Peer Review File

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Reviewer A:

Comment 1: *"Nice review focusing on the main surgical alternatives to treat distal urethra stricture.*

Reply 1: We would like to thank Reviewer A for these kind comments.

Comment 2: *"My only concern is whether the figures presented are original and if they have copyright liberated from previous mentioned publications."*

Reply 2: We have obtained permission to use Figure 2 from Springer and the permission confirmation is on file with *TAU*. Figures 3 and 4 were from an open-access publication by one of the authors (Dr. Martins) who therefore has retained the copyright.

Reviewer B:

Comment 1: "*This manuscript is a narrative review of literature describing urethroplasty techniques for repair of distal urethral stricture. The preference was given for the most commonly performed techniques.*

Methods: although this is not a systematic review of all literature on distal urethral stricture management, would it be possible to add a statement on how this review was done? (i.e "PubMed search of all English language articles between years xxx-yyy to include... ". Also please mention if there were parameters for studies exclusion (was it minimum number of patients? length of follow up? or other parameters?)."

Reply 1: We indeed searched PubMed for articles addressing distal urethral strictures from 1985-2020. There were no specific inclusion or exclusion criteria as the studies published varied widely in number of patients, extent of approach, as well as follow-up and strategies for addressing recurrences. On the other hand, many studies presented variations of similar techniques that were published over time. We strived to bundle minor variation of similar techniques into only a few in order to present easy-to-follow suggestions for addressing distal urethral strictures which was the goal of this review.

We have incorporated the following in a Methods section:
"Methods
A PubMed search for English language articles was performed from 1985-2020 and included articles that reported on surgical correction of distal urethral strictures. As there was a wide variation in number of patients, follow-up, and description of recurrences, we did not apply specific inclusion or exclusion criteria".

Comment 2: *”In this review designed for general urologists would be important to further emphasize the importance of preoperative evaluation: the physical exam by itself would not always differentiate between meatal vs fossa vs penile vs panurethral stricture vs multi-segment stricture. This knowledge would likely change preoperative consent, in many cases would change a surgical approach and patient positioning. Otherwise, in the worst case scenario, a patient may be booked for a 15-min supine Malone meatoplasty and end up with a much longer Kulkarni urethoplasty or a 1-st stage Johansson urethroplasty for a panurethral stricture with an intraoperative need to reposition to dorsal lithotomy, re-prep and de-drape. The imaging is easily obtained by injecting contrast using an angiocatheter. In patients with an SP tube antegrade imaging and even antegrade cystoscopy (preoperative or intraoperative) would potentially spare an unanticipated staged urethroplasty for a long urethral stricture.”*

Reply 2: We completely agree with the comments raised by Reviewer B. We had attempted to delineate that for very distal strictures a retrograde urethrogram can be challenging as often the angiocatheter tip will be inserted beyond a very distal stricture and will not show the distal pathology. However, it will show the remaining urethra and possible additional strictures thereof which is important information to know *prior* to a urethroplasty. While we state this in the manuscript, we have now clarified this in the Diagnosis section as follows:

“Palpation of firm scar along the distal urethra may give further clues about the extent of the stricture but lacks accuracy. If the stricture is more proximal then the authors prefer an office cystoscopy to identify the exact location of the stricture. In order to delineate the length of the stricture and also the presence of additional strictures more proximally, we also perform a retrograde urethrogram in the office. While a retrograde urethrogram for evaluation of distal strictures can be particularly challenging as the instrument used to inject contrast may obscure the location or extent of the stricture or fail to identify the stricture the use of an angiocatheter tip usually allows passage of contrast beyond the distal stricture and opacification and evaluation of the remining urethra. If a patient has a suprapubic tube placed, a voiding cysturethrogram is recommended and could also be combined with an antegrade cystoscopy. In general we counsel our patients on a variety of repair options including meatotomy, the use of buccal mucosa grafts and/or skin flaps, as well as the need for multi-stage procedures. We also counsel patients that dilations have a very poor success rate and make further repair more extensive with higher likelihood of failure given the repeated trauma.”

Comment 3: “Through the manuscript the authors share their personal experience with some of approaches. If available, please include references of the all the discussed techniques including success rates and common complications (i.e. sections on dorsal inlay and two-stage procedure have no references).”

Reply 3: We appreciate this comment of Reviewer B regarding our oversight to appropriately reference several techniques described in our manuscript and we have corrected this.
We have included following references in the manuscript:

6. Marshall, S.D., V.T. Raup, and S.B. Brandes: Dorsal inlay buccal mucosal graft (Asopa) urethroplasty for anterior urethral stricture. Transl Androl Urol 2015;4: 10-5.
7. Zumstein, V., R. Dahlem, L.A. Kluth, et al. A critical outcome analysis of Asopa single-stage dorsal inlay substitution urethroplasty for penile urethral stricture. World J Urol 2020; 38: 1283-1294.
12. Mori, R.L. and K.W. Angermeier. Staged urethroplasty in the management of complex anterior urethral stricture disease. Transl Androl Urol 2015;4: 29-34.

We have also incorporated the following sentence in our Dorsal Inlay section:
"Dorsal inlay procedures using buccal mucosa graft have become a reliable addition to the reconstructive armamentarium for distal urethral strictures [6, 7]."

Comment 4: *"Two-stage urethroplasty section: generally these could be instead called "staged urethroplasty" techniques and warrant a mention that there is a substantial rate of additional stages needed (repeat stage-1, repeat stage-2) (In a review paper by Mori R L and Angermeier KW, a summary table with 7 studies demonstrates that up to 59% of patients require >2 stages, TAU PMID: 26816806. An additional study by Patel CK demonstrated that only 44% of patients underwent a 2-staged approach as planned, while others either required revisions of various stages or remained un-tubularized (PMID: 26892645)."*

Reply 4: We, again, completely agree with this comment and have revised the first paragraph of this section as follows:

"In general, two-stage urethroplasties are rarely necessary but are indicated in patients who have failed multiple distal urethroplasty attempts and having been rendered with insufficient suitable tissue for a successful reconstruction or those with trauma to the distal penis in whom there is variable amounts and quality of distal urethra and/or glans tissue remaining. Also, two-stage repairs are more commonly necessary in patients with a history of hypospadias that require revision in adulthood although all of the above repair techniques remain indicated [12]. It must be emphasized that a third or even a fourth surgery may be necessary due to complications such as fistula development, wound dehiscence, or recurrence which has been reported in 7-59% of patients [12]."

Comment 5: *"Additional recent papers worth reviewing (if found to be appropriate for the scope of this paper)."*

Reply 5: We appreciate these paper suggestions and are very familiar with them. As mentioned above, information of many papers found their way in the description of the surgical approaches presented in our manuscript. As we intend this manuscript to be a guideline for any practicing urologist, we chose to reference those papers that we believe will provide the most pertinent information for further reading. Under no circumstance did we intend to omit papers or references but instead focused on referencing those we feel to be most useful.