

Continent catheterisable channel formation using the Mitrofanoff principle – Long-term outcomes in a large adult cohort



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Introduction

Indications for creation of a continent catheterisable stoma using the Mitrofanoff principle in adults are varied and long term data are lacking

We present a large adult series of patients undergoing urinary diversion in the form and assess whether the underlying aetiology of urological dysfunction impacts their outcomes

Methods

Retrospective case review

Single centre multi surgeon (n=9) series of consecutive male and female adult patients (>18 years of age) having formation of a continent catheterisable stoma using Mitrofanoff principle from 1985-2013

Patients categorised by aetiology of underlying pathology:

- Neurological
- Complex urinary incontinence
- Congenital
- Malignancy
- Bladder Pain Syndrome

Data collected:

- Indications for catheterisable channel formation
- Previous surgical history
- Concomitant surgical procedures at time of channel formation and subsequent need for endoscopic/open revision
- Outcomes in terms of continued use and complications

	Neurological	Complex Urinary incontinence	Congenital	Cancer	Bladder Pain Syndrome	Overall
Total number of patients	59 (33.5%)	39 (22.2%)	37 (21.0%)	22 (12.5%)	19 (10.8%)	176
Median age at time of surgery (years, range)	36 (19-60)	50 (23-73)	25 (18-53)	58 (43-71)	42 (18-61)	42 (18-73)
Female gender	39 (66.1%)	36 (92.3%)	13 (35.1%)	11 (50.0%)	17 (89.5%)	116 (70.0%)
Median follow up (months, range)	56 (2-339)	88 (16-293)	66 (3-365)	53 (11-161)	49 (2-151)	60 (2-365)

	Neurological (n=59)	Complex Urinary incontinence (n=39)	Congenital (n=37)	Cancer (n=22)	Bladder Pain Syndrome (n=19)	Overall (n=176)
Urinary tract calculi (n, %)						
None	47 (79.7)	33 (84.6)	27 (73.0)	18 (81.8)	16 (84.2)	141 (80.1)
Bladder only	8 (13.6)	5 (12.8)	5 (13.5)	2 (9.1)	3 (15.8)	23 (13.1)
Ureter/renal only	1 (1.7)	0 (0)	4 (10.8)	2 (9.1)	0 (0)	7 (4.0)
Bladder/Ureter/Renal	3 (5.1)	1 (2.6)	1 (2.7)	0 (0)	0 (0)	5 (2.8)
Stone-related procedures (n, %)						
Percutaneous cystolithotomy (PCCL)	1 (1.7)	3 (7.7)	6 (16.2)	1 (4.5)	3 (15.8)	14 (8.0)
Open procedure bladder	6 (10.2)	3 (7.7)	2 (5.4)	0 (0)	1 (5.3)	12 (6.8)
Endoscopic procedures (bladder/ureter/renal)	8 (13.6)	2 (5.1)	4 (10.8)	2 (9.1)	0 (0)	16 (9.1)
Percutaneous nephrolithotomy (PCNL)	2 (3.4)	1 (2.6)	4 (10.8)	0 (0)	0 (0)	7 (4.0)
Current channel in use (n, %)						
Original conduit	28 (47.5)	7 (17.9)	28 (75.7)	11 (50.0)	12 (63.2)	86 (48.9)
Revised new conduit	7 (11.9)	20 (51.3)	7 (18.9)	3 (13.6)	2 (10.5)	39 (22.2)
Total	35 (59.3)	27 (69.2)	35 (94.6)	14 (63.6)	14 (73.7)	125 (71.0)
Reasons why catheterisable channel not in use (n, %)						
Conversion to ileal conduit	9 (15.3)	6 (15.4)	0 (0)	0 (0)	5 (26.3)	20 (11.4)
Other (indwelling catheter/CISC/no further requirement for channel)	13 (22.0)	5 (12.8)	1 (2.7)	1 (4.5)	0 (0)	20 (11.4)
Patient death	2 (3.4)	1 (2.6)	1 (2.7)	7 (31.8)	0 (0)	11 (6.3)
Total	24 (40.7)	12 (30.8)	2 (5.4)	8 (36.4)	5 (26.3)	51 (29.0)
Status of conduit (n)						
Catheterisable	35/35	27/27	35/35	14/14	14/14	125/125
Continent	33/35	19/27	33/35	12/14	13/14	110/125

Results

Described in tables above
Total of 176 patients with 165 (93.8%) alive at last review
Median age = 42 years
Female n=116 (65.9%), Male n=60 (34.1%)
Median follow up = 60 months (range 2-365)

Conclusions

Mitrofanoff channel formation was successful (in use by patient) in 75.8% of adult patients at last follow up at the expense of:

- Stone development in 19.9%
- 39.8% open revision rate

Stone development highest in patients with congenital aetiology whilst overall revision rates were highest in those with a background of complex urinary incontinence

Durable technique across patient cohorts. However, adequate patient education and counseling paramount