Indications and complications of Ileal Conduits

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THE EVACUATION OF URINE BY ILEAL SEGMENTS IN MAN*

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CRITICAL LEVELS of hydrostatic pressure initiating propulsion of fluid by the perfused intestine have been demonstrated in excised rabbit segments, and for guinea pigs, in situ, and in canine Thirty-Vella loops. Other local and extrinsic factors modifying fluid transport in Thirty-Vella loops have also been described. Recently the distal ileum of man has been substituted for the urinary bladder when the latter has been excised during pelvic exenteration for carcinoma. Segments approximately 25 cm. in length, with intact mesentry, were isolated from the intestinal tract. The ureters were anastomosed to the closed proximal end of the segment and the segment's open distal end brought out through the right lower quadrant of the anterior abdominal wall as an ileostomy. From the spontaneous periodic emptying of seven such segments, the following relationships have been derived:

1. Filling rate or rate of urine flow into segment vs. time between emptying of segment by catheterization (reducing volume of urine in segment to zero) and spontaneous emptying of segment.

2. Filling rate vs. volume of urine in segment at time of spontaneous emptying.

3. Residual urine (volume of urine remaining in segment after spontaneous emptying) versus time of spontaneous emptying.

4. Residual urine (volume of urine remaining in segment after spontaneous emptying) versus time of spontaneous emptying.

No restrictions were placed on dietary or fluid intake prior to arrival of the patients in the laboratory. The patients reclined on a bed and were allowed to read, talk, or sleep. A valve stem admitting a No. 14 urethral catheter was cemented to the ring cut out from a Roten collecting bag, and the ring was sealed to the skin adjacent to the ileostomy stoma, permitting catheterization of the ileal segment without the loss of fluid. Collecting tubing led from the valve stem either to a drop recorder registering on a kymograph or to a graduate. The patients drank water in quantities of 100 to 900 cc., providing variable urine flow. The volume of the segments was estimated by retrograde filling with isotonic saline over a several-minute period, to the point of spontaneous emptying.

To establish the pattern of spontaneous emptying, 130 determinations of spontaneous emptying and residual urine from the ileum, and 19 from the right lateral decubitus position were made in four patients on two or three widely separated days. These patients comprise Series 1. Within one to five minutes after each spontaneous emptying effort, the segments were cathe-
Urétérostomie transiléale selon Bricker
INDICATIONS

- **Ileal conduit is the standard of care**
  - To avoid direct ureterostomy
  - In patients that are not candidate or not motivated for bladder substitution or continent reservoirs

- **Contra-indicated**
  - In patients with severe disorientation
  - In geographical area with no access to stomial material
## Complications

<table>
<thead>
<tr>
<th>Early</th>
<th>Late</th>
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<tbody>
<tr>
<td>Bowel related</td>
<td>Stoma related</td>
</tr>
<tr>
<td>Intestinal anastomosis related</td>
<td>Abdominal wall related</td>
</tr>
<tr>
<td>Ureteral-ileal anastomosis leakage</td>
<td>Conduit stenosis</td>
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<tr>
<td>Enteric fistula</td>
<td>Uretero-enteric anastomosis stricture</td>
</tr>
<tr>
<td>Bowel obstruction</td>
<td>Hydronefrosis</td>
</tr>
<tr>
<td>Prolonged ileus</td>
<td>Kidney failure</td>
</tr>
<tr>
<td>Conduit necrosis</td>
<td>Metabolic changes</td>
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</tbody>
</table>
Complications acute

- Urinary leakage (5 to 10%)
  - Most cases transients and do not require additional manipulations
  - Role of the stenting.
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- Urinary leakage (5 to 10%)
  - Most cases transients and do not require additional manipulations
  - Role of the stenting.
  - In case of patients deterioration revision is required
    - Uretero-ileal anastomosis
    - Intestinal suture
Complications acute

- Intestinal complications
  - Acute Intestinal Obstruction
    - Most cases from transient ileus (22%)
    - Avoid over preparation
  - Intestinal leak
    - Rare cases of ileal anastomotic leakage
  - Thrombosis of the ileal segment
    - Alteration of the appearance of the stoma
Ileal conduit.

Position and correction.

- Positioning must be done with precaution
  - Not impinge on bony structures
  - Distant from abdominal deformities (scare, umbilicus)
  - Flat surface of the abdomen
Complications

- Inappropriate length of stoma.
Complications long-term

- Stomal complications (15 to 31%)
- Parastomal hernia (13.9 %).
- Stomal stenosis (0.7%)
- Stomal prolapse (0.7%).

Complications: long term

- Parastomal hernia
Complications long-term

- Ileal conduit stenosis
  - May lead to infections and progressive alteration of renal function
  - May be attempted to treat conservatively
  - In case of failure surgical reparation is required
Complications long-term

- Uretero-ileal stenosis
  - (7-14%)
  - Usually within 2 years
  - 50% of patients submitted to uretero-intestinal refluxing anastomosis will develop upper urinary tract alterations, but only in 12% of cases do the renal changes become clinically significant *.

Complications long-term

Cutaneous problems

- Extremely frequent (15–65%)
- Negative impact on overall QoL
- Result from
  - chemical injury (irritant contact, dermatitis pseudoverrucous lesions, alkaline encrustation),
  - mechanical injury (pressure ulcer, stripping, injury, mucocutaneous separation),
  - infection (candidiasis, folliculitis),
  - immunologic disorders (allergic contact dermatitis)
Complications long-term

Cutaneous problems

- Extremely frequent (15–65%)
- Negative impact on overall QoL
- The role of the stoma therapist in both prevention and management of these complications is essential.
- Proper preparation of material and protection of skin is required.
Complications long-term

- Infection
- Pyelonephritis (5%)
- Formation of stone
Complications long-term

- Metabolic changes only in 10%
Conclusion

- Ileal conduit is a simple procedure
- It deserve care and attention
- Postoperative nurse guidance is required