ROLE OF TRANSVAGINAL ULTRASONOGRAPHY IN EVALUATION OF MALIGNANT PELVIC MASSES

Essay
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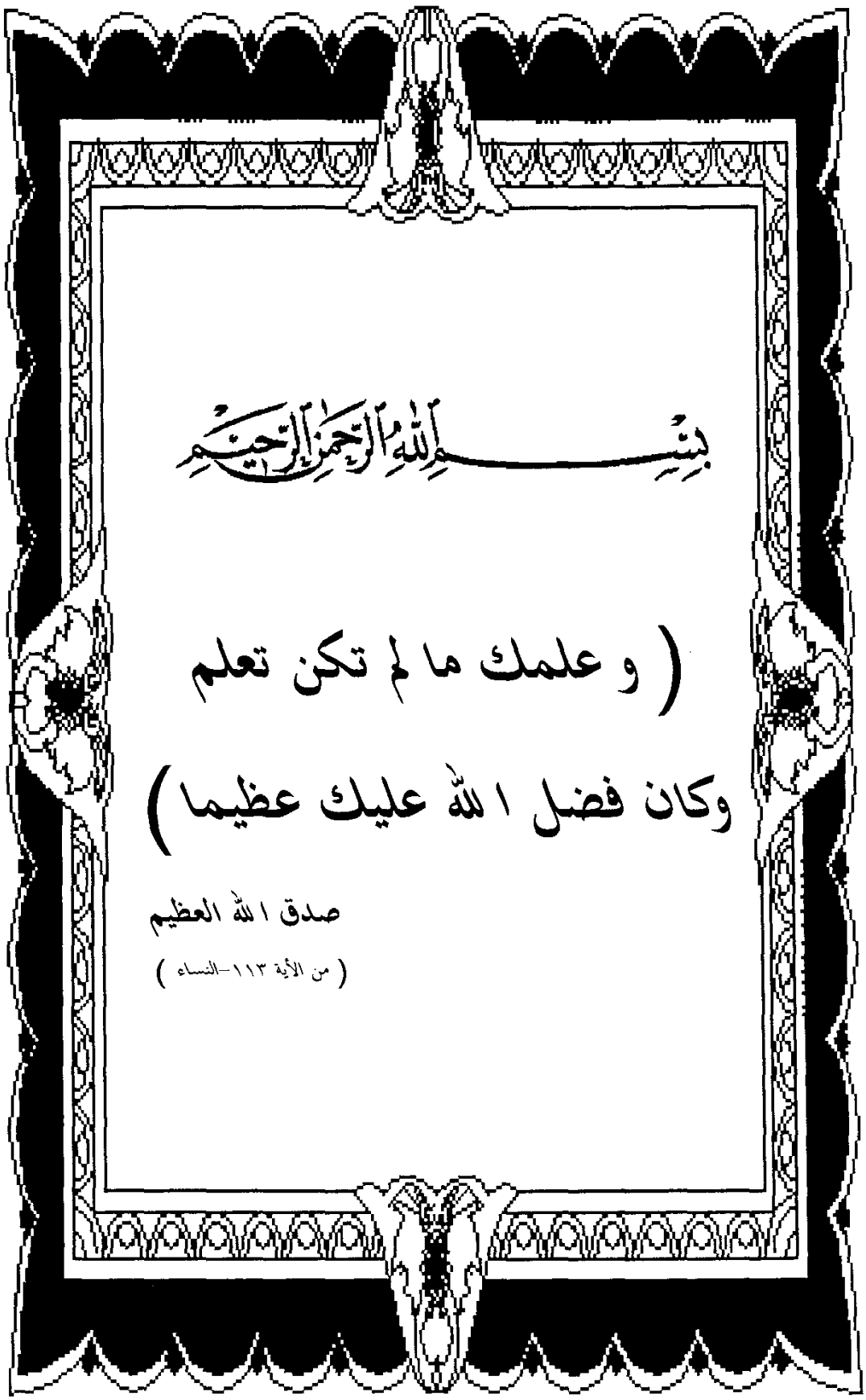

