EVALUATION OF DIFFERENT METHODS OF URINARY DIVERSION AFTER TOTAL CYSTECTOMY

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An essay
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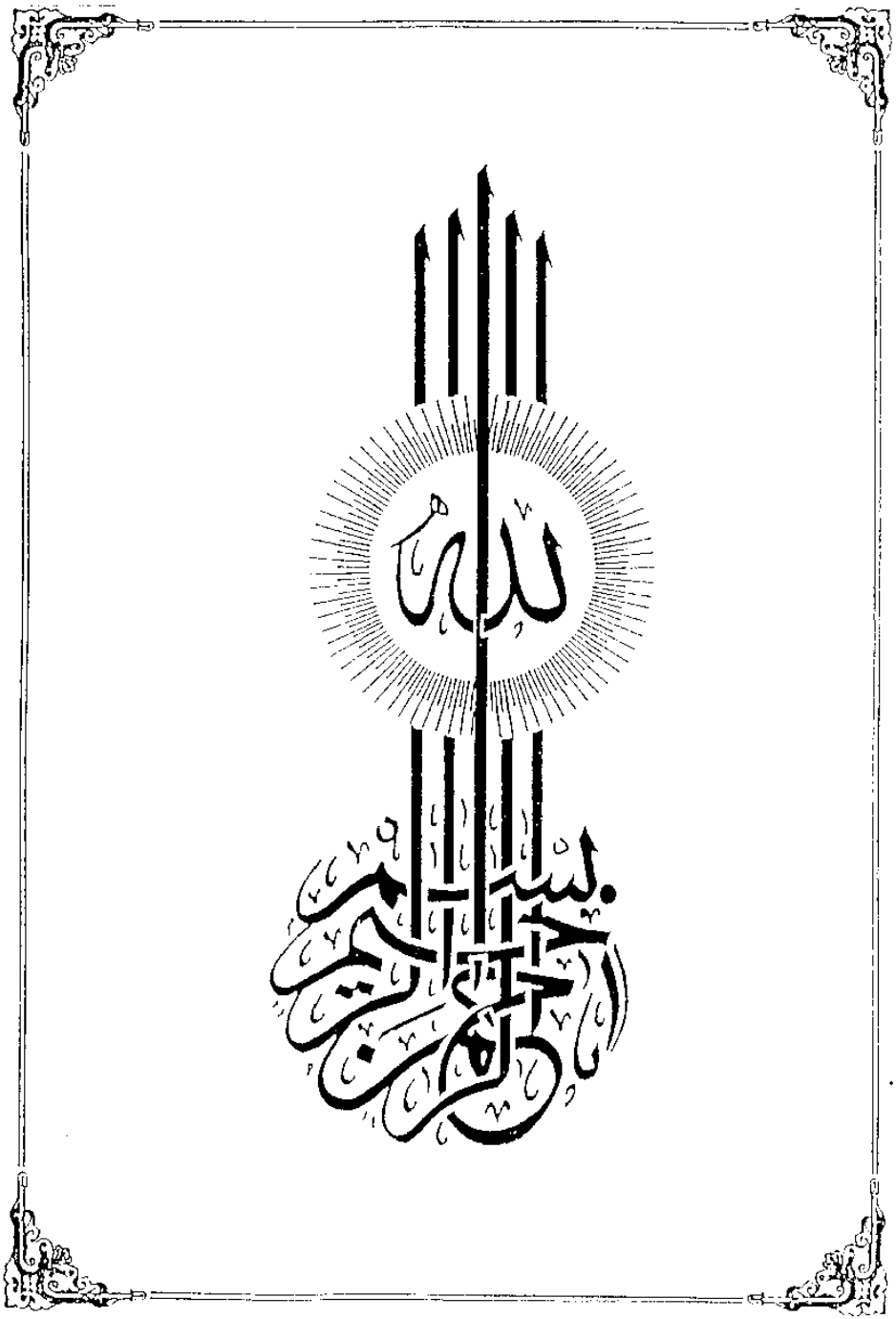

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INTRODUCTION

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The urinary diversion is defined as "The changing of the normal pathway of urine".
The treatment of concer bladder is faced with two problems, first is related to the excision of cancer and second is the problem of urine diversion after excising it.

Many surgeons and urologests have devoted several years and much effort to device a satisfactory method for urinary diversion.

Urinary diversion is always a reluctant compromise since, there is not a satisfactory substitute for the normally functioning urinary system.
The need for adequate methods of urinary diversion has long been recognized, and the development of successful techniques has coincided with progress in medical knowledge and improvement in technical skills.

Swenson has advocated bilateral side-by-side cutaneous ureterostomy, Chute and Sallade have published their experience with this technique and advocate it in patients whose ureters are dilated and who are not so obese.

The first attempts to divert the urnie to the bowel was made by "Simon" at the mid niteteenth century."Nesbit"[1]

1948 described mucosa to mucosa anastomosis of ureter to bowel to prevent strictures. "Bricker",[2] in 1950 revived the concept of ileal conduits urinary diversion as originally proposed by "Tizzoni" and "Foggi" in 1888,subsequentlly modifications of the uretero-ileal conduit by placing the conjoined ureters into the butt of the ileal segment have been popularized by "Walace"[3] and by "Albert" and "Persky" 1970.

Different methods of urinary diversion are often used, depending upon, the condition and state of renal function and the ability and inclination of the surgeon. The main indications for permanent urinary diversion are malignant tumours or irriperable lesions of the bladder.

