INTESTINAL STOMAS

(ILEOSTOMY AND COLOSTOMY)

An Essay

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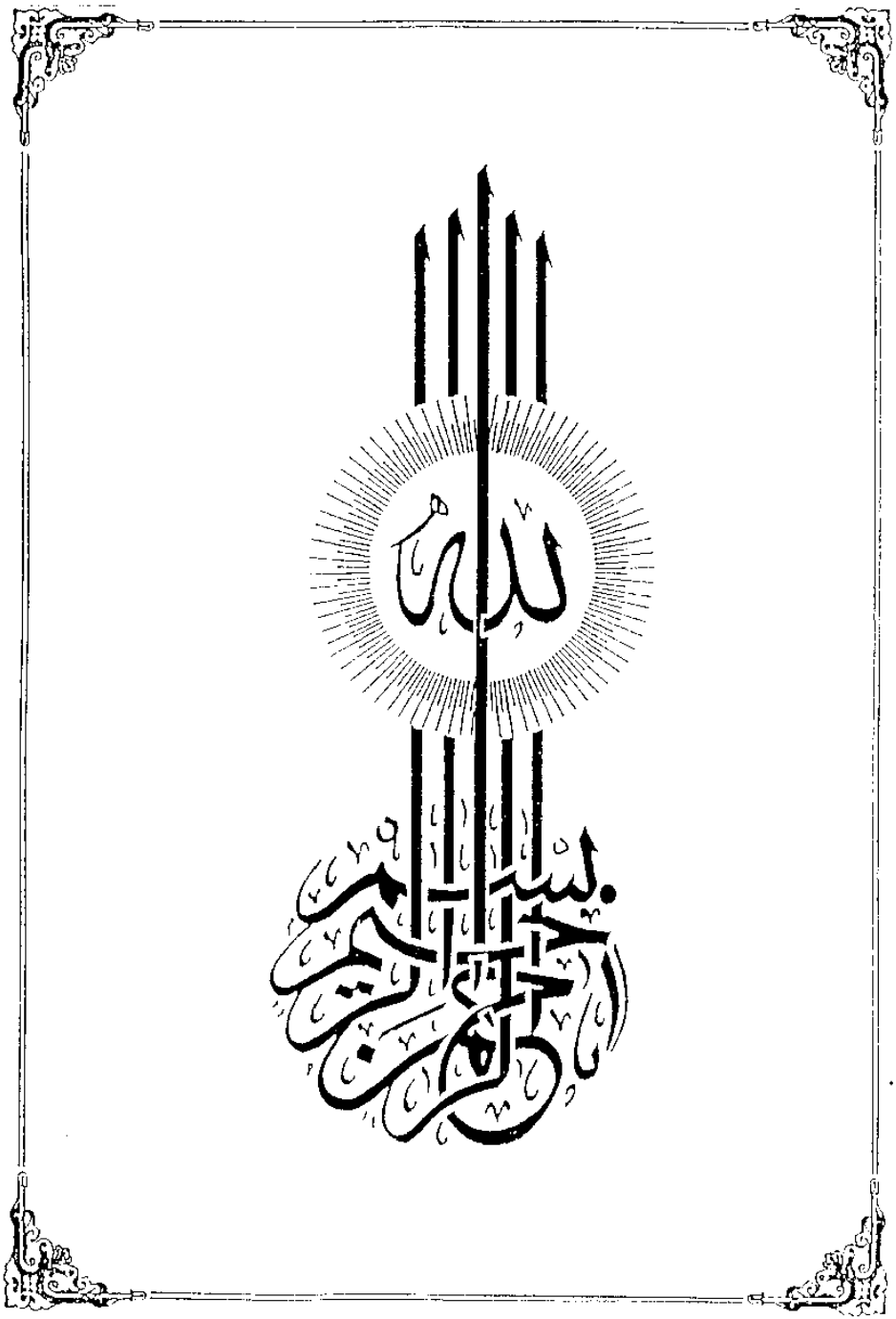

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INTESTINAL STOMAS

INTESTINAL STOMA

INTRODUCTION

The stoma, or ostomy, is an artificial opening of the intestinal or urinary tract to the abdominal wall. It has been developed as a technique to provide both cure and palliation for benign and malignant diseases.

In recent years, rapid advances have been made in surgical techniques, concepts of nursing care and equipment available, making ostomy surgery more successful and therefore more frequent choice of treatment.

