URETER IN OBSTETRIC AND GYNAECOLOGICAL PRACTICE

ESSAY

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of Master Degree in Obstetric and Gynaecology

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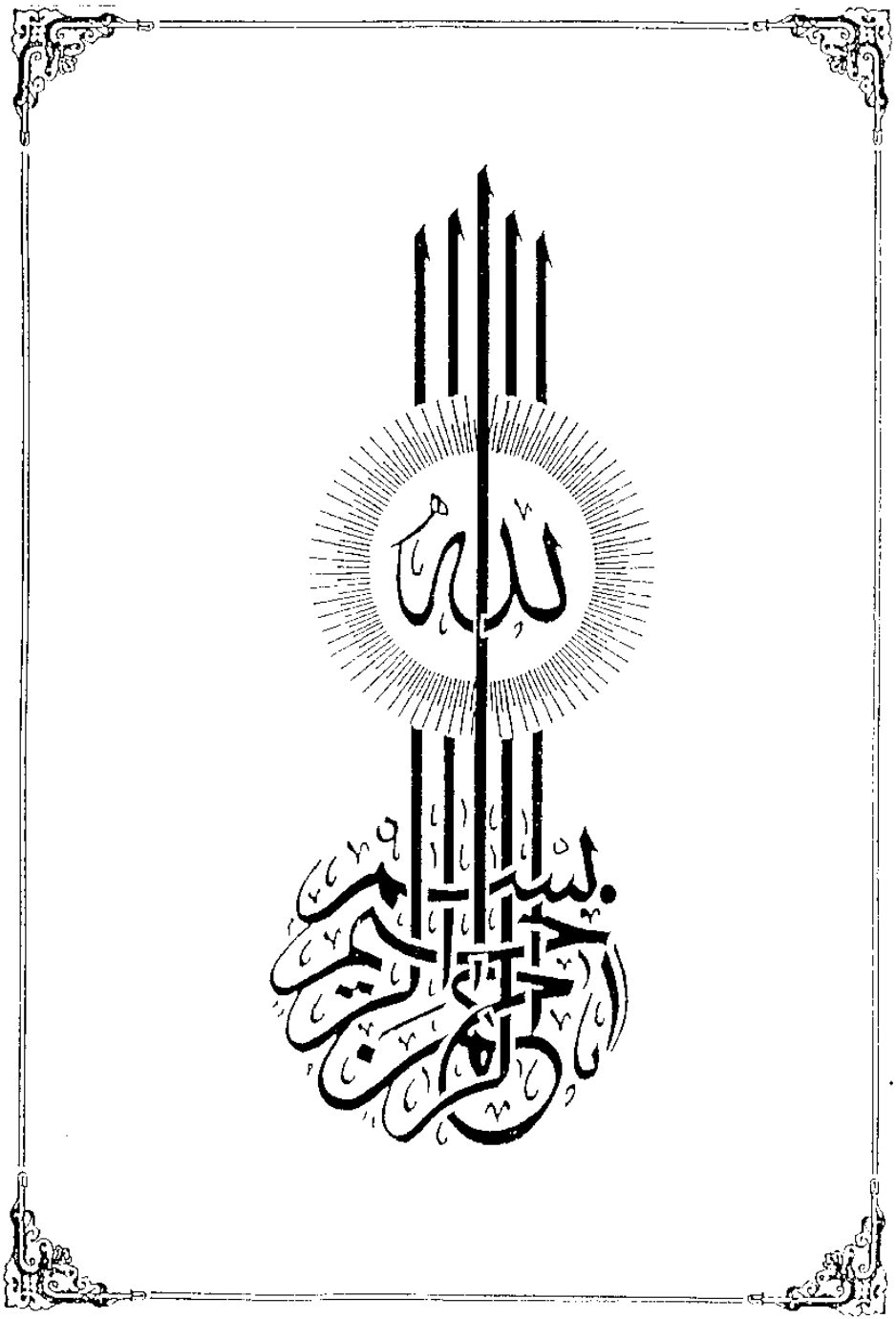
To The Memory of My Mother



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INTRODUCTION

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The complex development of the female genital and urinary tracts, from the stage where they shared common outlet to development of two adjacent but separate systems, made it inevitable that, pathological lesions in one tract may involve the other, simply because of close proximity.

