Peer Review File

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Reviewer A

I would like to thank the authors for this interesting manuscript of a topic of great urological interest. I would like to make a few comments to make the manuscript more useful to readers.

Reply: Thanks for your comments.

Introduction.

Comment 1: The authors should include some reference related to this statement: "In general, ureteroplasty with an appendiceal onlay flap is still a rare surgical intervention, especially on robotic platforms, with few reported cases".

Reply 1: Thanks for your advices. We added a suitable reference where appropriate.

Changes in the text: we modified the text (see page 3, line 74).

Comment 2: The authors are encouraged to abbreviate the Introduction, as it includes part of the Discussion.

Reply 2: Thanks for your advices. We abbreviated the section of the “Introduction”.

Changes in the text: we modified the text (see page 3, the section of the “Introduction”).

Comment 3: Authors should define "complex ureteral stricture disease".

Reply 3: Thanks for your advices. We supplemented the definition of “complex ureteral stricture disease” based on our experience.

Changes in the text: we modified the text (see page 4, line 94-98).

Methods.

Comment 4: The surgical technique is excessively detailed, the authors are advised to abbreviate this section.

Reply 4: Thanks for your advices. We abbreviated the section of “Surgical technique”.

Changes in the text: we modified the text (see page 4, the section of “Surgical technique”).

Results.

Comment 5: The authors should move the sentence "All patients underwent nuclear renography before surgery" as it is part of Methods and not Results.

Reply 5: Thanks for your advices. We removed the sentence "All patients underwent nuclear renography before surgery".

Changes in the text: we modified the text (see page 7, line 174).

Comment 6: Authors should provide a definition of success and describe the success rate.

Reply 6: Thanks for your advices. The definition of success has been described in the

original manuscript in the section of the “Postoperative management and follow-up” (highlighted in RED). In addition, we added the success rate in the section of the “Result”.
Changes in the text: we modified the text (see page 7, line 198-202).

Conclusions.
Comment 7: The authors could in the conclusions make some reference to the length of the strictures.
Reply 7: Thanks for your advices. We revised the section of the “Conclusion” to made it more reasonable.
Changes in the text: we modified the text (see page 2, line 50; page 10, line 281).

Reviewer B
Comment 1: The word "Mid-term" is confusing. How about just stating median 18 month follow up through out the manuscript.
Reply 1: Thanks for your advices. We agreed with you and replaced the “Mid-term” with the “18-month”.
Changes in the text: we modified the text (see page 1, line 2; page 2, line 31&51; page 10, line 282).

Comment 2: Please comment on the long length of stay (8 days) as compared to other series in the literature.
Reply 2: Thanks for your comments. In fact, the criteria that can be discharged from the hospital usually include that the drainage tube has been removed, the patient eats a normal diet, moves freely in the ground and has no obvious discomfort. In China, postoperative patients go home directly after being discharged from the hospital, and usually do not enter a community hospital to continue recuperation. Therefore, only patients who meet the aforementioned criteria are allowed to be discharged, and the patient agrees to be discharged. Therefore, the length of postoperative hospital stay maybe longer than reported in the literatures.
Changes in the text: none.

Reviewer C
I think this is a good study and the experience is worth to be published in the literature for reconstructive urology. I think it is a good description and would be a good addition.
I liked the Figures and the descriptive table as well
I think the presence of hydro is not a worrisome issue as the distension that can happen in the pelvis might always stay and not get back to normal. We see this with pyeloplasty unless trimming of the renal pelvis was done.
The results were equally impressive
Reply: Thanks for your comments.

I have few comments that I would appreciate if the author can elucidate so that it can be a better description.

Comment 1: What is the rational for keeping a patient who had robotic surgery for 8 days in the hospital. This is an unusually very long length of stay.

Reply 1: Thanks for your comments. In fact, the criteria that can be discharged from the hospital usually include that the drainage tube has been removed, the patient eats a normal diet, moves freely in the ground and has no obvious discomfort. In China, postoperative patients go home directly after being discharged from the hospital, and usually do not enter a community hospital to continue recuperation. Therefore, only patients who meet the aforementioned criteria are allowed to be discharged, and the patient agrees to be discharged. Therefore, the length of postoperative hospital stay maybe longer than reported in the literatures.

Changes in the text: none.

Comment 2: Do the authors have post operative nuclear renogram to assess the function and if there was any improvement.

