ROLE OF DUPLEX SONOGRAPHY IN THE EVALUATION OF ERECTILE DYSFUNCTION

THESIS

Submitted in Partial Fulfilment for the M.D. Degree in Radiodiagnosis

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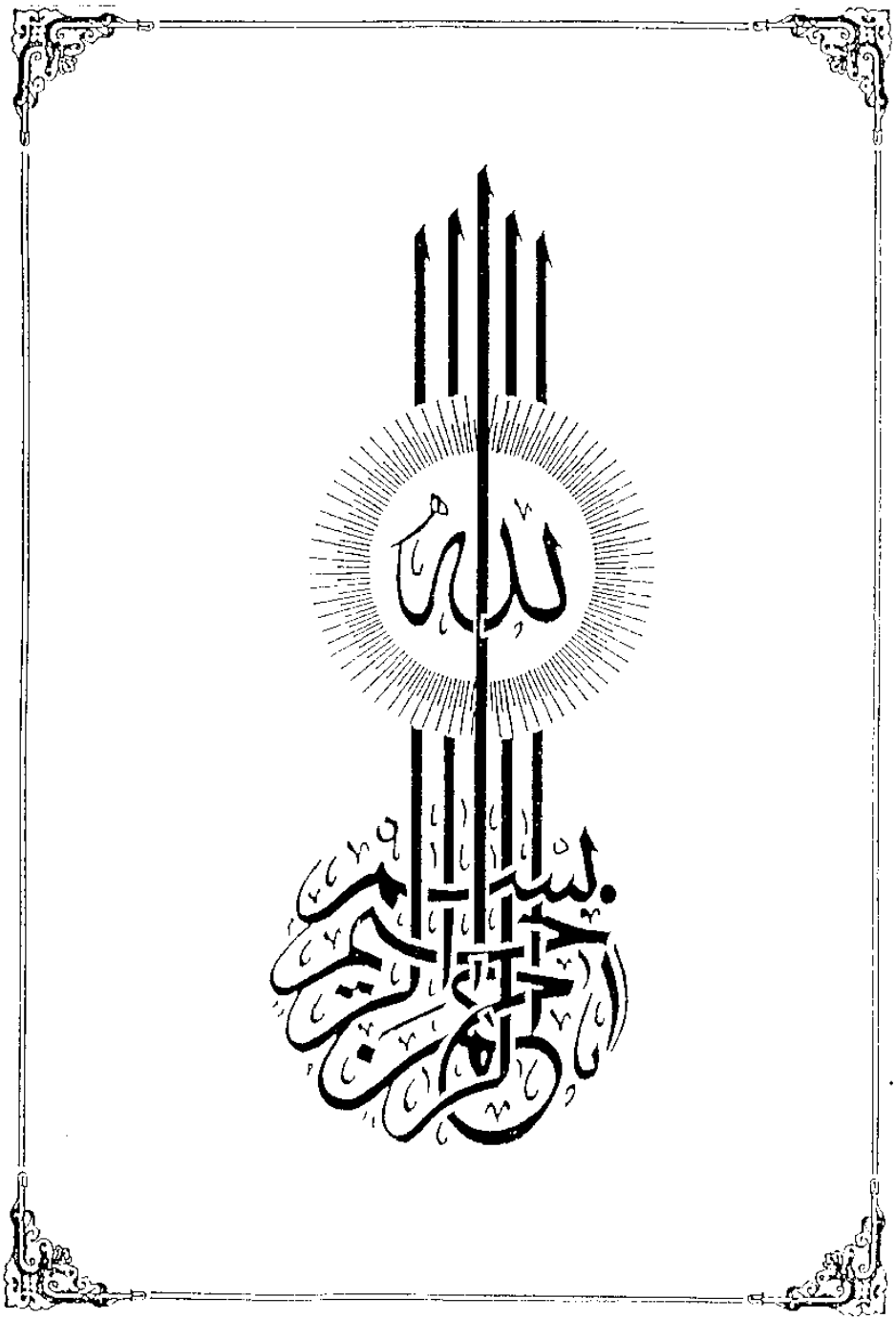
1998



Acknowledgment

Thanks to God who always help me in all my life.

