ASSESSMENT OF RENAL GRAFTS BY DUPLEX -DOPPLER SONOGRAPHY AND RENAL SCINTIGRAPHY

ESSAY

Submitted in partial fulfillment for the Master Degree in Radiodiagnosis

Submitted by

Mary Rose Maurice Yacoub
M.B.B.CH.

616.0757
M. R.
63559

Supervised by

Dr. Alia Abdallah El Fiky
Assistant Professor of Radiodiagnosis.
Ain Shams University.

Dr. Hassan Galal Mourad
Assistant Professor of Radiodiagnosis
Ain Shams University

Faculty of Medicine
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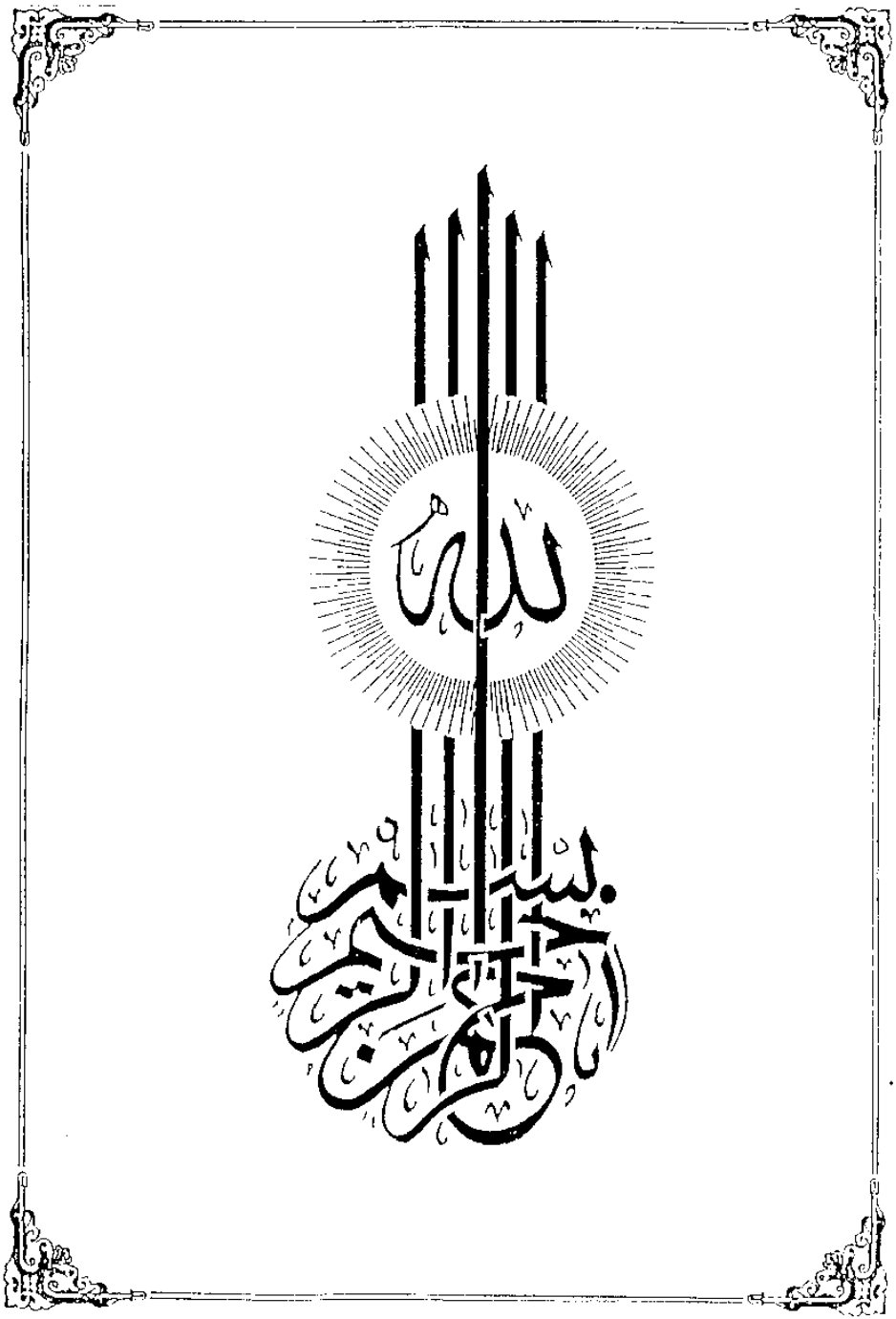

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TO ALL THOSE WHO GAVE ME A

LENDING HAND

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Abbreviation List

ACE	Anticonverting Enzyme
ACR	Acute Cellular Rejection
ATN	Acute Tubular Necrosis
AVF	Arteriovenous Fistula
CRF	Chronic Renal Failure
CsA	Cyclosporine A
DTPA	Diethylene triamine penta acetic acid
D/S	Diastole/Systole
EDTA	Ethylene diamine Tetra Acetic Acid
ERPF	Effective Renal Plasma Flow
GFR	Glomerular Filtration Rate
LFOV	Large Field of View
MAG_3	Mercapto acetyl triglycerine
OIH	Ortho-iodo-hippuric acid
PAH	Para-amino-hippuric acid
PI	Pulsatility Index
RAS	Renal Artery Stenosis
RBC	Red Blood Cells
RI	Resistive Index
RIR	Renal Iliac Ratio
SDCS	Single Dose Captopril Scintigraphy
TRAS	Transplant Renal Artery Stenosis
US	Ultrasound
DMSA	Diamine mercapto succinic acid.

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LIST OF FIGURES

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INTRODUCTION

Chronic renal failure is a stage reached when the kidneys no longer function. Treatments provided are dialysis and renal transplantation. Due to the marked improvement of graft survival, the treatment of choice is renal transplantation. ***(Tublin and Dodd, 1995)***

As any other operation, follow up for the graft is necessary for detection of early or delayed complications. Complications occuring are either parenchymal, urological or vascular in origin.

Usually, the best and least harmful methods for post operative assessment are the non invasive techniques. Duplex sonography and renal scintigraphy provide these measures, in addition to their provision of morphological and functional data.

The success of ultrasound is derived from its good spatial resolution and diagnostic accuracy. The most recent application of the ultrasound is the colour Doppler which has introduced the dynamic factor, allowing the superimposition, on the high-resolution image, of blood flow information through a detailed, non invasive method ***(Castelo et al 1997).***

Renal imaging of transplanted kidneys is performed to help distinguish acute tubular necrosis from acute transplant rejection as well as to detect other post transplant complications ***(Frederic A. Conte,1994).***

The strength of nuclear medicine imaging resides in its ability to portray the functional status of an organ or body part . Renal imaging of transplanted kidneys is performed to help

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distinguish ATN from transplant rejection as well as to detect other past transplant complications ***(Frederic A. Conte, 1994).***

In the analysis a Perfusion Index may be calculated by relating the blood flow through the kidney to that through the distal iliac artery ***(Michael Maisey,1992)***

AIM OF WORK

My aim in this research is to study and evaluate the uses of Duplex - Doppler sonography and renal scintigraphy as accurate, non invasive methods for the early detection of renal allograft complications.

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