

سامية محمد مصطفى



شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



سامية محمد مصطفى



شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



سامية محمد مصطفى



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



سامية محمد مصطفى



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



سامية محمد مصطفى



شبكة المعلومات الجامعية



بالرسالة صفحات لم ترد بالأصل



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا سبحانك

لا علم لنا الا ما علمتنا انك انت العليم الحكيم

سورة البقرة آية "٢٢"

صدق الله العظيم

B ١٣٤٥٢

**ROLE OF MRI
IN DIAGNOSIS OF
ENDOMETRIAL CARCINOMA
AND
CERVICAL CARCINOMA**

ESSAY

*Submitted to the Faculty of Medicine
Alexandria University
in partial fulfillment for the Requirements of the
Master degree of
Radiodiagnosis*

By

Waheed Hamdi Mohamed

MB, BCH. Alex.

Faculty of Medicine
Alexandria University
1997

SUPERVISORS

Prof. Dr. Mohamed Moustafa El Nahas

Professor of Radiodiagnosis

Faculty of Medicine

University of Alexandria

Dr. Salah Eldin Desouki Aboulenin

Lecturer of Radiodiagnosis

Faculty of Medicine

University of Alexandria

Dr. Adel Ali Ramadan

Lecturer of Radiodiagnosis

Faculty of Medicine

University of Alexandria

ACKNOWLEDGMENT

After giving all thanks to Allah.

A word of great appreciation and thanks should be deeply expressed to **Prof. Dr. Mohamed Mostafa El Nahas**, Professor of Radiodiagnosis, Faculty of Medicine, Alexandria University, for his help, close supervision, support and valuable guidance.

I would like to sincerely express my intense gratitude to **Dr. Salah El Din Desoki**. Lecturer of Radiodiagnosis, Faculty of Medicine, Alexandria University, for his close supervision, valuable advise, support and for his own activity and participation to deliver this work to light.

I record my gratitude to **Dr. Adel Ali Ramadan**, lecturer of Radiodiagnosis, Faculty of Medicine, Alexandria University, for his cordial guidance and indispensable help which have enabled me to perform this work.

TABLE OF CONTENTS

	Page
Introduction	1
Imaging techniques of the Uterus	11
MR Imaging of the Pelvis	14
MRI artifacts	30
MRI Anatomy	34
Pathology of endometrial carcinoma	52
Pathology of cervical carcinoma	55
MRI in diagnosis of endometrial carcinoma	59
MRI in diagnosis of cervical carcinoma	70
Summary	84
Recommendations	87
References	89
Protocol	
Arabic Summary	

INTRODUCTION

INTRODUCTION

Embryonic Development Of The Uterus

The mullerian ducts develop cephalocaudally from embryonal mesoderm forming the fallopian tubes and fuse distally to create the uterus, cervix and upper vagina. The uterus and superior end of the vagina are formed by fusion of the para mesonephric (mullerian) ducts near their attachment to the posterior wall of the primitive urogenital sinus , then the ducts zipper together in a superior direction between the 3rd and 5th months^(1,2). (Figure 1).

As the mullerian ducts are pulled away from the posterior body wall, they drag a fold of peritoneal membrane with them forming the broad ligament of the uterus. ^(2,3)

Histology Of The Uterus And Cervix

The endometrium represents the mucosal surface of the corpus uteri and it is formed by epithelium which is columnar and gland forming with a specialized stroma. The endometrium is composed of mucosal stratum functionalis which undergoes cyclic structural and functional changes during the reproductive age, and of stratum basale. Subendometrial region represent the densely packed smooth muscle bundles which are parallel to the stratum basale. The stratum vascular is the layer, in which the arcuate arteries are branched through the smooth muscle bundles of the myometrium proper. Thin subserosal zone of dense circumferential smooth muscle fibers forms an irregular capsule which become continuous with the myosalpinx. (Figure 2)^(2,4,5)

