EVALUATION OF URETERO-COLIC ANASTMOSIS OF URINARY DIVERSION AFTER RADICAL CYSTECTOMY IN CANCER BLADDER

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BY

DR. MOUNIR WILLIAM LABIB

M.B.B.Ch.

SUPERVISED BY

Prof. Dr. Tawfik Saouidan

Prof. of surgery

Ain Shams University

Dr. Abd El-Fattah Abd El-Wahed Agour

Assist. Prof. of urology

Ain sams University.

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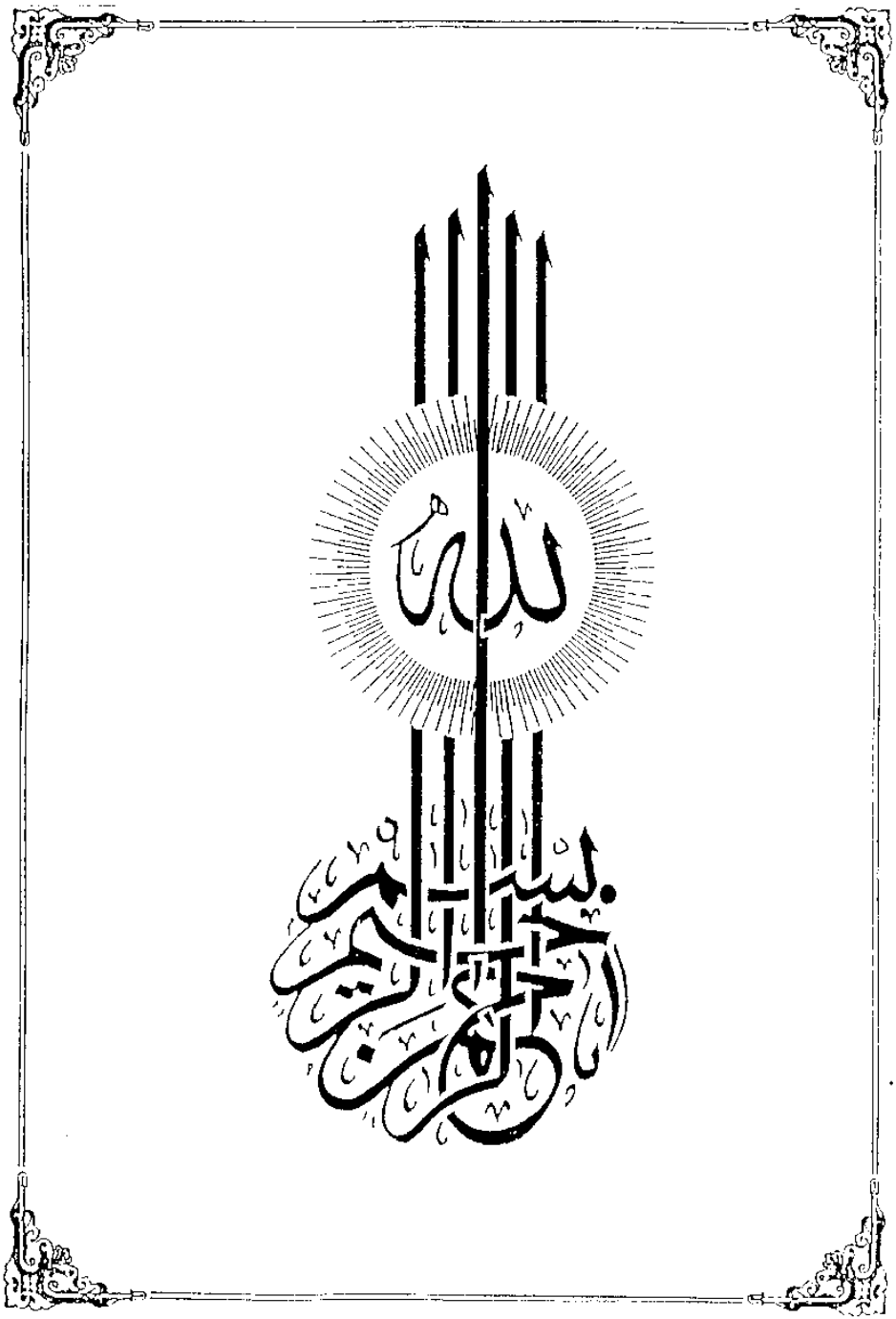
THE ARABIC TRANSLATION IS SUPERVISED BY:

PROF. M.E. FADLI.

PROFESSOR OF NEUROPSYCHIATRY, AIN SHAMES UNIVERSITY.



DEDICATION:

TO MY WIFE DR.LUCY,

TO MY DAUGHTERS JULIE AND SHERY.

