ROLE OF TECHNETIUM 99-m PERTECHNETATE IN THYROID SCINTIGRAPHY TOWARDS THE DIAGNOSIS OF THYROTOXIC PATIENTS

Essay

Submitted for the partial fulfillment of
Master degree in Radiodiagnosis

By

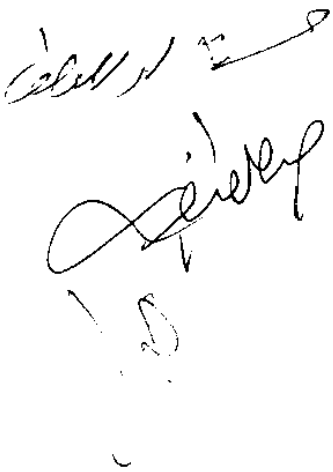
SHERINE MOHAMED SHARARA
M.B., B.ch

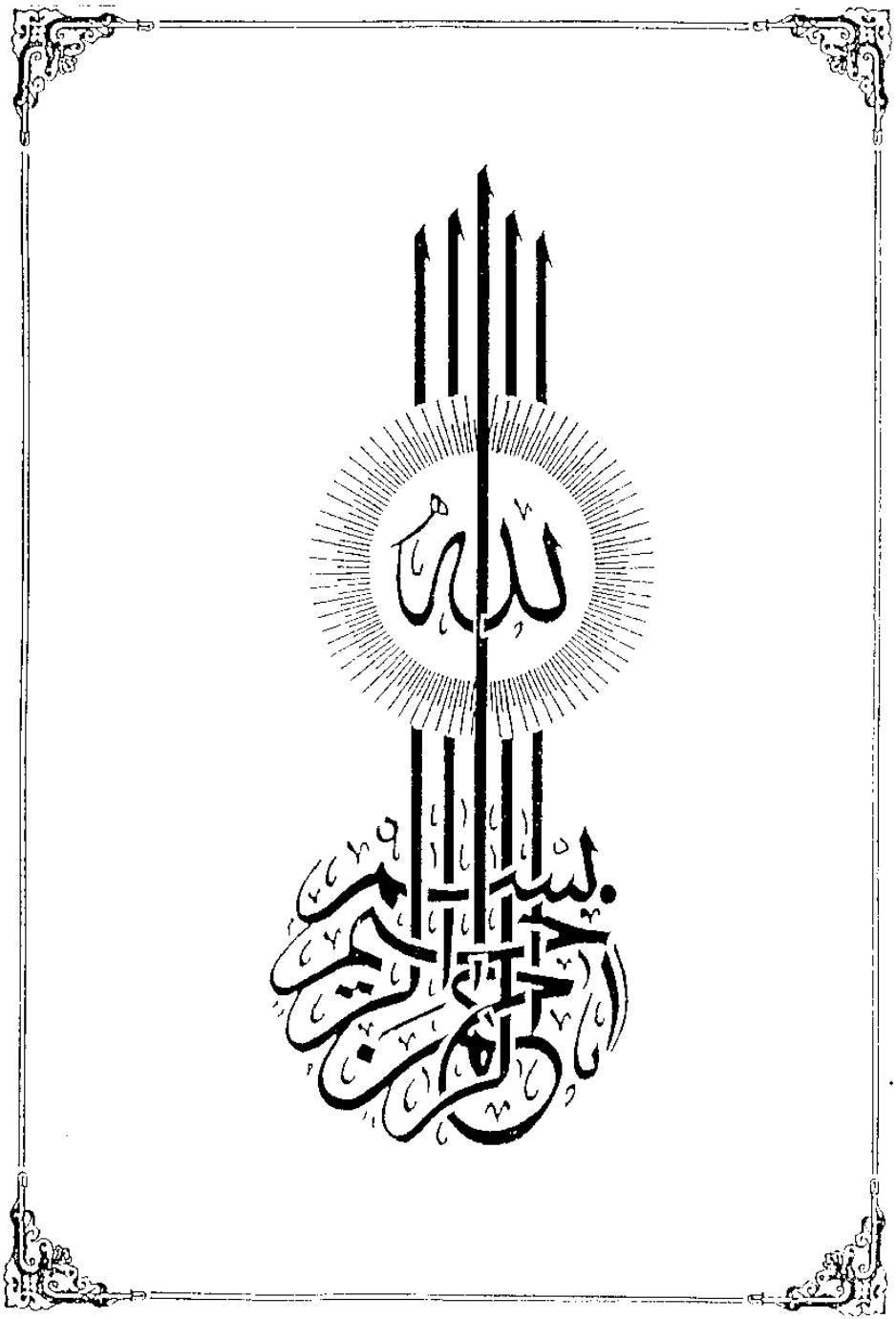
Supervised by

PROF. DR. AHMED TALAAT KHAIRY
Professor of Radiodiagnosis
Ain Shams University

DR. RANDA ABDALLA
Lecturer of Radiodiagnosis
Ain Shams University

Faculty Of Medicine
Ain Shams University
1998





"قالوا سبحانك لا علم لنا إلا ما
علمتنا إنك أنت العليم الحكيم"

البقرة آية "٣٢"

ABSTRACT

Thyrotoxicosis may be due to diffuse thyroid disorder such as Grave's disease and subacute thyroiditis, or due to focal lesions such as single toxic adenoma or multiple functioning adenomas (Plummer's disease).

Tc-99m pertechnetate scan plays an essential and leading role for establishing the diagnosis. It is capable for differentiating Grave's disease from thyroiditis, unlike ultrasound which gives similar findings. In nodular disease, the scan reveals the functioning nature of the adenoma and reflects the degree of thyrotoxicity through the elevation of the thyroid uptake.

TO My Parents
Husband
&
Lovely Daughter

ACKNOWLEDGMENT

Thanks first and last to GOD as we owe him for his great care, support and guidance in every step in our life.

Words do fail me when I come to express my sincere indebtedness, profound gratitude and cordial appreciation to my **Prof. Dr. Ahmed Talaat Khairy** *Professor of Radiodiagnosis, Faculty Of Medicine, Ain Shams University, for his moral support, valuable supervision and for enabling me to fulfill this work. He is not only my Professor to whom I am very grateful, but he is also a human to whom I wish always the best of everything.*