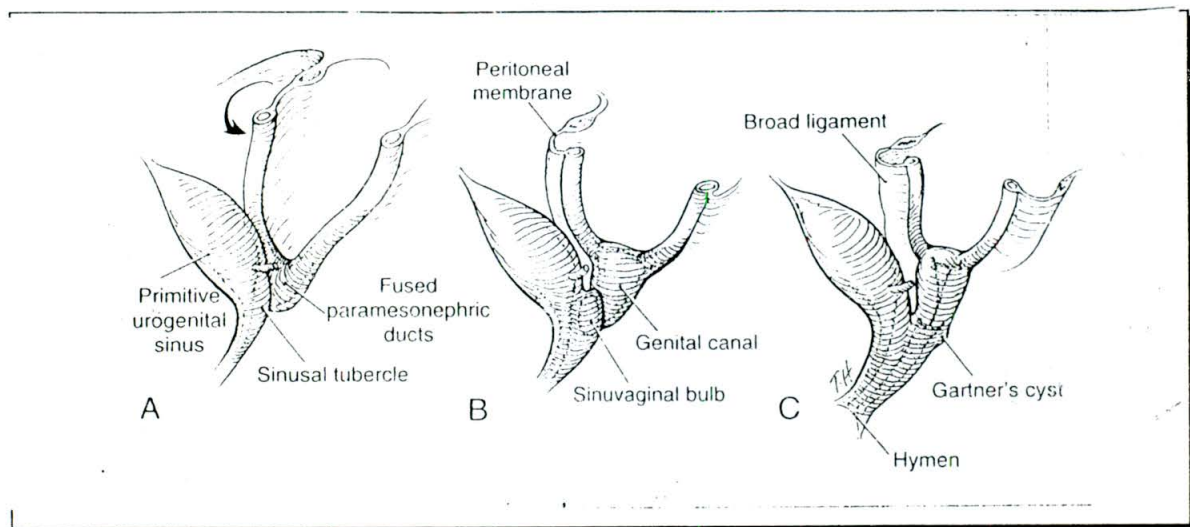


Figure 1: Embryonic Development of The Uterus. ⁽²⁾

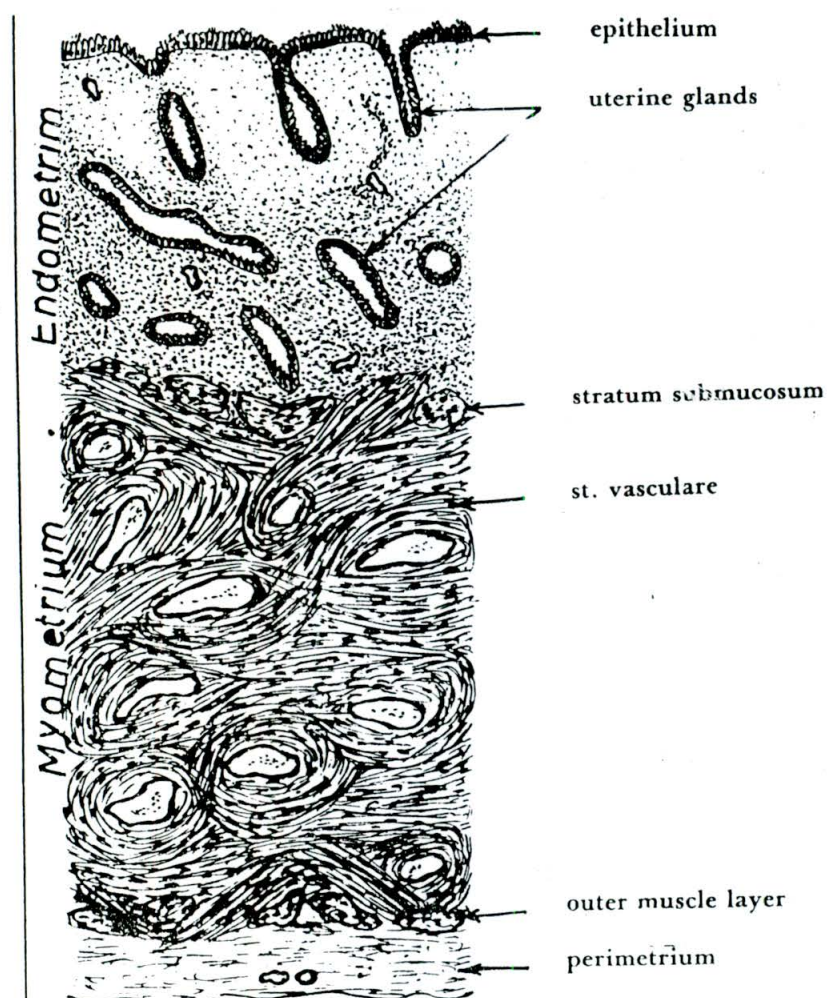


Figure 2: Histology of The Uterus. ⁽⁵⁾

Tubal mucosa is ciliated columnar epithelium which becomes progressively complex as the fimbriated end is approached.⁽²⁾

