RISK OF MALIGNANCY INDEX (RMI) INCORPORATING CA125, ULTRASOUND AND MENOPAUSAL STATUS FOR THE ACCURATE PREOPERATIVE DIAGNOSIS OF CANCER OVARY

A Thesis

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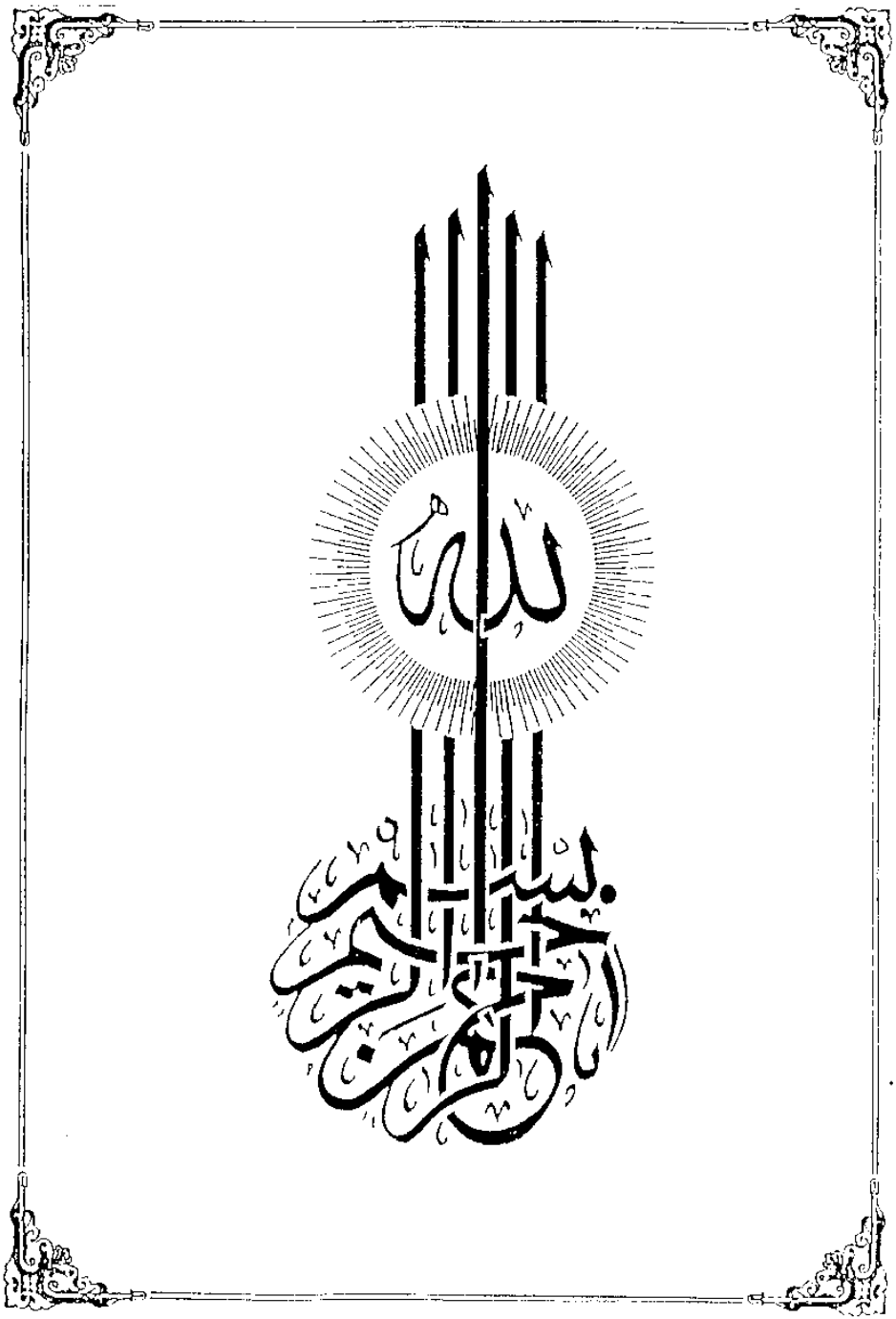

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It is postulated that methods of improving the preoperative diagnosis of ovarian malignancy would lead to more women receiving first line surgery from appropriately trained and experienced personnel either locally or after referral to a gynaecologist with special interest in gynaecologic oncology ***(Davis et al., 1993).*** So a risk of malignancy index (RMI) was employed by various investigatiors as a method for preoperative prediction of the nature of an adenexal mass that was detectable clinically ***(Jacobs et al., 1990 and Tingulstad et al., 1996).*** It was defined as the product of a menopausal status score, an ultrasound score and the serum CA125 level (U/ml) according to those writers, the RMI was more sensitive and specific than any of the three component in detecting the nature of the adenexal mass.