I am greatly indebted to Prof. Dr. Ahmad Abd El Tawab, Professor of radiodiagnosis, Faculty of Medicine, Ain Shams University, for his generous assistance, moral support and supervision.

I am most grateful to Prof. Dr. Ahmad El Dorry, Professor of radiodiagnosis, Faculty of Medicine, Ain Shams University, for his help, kind encouragement and supervision.

I would like to express my thanks to Tom Lue, M.D. Professor of Urology, faculty of Medicine, University of California, and to Hedvig Hricak, M.D.,Ph.D., Chief of Abdominal Imaging section, Dept. of Radiology , University of California SF, for their help & support.

My appreciation to Prof. Dr. Zeinab Abd Allah, chief of the Radiology Dept., Faculty of Medicine, Ain Shams University, for her generious help & moral support.

Last but not least I am deeply grateful to all the staff of radiodiagnosis Department, Ain Shams University for their collaboration.

CONTENTS

Abstract

The aim of this work is devoted to assess the value of color Duplex US in the evaluation of different causes of erectile dysfunction. Meanwhile the best practicable technique & the optimum vaso-active agent would be identified; seeking an efficient diagnosis and treatment.

This study was conducted on 174 patients complaining of erectile dysfunction for a duration ranging between 1 and up to 60 months.

Two methods of examinations were done in this study. The first method was done on 72 patients at the radiodiagnosis Dept. Ain Shams University Hospital, using papaverine as the only intracavernous injected vaso-active agent. Duplex measurements were recorded at 5, 10 & 15 minutes post injection.

The second method of examination was done on 74 impotent patients at the Urology Dept. of the University of California SF, using a mixture of papaverine , phentolamin & prostaglandin E1. Duplex measurements were obtained post injection. Patients with suboptimal response were advised to do self genital stimulation & were injected with a poster dose of the same triple vaso-active agent.

We found that the second method was more physiological & the results of erection were comparable or better than that obtained during intercourse.

Our study showed high accuracy of duplex US as the primary modality for investigating people with vasculogenic cause of erectile dysfunction. It can differentiate (with high sensitivity & specificity) between arterial or venous causes of impotence, (using a peak systolic velocity (PSV) threshold of 30 Cm/S as indicative of arterial response & end diastolic velocity (EDV) threshold of 5 Cm/S as an indication of the venous response). We found also that PSV is more accurate than acceleration time . Also combining the EDV & resistive index parameters improves the sensitivity of Duplex Us for the diagnosis of veinogenic cause of impotence.

Introduction & Aim of the Work

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Erectile dysfunction is the inability to obtain an erection sufficient for penetration which may be due to psychogenic or organic causes. It is an important cause of marital failure.

Impotence is a topic that can arouse fear and anxiety in many men and women. The lack of knowledge about the sexual process among both the public and many physicians compounds the problem.

Recent research advances in the neuro-anatomy, physiology, hemodynamics and pharmacology of penile erection have provided us with new insights into the cause and pathophysiology of different types of erectile dysfunction. Apart from psychogenic factors, it is now evident that vascular disease is one of the most common factors implicated , (Bernard and Lue, 1990).

Definite diagnosis of impotence is established after careful history taking, proper examination and adequate investigations such as radiographic study of penile vasclature. Patients who are suspected for impotence secondary to inadequate penile flow should undergo non invasive vascular studies.

The introduction of Duplex Sonography has provided an accurate and non invasive means for assessment of suspected vasculogenic impotence. The advent of color Doppler imaging brings with it certain advantages over the standard duplex Sonography as it makes the visualization of

the cavernosal arteries more easier and the correction of Doppler angle simple and more accurate, and allows more rapid accurate acquisition of data.

The introduction of penile Duplex Sonography in the evaluation of vasculogenic impotence has been useful in many studies. These important studies used peak systolic velocities and diameter of the cavernosal arteries to assess penile blood flow.

This work will evaluate patients with vasculogenic impotence and trying to differentiate the cause whether arteriogenic or venous.