شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

Evaluation of Segmental Tricuspid Annuloplasty, a New Technique for Tricuspid Repair

THESIS

Submitted in Partial Fulfillment for M.D. Degree

in Cardiothoracic Surgery

BY

Sarwat Fakhry Ishak

M.B., B.Ch., M.Sc. (General Surgery)

Faculty of Medicine, Cairo Univeristy

SUPERVISED BY

Prof. Dr.
Mohamed Fathy EL-Ashkar
Professor of Cardiothoracic Surgery
Faculty of Medicine, Cairo University

Prof. Dr.
Mohamed Magdy Gomaa
Professor of Cardiothoracic Surgery
Faculty of Medicine, Cairo University

Prof. Dr.
Adel Emam
Head of Cardiology Department and
Cardiac Catheterization Department
National Heart Institute, Cairo

Dr.
El-Sayed Kamel Akl
Assistant Professor of
Cardiothoracic Surgery
Faculty of Medicine, Cairo University

Faculty of Medicine
Cairo University
1995

ACKNOWLEDGMENT

All thanks are due to **God**

I *would like to express my deepest thanks to Prof. Dr.* **Mohamed Fathy El-Ashkar,** *Professor of Cardio-thoracic Surgery, Faculty of Medicine, Cairo University, for his kind supervision, valuable remarks and encouragement.*

I *stand in great debt to Prof. Dr.* **Magdi Gomaa,** *Professor of Cardio-thoracic Surgery, Faculty of Medicine, Cairo University for his generous help and meticulous care throughout the whole period of the study.*

I *wish to express my deepest appreciation to Prof. Dr.* **Adel Emam,** *Professor and Head of Cardiology Department and Angiography and Cardiac Catheterization Department, in the National Heart Institute, for his kind cooperation and valuable advice.*

I *offer warm thanks to Dr.* **Sayed Akl,** *Assistant Professor of Cardio-thoracic Surgery, Faculty of Medicine, Cairo University for his continuous guidance, fruitful suggestions and unlimited help.*

No *word can fulfill the feeling of gratitude and respect I carry for Dr.* **Rifaat Kamar,** *Associate Professor of Cardio-thoracic Surgery in the National Heart Institute for his impressive assistance and cordial help. He spared no effort or time in providing all facilities required to carry out this work.*

I *am much obliged to Dr.* **Adel El-Banna,** *Associate Professor of Cardio-thoracic Surgery in the N.H.I. for his sincere help, patience and cooperation. In this opportunity, I present my thanks and appreciation to Dr.* **Ibrahim Fayez,** *Head of Department of Medical Registration and Statistics, El-Sahel Teaching Hospital. He gave me much of his precious time and constructive remarks.*

To *all the staff of Cardio-thoracic Surgery, Cardiology, and Echocardiography in the National Heart Institute, I am so grateful for their valuable help.*

Finally, *I would like to thank my dear wife for her everlasting devotion, encouragement and patience for converting blank papers into a written thesis.*

CONTENTS

LIST OF ABBREVIATIONS

+	: Present, mild
+ +	: Moderate
+ + +	: Severe, marked
-	: absent
2D	: Two Dimensional
<	: Less than
>	: Greater than
♀	: Female
♂	: Male
A.F.	: Atrial Fibrillation
A.V.	: Atrioventricular
A.V.D.	: Aortic Valve Disease
A.V.R.	: Aortic Valve replacement
C.O.P.D.	: Chronic Obstructive Pulmonary Disease
C.T.R.	: Cardio-Thoracic Ratio
C.V.P	: Central Venous Pressure
D.V.R.	: Double Valve (mitral and aortic) Replacement
ECG	: Electrocardiography
F.S.	: Fraction Shortening
H.S.	: Highly Significant
I.V.C.	: Inferior Vena Cava
L.A.	: Left Atrium
L.A.D.	: Left Axis Deviation
L.L.	: Lower Limb
LVEDD	: Left Ventricular End-diastolic Dimension
LVESD	: Left Ventricular End-systolic Dimension
M.repair	: Mitral repair
M.R.I.	: Magnetic Resonance Imaging
M.S.	: Mitral stenosis
M.V.	: Mitral valve

