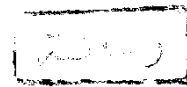


CT AND MRI OF SELLAR AND PARASELLAR LESIONS

Essay

Submitted in partial fulfillment of
Master Degree of Radiodiagnosis



By

Marwa Ibrahim Fahmy

M.B., B.Ch.

Supervisor

Dr. Heba Mohamed Khalil El-Deeb

Professor of Radiodiagnosis

Faculty of Medicine

Ain Shams University

Dr. Fatma Seddik Mahmoud

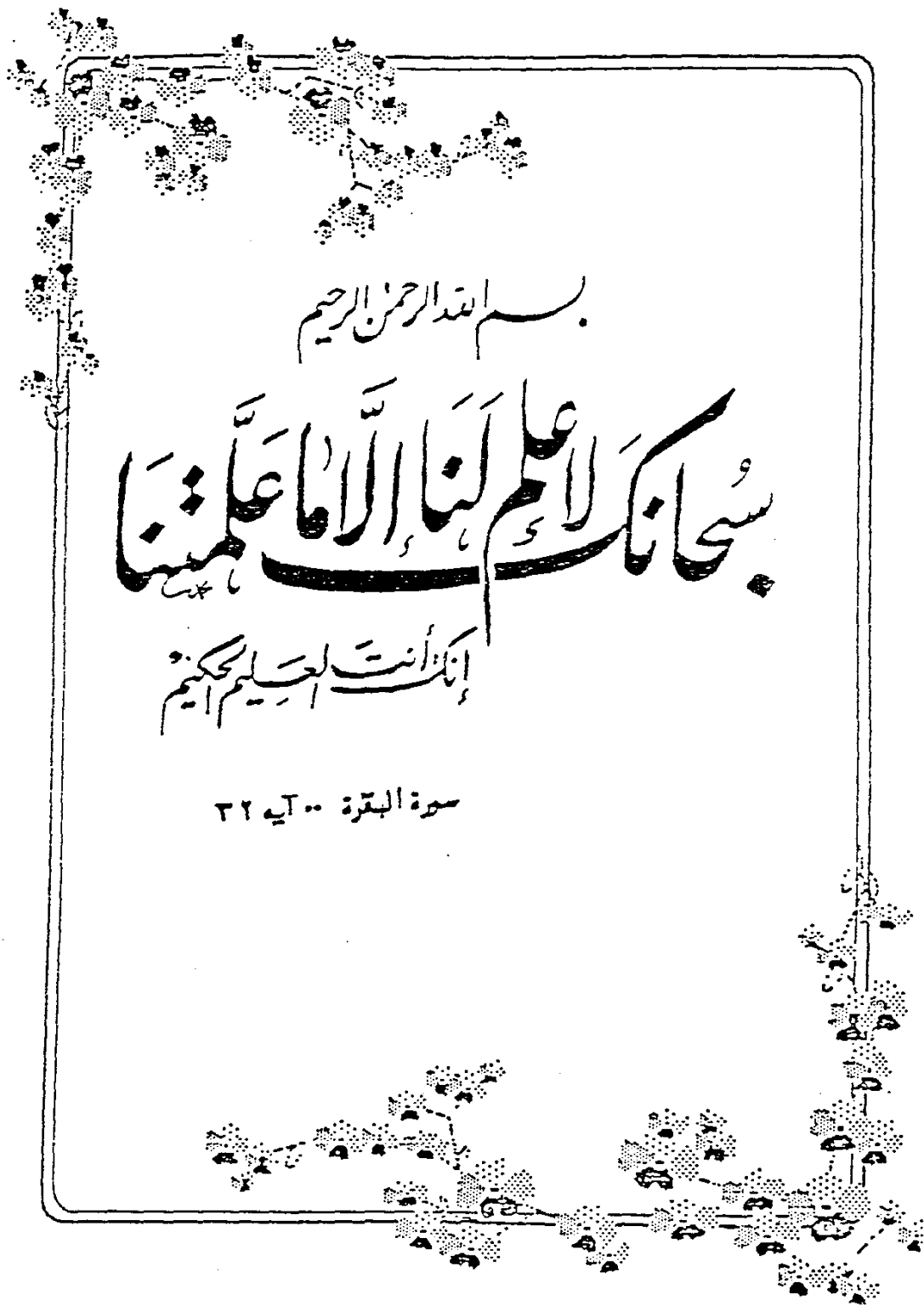
Assis. Prof. of Radiodiagnosis

Faculty of Medicine

Ain Shams University

**Faculty of Medicine
Ain Shams University
1994**





بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

سُبْحَانَكَ اللَّهُمَّ لَنَا إِلَٰهٌ غَيْرُكَ

إِنَّا أَنْتَ الْعَزِيزُ الْحَكِيمُ

سورة البقرة .. آية ٢٢



TO...