So the two specialities of urology and gynecology must therefore overlaps in several places.

Many pathological conditions as tumours, infections, fistulas, prolapse, endometriosis and radiation affect the ureter and may cause sever urinary troubles, or make it more liable to be injured.

During gynecological operations the lower part of the ureter is in great dangers, especially in case of bloody field or sevre adhesion and infiltration of the pelvis.

The sequelae of these injuries presented by obstruction which lead to renal failure or by distressing incontinence due to ureterovaginal fistula.

For many gynecologist the ureter is a mysterious tube, if one has not seen and identified a structure, it can easily be damaged, if one learn to see it or feel, it is easy to avoid it.

Nowadays the hysterectomy is performed at a rate higher than any other major operation. This invade us to respect the genito-urinary relation, so our surgical techniques should be based on secure anatomical knowledge of the pelvis.

ANATOMY
HISTOLOGY
PHYSIOLOGY
EMBRYOLOGY

ANATOMY OF THE URETERS

The ureters are two tubes which convey the urine from both kidneys to the urinary bladder. Each measure from 25-30 cm in length and 3 mm in diameter, thick muscular tube which commences within the renal sinus as funnel shaped dilatation termed the pelvis of the ureter. It runs downwards and medially in front of psoas major, passes into pelvic cavity, and opens into the base of urinary bladder.

The Pelvis of the Ureter

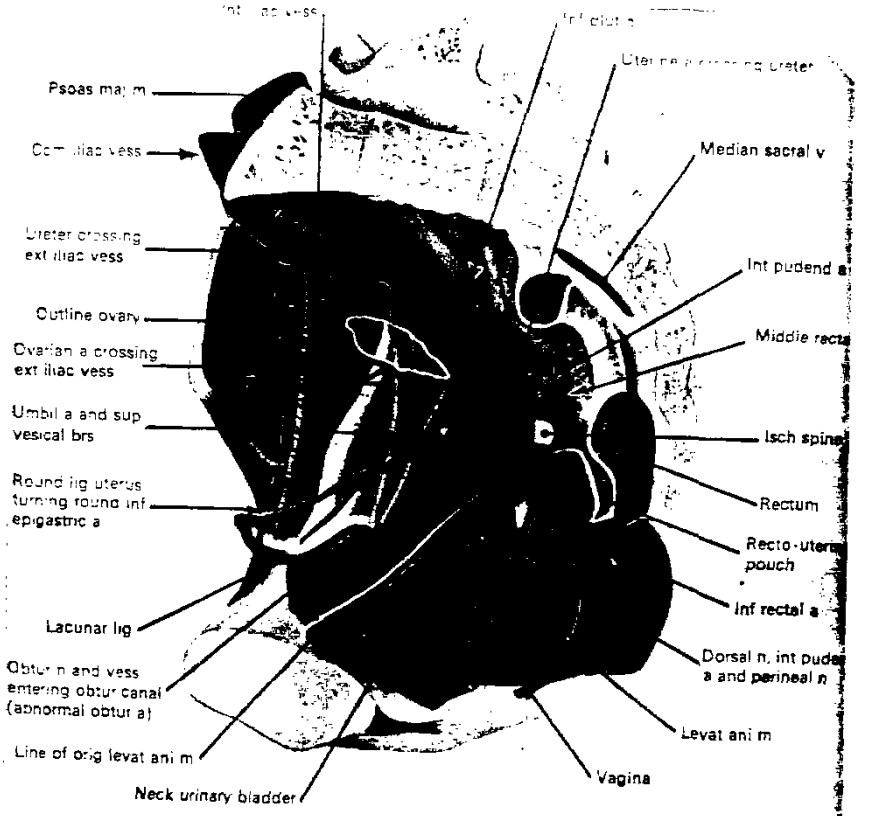
It runs along the medial border of the kidney to its lower pole, it is related to renal vessel anteriorly inside the kidney, and to renal vessel, second part of duodenum in right side while covers by peritoneum, pancreas, and jejunum in left side.

Abdominal Part of the Ureter

It lies behind the peritoneum on the medial portion of psoas major, which intervenes between it and the tips of the transverse process of lumber vertebrae. It enters the pelvic cavity by crossing either the end of common iliac vessels, or the beginning of external iliac vessels.

