SUPRAVESICAL DIVERSION OF URINE USING THE BOWEL

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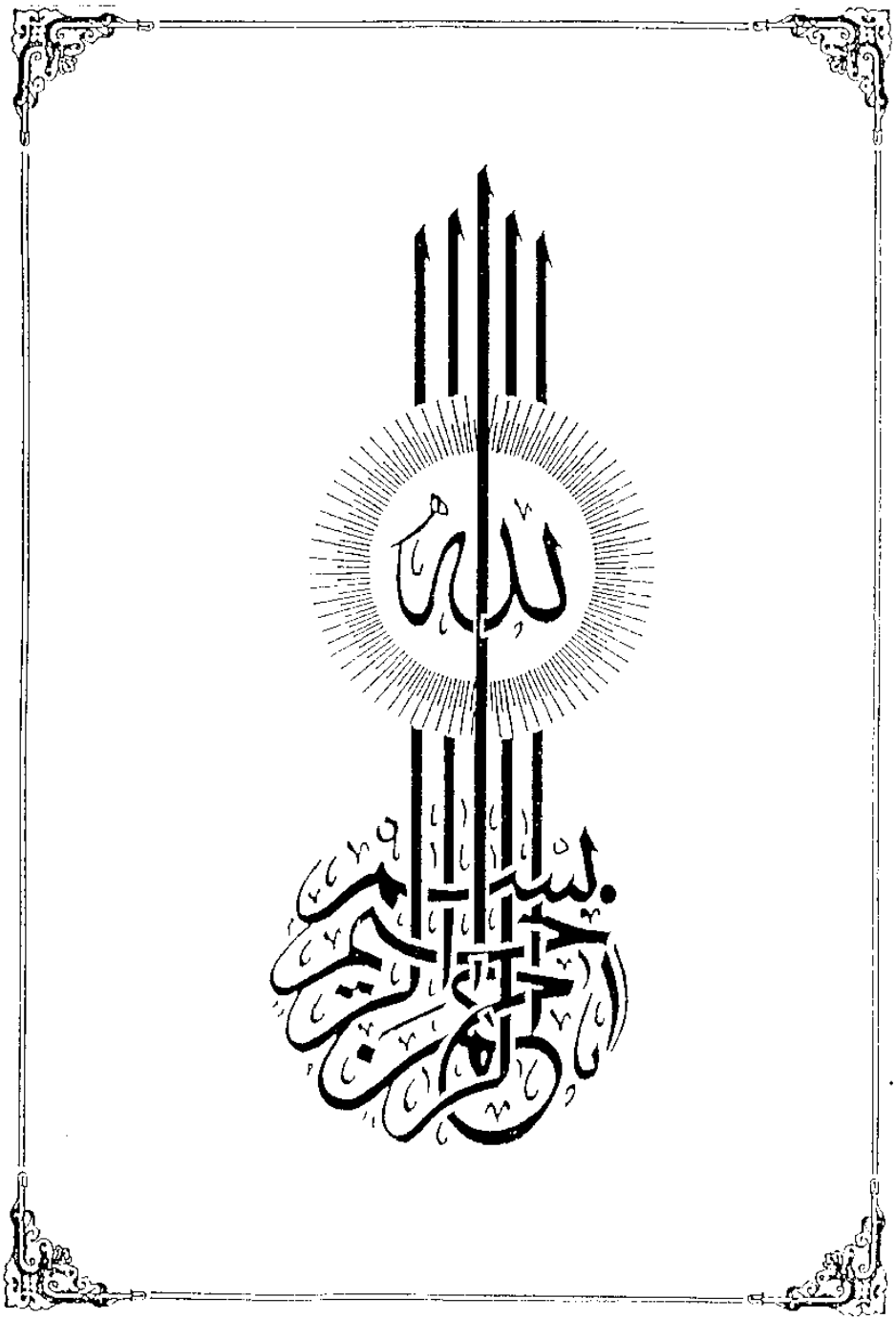

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INTRODUCTION

HISTORICAL REVIEW

complications with the older techniques of ureterosigmoidostomy (Harvard and Thompson, 1951; Whisenand and Moore, 1951; Zincke and Segura, 1975).

Since 1950, the ileal conduit has been by far the most common type of supravesical diversion of urine, and there have been only few surgical modifications of Bricker's original description, related to ureteral implantation into the ileal segment (Richie and Skinner, 1986).

Barzilay (1960), Barzilay and Goodwin (1968) and Wallace (1966) have described methods of joining the two ureters, and either implanting them into the side of the ileal segment (Barzilay) or sewing them to the open end of the proximal conduit (Wallace).

Parkhurst and Leadbetter (1960) anchored the base of the conduit to the sacral promontory or retroperitoneum and then implanted the ureters end-to-side just above the closed end of the segment.

