

ثبكة المعلومات الجامعية





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بللله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأفلام قد اعدت دون آية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار في درجة حرارة من 15 - 20 منوية ورطوبة نسبية من 20- 40 $^{\circ}$

To be kept away from dust in dry cool place of 15 – 25c and relative humidity 20-40 %



ثبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



ثبيكة المعلومات الجامعية



The Role of MR1 in Diagnosis of Pituitary Tumours

Thesis
Submitted for Partial Fulfillment of
M.D. Degree
In
Radiodiagnosis

By **Alaa Eldeen Mohamed Khalifa**

Radiodiagnosis Department Maadi Armed Forces Hospital M.B., B.Ch. - M.Sc.

Supervisors

Prof. Dr. Salwa Taha Ahmed Ismail

Professor of Radiodiagnosis

Faculty of Medicine

Ain Shams University

General Dr. Sarwat Mohammed Selim Consultant of Radiodiagnosis & Head of Radiodiagnosis Department, Maadi Armed Forces Hospital, Cairo 407E

Faculty of Medicine - Ain Shams University

1997

Acknowledgment

I am most grateful and greatly indebted and gratitude to *Professor Dr. Salwa Taha Ahmed Ismail*, Professor of Radiodiagnosis, Faculty of Medicine, Ain Shams University, for her help, meticulous revision, kind encouragement and supervision, and the time she devoted for this work to come into the final form.

I am greatly indebted to General Dr. Sarwat Mohammed Selim, Consultant of Radiodiagnosis and Head of Radiodiagnosis Department, Maadi Armed Forces Hospital, Cairo, for his assistance, moral support and supervision.

I would like to express my thanks to Professor *Dr*. *Zeinab Abdallah*, Professor and Head of Radiodiagnosis Department. Faculty of Medicine, Ain Shams University, for her support and encouragement

It is as well, with great pleasure to record my sincere gratitude to *Dr. Hassan Abd El-Moneim*, Lecturer of Radiodiagnosis.

Last but not least, I am deeply grateful to my wife, who without her kind and her great effort of editing this work, it could not have come to light.

To My Mother and Late Father

Contents

•	Introduction and Aim of The Work	1
	- Anatomy of the pituitary tumours	3
	- Pathology of the pituitary tumours	35
•	Material and Methods	51
•	Results and Illustrative Cases	56
•	Discussion	144
•	Summary and Conclusions	152
•	References	155
•	Arabic Summary	

List of Abbreviation

ACTH Adrenocarticotrophic hormone.

ADH Aldosteron hormone (vasopressin hormone).

CS Cavernous sinus

CSF Cerebrospinal fluid

CT Computerized tomography
FSH Follicle stimulating hormone.

Gd DTPA Gadolinium diethylene-triamin penta acetic acid.

GRE Gradient echo images

I.V. Intra venous

ICSH Interstitial cell stimulating hormone

LH Leutinizing hormone.

LTH Lactogenic hormone.

MRA Magnetic resonance angiography.

MRI Magnetic resonance imaging

MSH Melanocystic stimulating hormone.

SE Spin echo images

STH Somatotrophic hormone.

T1 Longitudinal relaxation time.

T2 Transversal relaxation time.

TE Time to echo
TOF Time of flight
TR Time to repeat

TSH Thyrotrophic hormone

List of Figures

Figure No.	Details	Page No.
1	An anatomical coronal section at the level of the pituitary gland (P) showing optic chiasma (oc), contents of the cavernous sinus, internal carotid artery (A), third (III) fourth (IV) and sixth (VI) cranial nerves	4
2	Showing deferent parts of the pituitary gland	7
3	Showing blood supply of the pituitary gland, the anterior pituitary lobe is supplied by the superior hypophyseal arteries indirectly through the pituitary portal system. The posterior pituitary gland receives separate and direct arterial supply from the inferior hypophyseal arteries	10
4	Normal anatomy of the sella turcica and parasellar region is illustrated in sagittal (A-B-C-) T1 weighted images. (The most important structures are labeled	15
5	Normal anatomy of the sella turcica and parasellar region is illustrated in coronal (A, B, C, D) T1 weighted images. (The most important structures are labelled),	16
6	Normal anatomy of the sella turcica and parasellar region is illustrated in axial (A, B, C, D) T1 weighted images. (The most important structures are labeled)	18

