COMPARATIVE STUDY OF DIFFERENT METHODS OF URINARY DIVERSION FOLLOWING TOTAL CYSTECTOMY

ESSAY

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BY

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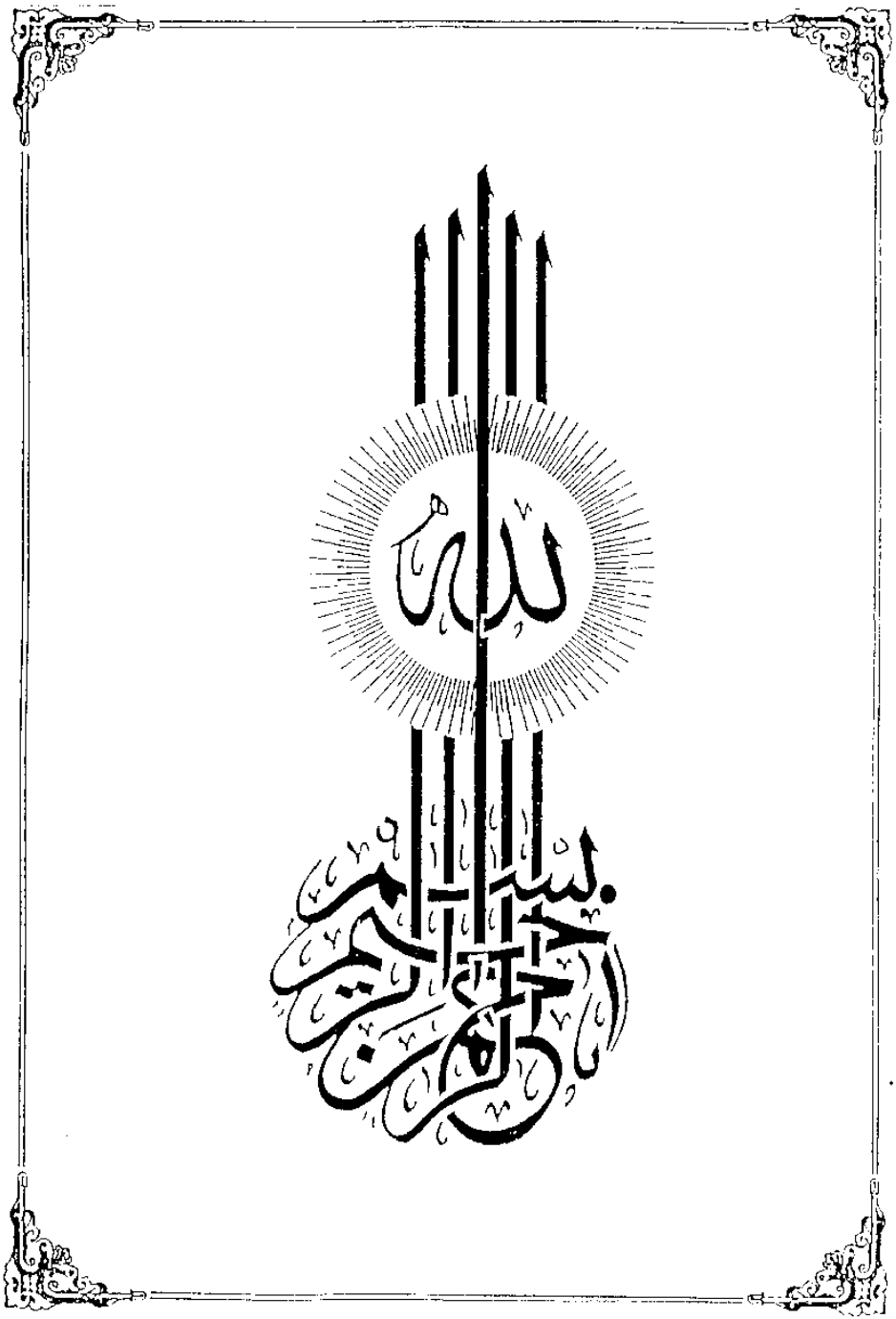

C O N T E N T S

INTRODUCTION

I N T R O D U C T I O N

In this essay the various methods of urinary diversion of the lower Urinary tract after total Cystectomy are going to be studied.

