ROLE OF U.S., C.T. AND MRI IN OVARIAN NEOPLASMS

Essay

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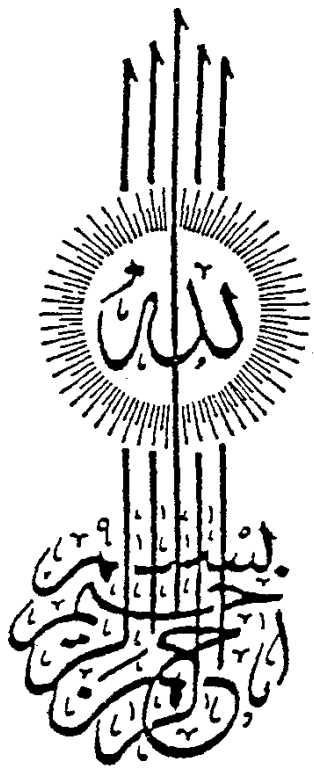

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ .

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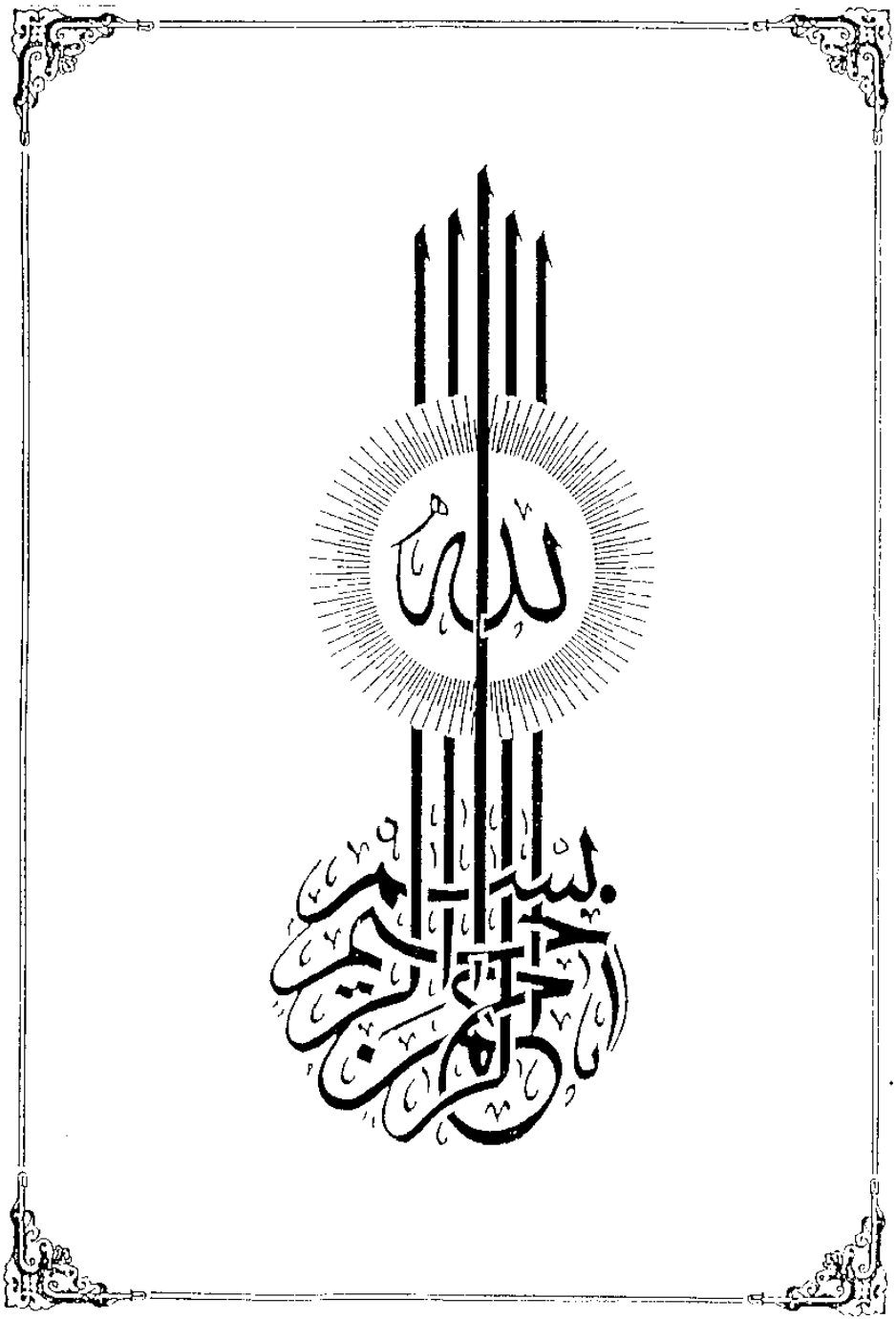