The posterior part of pituitary gland and cavernous sinus in (a) anatomical and (b) coronal T1 weighted images. The vertical part of the internal carotid artery (A) has negligible signal, Optic chiasm (OC), infundibulum and third cranial nerves (III). 8 Sagittal (A) and coronal (B) MR images show bright post pituitary (arrow-head) and the isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary gland (III) is third cranial perves			
coronal T1 weighted images. The vertical part of the internal carotid artery (A) has negligible signal, Optic chiasm (OC), infundibulum and third cranial nerves (III). 8 Sagittal (A) and coronal (B) MR images show bright post pituitary (arrow-head) and the isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary	7	The posterior part of pituitary gland and	18
the internal carotid artery (A) has negligible signal, Optic chiasm (OC), infundibulum and third cranial nerves (III). 8 Sagittal (A) and coronal (B) MR images show bright post pituitary (arrow-head) and the isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		cavernous sinus in (a) anatomical and (b)	
signal, Optic chiasm (OC), infundibulum and third cranial nerves (III). 8 Sagittal (A) and coronal (B) MR images show bright post pituitary (arrow-head) and the isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		coronal T1 weighted images. The vertical part of	
third cranial nerves (III). 8 Sagittal (A) and coronal (B) MR images show bright post pituitary (arrow-head) and the isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		the internal carotid artery (A) has negligible	
Sagittal (A) and coronal (B) MR images show bright post pituitary (arrow-head) and the isointense anterior pituitary) Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		signal, Optic chiasm (OC), infundibulum and	
bright post pituitary (arrow-head) and the isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		third cranial nerves (III).	
isointense anterior pituitary) 9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary	8	Sagittal (A) and coronal (B) MR images show	23
9 Coronal T1 weighted images at the level of posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		bright post pituitary (arrow-head) and the	
posterior pituitary, high signal intensity in post lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		isointense anterior pituitary)	
lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary	9	Coronal T1 weighted images at the level of	23
lobe. Posterior clinoid process (straight arrows), clivus (curved arrow) 10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		posterior pituitary, high signal intensity in post	
10 A sagittal T1 weighted images showing the pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		lobe. Posterior clinoid process (straight arrows),	
pituitary gland (P) has a homogenous signal intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		clivus (curved arrow)	
intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary	10	A sagittal T1 weighted images showing the	24
intensity, negligible signal of sphenoid sinus (S) and the high-intensity signal from fatty marrow in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		pituitary gland (P) has a homogenous signal	
in dorsum sellae (D and clivus (curved arrow), optic chiasma (OC), infundibiulum (I) 11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary			
optic chiasma (OC), infundibiulum (I) The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		and the high-intensity signal from fatty marrow	
11 The pituitary gland (P) has a normal size and homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		in dorsum sellae (D and clivus (curved arrow),	
homogenous signal intensity, above the gland is the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial 28 anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		optic chiasma (OC), infundibiulum (I)	
the optic chiasm (OC), cranial nerves (VI, VII), internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary	11	The pituitary gland (P) has a normal size and	27
internal carotid artery (A) 12 Upper part of cavernous sinus in (A) axial 28 anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		homogenous signal intensity, above the gland is	h
12 Upper part of cavernous sinus in (A) axial anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated, the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		the optic chiasm (OC), cranial nerves (VI, VII),	
anatomical and (B) T1 weighted images. The horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		internal carotid artery (A)	
horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary	12	Upper part of cavernous sinus in (A) axial	28
horizontal part of the cavernous internal carotid artery (A) is demonstrated. the lateral wall of the cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		anatomical and (B) T1 weighted images. The	
cavernous sinus and adjacent CSF can not be differentiated in this images because both have negligible signal (curved arrow), P, pituitary		horizontal part of the cavernous internal carotid	
differentiated in this images because both have negligible signal (curved arrow), P, pituitary		artery (A) is demonstrated. the lateral wall of the	
negligible signal (curved arrow), P, pituitary		cavernous sinus and adjacent CSF can not be	
negligible signal (curved arrow), P, pituitary		· · · · · · · · · · · · · · · · · · ·	
gland (III) is third cranial nerves			
giana, (11) is third cramar nerves		gland, (III) is third cranial nerves	

13	The pituitary gland (P) in coronal T1 weighted	30
	images (A) without and (B) with intravenous	
	Gd.DTPA the gland enhances intensely but	
	slightly less than the adjacent cavernous sinuses	
	(arrows). The cavernous internal carotid artery	
	(A) has negligible signal without enhancement	
	in (A) or (B)	
14	Dynamic MR images of the normal pituitary	31
	gland in the sagittal section.	
15	Dynamic MR images of the normal pituitary	32
	gland in the coronal section.	
16	Sagittal (A) and coronal (B) high resolution	33
	contrast enhanced MR images of pituitary gland	
	in a 14 years old female with nromal	
	endocrinologic and biochemicalprofile. The	
	gland measures only 8 mm in high but has a	
	markedly convex upper margin with a nearly	
	spherical shape in sagittla seciton. The shape	
	was seen in 25% of female teenages and should	
	be considered a normal appearance representing	
	physiological (pubertal) hypertrophy	

Abstract

The aim of this work is to emphasize the role of MR1 in diagnosis of pituitary tumors.

This work was performed on 87 patient classified into 5 groups according to MR1 manifestation.

Adenomas, craniopharyngiomas dermoid, epidermoid and empty sella syndrome.

According to the MR1 criteria both T1 and T2 pulse sequence, the group I of adenomas are subdivided into 3 subtypes, water, solid and haemorrhagic types. it was concluded that MR1 has become the preferred modality for imaging the pituitary tumors.

Introduction and Aim of the Work