Peer Review File

Article Information: https://dx.doi.org/10.21037/tau-21-298

Reviewer A

This case report is interesting and worthy of publication. However, the authors may improve their manuscript by clarifying the following points (word count permitting):

Reply: We are very grateful to the reviewer for his (her) time and effort dedicated to providing feedback on our manuscript, and thank you for your insightful comments on our paper. Please see below for point-by-point responses to the comments and concerns of the reviewer.

Comment 1: There are several types of continent-anal urinary diversion, with the most contemporary being the sigma-rectum pouch, also referred to as Mainz-pouch 2. To the best of my knowledge the HBCP it is no longer routinely used. The original surgical technique should be briefly described, as most urologists nowadays are unfamiliar with it. It should be clearly stated that in the present report a modified version of the original technique was carried out, as the technically demanding surgical step of retrorectal pull-through of the sigmoid colon was unnecessary given that the patient already had enterostomy. A schematic drawing would greatly help understand the reader what was actually done.

Reply 1: Thank you for the constructive comments, we totally agree with your opinion. The original surgical techniques were described in manuscript in yellow. It has been clearly stated that in this report a modified version of the Heitz-Boyer-Hoveracque technique was carried out, as the technically demanding surgical step of retrorectal pull-through of the sigmoid colon was unnecessary given that the patient already had enterostomy. Detailed procedures and schematics can be referred to the following articles (1, 2).

Changes in the text: We have modified our text (see Page 2, 3 line 44-48; Page 4, Line

75-80, marked in yellow).

1. Culp DA, Flocks RH. The diversion of urine by the Heitz-Boyer procedure. The Journal of urology. 1966;95(3):334-43.
2. Bracci U. Urinary diversion by the Heitz-Boyer-Hovelacque procedure. Technique and experience. Urologia internationalis. 1968;23(1):63-73.

Comment 2: It should be emphasized that the HBCP is not a standard procedure and that this type of urinary diversion should only be considered in very carefully selected cases. In this context the authors should point out that surgery was performed laparoscopically and that the most relevant benefit for their patient was to avoid incontinent urinary diversion or possibly a more complex surgical procedure.

Reply 2: Thank you for pointing this out. We have added your suggestion to the article.

Changes in the text: See Page 5, line 104-108, marked in yellow.

Comment 3: A key principle of any continent-anal urinary diversion is to create a low-pressure high-capacity reservoir in order to protect the upper urinary tract and with regard to continence. Specifically, in the HBCP, the rectum is separated from the sigmoid colon to avoid mixing of urine and feces and-equally important-to lower intrarectal pressure. In the present case, this step was unnecessary, as the patient already had enterostomy. Please indicate the level of enterostomy (colon descendens? simoid colon?) as this has an impact on the physical properties of the rectal reservoir in terms of capacity and pressure. From figure 2 I can assume the patient probably has a colostoma at sigmoid level.

Reply 3: Thank you for pointing this out. The patient has a colostoma at sigmoid level. The level of enterostomy has been described.

Changes in the text: See Page 3, Line 63.

Comment 4: The authors indicate that both distal ureters were stenotic. How is this compatible with an uncompromised uretero-rectal anastomosis? I assume the stenotic segments were of very short distance and far distally located.

Reply 4: We appreciate the reviewer's comments on this point. Bilateral ureteral strictures were located at the distal end of the ureter. We also fully dissociated the ureter during the operation.

Comment 5: Their patient had recto-vesical fistula. How did the authors deal with this issue? Was it closed? Or was the problem solved just by closing the suprapubic cystostomy?

Reply 5: We appreciate the reviewer's valuable comments on this point. The recto-vesical fistula was closed and was the suprapubic cystostomy also closed.

Changes in the text: See Page 4, Line 80.