FOR WHOM I SPENT A LOT OF TIME TO BRING THIS THESIS TO LIGHT. I DEDICATE THIS WORK.

C O N T E N T S .

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INTRODUCTION

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Carcinoma of the urinary bladder in Egyptian patients is commonly associated with chronic bilharzial cystitis.

Bladder carcinoma in Egypt accounts for 20% of all forms of malignant tumours (Awwad 1978). Statistical studies in the National Cancer Institute of Egypt showed that carcinoma of urinary bladder forms about 27.7% of all malignant tumours (Ibrahaem 1978).

From every 1.00 of population of high risk group farmers, age 20 years or older, there confirmed carcinoma of urinary bladder were detected by urine cytology screening (Awwad 1978). In Europe and North America carcinoma of the urinary bladder forms 9% of all forms of malignant tumours with an incidence rate of $10/10^5$ in the entire population (Burger 1978).

In Iraq, the epidemiological pattern of the disease seems to be similar to that in Egypt (Talib 1978). Radical cystectomy has been proved to be the most successful and satisfactory line of treatment for operable cases of carcinoma of urinary bladder, necessitating some forms of urinary diversion .

Many methods of urinary diversion has been established, no method can simulate exactly the natural urinary bladder, aiming at the creation of an artificial bladder acting as a reservoir for urine after removal of the diseased bladder.

Urinary diversion is carried out by diversion outside the natural passages as the uretero-cutaneous implantation , uretero-sigmoidostomy , uretero-colic anastomosis , the rectal bladder (Maudlair , 1895) , the ileal conduit (Bricker , 1948) and the continent ileo-coecal bladder (Ben Shakroon) , or diversion through an artificial bladder through the natural passages as the ileo-coecal bladder (Khafagy , 1975). Urinary diversion necessitates the implantation of the ureters into the intestine. This creates a continious danger of urinary leakage from the different lines of uretero-intestonal anastomoses or coeco-uretheral anastomoses in case of diversion using the ileo-coecal bladder. This exposes the patients to many risks as a result of collection of the urine into the pelvis and the peritoneal cavity with absorption of toxic material through the wide absorping surface of the peritoneum .

The complications of urinary leakage are manifested as uraemia , pelvic sepsis , peritonitis , septic shock , intestinal obstruction and secondary haemorrhage . All these complications endanger the patients life .

The aim of this work is to study uretero-colic diversion after radical cystectomy . Pre-operative and post-operative clinical conditions and complications and laboratory investigations will be discussed . Also , comparison with other types of diversion will be included .

EMBRYOLOGY OF URINARY SYSTEM.

Developmenet of Kidney and Ureter

The kidney is composed of several units called uriniferous tubules . The tubules arise from the mesoderm of the inter - mediate cell mass or nephrogenic cord which lies between the somites and the intra-embryonic coelom . During their develop- ment , vertebrates have developed three kidneys :

I-Pronephros : It is the earliest and simplest kidney to appear. It is the permenant or functioning kidney of some low animals as amphioxus and few fishes . It lies in between the somites and intra-embryonic coelom extending from the seventh to the fourteenth somite in the cervical region of the embryo . One perinephric tubule is found opposite each somite . Each peri- nephric tubule consists of :

A - Nephrostome : It is a funnel shaped ciliated opening which opens in the coelom and recieves one end of the pronephric tubule .

B - Pronephric tubules : They are simple tubules arranged segmentally .

C - Pronephric duct : which recieves the other end of the tubule .

D - External glomeruli : Each is supplied by a branch from the aorta .

The pronephros is vestigial and has no function . Its degeneration is complete in 5mm. embryo . The pronephric duct remains .