Special thanks are due to **Dr. Randa Abdalla** *Lecturer of Radiodiagnosis, Faculty Of Medicine, Ain Shams University, for dedicating so much of her precious time and effort and for her kindness, honest and constant guidance to complete this work.*

Sherine

List Of Abbreviations

%	Per cent
°C	Degree centigrade
μCi	Micro Curie
μg	Microgram
	(A)
AMP	Adenosine mono phosphate
Anti-TPO	Antithyroid peroxidase
APUD	Amine precursor uptake and decarboxylation
	(B)
BMR	Basal metabolic rate
	(C)
cm	Centimeter
	(D)
d	Day
dl	Deciliter
	(E)
ESR	Erythrocyte sedimentation rate
	(G)
g	Gram
	(H)
h	Hour
	(I)
I-131	Iodine-131
IM	Intramuscular
IVU	Intravenous urography
	(K)
KeV	Kilo electron volt
	(L)
LAO	Left anterior oblique

	(M)
mg	Milligram
mm	Millimeter
mrad/mCi	Millirad/millicurie
mU/L	Milliunit per liter
	(N)
NaI	Sodium iodide
ng	Nanogram
nmol/L	Nanomol per liter
	(O)
O/E	On examination
	(R)
RAIU	Radioactive iodine uptake
RAO	Right anterior oblique
RIAs	Radioimmunoassays
	(S)
SSN	Suprasternal notch
	(T)
T_3	Triiodothyronine
T_4	Tetraiodothyronine or thyroxine
TBG	Thyroid binding globulin
TBII	TSH-binding inhibitory immunoglobulins
Tc-99m	Technetium – 99 metastable
Tc-99m-MIBI	Technetium 99m-methoxy isobutyl isonitrile
TCO_4^-	Pertechnetate
TPO	Thyroid peroxidase
TRH	Thyrotropin releasing hormone
TSAb	Thyroid-stimulating antibodies
TSH	Thyroid stimulating hormone
TSI	Thyroid-stimulating immunoglobulins

List Of Figures