Aim Of The Work

borders. The ovary is attached to the posterior layer of the broad ligament by the mesovarium, to the lateral pelvic wall by the infundibulo-pelvic fold and to the uterus by the ovarian ligament. The posterior border is free. The uterine extremity or lower pole is directed inferiorly and connected through the ovarian ligament to the lateral margin of the uterus.

The tubal extremity or the upper pole is attached to the peritoneum of the lateral pelvic wall by the infundibulo-pelvic ligament. The medial surface faces inward and to a great extent is covered by the fimbriated extremity of the fallopian tube. Usually, the lateral surface is in direct contact with the parietal peritoneum overlying the shallow ovarian fossa, in the angle between the diverging external iliac and hypogastric vessels. The position of the ovary is, therefore, likely to be influenced by the movements of broad ligament and the uterus under normal circumstances ***(Ham, 1987).***

The ovary in the newborn is an elongated structure approximately 1.5 cm long and 0.5 cm wide, and it varies from 1.5 to 3.5 mm in thickness. The ovarian surface is pinkish-white, smooth and glistening. Its weight is about 0.3 to 0.4 gm. The ovary gradually grows larger and changes shape and position between birth and puberty. It is developed between 10^{th} and 12^{th} segments on the posterior wall near the kidney, then slowly moves into the true pelvis and enlarges to about 3x1.8x1.2 cm. The weight of both ovaries at puberty is between 4 and 7 gm.

In the nullipara the ovary lies in shallow peritoneal fossa on the lateral pelvic wall know as the fossa ovarica of Waldeyer. Its long axis lies in vertical plane, so it has an upper and lower pole, anterior and a posterior border, and a medial and a lateral surface. The fossa of the ovary lies immediately below the bifurcation of the common iliac artery; and one of the most important relations of the ovary is the ureter, which lies immediately behind it ***(Ham, 1987).***

During pregnancy, the ovaries are lifted out of the true pelvis as the uterus enlarges. During the early part of the first trimester the corpus luteum may be large and protrude above the ovarian surface. At the time of ceasarean section the ovaries are in a resting state and are covered with shaggy pink material, which is a decidual reaction.

The premenopausal ovary measures 3.5x2.0x1.5 cm. The menopausal ovary tends to atrophy and shrink when the Graffian follicles and ova disappear. The ovary eventually becomes an inert residue that consists of connective tissue, and it clings to the posterior leaf of the broad ligament. Its pink color becomes pure white. It shrinks to 2.0x1.5x0.5 cm and sometimes, it may be as small as 1.5x0.75x0.5 cm. Its wrinkled surface resembles the gyri and sulci of the cerebrum. At this point, it is almost impossible to palpate it on examination ***(Ham, 1987).***

Blood Supply:

The blood supply of the ovary is from the ovarian artery, a branch of the abdominal aorta, which arises immediately below the renal artery. From here it crosses the inferior vena cava and ureter on the right and on the left it crosses the ureter and left psoas muscle. Having reached the pelvic brim, it crosses the common or external iliac arteries and runs between the two layers of the infundibulo-pelvic fold and enters the broad ligament. It reaches the hilum of the ovary by passing between the two layers of mesovarium ***(Ham, 1987).***

The venous drainage is into a pampiniform venous plexus from which the ovarian vein emerges. On the right side the ovarian veins enter the inferior vena cava at an oblique angle below the renal vein, and on the left side it enters the left renal vein at right angle. A hypernephroma arising in the left kidney may metastasize in a retrograde manner along the left ovarian vein and present in the pelvis or the vagina ***(Ham, 1987).***

Nerve Supply:

The nerve supply comes from the level of the tenth thoracic segment. It is derived from the lateral column of gray matter in the spinal cord at this level. The ovarian artery, vein,