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Ovarian neoplasms are the third most common gynecologic malignancy but have the highest mortality rate because of late detection.

Ultrasonography is the foremost imaging modality for screening patients with adnexal masses, however with the use of high technology imaging using color flow directed Doppler measurement affords better discrimination between benign and malignant ovarian masses.

In addition, CT has better advantage in detection of invasion to the surrounding structures and metastatic spread.

Concerning the MR imaging, it has been shown to have a high degree of diagnostic specificity for certain types of ovarian masses, and allows better evaluation and staging of ovarian neoplasms.

The aim of this work is to emphasize the role and sensitivity of each tool in detecting ovarian neoplasms in the various stages.

ANATOMY OF THE OVARIES

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The ovaries are two almond-shaped bodies, one on either side of the pelvis in a depression called the ovarian fossa.

The right ovary is usually slightly higher than the left and the length varies from 2.5 to 5 cm, the width is ordinarily one half the length and the thickness is one half the width *(Meschan, 1976).*

In nulliparous women and, in the upright position, its long axis is vertical. It has lateral and medial surfaces, tubal and uterine extremities, mesovarian and free borders *(Williams et al., 1989).*

Attachments of the ovaries: (fig.1)

1. They are attached to the back of the broad ligament by the mesovarium.
2. The ovarian ligament: which passes to the cornu of the uterus. It is a rounded cord of fibromuscular tissue recognizable by its whitish appearance.

3. The infundibulo-pelvic ligament: which carries the ovarian vessels and lymphatics from the side wall of the pelvis *(Gray, 1967).*

Relations of the ovary:

Tubal end lies near the external iliac vessels, and the terminal part of the uterine tube curves around it.

Uterine end is connected by the ligament of the ovary with the uterus.

Free border: is separated from ureter only by peritoneum.

Mesovarian border: is attached to the broad ligament. Vessels and nerves enter at this border through a cleft called the hilum.

Medial surface: is largely overlapped by the terminal part of the uterine tube, and is related to the pelvic colon or ileum.

The ovary lies on the side wall of the pelvis, and its lateral surface is separated by peritoneum from the umbilical artery, obturator vessels and nerves and obturator internus muscle *(Jameison, 1969).*

Structures of the ovary:

The ovary is divided into three regions.

1. The hilum: is the small area which adjoins the mesovarium and which receives the twigs of the ovarian vessels, lymphatics and nerves which enter from the broad ligament.

2. The medulla (inner zone): This subtends the hilum as a semilunar area enclosed by the cortex.

3. The cortex (outer zone): This is the specialized functioning part of the ovary forming the main mass of the organ.

It is composed of:

a. connective tissue stroma:

Which consists of closely packed fibers which form a dense matrix for the vessels and Graffian follicles.

Just under the covering epithelium, it is thickened to form the tunica albuginea, a dense connective tissue layer which encloses the ovary, and the presence of which gives the whitish color to the surface of the organ.

b. Epithelial structures:

These are: