

Peer Review File

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Review Comments

Reviewer A

a) Major

Comment 1: Urodynamic study (UDS) is the most common examination for detrusor contractility. Did you examine UDS before HoLEP?

Except for the UDS result, it is difficult to diagnose DO, DHIC, and UAB.

Reply 1: We had a UDS for each patient before HoLEP, and ruled out DO, DHIC, and UAB according to the results. Finally, we chose Qmax as the prediction factor of the operation effect.

Changes in the text: On page 3, lines 15-16, we highlighted the preoperative examinations in red.

Comment 2: Have you considered whether prostate volume is the predictive value? Since a large prostate volume is generally considered to be a strong voiding disorder, large prostatic volume is considered to improve postoperative voiding disorders after HoLEP.

Reply 2: Yes, we know that many articles have reported that the effect of HoLEP on patients with larger prostate is better, however we have met many patients with large prostate but the effect of operation is not so good. Moreover, scholars such as Luo GC and Hirayama A have published relevant papers on serious urinary tract obstruction in patients with small prostate. Compared with prostate volume, we think the degree of intravesical prostatic protrusion (IPP) can better reflect the effect of prostate on urination resistance. In the future, we may focus on whether the degree of IPP is better than the volume of prostate to explain the effect of prostate on urination resistance.

Changes in the text: On page 6, lines 39-page 7, line 5, we highlighted the explanation of why we choose IPP other than prostate volume to predict efficacy of HoLEP.

Comment 3: Have you considered whether body mass index (BMI) is the predictive value?

Reply 3: From our work experience, we have not found strong evidence that BMI is related to the efficacy of HoLEP. So, we didn't take BMI into account when we designed the model. Because we didn't take this factor into account at the beginning of the design, we didn't accurately measure the height of each patient when the patient was admitted to the hospital. As a result, we didn't take BMI into the baseline data, for which we are sorry. We will seriously consider this factor in the future work. Thank you for your understanding!

Changes in the text: No changes for this comment.

Comment 4 Why did you consider evaluating 3 months after surgery?
How was the result at 1 month or 6 months after surgery?

Reply 4: In decades of years' work, We found that in the first period of time after operation, patients often had the condition of dysuria caused by inflammation and edema or other reasons and urinary incontinence, which would get better in the next few weeks. If the patient's symptoms do not improve within a few weeks, the possibility of subsequent improvement is also relatively small. In the first outpatient follow-up after discharge, we often cannot see the best clinical efficacy. Therefore, we chose three months after the operation for follow-up.

Changes in the text: In page 5, line 31-36, we explained the choice of follow-up time.

b) Minor

Comment 1: Please describe the details of the result of HoLEP operation such as operation time and enucleate prostate weight.

Reply 1: Ok, we will elaborate on this part of the content. Thank you for your advice. But I'm very sorry that due to the lack of consideration, we have not carried out the weighing work for the enucleated prostate tissue, and we ask your understanding.

Changes in the text: On page 4, lines 18-21, we have added relevant details.

Comment 2: Please describe the details of the IPP measurement in method part. Did you use the ultrasound or magnetic resonance imaging?

Reply 2: We used ultrasound to measure IPP, and we will elaborate this in Method. Thank you for your advice.

Changes in the text: On page 3, lines 16-21, we have added relevant contents.

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Reviewer B

Summary: The authors evaluated patients undergoing HoLEP to determine if they had a significant effect vs a poor effect following surgery. They compared patient factors including data from symptom scores, IPP, PUV, and urine flow metrics between groups. Additionally, they performed multivariable analysis to assess predictors for success after the operation.

Abstract:

Objective is reasonably clear, but by "effect" I think the authors actually were more specifically assessing for successful effect. Methods - see below for overall commentary on Methods. Results section talks about single factor analysis but does not say anything other than what results are different in the two-group comparison and does not review any findings from the

logistic regression analysis.

Reply: Thank you for your advice. We will adjust accordingly.

Changes in the text: In Part Introduction, we have changed “effect” to “efficacy”, which can more aptly describe the meanings. At the same time, we describe the results of single factor analysis more detailedly, and briefly introduce the results of logical regression analysis on page2 line 15-19.

Introduction:

Generally well-written but does include some results information, which should be placed in the results section.

Reply: Thank you for your advice. We will delete relevant contents.

Changes in the text: We have deleted results information in Part Introduction.

Methods:

Comment 1 : It is unclear why this time period was chosen.

Reply 1: In decades of years' work, We found that in the first period of time after operation, patients often had the condition of dysuria caused by inflammation and edema or other reasons and urinary incontinence, which would get better in the next few weeks. If the patient's symptoms do not improve within a few weeks, the possibility of subsequent improvement is also relatively small. In the first outpatient follow-up after discharge, we often can not see the best clinical efficacy. Therefore, we chose three months after the operation for follow-up.

Changes in the text: In page 5, line 31-36, we explained the choice of follow-up time.

Comment 2 : Was there institutional review board approval?

Reply 2: This study was approved by Ethics Committee of Nanjing Medical university and performed according to the Declaration of Helsinki, after obtaining written formed consent from participants.

Changes in the text: In page 3, line 6-7, We added an ethical statement.

Comment 3: Inclusion and exclusion criteria are clearly defined. The preoperative data should be placed in the results section.

Reply 3: We will place preoperative data in the results section.

Changes in the text: In page 4, line 15-17, we have placed preoperative data in the results

section.

Comment 4: I am guessing the authors mean to state "Mostly Satisfied" in line 31, corresponding to AUA symptom score quality of life score of 2, but if not it is unclear what is meant by "generally satisfactory". The authors clearly define the satisfactory vs unsatisfactory groups, but how did they determine that these results would be the determinants of satisfactory vs unsatisfactory (some mention way later in the Discussion starting with line 6 should be included in Methods)?