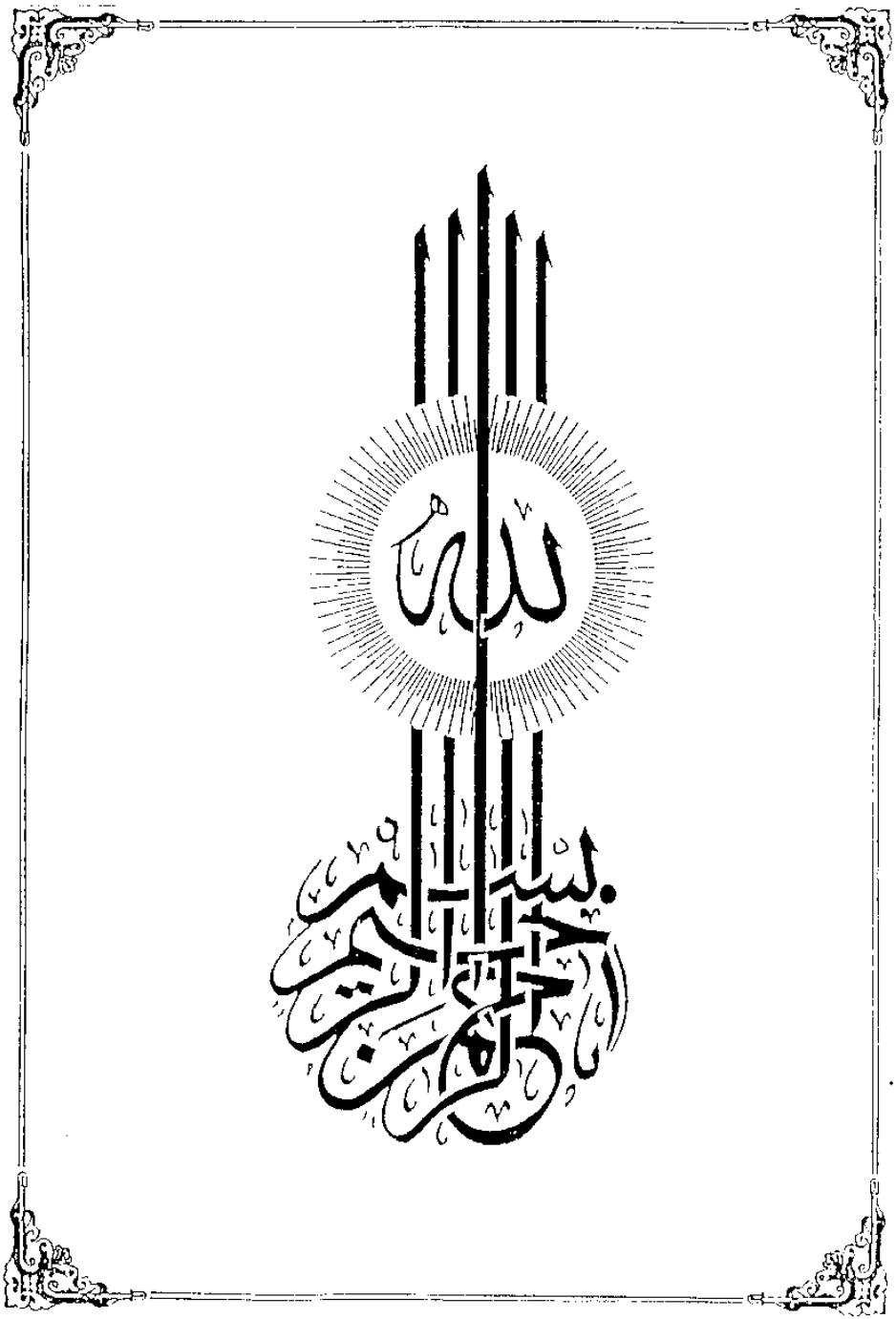

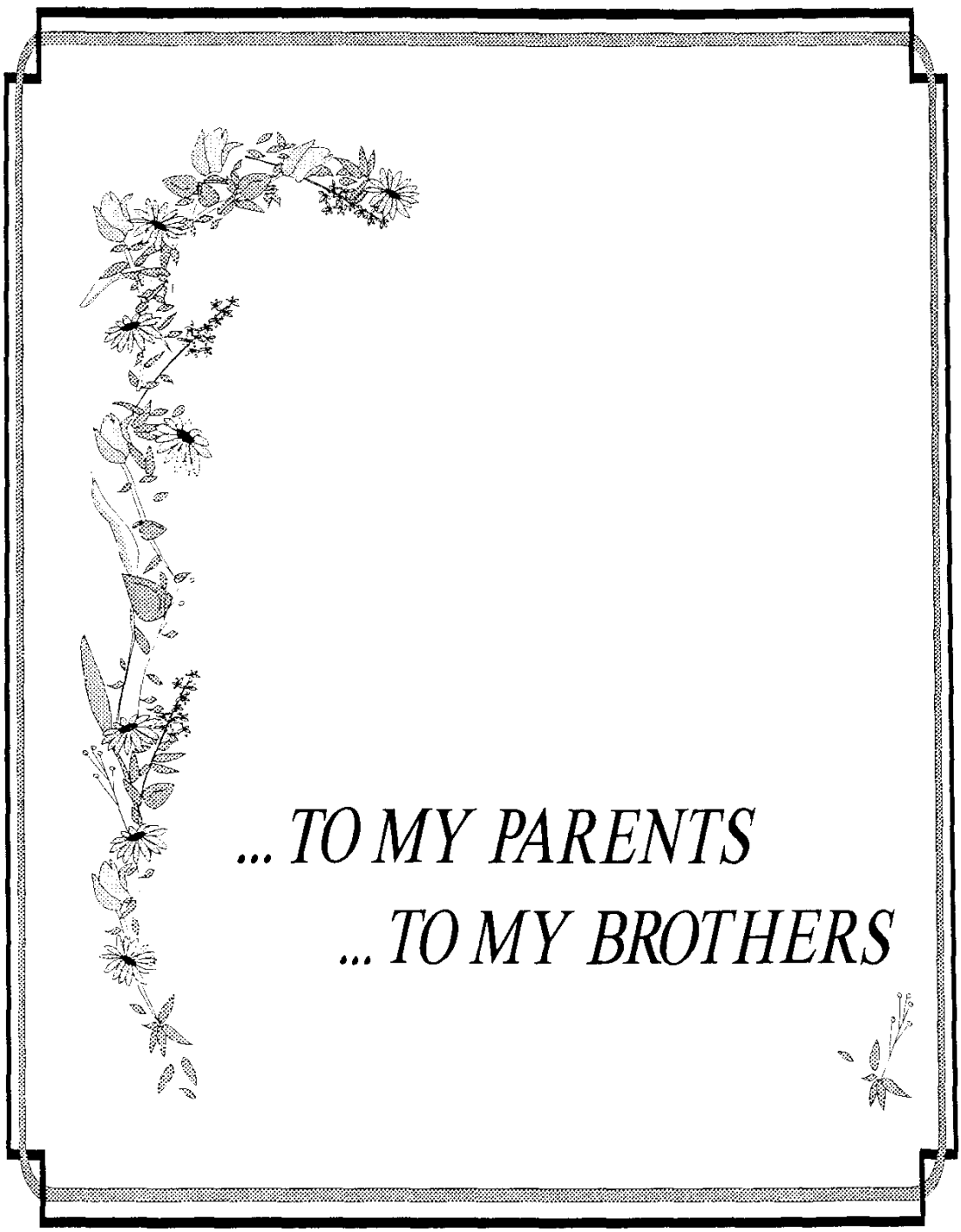

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HOSAINY AL-SHAHAT

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INTRODUCTION AND AIM OF WORK

Ultrasound is the primary imaging investigation of choice in most gynaecological disorders , since it lacks ionising radiation , non invasive , and can be performed at bed side .Also , it is both accurate and much cheaper than CT . (computed tomography)

(Lees, 1992)

A primary advantage of TRANSVAGINAL SONOGRAPHY (TVS) over conventional TRANSABDOMINAL SONOGRAPHY (TAS) is the ability to place the high frequency transducer nearer to the region of interest , permitting optimal visualization of the uterus, cervix,ovaries,adnexal regions,and Cul-de-sac, as well as the urinary bladder and bowel .

(Böhm-Vélez et al , 1992)

The major structures of interest in the pelvis for sonography are the uterus and ovaries.TVS with its superior imaging characteristics, provids better sonographic details of their anatomy and improves our diagnostic capabilities.

(Lyons et al, 1992)

TVS provides valuable information in assessing a wide range of gynecologic disorders including evaluation of the uterus , adnexal masses, inflammatory processes and neoplasms. Its potential role in screening of ovarian and endornetrial tumors oppears promising.It is also useful in assessing certain nongynecologic conditions such as urinary bladder incontinence and non gynecologic pelvic masses.

(Böhm-Vélez et al , 1992)

The aim of this work is to study the role of TVS in evaluating pelvic malignancies regarding the size , location , internal consistency and definition of the borders of the mass.Also to detect local spread or invasion of adjacent structures and lymph nods metastases.And , also ,to determine role of TVS in detection of recurrent pelvic malignancies in cases presenting prior to second look surgery .

Sonographic anatomy of the Female pelvis

SONOGRAPHIC ANATOMY OF THE FEMALE PELVIS

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- Fallopian tubes.
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- Bowel.
- Pelvic muscle and pelvic sidewall.