Reply 2: Thanks for your question. In fact, in our study, nuclear renography is not a routine postoperative examination. Our purpose of preoperative nuclear renography was to assess whether the function of the hydronephrotic kidney was worth saving, which means that if its renal function was less than 20% of the total renal function, complicated repair surgery was not recommended. We tended not to perform the nuclear renography for patients postoperatively, as long as the hydronephrosis did not get worse. Therefore, considering reducing the financial burden of patients, we did not recommend patients to undergo nuclear renography postoperatively.

Changes in the text: none.

Comment 3: For the technique, I was not really sure why all these ports were needed to be fair. This is commonly done with maximum 4-5 ports.

Reply 3: Thanks for your comments. The fourth arm of the robot was equipped in our surgery to better stretched and exposed the narrow segment which was often severely scarred. The two assistant ports were 5mm and 12mm trocars respectively, which could satisfy the smooth in and out of Hem-o-lok pliers and suction devices. These six ports were more conducive to the efficient implementation of surgery. However, it was undeniable that the increase in the number of ports means that the trauma to the patient was aggravated. In the future, we need to continue to research and innovate new method that are conducive to operation and reduce trauma.

Changes in the text: none.

Reviewer D

The authors should be congratulated on their technique and outcomes. I agree this is a good tool for reconstruction of the ureter to add to the tool kit. I especially want to congrats on the pictures which are of high quality and really add to this manuscript.

Reply: Thanks for your comments.

Comment 1: Was there any attempt to capture patient reported outcomes or quality of life data?
Reply 1: Thanks for your questions. We are conducting a study using the SF-36 scale to evaluate the quality of life of patients after ileal replacement. This study mainly described the surgical technique of appendix onlay and the follow-up outcomes, but did not describe the quality of life for the time being.
Changes in the text: none.

Comment 2: With what algorithm would the authors suggest this within the framework of repairs for the ureter?
Reply 2: Thanks for your questions. According to our experience, robotic appendiceal onlay flap ureteroplasty could be performed for the strictures of 3~6 cm in the proximal and middle ureter of right side.
Changes in the text: none.

Comment 3: Would the authors still use this method if they had to convert to open surgery?
Reply 3: Thanks for your questions. To be honest, we haven't encountered an example of robotic procedure converting to open. According to our experience, even if open surgery is performed to treat these severe ureteral strictures, simple methods such as end-to-end anastomosis may not be implemented. Autologous onlay technique may be a workable choice.
Changes in the text: none.

Comment 4: Do the authors have an opinion about venous or fallopian tube as alternatives for this approach?
Reply 4: Thanks for your questions. We not conducted research in this field in our institute. There are reports in the literatures about these two materials replacing the ureter in animal experiments (1,2). This field is still in the exploratory stage, and we look forward to new breakthroughs in the future.
Changes in the text: none.

Comment 5: Cleary there were adaptions to the post-op care given some of your descriptions here. Where there major operative technique changes that occurred for these patients as part of the 'learning curve' of performing this technique?
Reply 5: Thanks for your questions. You are right. Since we started to perform autogenous onlay ureteroplasty which include appendiceal onlay and lingual mucosal graft till now, the major change was that we no longer recommend routine ureteroscopy after surgery. Because we found that this postoperative examination for patients was not worth.
Changes in the text: none.

Comment 6: For obliterative strictures you discuss interposition somewhat as a described alternative. Could you go into greater detail on how you think your

approach recreating a ureteral plate is superior or inferior to true interposition. Do you think that adds tension to the repair ? How do you address tension if the ureter ends forming the plate are difficult to get together?
Can you discuss other alternative techniques such as double buccal inlay and onlay procedures that have been performed robotically?
Reply 6: Thanks for your questions. Most of the studies on the appendix interposition for managing ureteral strictures are case reports. There is no high-quality research comparing appendix interposition and appendiceal onlay technique. The current view is that the onlay technique can expand the ureteral lumen to a certain extent, so the possibility of restenosis after surgery is less.
Regarding the posteriorly augmented anastomotic technique, there may be tension when suturing the two broken ends of the ureter, but the anastomosis is usually successful and we have no examples of failure for the time being. If the occlusion segment of the ureter is long and the two broken ends of the posterior wall cannot be sutured smoothly, it means that the onlay technique cannot be implemented and other surgical options should be considered, such as ileal replacement.
There are many cases reported in the literature that use oral mucosal grafts, especially buccal mucosa grafts, to repair ureteral strictures. Zhao et al. reported that an 8 cm ureteral defect was repaired with a buccal mucosa graft(3). Our team has performed 50 ureteral strictures repair procedures with lingual mucosa grafts, and all patients are currently undergoing detailed follow-ups. However, there is insufficient data for a comparative analysis of oral mucosa grafts and appendiceal onlay. Because of its anatomical position, the appendix is mostly used to repair the right ureteral stricture, and the oral mucosa can be used on both sides. The appendix mesoappendix is preserved, and its blood supply is better than that of the oral mucosa.
Changes in the text: none.

