

Update on the Camey II procedure

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Summary. Between January 1987 and January 1991, 110 detubularized U-shaped ileocystoplasties (Camey II) following radical cystectomy were carried out in our Department of Urology (CMC Foch Suresnes, France). Our first evaluation of this procedure was carried out in 1989 and reviewed initial 57 patients operated on. These data were compared with those of the Camey I operation. The improvement in neobladder capacity as well as nighttime urinary control achieved by the detubularization required in the Camey II operation was obvious. In this article we review the first 110 patients treated by Camey II bladder replacement following cystectomy.

Patients and methods

A total of 110 patients with invasive bladder cancer underwent cystectomy and construction of an orthotopic bladder substitute employing a segment of detubularized ileum. This operation has been described previously [1, 2]. Ureters were directed to the re-fashioned ileum and implanted using a LeDuc technology, wherein the spatulated ureter is sutured into a mucosal furrow created in the appropriate segment of ileum.

Results

Complications

Of the 110 patients, 1 died of terminal hepatic cirrhosis 45 days following the procedure, resulting in a mortality rate of 0.9%. In the early postoperative period, 15 of the 110 patients required reoperation (13.6%). Four patients required correction of bowel obstruction; four lymphoceles and four wound abscesses (two occurring in the pelvis) required drainage. Three patients required reoperation for closure of an abdominal-wall dehiscence.

Delayed reoperations were required in 16 patients at various intervals from the time of surgery. Two abdominal-wall hernias (one with a secondary ileal fistula) underwent repair. One patient required reoperation for a previously treated urethral stricture and remains stable 4 years later. One patient developed urethral recurrence of cancer,

necessitating complete removal of the penis and urethra with rediversion. This patient died 6 months later of metastatic disease.

Among 216 ureters reimplanted according to the LeDuc Camey technique, 23 instances of ureteral stenosis were observed (10.5%); a variety of techniques were employed to treat these stenoses, including 8 operative reimplantations and 4 nephrectomies.

Functional results

Of the 109 patients who survived the operative procedure, 101 recovered normal daytime continence (92.6%) without any leakage at all. Nocturnal continence was achieved in 81 patients (74.3%). In 61 patients, nighttime control was achieved without any protection; 20 patients wore a small pad for occasional minimal wetting.

These patients were managed by the usual rehabilitation techniques that we have employed for years. They were instructed to awaken three times nightly initially. Gradually, over time, the number of nocturnal voidings could be decreased. After 6 months the majority of the patients fared well in the evenings with only one to two voiding episodes nightly.

We should emphasize, that even if a certain number of patients can achieve nocturnal continence without any awakening, we advise these patients to void at least once a night so as to avoid ileal bladder distention, which could lead to urinary retention. One patient in our series has to wear an indwelling catheter because of urinary retention as a consequence of his inability to accommodate a program of clean self-catheterization.

Urodynamic data

The mean capacity of the pouch in these 109 patients was 530 cc; the mean residual volume was 65 cc. The mean peak urinary flow was 18 ml/s. Baseline pouch pressures are low (10 cmH₂O). During the filling phase, minimal contractility is observed (mean, 30 cmH₂O). These urodynamic data seem to remain stable over time, the exception being the capacity of the neobladder. This figure does increase during the first 6 months and remains stable thereafter in the vast majority of cases.