If the stoma is constructed by a surgeon specializing in the new techniques and if nursing care is delegated to the most skilled person available, stoma patients may be spared many of the complications that in the earlier years hindered their return to normal existence.

Basic Types of Intestinal Stomas

1. An Ileostomy : is constructed most frequently for treatment of inflammatory bowel disease. A loop ileostomy can be used on a temporary basis to divert intestinal flow, to protect a precarious anastomosis (the ileorectal anastomosis, for example, constructed when the colon must be removed), or to allow healing of distal disease. When both colon and rectum must be removed, a permanent

ileostomy is constructed, usually a Brooke stoma positioned in the right lower quadrant.

2. A Colostomy : is constructed in treatment for malignant or benign disease of the colon or rectum or both. A colostomy can be used as a temporary measure to divert colonic flow or to decompress the colon. The temporary colostomy, is usually a loop stoma constructed in the midtransverse colon. A permanent end colostomy is constructed when the rectum must be removed and is usually located in the left lower quadrant.

3. A urinary conduit : is constructed to compensate for the loss of or severe malfunction of the urinary bladder. Construction of the stoma involves isolation of a segment of small intestine (mesentery intact) and the restoration of the continuity of the remainder of the small intestine. One end of the segment is brought to the abdominal wall as a stoma, the other end is closed. The ureters are implanted in the segment to allow free passage of urine to the exterior of the body. The urinary conduit functions exactly that, a conduit, and it does not severe as a reservoir.

4. Cutaneous fistulas : may also be considered in a discussion of stomas, because they are managed by the same techniques of care. Fistulas can be defined as unintentional openings of the intestinal or urinary tracts to the surface of the abdominal wall.

I. ILEOSTOMY

HISTORICAL PERSPECTIVES

In 1154, Stephen, King of England, died of the "iliac passion" a syndrome defined in Saxon medical lore as "a disorder in which a desire cometh upon a sick man for discharging his bowels and he is not able, when he is shut in the out house." Six centuries were to elapse before the 1st record appeared of a stoma created for relief of obstruction.

Pillore from Rouen performed caecostomy in 1776 on a wine merchant with rectal cancer, the patient died on the 28th post operative day.

Twenty years more elapsed before a patient survived following creation of a stoma undertaken again by a French surgeon, Duret of Brest. On this occasion, colostomy was done on an infant with imperforate anus.

In 1891 Mayo Robson of Leed's used a sigmoid colostomy to irrigate the inflamed colon of a woman with ulcerative proctocolitis, the inflammation subsided and thereafter the stoma was closed.

Irrigation was fashionable for several conditions and could be done in other ways. Brown, of St. Louis (1913) turned to ileostomy to provide complete physiological rest

for the bowel and for irrigation of the bowel in conditions as rectal cancer, amoebic dysentery, obstruction by adhesions, and tuberculous colitis. The ileum was divided, the distal end closed, and a catheter sewn into the caecum for irrigation, the proximal end was brought to the skin. Brown therefore has created the concept of diversion of the fecal stream as a means of treating inflammatory bowel disease.

After World War I, ileostomy was the surgery of choice for those who had lost faith in the efficacy of irrigation alone. Though deflection of the fecal stream sometimes proved ineffective. Arthur Hurst test a remission before allowing closure of an ileostomy by inserting ileal contents into the distal ileum to see if this evoked a reaction. This was the principle that led to the development of double-barreled stomas rather than end stomas.

Ileostomy at the beginning of this century was considered by many to be an unmitigated disaster, a measure of last resort to be undertaken only in patients in extremes because of the inability to control the fluid excreta. Leakage of the stoma due to badly developed appliance was inevitable, normal daily activities were impossible. What was worse, the skin surrounding the ileostomy became ulcerated due to excoriation over an area made wider by the dressings which served as fecal polutics. These disabilities

Fig. 1: Salt's version of the Koenig Rutzen bag.

inherent in the ileal stoma, together with the fact that the operation was undertaken only with the greatest reluctance and was reserved for the severly ill, led to the high mortality rate that was associated with ileostomy, it was not less than 30%.

It is hardly surprising therefore, that ileostomy remained an operation of ill repute until a great event occurred in 1944 which placed surgery for ulcerative colitis on a sound and safe basis and set stoma care in a new direction, that event was the creation of a new efficient appliance by Koenig and Rutzen, the so called Koenig-Rutzen bag. The problems which beset any stoma had been overcome leakage was obviated, control was complete, in particular for a fluid efflux, the appliance did not need to be removed and reapplied each time it had to be emptied (Fig. 1).

