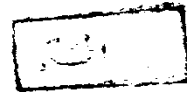


TRANSVAGINAL VERSUS TRANSABDOMINAL ULTRASONOGRAPHY IN PELVIC LESIONS

Thesis

Submitted in partial fulfillment of
M.D. In Radiodiagnosis



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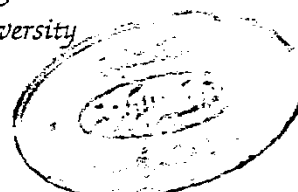
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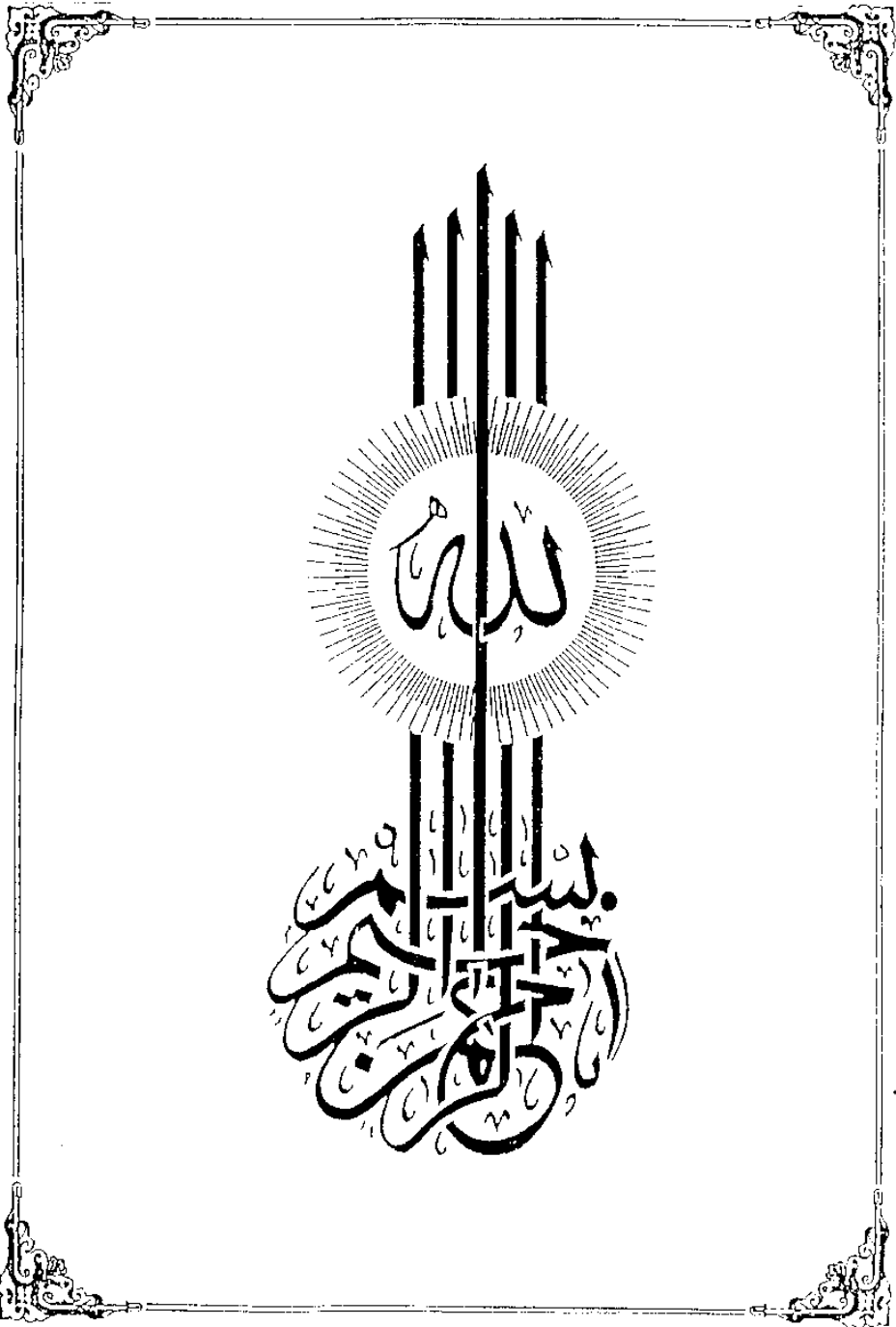
**Faculty of Medicine
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بسم الله الرحمن الرحيم

