

Appendix, Ileum or Ureter – Which is the Best Material for Mitrofanoff Channel Formation in Adults?



O’Connor EM¹, Toia B¹, Malde S², Raja L¹, Foley CL³, Taylor CJ², Hamid R¹, Wood DN¹, Ockrim JL¹, Greenwell TJ¹



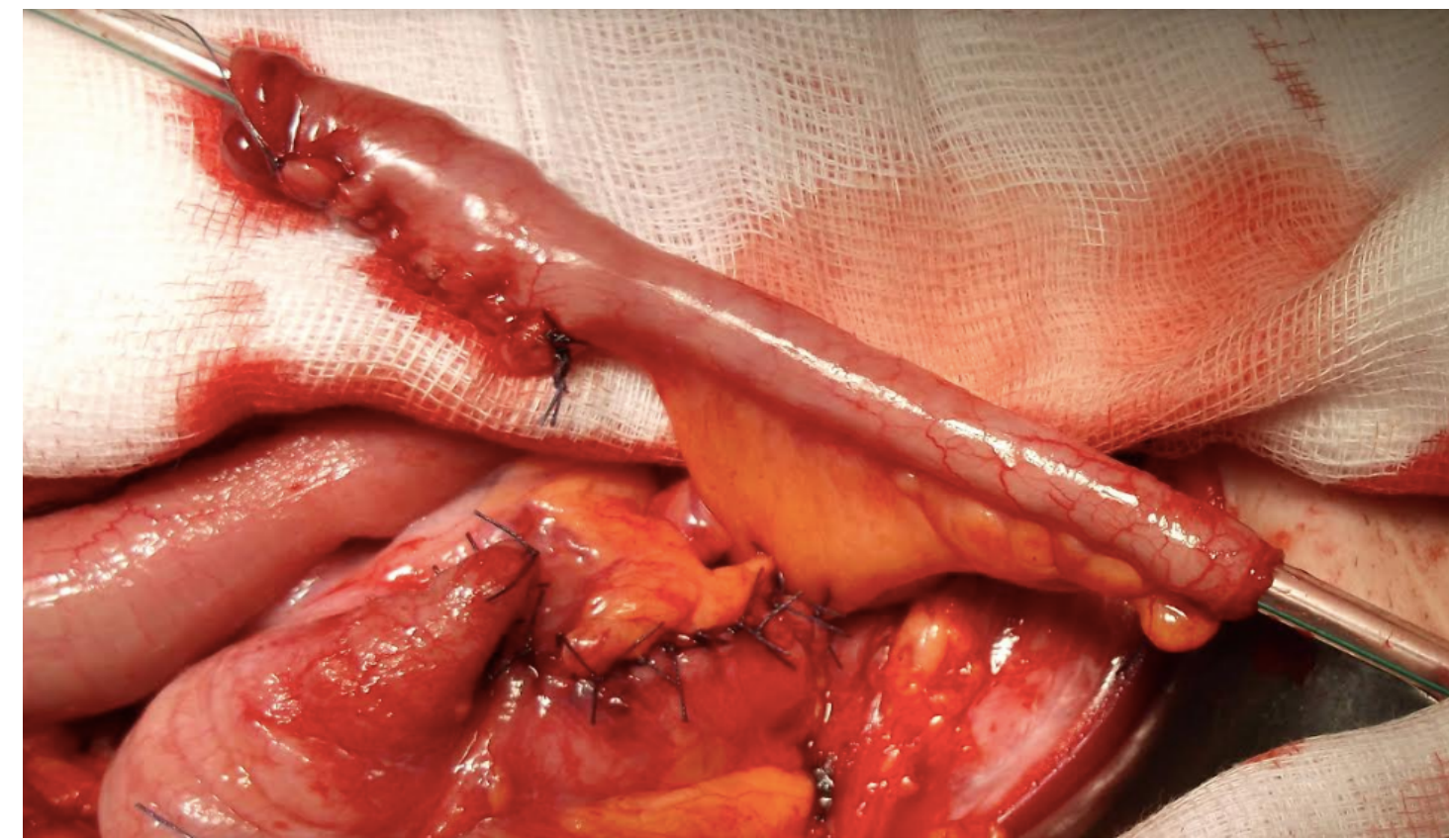
¹ Department of Urology, University College Hospital at Westmoreland Street, 16-18 Westmoreland St, London W1G 8PH, UK
² Department of Urology, Guy’s and St Thomas’s Hospital Trust, London, UK
³ Department of Urology, Lister Hospital, Stevenage, UK

Introduction

First described in paediatrics, the formation of a catheterisable channel utilising the Mitrofanoff principle has been used for the past few decades in adult populations.

We report the long-term data of a large adult cohort undergoing formation of a continent catheterisable channel for a variety of indications.

We aim to elucidate the optimal tissue for channel formation and quantify the risk of stenosis and incontinence. .