Carcinoma of the urinary bladder is the commest solid tumeur among adult males in Egypt (Makar, 1955 and El Sebai 1961). The association between bladder cancer and urinary Bilhavriziasis posseses a distinet clinocopathological behavior most of the caseses are seen at an advanced stage and are usually of squamous cell type (El. Boulkany et al., 1972 and Ghoneim et al., 1972). Radical cystectomy with urinary diverion appears to offer the best prospect for cure in most of these cases.

Uretero-Colic anastomosos was one of the earliest operations performed for diversion, an external Condiut may be performed from an isolated loop of ileum or of colon and the ureters are transplanted into it.

Sigmoid colon has been divided to form a colostomy from the upper end and the distal end is closed to form a rectal bladder and the ureters are anastomosed into it. So many diversion creates nuisanee to patient's from his or her point

of view, all operation which necessitate the formation of an external fistula are usually not, accepted by the patient's so other methods are used. To achieve voluntary controll of urine and faeces by formation of rectal bladder and in addition bringing down the proximal cut end of the colon through the anal spincter to perineal skin (Gersuny 1937).

Two methods of diversion can be used frist one diversion using the anal sphincter for urinery control having a greater advantage from the patients point of view and same communities. These are the only forms of diversion which will be permitted this method is not used in all neurological disturbance of bladder. The anal sphincter will also be affected although the patient may be able to controll solid faeces the urine will not be retained, alsoin cases such as congenital abnormalities the pelvic floor is inadequate and rectal control will not be possible. Morever in advanced pelvic malignancy or by irradiation make diversion into the intact bowel entirely unacceptable.

Second type of diversion is that diversion using an appliance on the abdominal wall, it can be used where the anal sphineter is paralysed and ureters are dilated, the pelvis is involved in malignant disease or irradiation or even

considerable part of the ureters are already damaged the advantage of this method over other methods which used an intestinal segment in that operation is less postoperatvely complication, no biochemical disturbance and the only disadvantage is stenosis of the stoma. So its standard form of diversion in cases of neuropathic bladder.

Several attempts have been done to produced a continent ileal stoma where an isolated cacum and ascending colon act as reservoir the ileum being anastomased to skin with ileocaecal valve preventing a continual urine flow. The reservoir is then catheterized at regular interval through ileal stoma thus aollowing the patient to free of an oppilance in spite of its considerable advantage and of reports by (Gilchrist and Merrik 1956, Sullikan et al., 1973, and Zinman and Libertino 1975). These method must still be regarded as experimental.

ANATOMY OF THE LOWER URINARY TRACT

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Lower urinary tract Includes the lower third of ureters Bladder, prostate, Semenial vesicler. Vas defernce, urethera.

The pelvic part of the ureter is mesodermal in origen. forming a tube of smooth muscle, circular and longitudnal and muscle lies in three layers an inner most and outer most circular and an intermediate longitudinal layer.possess a mucus membrane resting on lax areolar tissue so it is dilatable tube lined by transitional epithelium.

It leaves the psoas muscle at the bifurcation of common iliac artery over sacro-iliae joint and passes to the pelvic in contact with peritonum of the pouch of douglas toward the spine of ischium then runs forward above the pelvic floor to pass obliquely into the base of the bladder. In this part of its course it lies in losse areolar tissues of the pelvic fascia some distance below the pelvic peritonum.

At it desend it runs postero-inferiorly along the front of internal iliac artery at the level of the ischal spine it curves anteromedially in fat above levator ani in female it passes inferior to the broad ligment and to uterine

artery which turns superiorly into that ligament-in male it remains contact with peritonum.

Untill it is separated from it by the ducts deverens a short distance before it reaches the postero superior angle of bladder the same point as in female in both sexes it passes obliquely through the bladder wall in an infer-medial direction and opens at the superolateral angle of the trigone of bladder. The bladder supply by ureteric branches from either hypogastric, commonilac, the infiror or superior vesical arteries all these vessels make a fairly good anastomosis with each other running in the adventitia and supplying the wall of the ureter veins of ureter drain into the renal, gonadal internal iliac vein, so pelvic part drain to internal iliacvein, - Lymphatics run back alongside the arteries so pelvic part into lymph nod on side wall of pelvic alongside the internal iliac arteries is to vesical and hypogstric lymph node. The ureter is derived from sympathetic connecter cells in spinal cord from (11 to 12) synapse occure in the cocliac and renal ganglio and post ganglionic fibres reach to the tube along the ureteric arteries nothing is known of parasympathetic supply.