Reply 4: The QOL score is the patient's response to "what do you think if you always have the current symptoms of urination in your future life?" The subjective answer to this question includes "very happy, satisfied, generally satisfactory, just ok, not very satisfied, distressed, very bad". QOL less than or equal to 2 points after operation is regarded as mostly satisfied. That is to say, it includes "very happy, satisfied, generally satisfactory". We think that the evaluation of surgical efficacy should be combined with the subjective feelings of patients, so the IPSS score and QOL score should be combined to determine the surgical efficacy. We are sorry that we can't elaborate on how to distinguish the group with satisfactory effect from the group with poor effect in the method section, and we will explain it clearly in Methods.

Changes in the text: In page 3, line 33-34, we have explained how to define the satisfactory vs unsatisfactory groups clearly in Methods.

Comment 5: For the logistic regression, was there a univariate followed by a multivariable analysis for the nomogram? What is meant by adjusted odds ratio?

Reply 5: In Table 1, clinical features and univariate analysis are both included. We are sorry that the naming of the table is not very clear. Adjusted odds ratio is the OR value of each factor in the logistic regression analysis, in order to distinguish it from the OR value in the single factor analysis.

Changes in the text: We have changed the title of Table 1.

Comment 6: The authors did not specify how they calculated the IPP.

Reply 6: We will elaborate this content in Method. Thank you for your advice.

Changes in the text: On page 3, lines 16-21, we have elaborated this content.

Comment 7: How did the authors determine voiding and storage symptoms and calculate the V/S ratio?

Reply 7: As we all know, there are eight questions in the I-PSS scale. Questions 1, 3, 5, 6 are about the symptoms of voiding, questions 2, 4, 7 are about the symptoms of urinary

storage, and the last one is about the quality of life. The V / S is the ratio of the sum of the voiding scores to the sum of the storage scores.

Changes in the text: We have explained it on page 4, line 35.

Comment 8: Not sure why the authors used R and SPSS for these calculations; both of these software packages should be able to perform these types of comparisons from what I can see in the manuscript.

Reply 8: SPSS is convenient and easy to use, but its graphics are not as beautiful as R language. So in the drawing of nomogram, we choose R language, although it is a little complicated. We are sorry to confuse you.

Changes in the text: No changes for this comment.

Results:

Comment 1: Would include all preoperative and postoperative data here.

Reply 1: We will move preoperative data to this section.

Changes in the text: In page 4, line 15-17, we have placed preoperative data in the results section.

Comment 2: The authors talk about a "certain correlation" between the voiding score and the V/S ratio in lines 25-26 but it is not clear what this means. How did the authors devise the V/S ratio?

Reply 2: What we mean is that V/S is the sum of the voiding scores to the sum of the storage scores, value of V/S would be affected by voiding and storage score, so there is a certain correlation between the voiding score and the V / S ratio.

Changes in the text: We had explained it more clearly on Page 4, line 35.

Comment 3: Starting in line 28, the authors talk about Model 3 but they do not review the results of Models 1-3, nor did they provide sufficient evidence for supporting model 3 as a superior model.

Reply 3: We are sorry that this part is too brief, and we will explain it in more detail.

Changes in the text: On page 5, line 4-13, we explained the difference among three models and why the Model 3 is the superior one.

Comment 4: In determining success after HoLEP, it is helpful to know how many patients preoperatively were in urinary retention and how many remained in urinary retention postoperatively; this is certainly a marker of success following HoLEP.

Reply 4: We know that residual urine volume is a very important evaluation index, and patients' residual urine volume is also evaluated before operation. However, due to many reasons, we failed to measure the residual urine volume of all patients after the operation, such as the long waiting time for appointment, the subjective refusal of patients and so on, which we deeply regret.

Changes in the text: No changes for this comment.

Discussion:

Comment 1: Unclear how the second paragraph fits with the data presented here. Sentence starting on line 33 talks about patients in this study who would have a better result with TURP, but it is unclear how the authors reached this conclusion since this is an analysis of HoLEP and they provide no other evidence to support this claim.

Reply 1: We have consulted many literatures on the efficacy of prostate surgery, most of which are TURP, so we have inadvertently made a clerical error here. I'm really sorry to make you confused.

Changes in the text: We have changed "TURP" to "HoLEP" , on page6, line 22.

Comment 2: Beginning on line 36 the authors again discuss the V/S score as being the most useful indicator of success but provide no data to support this claim. Data seem to support the authors' claim that patients with higher IPP are more likely to have an operative success (5th paragraph of discussion).

Reply 2: We mean that V / S is more valuable than voiding score, which has been analyzed when discussing the advantages and disadvantages of three prediction models.

Changes in the text: On page 4, line 36-page 5, line 2, we have explained what the V/S is, and why the V/S is better than voiding score in the prediction.

Comment 3: The Conclusion is not supported - did the authors feel like some patients inappropriately underwent HoLEP when perhaps another treatment course of action would have been more appropriate? If so, please explain. Also, are only people who have the largest amount of multiple score improvements successful?

Reply 3: We are sorry that the conclusion is too short to be clear. We think that some patients' poor surgical results are only due to lower urinary tract symptoms and the enlargement of prostate volume indicated by B-ultrasound. In addition, the secondary injury of bladder function caused by age and long course of disease is also the possible cause of poor surgical

effect. We don't think that only the patients with high scores are likely to achieve the success of surgery. This is only a prediction model of surgical efficacy. Patients with high scores are more likely to achieve satisfactory surgical outcomes. Of course, this needs further study, due to the small sample size.

Changes in the text: We have elaborated conclusion more detailedly on page 7, line 27-31. work.