Methods

Retrospective case review of adult patients having Mitrofanoff channel formation a median of 142 months (range 54-386) ago

Data collected on continued use of channel and continence

Ileal channels evaluated both as one type of channel material and seperately as single and double ileal channels and those created from a detubularised portion of a pre-existing ileal conduit (tapered ileum)

Results

Total of 176 adult patients
• 165 (93.8%) of patients alive at last review

Median age = 42 years

Median follow-up = 60 months (range 2-365)

Outcomes at time of last follow up
• 75.8% (125/165) of channels functioning and in use
• 68.5% (113/165) of patients continent

Patient characteristics grouped according to type of continent catheterisable channel used

	Appendix	Ileum (single + double + tapered)	Single Monti	Double Monti	Tapered ileum (previous conduit)	Ureter	Other	Overall
Total number of patients (n, %)	87 (50.3)	75 (43.4)	30 (17.3)	37 (21.4)	8 (4.6)	8 (4.6)	3 (1.7)	173
Median Age at time of surgery (years, range)	36 (18-73)	45 (18-71)	45.5 (18-71)	43 (22-68)	44.5 (25-56)	37.5 (19-60)	38 (23-49)	42 (18-73)
Female gender (n, %)	50/87 (58.1)	56/75 (74.7)	22/30 (73.3)	26/37 (70.3)	8/8 (100)	5/8 (62.5)	3/3 (100)	114/173 (64.8)
Surgery within last 10 years (≥2008) (n, %)	35/87 (40.2)	17/75 (22.7)	3/30 (10.0)	14/37 (37.8)	0/8 (0)	1/8 (12.5)	0/3 (0)	53/173 (30.6)
Median follow up (months, range)	57 (2-365)	60 (2-279)	68 (4-234)	56 (2-279)	61 (46-229)	207 (14-339)	97 (57-111)	60 (2-365)
Underlying aetiology (n, %)								
Neurological	32 (36.8)	23 (30.7)	9 (30.0)	12 (32.4)	2 (25.0)	1 (12.5)	1 (33.3)	57 (32.9)
Congenital	19 (21.8)	12 (16.0)	6 (20.0)	5 (13.5)	1 (12.5)	4 (50.0)	1 (33.3)	36 (20.8)
Complex urinary incontinence	11 (12.6)	24 (32.0)	9 (30.0)	11 (29.7)	4 (50.0)	3 (37.5)	1 (33.3)	39 (22.5)
Malignancy	14 (16.1)	8 (10.7)	2 (6.7)	5 (13.5)	1 (12.5)	0 (0)	0 (0)	22 (12.7)
Bladder pain syndrome/interstitial cystitis	11 (12.6)	8 (10.7)	4 (13.3)	4 (10.8)	0 (0)	0 (0)	0 (0)	19 (11.0)

Channel related complications and revision rates

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Total number of patients (n,%)	87 (50.3)	75 (43.4)	30 (17.3)	37 (21.4)	8 (4.6)	8 (4.6)	3 (1.7)	173
Recorded channel-related complications (n,%)								
None	26 (29.9)	13 (17.3)	7 (23.3)	6 (16.2)	0 (0)	5 (62.5)	0 (0)	44 (25.4)
Catheterisation and stoma	50 (57.5)	40 (53.3)	17 (56.7)	20 (54.1)	3 (37.5)	2 (25.0)	3 (100.0)	95 (55.0)
Stomal incontinence	25 (28.7)	45 (60.0)	18 (60.0)	20 (54.1)	7 (87.5)	1 (12.5)	1 (33.3)	72 (41.6)
Patients undergoing a major revision (n, %)	25 (28.7)	39 (52.0)	19 (63.3)	17 (46.0)	3 (37.5)	1 (12.5)	2 (66.7)	67 (38.7)
Revision procedures for catheterization difficulties or stomal stenosis (n,%)								
Skin level revision of stoma	38 (43.7)	28 (37.3)	12 (40.0)	14 (37.8)	2 (25.0)	2 (25.0)	3 (100.0)	71 (41.0)
Full revision of conduit	15 (17.2)	17 (22.7)	9 (30.0)	7 (18.9)	1 (12.5)	1 (12.5)	2 (66.7)	35 (20.2)
Procedures for channel incontinence (n,%)								
Injection of intraluminal bulking agent	5 (5.7)	14 (18.7)	3 (10.0)	9 (24.3)	2 (25.0)	0 (0)	0 (0)	19 (11.0)
Revision of conduit	17 (19.5)	27 (36.0)	14 (46.7)	10 (27.0)	3 (37.5)	1 (12.5)	0 (0)	45 (26.0)

Conclusions

There was no significant difference in outcomes in terms of channel usage at last follow up between any of the materials used to make Mitrofanoff channels

Patients were significantly more likely to have continence issues if channels were made out of ileum

Appendix should be the first choice for Mitrofanoff channel formation in adults