The right ureter lies to the right of inferior vena cava and it is crossed by, the right colic, ileocolic vessels, and right ovarian vessels, while near the inlet of the pelvis it passes behind the lower part of the mensentery and terminal part of the ileum.

The left ureter is crossed by, left ovarian vessels, left colic vessels, and near the inlet of the pelvis it passes behind the pelvic colon and its



SIDEWALL AND FLOOR OF FEMALE PELVIS
Attachment of broad ligament is indicated by dotted lines

Fig 1. Pelvic portion of the ureter. "Jamieson's Regonal Anatomy-Pelvis"

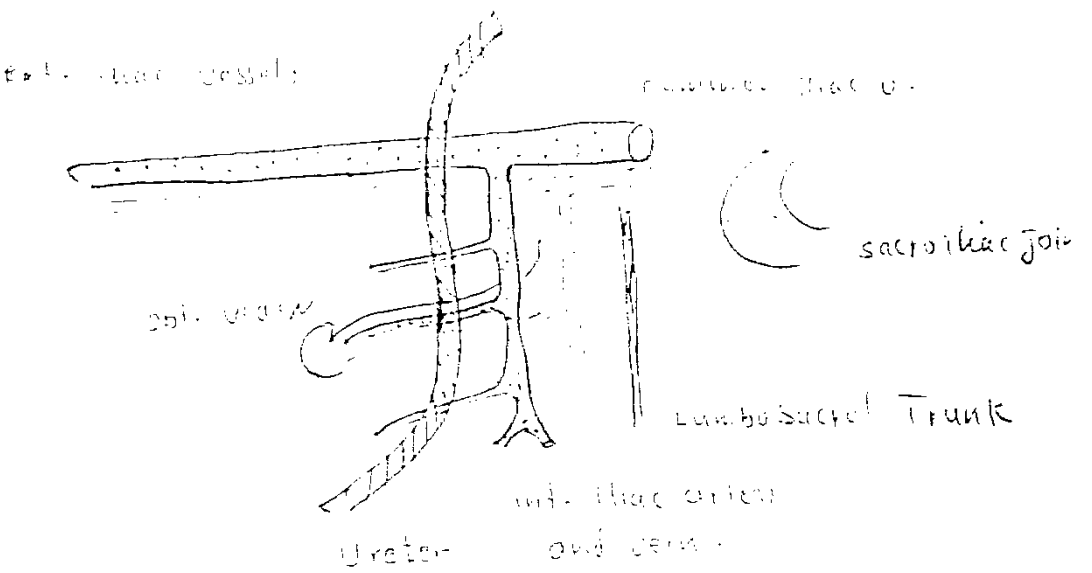


Fig 2. The pelvic portion of the ureter.

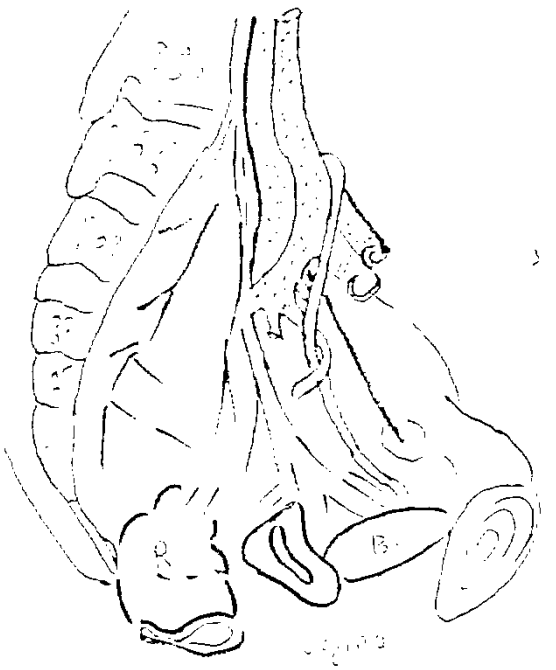


Fig 3. Relation of the ureter in pelvic cavity.

mesentery lying in posterior wall of the recess of pelvic mesocolon "intersigmoid recess".

