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CONTINENT CUTANEOUS URINARY DIVERSIONS:

Long-term follow-up of laparoscopic Mitrofanoff and Yang-Monticatheterizable channels

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Une seule exigence, l'excellence

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INTRODUCTION

CONTINENT CUTANEOUS DERIVATION (CCUD) is a useful treatment strategy for neurogenic lower urinary tract dysfunction (NLUTD) patients who are unable to perform clean intermittent catheterization (CIC). This can happen due to loss of upper-limp dexterity, difficult urethral access, or anatomical destruction of the urethra.

MITROFANOFF APPENDICOVESICOSTOMY OR YANG-MONTI ILEOVESICOSTOMY are surgical techniques which allow the use of the appendix or a transverse ileal tube, respectively, as alternate conduits to bypass the native urethra for CIC. While the former is the most frequently performed CCUD, the latter is an alternate procedure when the appendix is unavailable or unsuitable.

→ These techniques aim to restore an adequate bladder emptying with long-term continence and, therefore, prevent future renal function deterioration, decrease urinary tract infections, and improve quality of life.

→ Advantages of the minimally invasive approaches: Reduced intraoperative bleeding and postoperative pain, quicker recovery with shorter hospitalization length and better cosmetic results.

- Despite the more and more common use of robotic techniques, laparoscopy might still be an optional minimally invasive approach, due to its decreased costs and higher availability.

→ Long-term efficacy and safety data regarding these procedures is still scarce.

OBJECTIVES:

- Report our experience with laparoscopic appendico and ileovesicotomies in adult patients with NLUTD.

METHODS

- Retrospective study review
- All patients submitted to CCUD - Mitrofanoff or Yang-Monti procedure
- **Single institution** from **January 2014 to March 2023**.
- **One experienced** surgeon.

RESULTS

12 patients
(9 years)

Gender, n	
Female	8
Male	4
Sex ratio female/male	2:1
Age at time of surgery, years, (mean±SD)	49.92±0.64
Etiology of NLUTD, n	
Spinal cord injury	8
Multiple sclerosis	2
Mielomeningocele	1
Others: vertebral isquemia	1
Tetraplegia, years, (mean±SD)	6
Type of surgery, n	
Mitrofanoff appendicovesicostomy	8
Yang-Monti ileal conduit	4
Augmentation enterocystoplasty	3
Localization of the stoma, n	
Umbilicus	11 (91.7)
Right iliac fossa	1(8.3)
Operating time, min, (mean±SD)	156.67±0.67
Mitrofanoff appendicovesicostomy	151.4±25.76
Yang-Monti ileal conduit	167.3 ±28.5
Blood loss, ml, mean (range)	80(50-130)
Need to laparotomy conversion	-
Hospitalization length, days, median(IQR)	6 (5-7)

Table 1 – Patients' surgical data

Legend: *SD* Standard Deviation, *min* minutes, *NLUTD* Neurogenic Lower Urinary Tract Dysfunction

Follow-up, months, median(IQR)	82 (7-85)
Serum Creatinine, mg/dl, (mean±SD)	0.51±0.64
Glomerular filtration rate (CKD-EPI), mL/min/1,73m2, (mean±SD)	115.96±0.66

✓ Regular urological ultrasound: non-significant post void residual and no upper urinary tract dilation.

✓ **75% have a catheterizable continent stoma**

- 2 patients died: UTI (n=1) and respiratory infection (n=1)
- 1 patient had conversion to non-continent urinary diversion

✓ Mean 6.5±0.75 CIC per day.

✓ **Global satisfaction rates were positive → all the patients - a moderate-to-significant increase in quality of life.**

Complication rate :

- **Stoma stenosis** was the most common complication (6/12)
  - Only complication reported early (<3 months)
  - 50% treated conservatively
- **Stress Urinary Incontinence** through the native urethra (3/12)
  - 75% midurethral sling
- **Urinary Tract Infections** (2/12)
  - Oral antibiotics
  - Intravenous antibiotics → complicated in fatal urosepsis
- **Bladder lithiasis** (1/12)
  - Endoscopic LASER lithotripsy
- **BCG-refractory urothelial bladder tumour** (1/12)
  - Pelvic exenteration and bricker ureteroileostomy
- **Idiopathic Sporadic Episodes Of Haematuria** (1/12)

Global complication rate 83%

CONCLUSIONS

CCUD are feasible and safe in adults with NLUTD. However, considering their significant complication rate, **adequate patient selection, multidisciplinary evaluation and careful expectation management** are of utmost importance for optimal results.

The **laparoscopic technique** allows a less invasive approach with better recovery. These patients should be followed in referral and **high volume centers** as further studies with larger samples are still deemed necessary.

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