A:-Equipments and performance of examination:

1- Introduction :-

The operating principle under lying all good sonographic studies can be summed up in the following statement :Use the highest operating frequency possible that will penetrate to the structure of interest . The advent of transvaginal ultrasound (TVS) probes in 1985 enabled the use of higher frequencies in the sonographic evaluation of the female pelvis.

Placing the transducer closer to the region of interest reduced the tissue attenuation and permitted the use of 5 - 7.5 Mhz transducers in lieu of the lower frequency instruments that were required by the transabdominal approach . The consequent imaging benefits provided sonographic details of the pelvis that had been previously unattainable.

(Lyons et al, 1992)

TVS provides diagnostic images in clinical situations that are sometimes impossible to visualize with transabdominal ultrasound, for example , when subcutaneous fat degrades the image during assessment of obese patient,and when the uterus is retroverted or retroflexed.

(Böhm-Vélez et al , 1992)

Instrumentation:-

Ultrasound scanning systems typically consists of :

a) A mechanical or electronic means of moving the ultrasound beam through an image plane.

b) An electronic signal processing unit with controls for varying the transducer power output, overall receiver gain and other operational parameters such as time gain compensation (T.G.C.).

c) A gray scale display unit equipped with controls for varing the image brightness and contrast.

d) A device for permanently recording the images (polaroid, multi-image format camera, paper printers , videotape or disk) the console also has a keyboard to superimpose patient identification, examination data , and study information on the recorded images.

(Price et al, 1991)

Nearly every manufacturer of ultrasound equipment currently offers an intravaginal probe . All transducers are either mechanical or electronically focused sector probes .The mechanical probes tend to be less expensive and can provide a wide field of view.However , the near field resolution of mechanical transducers is often poor. Although more expensive,