**(... قال رب اشرح لي صدري
ويسر لي امري واحلل عقدة من
لساني يفقهوا قولي ...)**

صدق الله العظيم

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LIST OF ABBREVIATION

Asc.	Ascites
C	Cyst
CC	Clomiphene citrate
Cx	Cervix
End	Endometrium
FL	Fluid
FT	Fallopian tube
GTD	Gestational trophoblastic disease
HMG	Human menopausal gonadotropin
IUCDs	Intrauterine contraceptive devise
IUD	Intrauterine devise
IVF-ET	In Vitro Fertilization-Embryotransfer
LUFs	Luteinized unruptured follicle syndrome
M	Mass
OV	Ovary
Stim.	Stimulated
T	Transducer
TA	Transabdominal
TAS	Transabdominal sonography
TV	Transvaginal
TVS	Transvaginal sonography
TVT	Transvaginal transducer
UB	Urinary bladder
UF	Uterine fundus
UT	Uterus
Vag	Vagina

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INTRODUCTION AND AIM OF THE WORK

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The conventional transabdominal sonography is an established modality for the assessment of pelvic lesions (*Lewis, 1987 and Knaf, 1988*).

The recent availability of transvaginal sonography has greatly improved the evaluation of both normal and abnormal pelvic organs. Transvaginal sonography was already applied in the diagnosis of uterine and fallopian tubes disorders (*Pearson and Dawood, 1990*), pelvic masses (*Silverberg, 1983*), and the assessment of intrauterine pregnancy (*Hurwitz, 1986*).

With the introduction of high frequency transvaginal probes, better resolution images of pelvic organs can be obtained (*Tritsch et al., 1988 and Tessler et al., 1989*).

The aim of this work is to emphasize the role of transvaginal versus transabdominal ultrasonography in various pelvic lesions.

SONOGRAPHIC ANATOMY

A. TRANSABDOMINAL ANATOMY

The female reproductive system

The female reproductive system is divided into five major anatomic parts, the uterus, the fallopian tubes the ovaries, the vagina, and the parametrium.

The uterus

The uterus is divisible into a cervix, body, and fundus. The cervix is relatively elongated, extending between the external and internal os, and accounting for one-third to nearly one-half the length of the uterus. The internal cervical os lies at the junction of the uterine cervix and body and cannot be precisely localized with ultrasound.

The uterine body extends between, the internal os and the fallopian tubes, accounting for nearly half of the remaining length of the uterus. The uterine fundus is the convex upper portion extending above the entrance of the fallopian tubes (*Shirrhoda and Madrazo, 1993*).

The uterus is usually anteverted, with the cervical canal oriented backwards, away from the pubic symphysis. (Fig. 1). Aretroverted uterus is posteriorly inclined, with the cervix

oriented anteriorly towards the pubis (*Shirkhoda and Madrazo, 1993*).

The endometrium can be distinguished from the myometrium with ultrasound. The endometrial canal is usually visualized as a thin echogenic line on ultrasound representing the interface between the apposed layers of the endometrium. The endometrium itself consists of a peripheral basal layer and an inner functional layer, the cyclical changes in the functional layer can be visualized with ultrasound (*Shirkhoda and Madrazo, 1993*).

In the proliferative phase

1 to 2,5 weeks after the onset of the menses, the functional endometrium is usually echopoor and thickens progressively. Though measurements vary with the observer and with the path of the sound beam and the transducer frequency (e.g., transabdominal versus endovaginal imaging), proliferative endometrium may measure up to 8 mm ($\pm$ 3mm standard deviation) Fig. (1A) (*Shirkhoda, and Madrazo, 1993*).

In the secretory phase

2.5 to 4 weeks after menses, the endometrium continues to thicken to an average of 11 mm $\pm$ 4mm and generally becomes