Pronephros

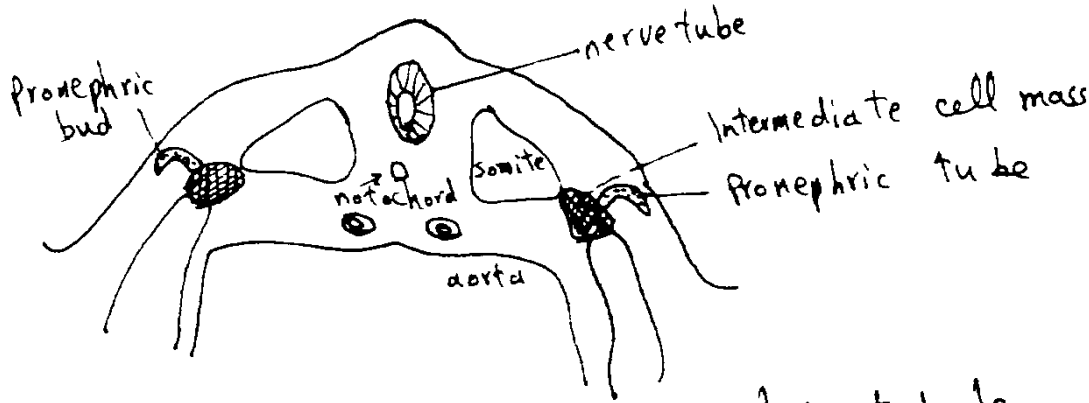
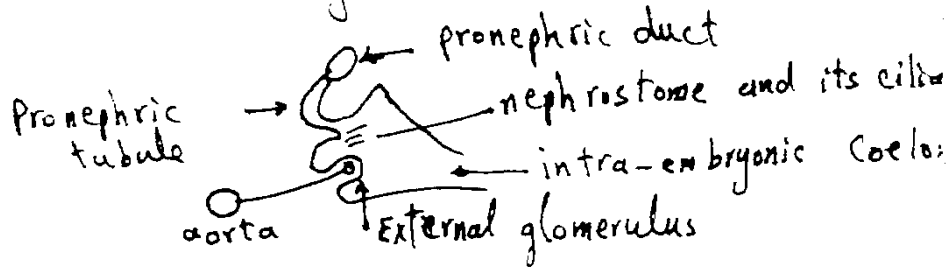
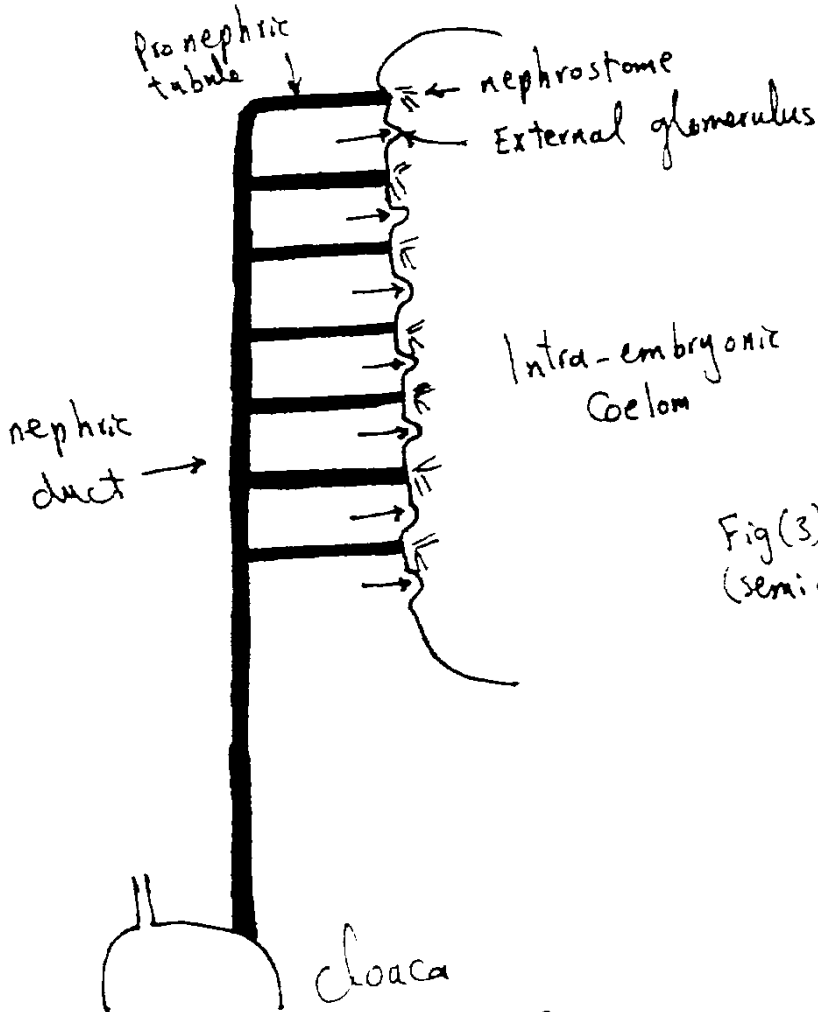


Fig (1) T.S showing pronephric tubule



Fig(2) Pronephric tubule (in details)



Fig(3): Pronephros (semi diagramatic)

II-Mesonephros (Wolffian body) : It appears later in the 4th week at lower level from the middle part of the nephrogenic cord i.e. in the thoracic and upper lumber segments of the embryo . The mesonephric tubules appear as spherical masses in a progressive way . Each becomes hollowed in the center to form a vesicle . One end of the mass joins the pronephric duct whose name is changed and is now called the mesonephric duct . The mass becomes converted into a S-shaped tubule . The free end of the tubule becomes thin and forms an internal glumerulus which is supplied by a branch from the aorta. The upper tubules degenerate forming the suspensory ligament of the testis or ovary . The middle tubules form the efferent ductules of the testis . The mesonephric duct becomes the male sexual duct i.e. the vas deferens and ejaculatory duct. In the female , the tubules and duct degenerate .