Comment 6: The authors report on normal kidney function postoperatively. What was the creatinine level and/or the glomerular filtration rate before and after surgery? A normal creatinine does not neccessarily mean kidney function is within normal range. Unimpaired upper tract urinary drainage is the "achilles heel" of any (continent) urinary diversion. Although it is stated that the upper tract appeared normal on postoperative ultrasound, was there any postoperative imaging (e.g. intravenous pyelography or antegrade ureterography) showing unimpaired urine drainage over the uretero-intestinal anastomosis? Which technique did the authors use for ureteral-implantation?

Reply 6: Thank you for pointing this out. No increase in blood urea nitrogen (BUN) and creatinine was observed in renal function examination. (Page4, Line72-73). Creatinine 240.5umol/L, BUN 12.27mmol/L, GFR 26.05ml/(min/1.73m-2) (preoperative); Creatinine 223.8umol/L, BUN 4.68mmol/L, GFR28.42 ml/(min/1.73m-2) (postoperative).

Because the patient's GFR was low and the bilateral nephrotomy was removed at discharge, the patient did not undergo postoperative imaging (e.g., intravenous pyelography or anterograde ureterography). Doppler urinary color ultrasonography showed no hydronephrosis in both kidneys. (Page 4, Line 84-85)

The ureter was implanted into the isolated rectum, which was established by mucosa-to-mucosa anastomosis and intramural tunnel. (Page 4, Line 75-77)

Comment 7: Were there any intra-/postoperative complications/problems? (if so preferentially use Clavien-Dindo-Classification)

Reply 7: Thank you for pointing this out. There were no significant postoperative complications.

Comment 8: Night-time continence with unvolontary urine losses during sleep is a common problem in at least 30% of patients following continent-anal urinary diversion. What was the postoperative continence situation like in the present case?

Reply 8: We appreciate the reviewer's comments on this point. The patient achieved complete volitional emptying, and no urinary incontinence.

Comment 9: Any urinary diversion, specifically continent forms, carry a high potential of long-term complications. Therefore the success of this type of surgery depends on regular follow-up and early detection of complications is paramount. This should be clearly stated. A six month follow up is too short to draw meaningful conclusions with regard to the overall/long-term success of therapy. Specifically: Metabolic complications with potential life threatening hyperchloremic acidosis being of clinical relevance. Did the authors check for this very common clinical issue/complication? Specifically, did they perform serial blood gas analyses postinterventionally?

Secondary malignancies. The patient is 52 years old and is therefore at risk of developing malignancy in his rectal reservoir, Specifically at the uretero-enteric anastomosis. How many years following surgery are the authors recommend to perform rectoscopy in regular intervals?

Reply 9: Thank you for the constructive comments, we totally agree with your opinion. We will continue to follow up patients regularly.

After the operation, we checked the patient's electrolyte level and found no metabolic syndrome such as hyperchloremic acidosis. The author recommends to perform rectoscopy every six months to a year.

Comment 10:

Line 33: should read “Heitz-Boyer-Houvelac uretero-rectostomy”

Line 77: should read uretero-vesical reimplantation

Line 83: better use the term “sigmoidal perineostomy”

Reply 10: Thank you for pointing this out. We have revised it in the manuscript.

Changes: See Page 2, Line 41; Page 5, Line 93; Page 5, Line 102.

Reviewer B

Comment 1: Abstract: The abstract provides relevant details that are appropriate for a case study. Would be beneficial to provide a one line description of why this is a unique case report and how it contributes to literature.

Reply 1: Thank you for pointing this out. It is clearly stated that in the present report a modified version of Heitz-Boyer-Houvelac uretero-rectostomy technique was carried out, as the technically demanding surgical step of retrorectal pull-through of the sigmoid colon was unneccesary given that the patient already had enterostomy. This surgery was performed laparoscopically and that the most relevant benefit for the patient was to avoid incontinent urinary diversion or possibly a more complex surgical procedure. For complicated patients with total urethral stricture and enterostomy caused by car accident, this surgical method has a certain reference significance.

Changes in the text: See Page 2, Line 28-34.

Comment 2: The authors state that this technique has been previously described by multiple people, but do not state why they feel this case is worthy of being described as a case report. We have performed this procedure at our institution in very select cases as well.

