

USE OF ILEAL LOOP BLADDER FOR UROLOGICAL COMPLICATIONS OF CARCINOMA OF THE CERVIX

Review of Literature and Report of Three Cases.

by

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Introduction

In recent years the greater possibility and practicability of extensive pelvic surgery for carcinoma of the cervix has placed a new emphasis on methods of repairing permanent ureteral damage. To meet this demand, various means were adopted, such as plastic devices or isolated blood vessel grafts, but success with these methods was far from satisfactory. Flaps of bladder have been used for low ureteral damage with better results than the former methods. It was later found that an isolated loop of small bowel can be used conveniently to bridge ureteral defects, and acting as a conduit, it can carry urine from the kidneys to the bladder. Such a procedure enables one to preserve the renal tissue, which was frequently removed in the past from lack of confidence and bad results in restoring ureteral continuity. To a patient who has been subjected to debilitating radical surgery, it is of utmost importance to preserve her renal efficiency. From this point of view, by ileal loop re-

placement, the serious complications due to renal insufficiency can be avoided.

Review of Literature

In 1894, Finger was the first person to propose, in writing, reconstruction of the ureter by a loop of small intestine without isolation from its mesentery.

This operation was actually first performed by d'Urso and de Fabii on three dogs in 1900. One dog survived the operation and was killed 32 days after the operation. Autopsy showed a normal kidney, renal pelvis and ureter above the anastomoses with good healing at both ends.

Shoemaker (1906) was the first to perform human ureteral repair with an isolated segment of ileum. His patient was a girl of 18, who suffered from severe urinary frequency. Her bladder capacity was reduced to 25 c. c. and the urine was loaded with red cells. The right ureteric orifice was red and oedematous. First, a right nephrectomy was done and the kidney showed multiple abscesses. Her symptoms were not relieved at all. Shoemaker isolated a loop of ileum and attached its proximal end to the mid-ureter, bringing the distal end out on to the skin. The patient

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TABLE I
Details of Patients before and after the Operation

Name and age	Indication for the operation	Pre-operative I.V.P.	Post-operative I.V.P.	Result
1. Mrs. C. M. (60 yrs.)	Uretero-vaginal and vesico-vaginal fistula following Wertheim hysterectomy.	Leak at the lower end of right ureter and bilateral hydronephrosis and hydroureter (Fig. 2).	Normal left side. Some degree of right sided hydronephrosis (Fig. 3).	Alive and well 5 years after.
2. Mrs. M. D. (68 yrs.)	Extensive bilateral ureteral stricture following radiotherapy for carcinoma of the cervix.	Gross bilateral hydronephrosis and hydroureter from the level of the pelvic brim upwards.	Dilatation of the ureters and the kidney pelvis less marked.	Alive and well 2 years after.
3. Mrs. M. B. (56 yrs.)	Extensive radiation necrosis of the urinary bladder.	Non-functioning left kidney. Right side normal.	Died of uraemia 19 days after the operation.

The renal tract was studied by intravenous pyelography pre- and post-operatively (except case 3) using Hypaque solution, cystoscopy, blood electrolytic study and urine examination. The steps of the operation were as follows:

The abdomen was opened by a midline incision. An 18 inch loop of ileum was isolated with its mesentery attached. The non-isolated portion of the bowel was anastomosed. Polythene tubes were passed along the ureters into the cut ends of the isolated ileal loop and into the opening in the dome of the bladder and out through the urethra. Anastomosis of the isolated loop to the dome of the bladder was performed and anastomosis of the ureters to the cut ends of the ileal loop was done. Two tubes were inserted to drain the pelvis and the cave of Retzius. Through and through nylon tension sutures were applied in the abdominal parietes and the skin incision was closed in the usual way (Figs. 1,

a and 1, b).

Discussion and Conclusions

Case 3, Table I, who died, was definitely uraemic when she was received for treatment. She was treated for carcinoma of the cervix elsewhere but unfortunately the dosage of radium or deep X-rays was not known. Her blood urea was 111 mg. per cent before the operation, and hence the latter cannot entirely be blamed for her death. There is no doubt that her remaining kidney failed slowly.

Thus it appears that it is mechanically and surgically possible to substitute an isolated loop of viable small bowel for damaged ureter or bladder. As it is a formidable operation, it is better not used for those cases of ureteric or bladder damage due to infection, trauma or neoplastic invasion, where simpler methods of treatment are quite possible. Where the damage to the ureter is extensive, such as in the past, necessitat-

The preservation of renal function is possible after this operation and in fact improvement of a previously dilated tract may occur (Figs. 2 and 3). Moore et al (1956) suggest that

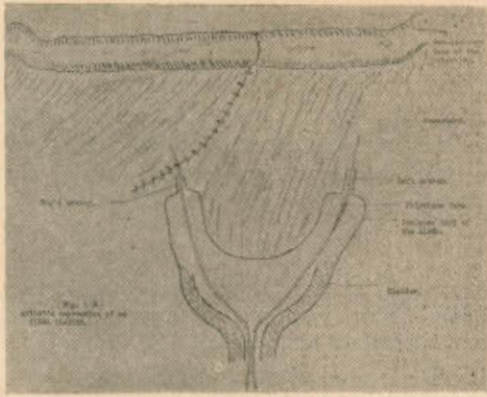


Fig. 1 (b)—Radiological appearance of the ileal loop bladder. (by permission of the Jour. of Obstet. & Gynaec. of Brit. Commonwealth).

ing troublesome nephrostomies or nephrectomy of a good kidney to obviate ureter drainage, this operation is the method of choice.

It is interesting to note that very little change is found in the electrolyte balance of the body following this operation. The blood electrolyte study of case I is shown below.

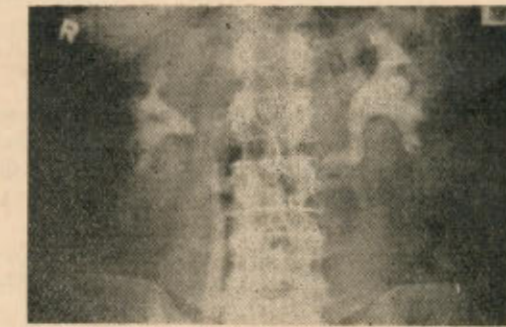


Fig. 2—I.V.P. showing bilateral hydronephrosis and hydroureter due to ureterovaginal and vesicovaginal fistula following Wertheim hysterectomy. (Case 1, Table I)



Fig. 3—Followup I.V.P. of the same patient 1½ months after the construction of ileal bladder, showing normal left side and slight hydronephrosis on the right. (Case 1, Table I).

TABLE II

	Before operation	One week after operation	Over 2 years after operation
Plasma K	20.5 mg %	21 mg %	20 mg %
Plasma Na	345 mg %	309 mg %	327 mg %
Plasma Cl	595 mg %	590 mg %	600 mg %
Blood urea	35 mg %	32 mg %	18 mg %
Alkali reserve	52 vol. CO ₂	55 vol. CO ₂	53 vol. CO ₂

hypermotility of the isolated loop with its active peristalsis may protect the kidney. Hence it is expected that more use of this procedure would save many kidneys which would have been sacrificed previously.

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