Comment 7: Limitations should expanded. This series is among expert robotic surgeons and expert reconstructionist and may not be generalizable to other centers. No comparison group.
Reply 7: Thanks for your advices. We agreed with you and supplemented these limitations.
Changes in the text: we modified the text (see page 10, line 273-278).

Comment 8: There are varied English language processing issues that should be addressed. A few examples from the intro are below but these are found throughout.
"but endoscopic therapy was associated with an unstable success rate" - unstable not proper use.
"However, extended strictures of the proximal or middle ureter and ureteroureterostomy with disappointing outcomes always require ureteral substitution." unclear meaning, are you saying for a secondary surgery?
Reply 8: Thanks for your critical advices. We revised the two sentences which mentioned above. We are sorry for the problems of grammar in the text. In order to ensure that readers can better understand the content of the article, we have polished

the article through AJE before submitting.
Changes in the text: we modified the text (see page 3, line 58&62-64).

Reviewer E
Thank you for your submission on appendiceal only using robotic technology to treat right ureteral strictures. There have been publications on the open technique for onlay, but less so for only procedures with a median of just over 18 months.
Reply: Thanks for your comments.

Reviewer F
The authors should be congratulated for collecting a short series using a novel robotic approach for managing right ureteric strictures with the appendix as a patch, providing mid-term follow-up. They describe the technique in detail, and provide adequate images of the key steps of the procedure and examples of successful cases. I also would like to congratulate the authors for their outcomes, which seem fairly good, despite the short number or patients.
Reply: Thanks for your comments.

Unfortunately, there are some concerns about their manuscript that I would like to address.
Comment 1: Across the manuscript, I would choose the term “stricture” or “stenosis” (I suggest using “stricture”) instead using both words.
Reply 1: Thanks for your advices. We agreed with you and chose the term “stricture”.
Changes in the text: we modified the text (all “stenosis” was replaced by “stricture”, such as page 9, line 245&252&253&255).

Comment 2: In the introduction, I would clearly separate the benign strictures from those related with ureteral malignancies -as they are different entities with separate managements-.
Reply 2: Thanks for your advices. We explained this important point in the section of the “Introduction”.
Changes in the text: we modified the text (see page 3, line 55).

Comment 3: In the introduction, “However, extended strictures of the proximal or middle ureter and ureteroureterostomy with disappointing outcomes always require ureteral substitution” would be misleading, as downward nephropexy or auto-transplantation are valid options. Also you are suggesting “augmentation” instead of “substitution”. I would suggest rephrasing this sentence.
Reply 3: Thanks for your advices. We rephrased this sentence.
Changes in the text: we modified the text (see page 3, line 62-64).

Comment 4: There are many STROBE reporting checklists, depending on the type of study. Define the verification list used, and provide the adequate reference.
Reply 4: Thanks for your comments. We present the text in accordance with the

STROBE reporting checklist.
Changes in the text: none.

Comment 5: In the Methods section, the postoperative imaging examination should be clearly defined, as the authors mentioned “upper urinary tract imaging urodynamics examination (IUE), functional cine magnetic resonance urography (cine MRU), and computed tomography urography (CTU)”. IUE should be clearly defined.
Reply 5: Thanks for your advices. In fact, the IUE is a modified Whitaker test, and we defined this by citing our previous studies.
Changes in the text: we modified the text (see page 4, line 92).

Comment 6: During the surgical procedure, they do not clarify if they use 0º or 30º camera. Also, when they are describing how they identify the stricture site, they use references, which should be avoided. I suggest describing the techniques that are used by the authors, and including this description in the tables with individual patient information
Reply 6: Thanks for your advices. We agreed with you and made appropriate changes in the text. Since we did not accurately record what method each patient used, it may not be described in the table. In fact, multiple methods can be combined and used in one procedure.
Changes in the text: we modified the text (see page 4, line 105).