Reply 2: Thank you for the constructive comments. This technique is a modified version of Heitz-Boyer-Houvelac uretero-rectostomy technique. The technically demanding surgical step of retrorectal pull-through of the sigmoid colon was unneccesary given that the patient already had enterostomy. The operation can be

performed laparoscopically. Postoperatively, the patient achieved complete volitional emptying.

Comment 3: The content of the presentation need to be reorganized. For example, the Helsinki declaration should generally go towards to the beginning of the paragraph.

Reply 3: We appreciate the reviewer's comments on this point. The Helsinki declaration goes towards to the beginning of the paragraph.

Changes in the text: See Page 3, Line 56-59.

Comment 4: There is a lot of space used to describe unnecessary clinical aspects such as vitals and not enough emphasis on the steps of the surgery.

Reply 4: Thank you for pointing this out. The ureter was implanted into the isolated rectum, which was established by mucosa-to-mucosa anastomosis and intramural tunnel. In this report a modified version of the Heitz-Boyer-Hoveracque technique was carried out, as the technically demanding surgical step of retrorectal pull-through of the sigmoid colon was unneccesary given that the patient already had enterostomy. The recto-vesical fistula was closed. The operation can be performed laparoscopically.

Changes in the text: See Page 4, Line 75-80; Page 5, Line104-108.

Comment 5: The section represents the patient data, with some additional details on the procedure; however, it still does not discuss the novelty of the technique satisfactorily.

Reply 5: Thank you for pointing this out. In this report a modified version of the Heitz-Boyer-Hoveracque technique was carried out, as the technically demanding surgical step of retrorectal pull-through of the sigmoid colon was unneccesary given that the patient already had enterostomy. The recto-vesical fistula was closed. It is important to emphasize that this is not a standard Heitz-Boyer-Houvelac procedure and that this type of urinary diversion should only be considered in very carefully selected cases. This surgery was performed laparoscopically and that the most relevant benefit for the patient was to avoid incontinent urinary diversion or possibly a more complex surgical

procedure.

Changes in the text: See Page 4, Line 75-79; Page 5, Line104-108.

Reviewer C

Comment 1: The authors present a nice case report of a unique surgery and indications for ureteral reimplant to the rectal stump. It is well written.

Reply 1: We appreciate the reviewer's positive comments. We hope this report can provide reference for urologists.

Comment 2: My only recommendation is to include a schematic of your surgical technique and/or any intraoperative photos showing the technique.

Reply 2: Thank you for pointing this out. Unfortunately, I forgot to videotape the operation.

Comment 3: Also would comment on benefit and risk of a non-refluxing anastomosis and why /why not this is considered.

Reply 3: Thank you for the constructive comments. In principle, anti-refluxing anastomosis can prevent urine from reflux into the kidney and cause little renal parenchymal damage. However, Anti-refluxing procedures are accompanied by a higher percentage of stricture of uretero-ileal anastomosis and do not guarantee the absence of reflux (1-3). The theoretical benefit of the antireflux technique has been overestimated until now despite of the frequency of stricture formation. So it is not considered.

Changes: Page 5, 6, Line 108-114.

1. Pantuck AJ, Han K-R, Perrotti M, Weiss RE, Cummings KB. Uretero-enteric anastomosis in continent urinary diversion: long-term results and complications of direct versus non-refluxing techniques. J. Urol. 2001; 163: 450–6;.
2. Hohenfellner R, Black P, Leissner J, Allhoff AB. Refluxing uretero-intestinal

anastomosis for continent cutaneous urinary diversion. J. Urol. 2002; 168: 1013–17.

3. Hassan AA, Elgamal SA, Sabaa MA, Salem KA, Elmateet MS. Evaluation of direct versus non-refluxing technique and functional results in orthotopic Y-ileal neobladder after 12 years of follow up. International journal of urology: official journal of the Japanese Urological Association. 2007;14(4):300-4.