M.V.D.	: Mitral Valve Disease
M.V.R.	: Mitral Valve Replacement
N	: Normal
NHI	: National Heart Institute
N.S.	: Non Significant
N.V.	: Neck Vein
N.Y.H.A	: New York Heart Association
N.Y.U	: New York University
O.M.V.	: Open Mitral Valvotomy
P.	: Probability of error
P.A.	: Pulmonary Artery
P.A.P.	: Pulmonary Artery Pressure
P.C.	: Prothrombin Concentration
P.H+	: Pulmonary Hypertension
P.T.	: Prothrombin Time
Pts.	: Patients
R.A.	: Right Atrial
R.A.D.	: Right Axis Deviation
R.H.F.	: Right-sided Heart Failure
R.V.	: Right ventricle
R.V.E.	: Right Ventricular enlargement
R.V.P.	: Right Ventricular Pressure
S.	: Significant
S.A.	: Sino-Atrial
S.D.	: Standard Deviation
S.G.O.T.	: Serum Glutamic Oxaloacetic Transaminase
S.G.P.T.	: Serum Glutamic Pyruvic Transaminase
S.V.C	: Superior Vena Cava
T.R.	: Tricuspid Regurge
Tr.V.	: Tricuspid valve
V.V.I.	: Ventricular-Ventriculo Inhibitory.
X-Ray	: Chest Roentgenogram

INTRODUCTION AND AIM OF THE WORK

INTRODUCTION AND AIM OF THE WORK

INTRODUCTION

Acquired tricuspid valve (Tr.V.) disease is classified surgically as functional or organic (**Karp, 1990**).

The most common cause of tricuspid regurgitation (T.R.) is not intrinsic involvement of the valve itself, but dilatation of the right ventricle (R.V.) and of the tricuspid anulus, which may be due to complication or right ventricular failure of any cause. This results in failure of systolic valve coaptation of the tricuspid valve leaflets (**Braunwald, 1992**).

The degree of functional impairement is related to the severity of the left sided lesion, the duration of aortic or mitral valve (M.V.) dysfunction and the resultant degree of pulmonary artery hypertension and the degree of right ventricular dilatation (**Karp, 1990**).

In tricuspid insufficiency the systolic regurgitation into the right atrium elevates the right atrial (R.A.) pressure (**Rackley et al., 1990a**).

Hepatic dysfunction often complicates Tr.V. disease and must be defined before surgical intervention (**Karp, 1990**).

T.R. in the absence of pulmonary hypertension (PH+) usually does not require surgical treatment. In patients with PH+, the severity of regurgitation should be assessed by palpation of the valve at the time of the mitral or aortic valve surgery. Excellent results have been reported in patients with T.R. with the use of the De-Vega tricuspid annuloplasty (**Braunwald, 1992**).

The De-Vega technique uses a double purse-string to narrow the anulus from the anteroseptal commissure to the posteroseptal commissure. A valve sizer is often inserted to gauge correctly the degree to which the annuloplasty suture is tightened **(Karp, 1990)**.

Undoubtedly, the results of Tr.V. annulorraphy have been better than those of the prosthetic replacement of the valve **(Minale et al., 1990)**.

However, the De-Vega procedure commonly fails when excessive stress causes the continuous suture to tear from the myocardium and the suture is strung across the tricuspid orifice, a condition called "Guitar string tricuspid", and tricuspid insufficiency recurs.

A new technique for tricuspid valvular repair "Segmental tricuspid annulopasty" can prevent suture tear by placing interrupted stitches over teflon pledgets. This new technique is as fast and technically simple as the commonly used De-Vega annuloplasty technique.

Segmental tricuspid annuloplasty successfully achieves annular reduction while compensating for suture tearing. Even if one suture should fail or tear from the endocardium, enough sutures would remain to prevent massive tricuspid insufficiency **(Revuelta and Garcia-Rinaldi, 1989)**.

Segmental tricuspid annuloplasty carries the advantage of the more expeditious one suture/one knot, while still securing the periannular tissues, over the unprotected annular suture after the De-Vega annuloplasty **(Antunes, 1990)**.

Color Doppler flow mapping provides accurate assessment of the presence and severity of T.R. This technique aids in the selection of patients appropriate for surgical repair of the Tr.V. and is useful in evaluating the adequacy of Tr.V. repair. Color Doppler study performed early post-operative accurately predicts the presence (if any) and the severity of residual post-operative T.R. **(Czer et al., 1989)**.

AIM OF THE WORK

The tricuspid valve remains an enigma. Whenever functional tricuspid insufficiency requires surgical repair to be performed, the choice of the best annuloplasty technique which gives permanent efficiency is still controversial, and opinions still differ on the best way to reconstruct the Tr.V.

The aim of this work is to evaluate this new technique "Segmental tricuspid annuloplasty", comparing it with the well known and commonly used De-Vega technique, and to assess the performance of the Tr.V. following this new technique both early and late postoperatively. The scope of this work includes functional tricuspid insufficiency in patients with mitral valve disease (M.V.D.) requiring surgical intervention.

REVIEW OF LITERATURE