Conduit over conduit reconstruction of retracted and fibrosed ileal conduit in severe abdominal adhesions

Mudassir Wani1,*, Tahir Bhat2, Matin Sheriff3
1Department of Urology, Glangwili General Hospital, Wales, UK; 2Department of Urology, Medway Maritime Hospital, Wales, UK

Abstract
We report a unique case of a patient who underwent cystectomy with ileal conduit for nonmalignant bladder disease. Patient postoperatively developed stoma necrosis which was managed conservatively but after few months there was severe stomal stenosis and retraction and patient ended up with bilateral nephrostomies. On planned open abdominal exploration with intention to refashion stoma, after resection of distal stenosed segment we found that it was impossible to mobilize proximal portion of conduit due to severe small bowel adhesions. We used a unique approach of creating one more ileal conduit, bringing it as a new stoma on one side and anastomosing its other side with proximal one (ileal conduit over conduit) to augment deficient portion. This technique is not mentioned in the literature and as such we are reporting same as it can help many urologists who may encounter such problems.

Keywords: Bowel adhesion; Conduit over conduit; Ileal conduit; Stomal necrosis; Stomal retraction

1. Introduction
Cystectomy and urinary diversion are treatment for bladder cancer and sometimes performed for benign conditions. Despite advancements in technology as well as refinements in surgical technique, morbidity as well as mortality associated with cystectomy has decreased, but being a major surgical procedure a number of complications are anticipated. One specific group of complications are those arising in relation to ileal conduit and stoma and include parastomal/incisional hernias, retraction or prolapses of stoma, stomal stenosis or redundant loop. Stomal complications needing revision surgery is often challenging in these patients, particularly if there is history of previous multiple surgeries.

2. Case presentation
A 64-year-old female patient was referred to our department for worsening voiding dysfunction and issues with long-term supra-pubic catheter (SPC). Patient had history of uro-gynecological issues for more than 25 years. She underwent vaginal hysterectomy in 1995 for menorrhagia and remained asymptomatic for next 5 years. From 2001 to 2004, she was treated under urology for recurrent urinary tract infections, lower urinary tract symptoms mainly urge incontinence and was diagnosed as having duplicated system on left side. During this period she underwent cystoscopies, urethral dilation, urodynamic evaluation and finally was discharged on clean intermittent self-catheterization and low dose prophylactic antibiotics. In 2015, she underwent anterior and posterior repair for prolapse. Over the next 2 years, her prolapse recurred and her voiding dysfunction worsened as she found doing self-catheterization quite painful. In 2017, she had revision surgery for prolapse and a long-term SPC was inserted. However, SPC location had to be changed many times and required either sedation or general anesthesia. She was referred to our department in 2018 for review. After discussion in noncancer multidisciplinary departmental meeting, simple cystectomy with ileal conduit was recommended for her. After discussion, evaluation, the patient consented for the procedure. In March 2019, she underwent open simple cystectomy with ileal conduit formation with bilateral salpingo-oophrectomy and appendectomy. Immediate postoperative period was uneventful. Unfortunately, over next 4–6 weeks her stoma necrosed and clinical examination revealed stomal stenosis (Fig. 1). Further evaluation revealed significant fibrosis of stoma tract and the patient was booked for revision of stoma. During same period the patient underwent bilateral nephrostomies.

The patient underwent laparotomy in July 2019 and on exploration we found dense adhesions making it difficult to identify conduit. For safe dissection, methylene blue dye was injected through nephrostomy to identify the conduit. After meticulous dissection, the distal end was separated from rest of small bowel. We noticed that about distal 8–10 cm of conduit was severely stenosed and subsequently was resected. After assessment it was decided to mobilize remaining proximal segment of conduit and refashion it into new stoma. Although meticulous dissection was carried out for few hours, not much progress could be made due to severe small bowel adhesions except for distal ileum. General surgical consultant on call was requested to help but despite his expertise not much progress was made. After discussing with many urology consultants colleagues, plan was made to make a completely new ileal conduit. On table, it seemed
again impossible to reach the retroperitoneum as it was completely plastered with dense adhesions. Rather, the operating surgeons decided, a novel approach. We decided to create one more ileal conduit, bringing it as a new stoma on one side and anastomosing its other side with proximal one (ileo-ileo conduit on conduit) to augment deficient portion.

The proximal segment of old conduit was dissected from rest of the bowel as much was possible. As it was only 3–4 cm long, another new ileal conduit was fashioned and was attached to original conduit proximally and taken out as stoma distally. Bowel anastomosis was made using GIA stapler, stoma was created by conventional technique (Fig. 2). Postoperative period was uneventful. Patient is on regular follow-up for last 9 months. The stoma is working fine at 9 months (Fig. 3).

This ileal conduit on conduit has not been described in literature before. We felt that other surgeons (urologists) can come across such challenges in their lifetime and this technique can help them under such circumstances. We named this ileal conduit as Bhat-Wani ileal conduit (BW conduit).

3. Discussion/conclusion

Cystectomy is a widely performed surgical procedure for urinary bladder removal. There are variable options like conduit (incontinent diversion), continent diversion (cutaneous/rectal), bladder replacement or substitution. It has been mainly used for bladder cancer and other malignant diseases. However, in later half of last century it was also employed in a number of non-malignant bladder diseases. Some of the indications for cystectomy for nonmalignant bladder conditions include interstitial cystitis/painful bladder syndrome, neurogenic bladder, hemorrhagic/radiation cystitis, endometriosis, refractory genitourinary fistulae, infectious diseases of the bladder.
surgical interventions and these can be often quite complex as well as challenging due to previous surgery or radiotherapy or associated comorbidities.[4] Our patient presented a unique challenge and by forming a unique conduit over conduit we were able to overcome same. Patient has been on regular follow-up for almost 9 months, her stoma has been doing fine.

Our technique may help surgeons in creating conduits when it is impractical to do safe adhesiolysis or refashion the parent conduit.

Acknowledgments

We acknowledge Wasim Gilani for his help in drafting of manuscript.

Statement of ethics

Ethical approval for publication was completed as per Medway Maritime Hospital Trust policy. Patient has given written permission/consent for this publication including sharing clinical information as well as images for publication.

Conflict of interest statement

The authors report no conflicts of interest.

Funding source

The authors declare there was no funding involved in this case report.

Author contributions

MW and TB were operating surgeons and compiled case report. MS helped in overall drafting of case report.

References

[1] Cody JD, Nabi G, Dublin N, et al. Urinary diversion and bladder reconstruction/replacement using intestinal segments for intractable incontinence or following cystectomy. Cochrane Database Syst Rev 2012;2012(2):CD003306.
[2] Stenzl A, Nagle U, Kuczyk M, et al. Cystectomy-technical considerations in male and female patients. EAU Update Series 2005;3:138–146.
[3] Rowley MW, Clemens JQ, Latini JM, Cameron AP. Simple cystectomy: Outcomes of a new operative technique. Urology 2011;78(4):942–945.
[4] Madersbacher S, Schmidt J, Eberle JM, et al. Long-term outcome of ileal conduit diversion. J Urol 2003;169(3):985–990.

How to cite this article: Wani M, Bhat T, Sheriff M. Conduit over conduit reconstruction of retracted and fibrosed ileal conduit in severe abdominal adhesions. Curr Urol 2022;16(1):50–52. doi: 10.1097/CU9.0000000000073