Most surgeons, weary of the problems of ureterosigmoidostomy, abandoned the procedure in favor of Bricker's operation without giving a fair trial to the combined technique of ureterocolonic anastomosis. Subsequently, Goodwin and associates (1953) described a transcolonic technique similar to that of Politano and Leadbetter's operation (1958) for preventing reflux with ureteroneocystostomy.

A comparison of Leadbetter's combined technique with Goodwin's technique reveals similar success in reducing the incidence of pyelonephritis. Both are based on the principle of creating a long submucosal tunnel (Ridlon, 1963).

The study performed in dogs by Weyrauch and Young noted that the best results were achieved when a submucosal tunnel technique was used in conjunction with the direct mucosa-to-mucosa anastomosis (Weyrauch and Young, 1952).

It would appear that one of these techniques should be used whenever ureterosigmoidostomy is contemplated (Wear and Barquin, 1973; Woodruff et al., 1952; Zincke and Segura, 1975).

In 1967, Mogg described the use of the sigmoid colon as an isolated conduit. Others have reported experience with the use of jejunal conduits (Golimbu and Morrales, 1975), the transverse colon (Schmidt et al., 1975) and the ileocecal segment (Zinman and Libertino, 1975).

Mogg and Syme (1969) claimed that the sigmoid colon presents definite advantages: adequate redundant colon is always available, thicker musculature, good peristaltic activity and little residual urine. It is constructed more rapidly (Mogg and Syme, 1969) and is suitable for attachment to the left renal pelvis (Murphy and Mikuta, 1961; Markland, 1969; and Gibbs, 1970).

B)Continent Ileal Urinary Reservoir (Kock Pouch):

In 1962, Dr. Nils Kock first performed a new type of bladder replacement to the urethra that was based on the principle of the fixed direction of the peristaltic movements in the intestine. By splitting the intestine at its antimesenteric border and folding the split intestine twice, the motor activity in the different parts of the bladder substitute counteracts itself (Montie et al., 1986).

In 1967, Dr. Kock applied the principle of the low pressure ileal reservoir to patients with ulcerative colitis who needed a proctocolectomy (Montie et al., 1986).

In 1975, Dr. Kock performed a continent ileal urinary reservoir for a 26-year-old patient with a neurogenic bladder, previous ileal conduit, and severe peristomal skin complications (Kock et al., 1978).

In 1982, he and his colleagues reported 12 cases (10 for benign disease, 2 for bladder cancer) (Kock et al., 1982).

In 1983, Gerber reported 7 patients (five converted from conduit to continent ileal reservoir) (Gerber, 1983). In 1984, Skinner et al. described their initial experience in 51 patients (Skinner et al., 1984).

C)Rectal Bladder Diversion:

In 1895, Mauclaire presented the rectal bladder

experimentally, but with left iliac terminal colostomy. Gersuny, in 1898, was the first to describe the use of a perineal sigmoidostomy anterior to the rectum, in an experimental work. In 1912, Heitz-Boyer and Hovelacque described a clinical case of bladder exstrophy operated upon by Marion, who performed a rectal bladder procedure with perineal sigmoidostomy, but posteriorly to the rectum (Campos Freire, 1983).

In 1957, Duhamel presented five children with bladder exstrophy in whom he accomplished a rectal bladder operation, with a slight modification of the Heitz-Boyer procedure (Campos Freire, 1983).

Extensive experience with rectal bladder diversion has been described by Campos Freire (1983), and also, Hanley (1967).

TYPES OF SUPRAVESICAL DIVERSION OF URINE USING THE BOWEL

I- **EXTERNAL DIVERSION:**

A- Intestinal Conduits:

1-Ileal and jejunal conduits urinary diversion.

2-Sigmoid conduit urinary diversion.

3-Transverse colon conduit urinary diversion.

4-Ileocecal conduit urinary diversion.

B- Continent Ileal Urinary Reservoir (Kock Pouch)

II- **INTERNAL DIVERSION:**

A- Ureterosigmoidostomy

B- Rectal Bladder Diversion:

1-With perineal colostomy (Gersuny, Heitz-Boyer, and Duhamel techniques).

2-With iliac colostomy (Mauclaire technique).

C- Colonic Diverticulum Bladder

EXTERNAL DIVERSION

EXTERNAL DIVERSION

I- INTESTINAL CONDUIT:

A- Preoperative Patient Preparation:

1- General preparation.

2- Bowel preparation.

3- Stomal site selection.

B- Postoperative Care:

C- Types of Intestinal Conduit:

1- Ileal and jejunal conduits urinary diversion.

2- Sigmoid conduit urinary diversion.

3- Transverse colon conduit urinary diversion.

4- Ileocecal conduit urinary diversion.

D- Stomal Construction:

Types: *1- Flush stoma.*

2- Bud stoma.

3- Turnbull's loop stoma.

4- Prosthetic urinary stoma.

E- Complications of Intestinal Conduit: Prevention and Management:

1- Early Complications.

2- Late Complications.

II- CONTINENT ILEAL URINARY RESERVOIR (KOCK POUCH):

Complications and Management

1 _ INTESTINAL CONDUIT