III-Metanephros : It is the permenant kidney . It has a double origin :

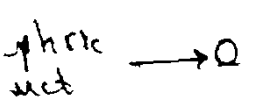
A - Ureteric bud and its ramifications

B - Metanephric cap from the lower part of the nephrogenic cord .

The ureteric bud elongates and its upper end expands to form the further pelvis of the ureter . From the latter , arise the cranial , central and caudal tubules which give rise to secretory tubules which in turn give rise to further tubules and the process is repeated . The cranial and caudal tubules

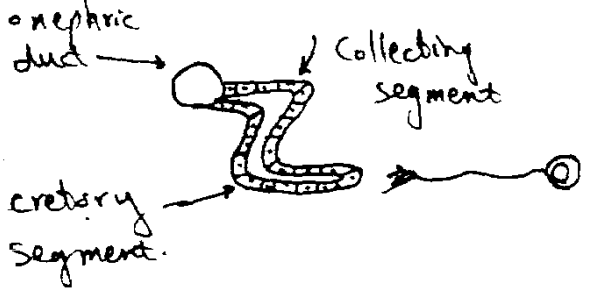
Mesonephros: Formation of mesonephric tubule.

← Fig(4): Solid epithelial mass.

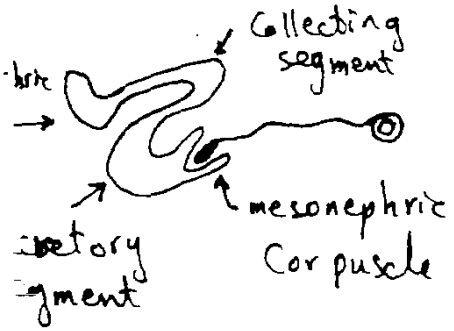


← Fig(5): mass acquires a lumen.

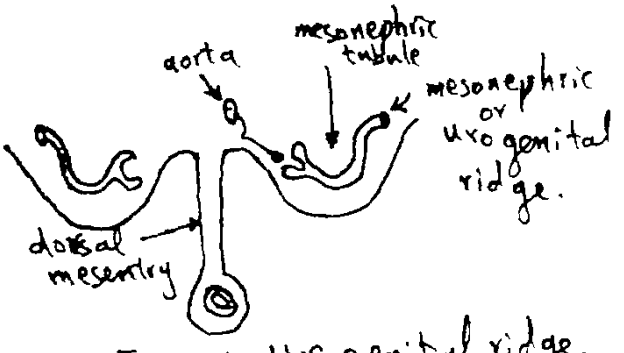
← Fig(6): mesonephric tubule becomes in contact with pronephric duct.



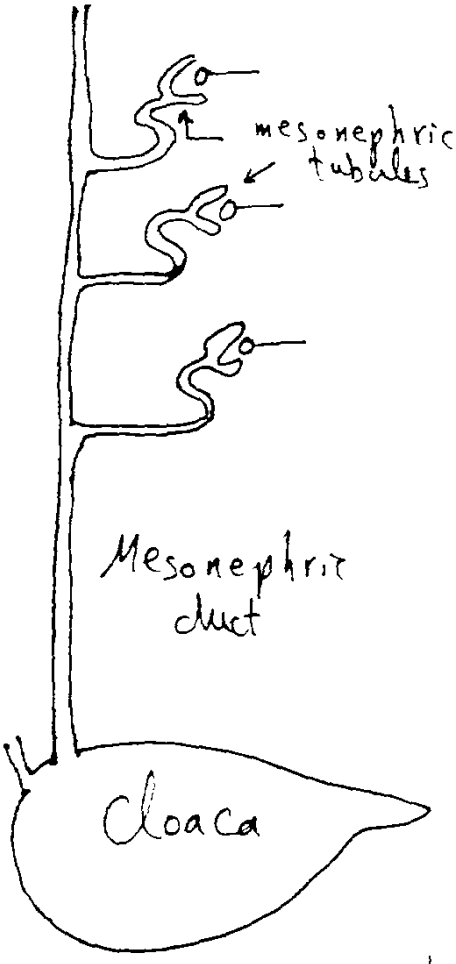
Fig(7): Invagination by blood capillaries and tubule opens in the duct



(8) Structure of mesonephric tubule.



Fig(10): Uro genital ridge. T.S.



Fig(9): Mesonephros.