The bladder :

It is a holow musclar organ act as reservoir for urine its capacity is about 350-450 ml. It is made of smooth muscle arranged in whorls and spirals the detrusor muscle is adapted for mass contraction not peristalsis the muscle is lined by a losse and readily distensible mucosus membrans and surfaced by transitional epithelium form and size of bladder are the same in both sexes but the attachment of its base and posterior relation of viscus require separete consideration in male and female in each the trigone is fixed and the fundus varies in size so the distenéded bladder is globular in both sexes while empty bladder is flattened from above downward by overlying intestine.

The fundus lies behind the symphysis pubis during distension it rises over the upper border of pubis it is held in position by tone of its muscular wall on the fixed base of trigan as a toy balloon. Sides of bladder consists of two infero lateral surfaces which are separated from the symphysis by a space lying between the pelvic floor and the pelvic peritoneum this retropubic space is occupied by very losse areolar tissur the two sides meet at an edge (posterior to pubic symphysis which slopes postero-inferioly from the apex to meet the inferior angle of the base at the neek of the bladder.

The upper surface (superior surface) has serius coat as the pelvic peritonum is firmly Adhernt behind the attachment of the medium umbilical ligment. The base of bladder is relatively indistensible and immobile it is held in position by the lateral ligments of bladder and by being fixed in the male to the immobile prostate two seminal vesicles with ampullae of the deferent ducts between them cover all but. Small peritoneal covered and in the female to cervex uteri and anterior vagnal fornix. So bladder lies relatively free in surrounding losse extraperitonal tissue except at inferior part of neck which is held firmly by pubo-prostatic (male) or pubo-vesical (female) ligment thus it is free to expand superiorly in extraperitonal tissue of anterior abdominal wall stripping the peritoneum from the transversus fascia.

Trigone :

A triangulor area lying between the internal urethral orifice and the orifices of ureters-it is smooth walled and mucus membrane is rather firmly adherent to the underlying muscles it is inferior angle lies at the median internal urethral orifice while a small obliquelly placed ureteric orifice is present at each of the superolateral a angles

the orifices are connected by transvers ridge called inter ureteric bar so orifices lie at the end of the bar. Orifices are in shape of an oblique slit-this oblique passage act as a flap valve thus any increase in intera vesical pressure as (contraction of musclatur Find pressure of the intra mural part of the ureter together and present the pressure in bladder being transmitted to ureter and kidney they also open rhythmically in respon-e to the ureteric peristalsis each time a jet of urine is injected into bladder (4-5 times/minute) in male trigone overlies the middle lobe of the prostate.

Peritoneal covering of bladder are important when it is empty the superior surface looks upward into pelvis and is covered by peritonum on each side between bladder and pelvic wall there is a recess known as para vesical peritonal fassa, posterioly peritonum passes of bladder wall on to the seminal vesicles and vasa it then dips downward to reach the bottom of the recto-vesical pouch where it is reflected on to the anterior surface of the rectal ampulla anteriorly bladder is not covered by peritonum .

The outer muscle layer extends down the whole length of female urethera and into distal end of prostate but is

circularly and spirally orineted thus it functions as major involuntary sphincter. The middle circular detrusor muscle layer end at the internal orifices of bladder it is best developed anteriorly, the internal compement remansis longitudinal and reches the distal end of urethra in female and the end of prostatic in male these covering Fibres cause a thickening that forms the so celled (Vesical Neck) but anatomically there is no true sphineter at this point.

External sphineter : Ther is 2 volumtary external sphricter mechanism formed of striated muscle the major one which lies between the fascial layer of urogental diaphragm is maximally condensed around the middle thrid of the female urehra. While in male these fibres surround the distal portion of prostatic andmembranous urethra-the straited muscle of pelvic floor (Levator ani) Contribute to sphineter function.

Blood Supply :

Bladder is supplied by two main vessels the superior vesical and inferior vesicel arteries of which there is one on each side. They arise from anterior division of internal iliac artery superior vesical may be the unobliterated part