreciation to Associate Prof. Gamal S. Sayed, associate professor of thoracic and cardiovascular surgery for his constant advice and continuous support, thanks for him for sharing his expertise, valuable time and helpful suggestions.

No words can express my gratitude and appreciation to Dr. Mostafa A. Abd El-Gawad, who saved no effort in helping and guiding me, without his help and guidance this work could not be completed.

I would not forget to thank everyone who helped me or gave me his advice until this work is completed.

ABSTRACT

Objectives: This study is a retrospective review for the current status of PA banding at Ain Shams University Hospital through the period of June 1993 to June 1998.

Patients and Methods: During this period PA banding was performed in 57 patients having different types of congenital heart diseases with an average age of 8.8 months (range 2-48) and average weight of 6.3 kg (3.5-14 kg).

Diagnosis was: ventricular septal defect (VSD) in 24 patients, VSD + ASD in 11 patients, 7 patients had complete atrioventricular canal, 6 patients had double outlet right ventricle (DORV) with large VSD, 2 pateints had tricuspid atresia with TGA and large VSD, 1 patient had truncus arteriosus, one pateint had single ventricle, and one patient had TGA /VSD + PDA, 2 pateints had double inlet-double outlet right ventricle, and 2 patients had double inlet left ventricle with large VSD. Other procedures performed during the same time as PAB were, ligation of PDA in two patients and interatrial septectomy in one patient with TGA.

PA banding was performed according to Albus and Trusler formula in 56 patients, with one patient (truncus arteriosus) received bilateral branch pulmonary artery banding.

Results: PA banding was totally effective in decreasing PA pressure from a mean of 82.2 mmHg before banding to a mean of 39.9 mmHg after banding, in the same time there

was an increase in the systolic ABP from 93.8 mmHg to 100 mmHg. Early death occurred in 9 patients (15.7%) and late death (after one month) occurred in three patients (5.2%). Nine patients had PA debanding and definitive correction of their cardiac anomalies. There is 25 patients (43.8%) are waiting for definitive operation, one patient had pulmonary hypertension precluding definitive repair, and their were 10 patients lost to follow up (17.5%). The average age at debanding was 24 months and the average weight was 9.4 Kg. Mean PAP at debanding was 26 mmHg and the average gradient across the band was 50mmHg. Out of the 9 debanded pateints there was 22% mortality (two patients).

Conclusion: PA banding is a useful palliative procedure for a diverse group of patients with congenital cardiac anomalies and unrestricted pulmonary blood flow. PA banding is still beneficial in multiple, complicated, or medically compromised VSD, as well as in very small neonates with atrioventricular septal defects, and truncus arteriosus, and subsets of double outlet right ventricle and tricuspid atresia with high pulmonary blood flow not amenable to early complete repair. PAB in functional single ventricle allows safer delayed definitive repair. TGA + VSD and DORV + subpulmonic VSD are now repaired primarily (arterial switch) with acceptable results.

(Keyword: Pulmonary artery banding)

list of abbreviations

2-D Tow dimensional echocardiography

ASD atrial septal defect

ASO Arterial switch operation

AVSD Atrioventricular septal defect

B-T. Shunt Blalock - Taussig shunt

CAVC Complete atrioventricular canal

CHD Congenital heart disease or defect

CHF Congestive heart failure

CW Doppler Continuous wave Doppler

DILV Double inlet left ventricle

DIRV Double inlet right ventricle

DKS Damus -Kaye -Stansel procedure

DORV Double outlet right ventricle

HLHS Hypoplastic left heart syndrome

IAA Interrupted aortic arch

LV Left ventricle

LVOT Left ventricular outflow tract

List of Abbreviations

MPA Main pulmonary artery

MRI Magnetic resonance imaging

PA Pulmonary artery

PAB Pulmonary artery banding

PDA Patent ductus arteriosus

PTFE Poly-tetra-flouro-ethylene

PVR Pulmonary vascular resistance

Qp Pulmonary blood flow

Qs Systemic blood flow

RV Right ventricle

RVOT Right ventricular outflow tract

SAS Subaortic stenosis

SV Single ventricle

TA Tricuspid atresia

TAPVC Total anomalous pulmonary venous connection

TGA Transposition of great arteries

TR Tricuspid regurge

Tr Art Truncus arteriosus

UVH Univentricular heart

VSD Ventricular septal defect

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