The Pelvic Part of the Ureter Figs. (1) and (2)

The ureter enters the pelvic cavity by crossing the end of common iliac, or the beginning of external iliac vessels. It passes in front of the sacroiliac joint and internal iliac vessels, medial to obturator nerve and umbilical, obturator, inferior vesical and middle rectal arteries, and behind: ovarian vessels infundibulo-pelvic ligament and ovarian fossa Fig. (3).

As it sweeps downward forwards and medially to reach the level of ischial spine, it is more closely related to the peritoneum of posterior leaf of the broad ligament than to pelvic cellular tissue. On left side the ureter is crossed and covered by pelvic colon. Then it leaves the peritoneum and pass medially and forwards in the base of the broad ligament, and in relation to pelvic floor to reach the lateral fornix of the vagina. In the base of the broad ligament, the ureter is situated in the Mackenrodt condensation of endopelvic fascia, lies about 1.5 cm, lateral to supravaginal portion of the cervix, and is arched over by uterine artery as the later passes medially to reach the side of the uterus Fig. (4)

The uterine vein may accompany the uterine artery as it arches over the ureter or may pass posterior to it. Sometimes the ureter is surrounded by plexus of uterine veins.

Relations of the Last portion of the Ureter "Brash 1922"

The relation of the last part of the ureter to the vagina is variable, there is usually a portion of the ureter in front of vagina. Lying for a short

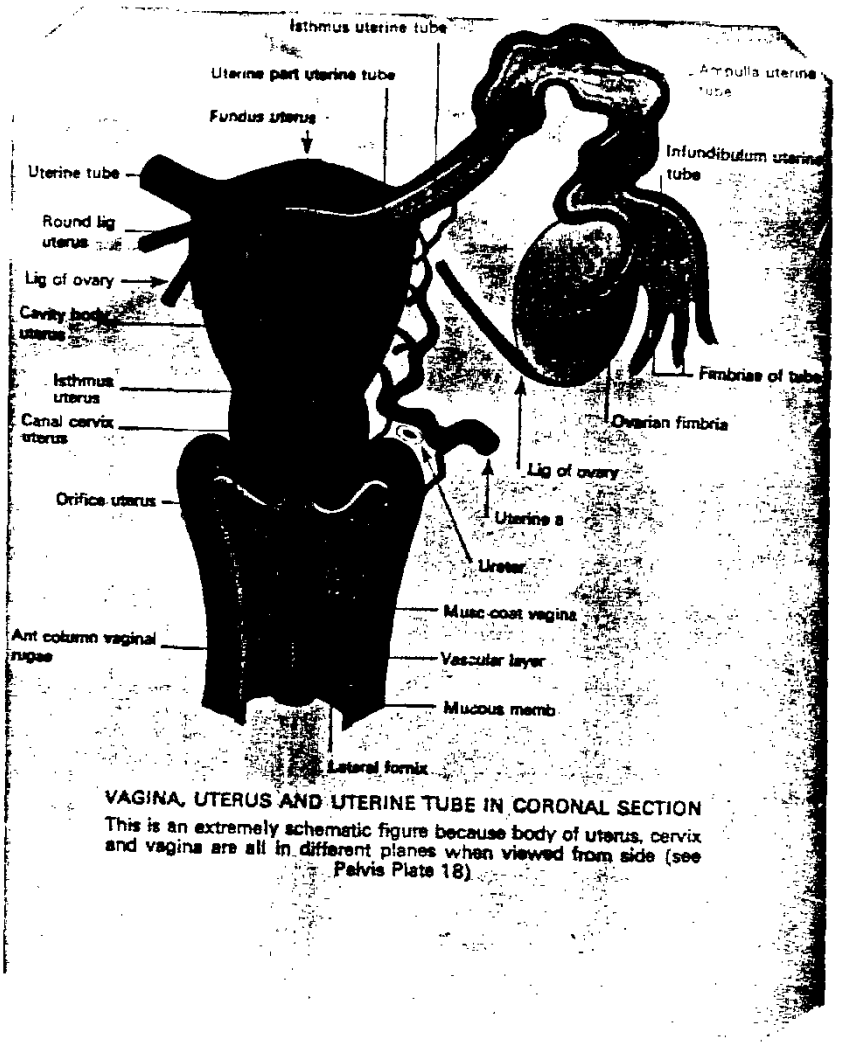


Fig 4. Relation of the ureter to uterine artery.
"Jamiesons Regonal Anatomy"