MY FAMILY

ACKNOWLEDGMENT

I am deeply indebted to Prof. Dr. Heba Khalil El-Deeb, Professor of Radiology, Faculty of Medicine, Ain Shams University, for her unlimited support, patience, guidance and spirit of cooperation which provide me with great help and assistance to continue this work.

My deep appreciation and gratitude for Dr. Fatma Seddik Mahmoud, Assis. Prof. of Radiology, Faculty of Medicine, Ain Shams University.

My sincere gratitude for all my Professors and Colleagues of Radiodiagnosis Department, Faculty of Medicine, Ain Shams University for their kind help and support they offered.

Marwa Ibrahim

CONTENTS

| | |
|--|----|
| Introduction and aim of work | 1 |
| Anatomy of sellar and parasellar region | 2 |
| Pathology of different sellar and parasellar lesions | 29 |
| CT technique and manifestations with illustrative cases | 45 |
| MRI technique and manifestations with illustrative cases | 69 |
| Summary and Conclusion | 94 |
| References | 97 |
| Arabic Summary | -- |

| | | |
|----|---|----|
| 17 | CT of suprasellar germinoma | 61 |
| 18 | CT of suprasellar dermoid | 61 |
| 19 | CT of optic chiasm glioma | 63 |
| 20 | CT of intrasellar arachnoid cyst | 63 |
| 21 | CT of arachnoid cyst with intrathecal contrast injection | 65 |
| 22 | CT of internal carotid artery aneurysm | 67 |
| 23 | CT of pituitary apoplexy | 67 |
| 24 | TIWI image of pituitary hypoplasia | 71 |
| 25 | TIWI image of empty sella turcica | 71 |
| 26 | TIWI and T2WI images of pituitary microadenoma | 73 |
| 27 | TIWI image of pituitary macroadenoma | 75 |
| 28 | MRI of pituitary macroadenoma | 78 |
| 29 | TIWI image of Cushing's disease with and without contrast enhancement | 78 |
| 30 | TIWI and T2WI images of calcified craniopharyngioma | 80 |
| 31 | TIWI image of craniopharyngioma | 80 |
| 32 | TIWI image of meningioma | 80 |
| 33 | TIWI images of meningioma with and without contrast | 82 |
| 34 | TIWI and T2WI images of germinoma | 84 |
| 35 | TIWI and T2WI images of paracavernous epidermoid cyst | 84 |
| 36 | TIWI and T2WI images of suprasellar dermoid cyst | 85 |
| 37 | TIWI image of optic chiasm | 85 |
| 38 | TIWI image of suprasellar arachnoid cyst | 87 |
| 39 | MRI of suprasellar arachnoid cyst | 87 |
| 40 | TIWI image of pituitary hypophysitis | 89 |
| 41 | Axial MRI of internal carotid artery aneurysm | 91 |
| 42 | TIWI image of pituitary apoplexy | 92 |
| 43 | TIWI image of Sheehan's syndrome | 92 |

INTRODUCTION AND AIM OF WORK

INTRODUCTION AND AIM OF WORK

The sellar and parasellar region is a complex crossroad of endocrine, neural, vascular and skeletal structures. Many clinical syndromes are the result of lesions involving the sella turcica and neighbouring structures. Imaging is crucial because clinical evaluation frequently cannot localize the lesion accurately.

The aim of this work is to summarize the most commonly encountered sellar and parasellar lesions and to enlight the role of CT and MRI in diagnosis of these lesions. The technique, advantages and limitations of either modality will be discussed and evaluated.

ANATOMY

Gray in 1975 stated that the sella turcica is a superior saddle shaped formation on the intracranial aspect of the body of sphenoid bone.

Parts of the Sella Turcica :

The parts of the sella are recognized as tuberculum sellae, dorsum sellae, hypophyseal fossa, the anterior, middle and posterior clinoid processes.

1. Tuberculum Sellae :

It is an elevation in the anterior slope of the sella turcica. Just anterior to the tuberculum sellae lies a groove for the optic chiasm termed sulcus chiasmaticus, with the optic foramen lateral to it.

2. Dorsum Sellae :

It is a square plate of bone that projects upward and forward. The middle part of the dorsum sellae is thin while the lateral edges are thick.

3. Hypophyseal Fossa :

It is a hollowed-out fossa posterior to the tuberculum sellae, with the sphenoid sinus inferior to it. The floor of the fossa may be flat, concave or convex from side to side.