Comment 7: The technique for separating the caecum from the appendix and closure of the caecum should be described.
Reply 7: Thanks for your advices. We added this information in the text.
Changes in the text: we modified the text (see page 5, line 125).

Comment 8: In postop, the drain was removed if not productive, but without analyzing for urinary content.
Reply 8: Thanks for your comments. In the cohort of this study, the postoperative drainage volume was between 50-120ml, and obvious urine leakage was not suspected, so the urinary content in the drainage fluid were not checked.
Changes in the text: none.

Comment 9: My main concern related with author´s work is about the follow-up tests and criteria for a successful repair. They considered the absence of flack pain as a criteria, and also the lack of ureteral obstruction, but they only describe using CT scans. They should explain why any scintigraphy or isotopic tests for unobstructed renal pelvis emptying.
Reply 9: Thanks for your comments. Our upper urinary tract repair team conducted a cohort study to evaluate the feasibility and guiding significance in postoperative management of the Whitaker test after complex reconstruction of the upper urinary tract. And we believe that postoperative Whitaker test can help judge whether nephrostomy could be removed. In addition, proper management for patients with

elevated renal pelvis pressure can help restore the renal function (4).
Changes in the text: none.

Comment 10: In the statistical analysis the authors fail to explain if they checked the variables for a normal distribution of variables. If not normal distributions, the data should be described as median +/- interquartile range.
Reply 10: Thanks for your advices. The variables mentioned in the manuscript were all in accordance with the normal distribution. We added this information in the text.
Changes in the text: we modified the text (see page 6, line 155-156).

Comment 11: In the Results section, it is mentioned that all patients have hydronephrosis in ultrasound and nuclear renography preoperatively. This nuclear renography should be repeated postoperative to ensure success of the repair.
Reply 11: Thanks for your comments. Our purpose of preoperative nuclear renography was to assess whether the function of the hydronephrotic kidney was worth saving, which means that if its renal function was less than 20% of the total renal function, complicated repair surgery was not recommended. We tended not to review the nuclear renography postoperatively, as long as the hydronephrosis did not get worse. Therefore, considering reducing the financial burden of patients, we did not recommend patients to undergo nuclear renography postoperatively.
Changes in the text: none.

Comment 12: They also mentioned that 2 cases have mild (they should describe the specific grade of dilatation) hydronefosis in postop. Without conducting functional isotopic renography, it is not possible to state that those kidneys are unobstructed.
Reply 12: Thanks for your comments. In fact, they all received the upper urinary tract imaging urodynamics examination, which showed that the ureter was unobstructed. We believe that the recovery of preoperative expanded renal pelvis was very slow after surgey, and may not even fully return to its normal shape. Therefore, the operation can be considered effective if the hydronephrosis did not worsen after surgery.
Changes in the text: none.

Comment 13: In the Discussion, they mentioned “The present manuscript provided a mid-term follow-up on previous patients and experience with three additional cases”. Previous report was of 6 cases, and now they have two extra
Reply 13: Thanks for your comments. Our previous report was of 4 cases with robotic appendiceal onlay flap ureteroplasty, and the median follow-up duration was 6.8 months. The present manuscript provided a mean 18-month follow-up on previous patients and experience with four additional cases.
Changes in the text: none.

I hope those comments would help the authors to enhance their work and increase the chances for a future publication.

Reply: Thank you very much.

References

1. Engel O, Rink M, Fisch M. Management of iatrogenic ureteral injury and techniques for ureteral reconstruction. Curr Opin Urol 2015;25:331-5.
2. Knight RB, Hudak SJ, Morey AF. Strategies for open reconstruction of upper ureteral strictures. Urol Clin North Am 2013;40:351-61.
3. Zhao LC, Weinberg AC, Lee Z, et al. Robotic Ureteral Reconstruction Using Buccal Mucosa Grafts: A Multi-institutional Experience. Eur Urol 2018;73:419-26.
4. Li X, Yang K, Zhu W, et al. The Whitaker Test in the Follow-up of Complex Upper Urinary Tract Reconstruction: Is It Clinical Useful or Not. Urol J 2021.