The aim of work of this essay is evaluation of different methods of urinary diversion after total cystectomy.

CHAPTER 1

EMBRYOLOGY, ANATOMY AND PHYSIOLOGY OF THE URINARY BLADDER

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Development of the urinary bladder:-(From 4th weak to 8th weak)

The allantois becomes enlarged to form the cloaca at 5th weak. When the cloacal dilatation is first formed the hindgut still ends blindly, but there is ectodermal depression under the root of the tail which sunk in toward the gut untill the tissue seperating the gut from the outside is very thin. The ectodermal depression is called proctoderm and the thin plate of tissue closing the hindgut is the cloacal membrane, which eventually rupture establishing caudal outlet for the gut.

The cloaca starts to be divided into two parts, by a cresentic fold which cut into the cephalic part of the cloaca. The two limbs of the fold bulge into the lumen of the cloaca from either side meeting and merging with each other. The two parts will be dorsal one which forms the rectum, and ventral forming the urogenital sinus, at the 8th weak. The mesonephric ducts open from either side into the cephalic end of the cloaca.

Meanwhile the proximal part of the allantois has become greatly dilated and now quite properly the urinary bladder. The neck of the bladder has been formed from tissue

which was originally part of the cloaca.

The caudal portion of the mesonephric duct is absorbed into the bladder wall. The end result of this is that the mesonephric and metanephric ducts open independently into the urogenital sinus.(4)

Anatomy of Adult Bladder

The bladder is a reservoir of urine. Its size, shape, postion and relation vary with the amount of urine it contains as well as the state of distension of neighbouring viscera.

When the bladder is empty it lies in the pelvis but as it fills it expands upwards and forwards into the abdominal cavity.[5]

In the living subject the bladder almost always contains some urine and therefore it is more or less globular in cutline.

Shape and surface:

The bladder is almost ovoid or spherical in shape. It has therefore apex, base or fundus and three surfaces, a superior surface and a pair of inferolateral.[6]

Relations of adult bladder:

In both sexes the peritoneum covers the bladder's superior surface from which it is reflected on to the infra-umblical abdominal wall anteriorly and to the side wall of the pelvis. As the bladder extends upwards its upper surface pushes the peritoneum upward.

In the female the peritoneum is reflected off the posterior border of the bladder on to the junction of the body and neck of the uterus, while in the male it dips down to cover a small median area on the base and is reflected on the rectum.

In the female the bladder neck narrow abruptly to become continous with the urethera. In the male, it is continuous with the prostate. It is connected by the pub-oprostatic ligament to the back of the pubis.

The apex is continuous with strong fibrous cord the median umbilical ligament.

In the male the pelvic colon and coils of the ileum rest on the upper surface. In the female it is related to the uterus and a loop of the ileum.

The inferolateral surfaces form the dorsal wall of the retropubic space, they are related to the retropubic fat which seperate each of them from pubic bone, obturator internus and levatora ani.

The base at it is border with the superior surface it is pierced by the ureteral opening. In the female it is related to the neck of the uterus and vagina. In the

seminal vesicle the ampulla of the ductus defferens cover it except small area in the middle below the upper border which is covered by peritoneum of recto vesical pouch. The pouch, the ductus defferens and vesicles seperate it from the rectum.(6)

Blood supply and lymphatic drainage:

The bladder is supplied by superior and inferior vesical arteries which arise from anterior division of the internal iliac artery or its umbilical branch, additional branches may pass to it from almost any of the pelvic arteries.

The vesical veins are prominent in the region of the ureters and at the neck of the bladder where they join with the prostatic and uretheral veins. They all drain into the internal iliac veins or their tributaries.

There is a rich network of lymphatic in all strata of the bladder wall and it communicates with the network of the ureteric wall. Some lymphatics from the bladder may run directly to the lateral aortic nodes, but most drain into the external iliac nodes.(5)

Nerve supply:

The bladder is supplied by both sympathetic and parasympathetic nerves from the vesical plexus.

The efferent (motor fibres) arise from 2nd, 3rd , and 4th sacral segments (Nervi erigents). Most of the parasympathetic synapse with ganglion cells situated in the bladder wall. The sympathetic supply arises from the lower 2 thoracic and upper 2 lumbar segments, and passes by way of the hypogastric plexuses into the vesical plexus situated at the base of the bladder.

The striated external sphincter is supplied by pudendal nerve (5,2,3,4).[6]

Anatomy of the ureter

The ureter is a cylinderical membranous tube, about sixteen inches in length, extending from the pelvis of the kidney to the bladder. Its course is obliquely downward and inward through the lumbar region into the cavity of the pelvis , where it passes downward forwards and inwards across that cavity to the base of the bladder.

Relations:

In its course it rests upon the psoas muscle beeing covered by the peritonium and crossed obliquely from within outwards by the spermatic vessels. The right is crossed by the branches of the mesenteric arteries, which are distributed to the ascending, and the left by those for the descending colon. The right ureter lying close to the outer side of the inferior vena cava. Opposite the first piece of the sacrum it crosses either the common of external iliac artery, lying behind the ilium on the right side and segmoid flexure of the colon on the left. In the pelvis it entersthe posterior false ligament of the bladder below the obliterated hypogastric artery, the vas deferens in the male passing between it and the bladder. In the female the ureter passes along the side of the neck of the uterus and upper part of the vagina.(7)