Other problems met with in early cases of ileostomy were the serous flux which developed often with cramping abdominal pains from the time the stoma begin to act and the contraction of the exteriorized part of the ileum due to the presence of exposed serosa. This gave rise to ileostomy obstruction or sometimes to recession of the stoma in a high percentage of patients.

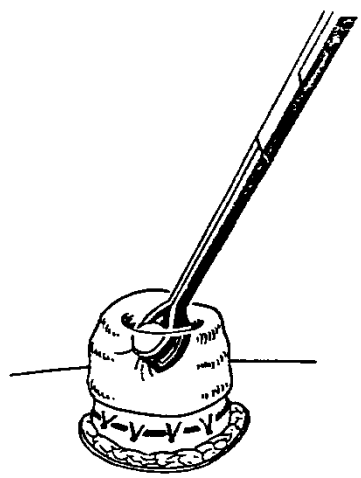

Fig. 2: Eversion of stoma using Babcock forceps inserted into lumen.

These problems were solved by stoma eversion that was first reported in 1952. It was achieved simply by bringing out 5 cm of the ileum and inserting a small delta Duval forceps within the lumen to grasp the ileal wall into full thickness at 2.5 cm to fix a fulcrum around which eversion could be undertaken, that point thus becoming the apex of the stoma (Fig. 2). This operation did not only prevent stoma stenosis but also the excessive flux disappeared. The reason became apparent from experimental work being undertaken by Crile Jr. and Turnbull in Cleveland which showed the flux and the cramps of ileostomy dysfunction to be due to infection through exposure of the ileal serosa.

From 1952 on, eversion ileostomy became standard surgical practice, those complications which more commonly gave cause for operative revision of the stoma -prolapse recession and fistula- became rarer.

The evolution of self-help patient groups has gone hand-in-hand with the developments of ileostomy. It is no exaggeration that access to a variety of modern stoma appliances and to specialized stoma therapists has revolutionized the life of the patient with an ileal stoma.

In 1960, a great advance was made by elaboration of the continent ileostomy at Sahlgren's Hospital in Goteborg, Sweden by Nils G. Kock.

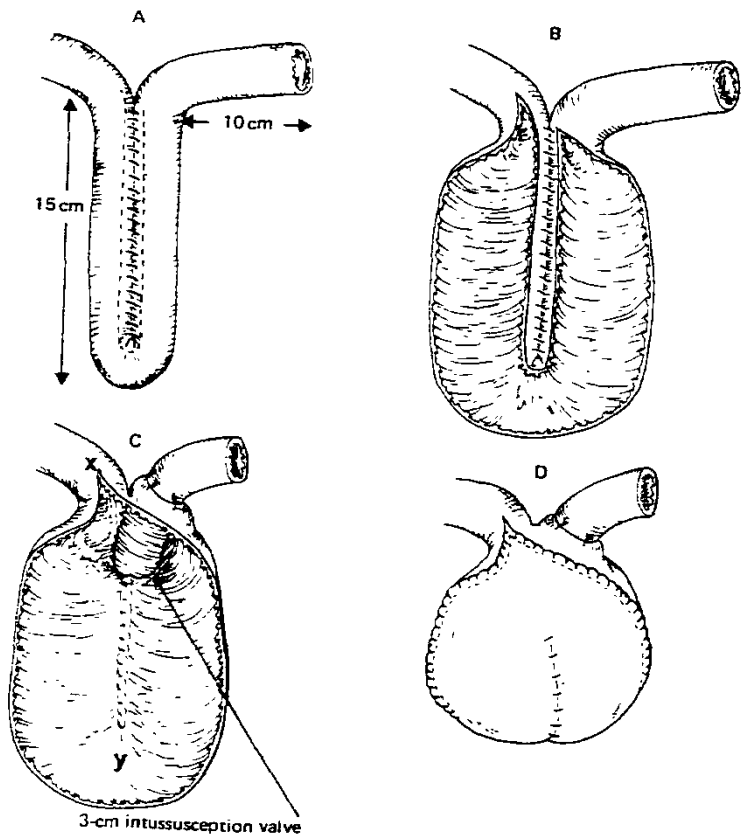

Fig. 3: Stages in the construction of the Kock continent ileostomy reservoir.