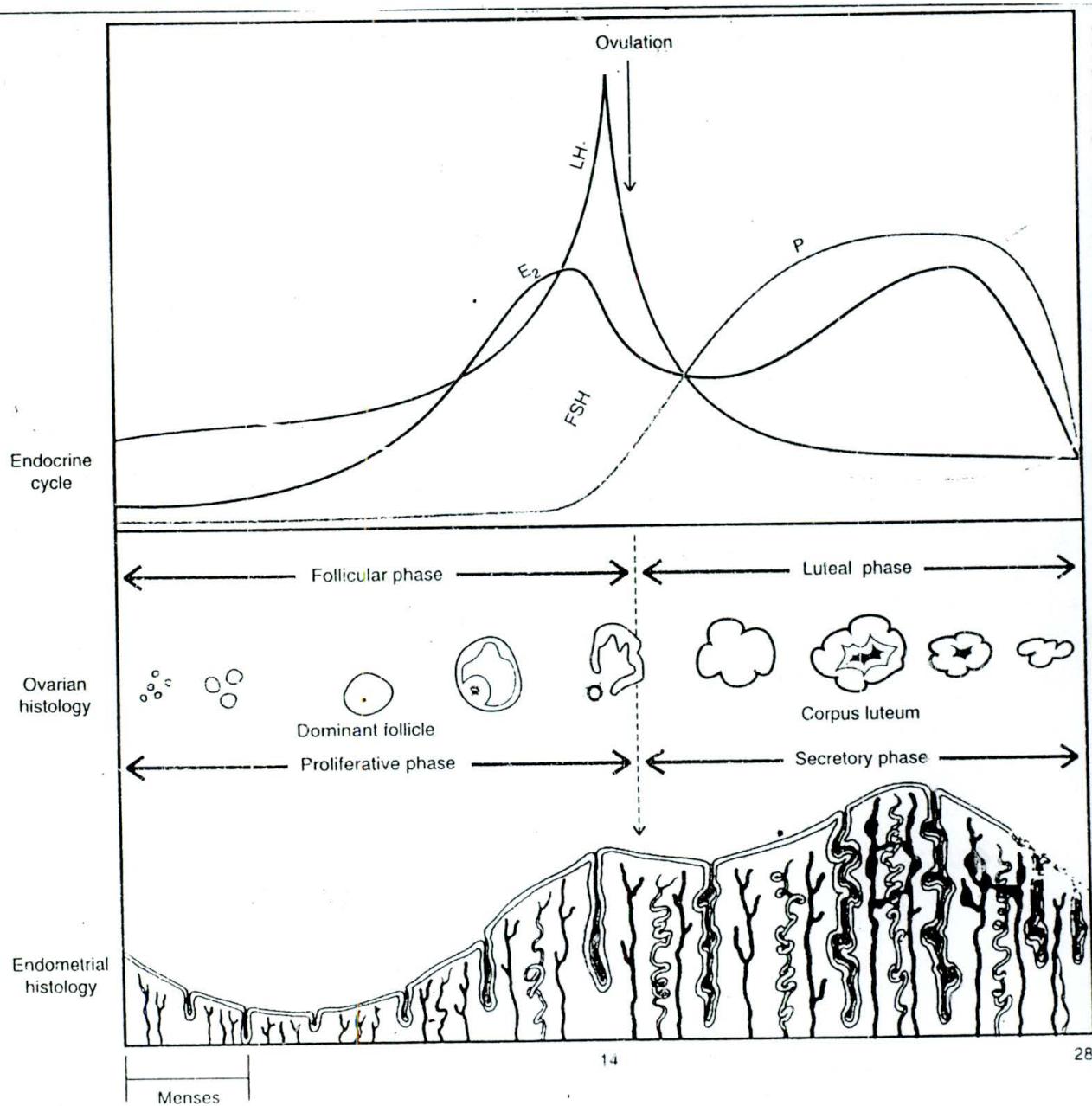
The cervix is primarily composed of fibrous tissue and approximately 10 to 15% of its tissue is smooth muscle, which increase peripherally. The cervical mucosa contains a stratified squamous epithelium which covers the exocervix and a mucous secreting columnar epithelium which covers the endocervical canal.^(2,6)

Physiology Of The Cyclic Changes Of The Endometrium:

Cyclic changes of the endometrium occur in its superficial 2/3 which is the zone that proliferates, and it is called decidua functionalis. The changes occur in decidua functionalis in two phases, proliferative and secretory phases.^(7,8)

Proliferative phase occurs in response to the raising follicular stimulating hormone (F.S.H) level which leads to increase in the level of estrogen. This phase is characterized by progressive mitotic growth of the decidua functionalis. In the proliferative phase the endometrial width grows from 1 to 3 mm.⁽⁷⁻⁸⁾

In typical 28 days cycle, ovulation occurs on cycle day 14 and the secretory phase occurs 48 to 72 hours following ovulation due to progesterone secretion which leads to production of eosinophilic protein-rich secretory products in the glandular lumen. In the secretory phase the endometrial width grows from 3 to 5 mm. The relation between the endometrial cyclic changes and ovarian changes during the normal menstrual cycle is demonstrated in figure 3.⁽⁷⁻⁸⁾



(Figure 3) The top panel shows the cyclic changes of F.S.H, L.H, estradiol and progesterone, the middle panel correlates the ovarian cycle in the follicular and luteal phases, while the bottom panel shows the endometrial cycle in the proliferative and secretory phases. ⁽⁷⁾