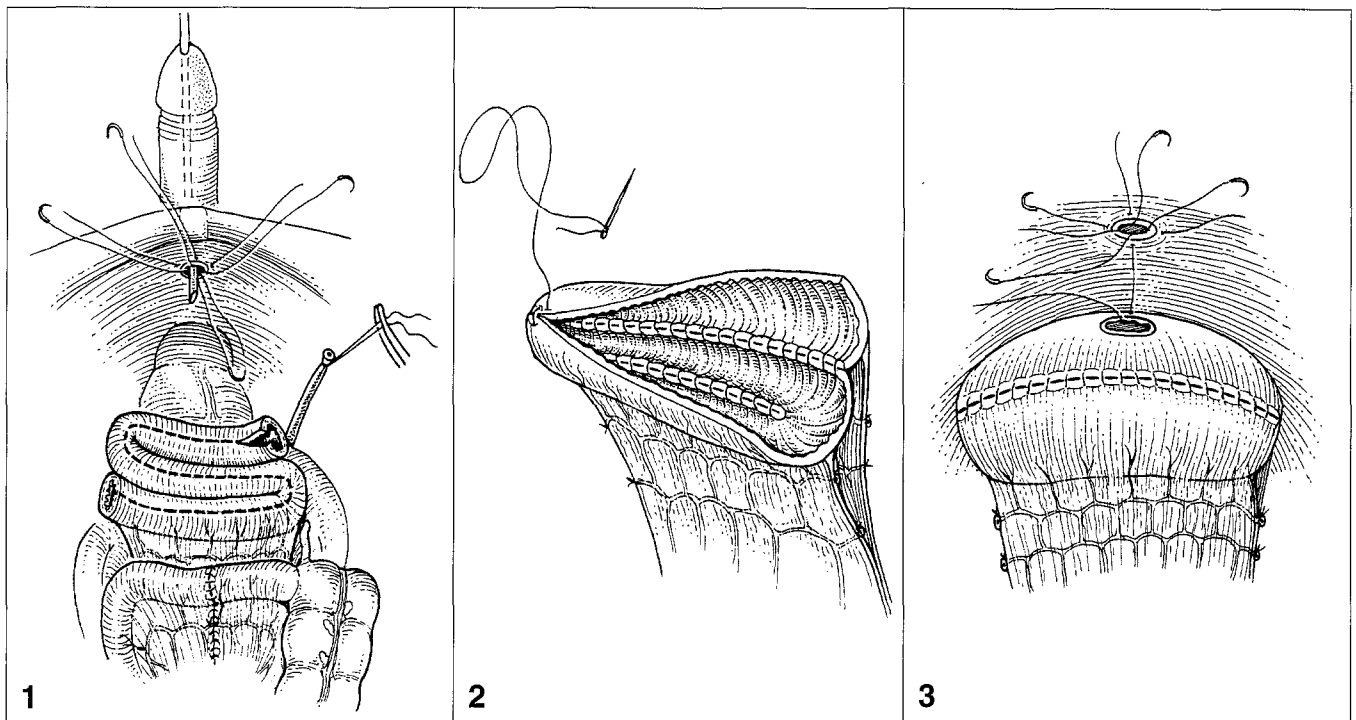


Fig. 1. The ileal loop, three times folded, is incised on its antimesenteric border

Fig. 2. Closing the ileal bladder (one layer running suture)

Fig. 3. Anastomosing the ileal bladder to the urethral stump

Discussion

The data presented herein on our first 110 patients treated with a Camey II bladder replacement procedure are much improved as compared with our original reports on the Camey I operation. However, they are not perfect. In an effort to improve on the functional results of the Camey II operation, the team that succeeded M. Camey at our institution (H. Botto and associates) modified the Camey II procedure further by folding the ileal segment one additional time, fashioning a Z-shaped detubularized ileal bladder as demonstrated in Figs. 1 and 2.

Our subsequent 70 patients requiring bladder replacements were treated with this procedure. In this series there was no mortality, and morbidity figures as well as func-

tional results were similar to those achieved with the Camey II procedure. Operative revisions were required in 13% of patients; 96% of individuals achieved daytime continence.

Nevertheless, the Z-shaped ileal bladder seems to have three slight advantages as compared with the Camey II operation. First, it can be achieved with only 55–60 cm of ileum, shortening the resected ileal segment by 5–10 cm. Second, the mean bladder capacity is slightly larger (600 cc). Finally, the nocturnal continence rate at 12 months reaches 82%. Again, we still advise patients who can sleep throughout the evening to awaken at least once a night so as to avoid the potential of ileal neobladder overdilatation.

References

1. Camey M (1990) Detubularized U-shaped cytoplasty (Camey II). *Curr Surg Tech Urol* 3:1–8
2. Camey M (1993) Ileal cystoplasty. In: Whitfield HM (ed) *Genital urinary surgery in Rob's and Smith's operative surgery*, vol 1. Butterworth-Heinemann, Oxford London, pp 227–233