Author’s response to reviews

Title: Optical puncture combined with balloon dilation PCNL vs. conventional puncture dilation PCNL for kidney stones without hydronephrosis: a retrospective study

Authors:

Mi Zhou (whateverzm@163.com)
Xiang He (hx.hzsy@163.com)
Yuelong Zhang (zhngyuelong613@gmail.com)
Weiwen Yu (hfhyww@163.com)

Version: 2 Date: 14 Feb 2019

Author’s response to reviews:

Dear Editors,

Thank you for your letter and for the reviewers’ comments concerning our manuscript.

We have studied comments carefully and have made corrections which we hope meet with approval. The main corrections in the paper and the responds to the reviewer’s comments are described below.

Thank you and best regards.

Sincerely yours,

Dr. Weiwen Yu
Dear reviewers,

We would like to express our sincere appreciation for your careful reading and helpful comments. Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. The responses to your comments (red words) are listed below.

“The manuscript would benefit from revision by native English speaker.”

We have revised.

“Page 3, line 56: This statement should be amended to read that PCNL is the main treatment modality for larger or complex stones, not for any stones in upper tract.”

We have revised (Page 3, line 57, revised version).

“The authors report that establishing a PCNL tract is increasingly difficult in the absence of hydronephrosis due to limited space in the kidney. I am not aware of the teachings in China, but in the absence of hydronephrosis, the collecting system can be dilated by means of irrigation through a retrograde ureteral catheter, providing enough space for tract dilation in most cases. The authors indicate that indeed a ureteral catheter was placed in all patients: Could the authors report whether or not any retrograde pyelogram was performed to dilate the collecting system?”

In China, most hospitals (including ours) use ultrasound-guided puncture instead of X-ray. In Discussion part (page 11, line 262, revised version) we have mentioned the establishing artificial hydronephrosis method and its deficiencies such as it might interfere ultrasound guidance image. We don't use artificial hydronephrosis in the complex cases. The ureter catheter is used only to prevent the stone fragment moving down to the distal ureter (We have revised in the surgical methods part in page 5, line 101, revised version).

“Could the authors elaborate on the process of placing the needle under ultrasound guidance while also holding the nephroscopy or polipscope. This sounds like a three-hand manoeuvre”

In visual puncture process, either UMP nephroscope or Poly visible nephroscope is fixed with the puncture needle and can be hold with one hand, while the other hand can hold the ultrasound probe.
“The authors report using ultrasound to identify the target calyx for renal entry. Could the authors elaborate on the potential benefit of visually following the needle target? Was the target adjusted based on the view? Was the angle different?”

As we mentioned in the discussion part (page 13, line 308, revised version), using direct vision, the accuracy of puncture position was determined by the visual puncture technique. (If we didn't see the stone, we should adjust the puncture angle.) And the needle tip position was observed by intrathecal endoscopy and the depth of needle tip in the targeted renal calyx was adjusted properly to ensure that the guide wire in the narrow space of the renal calyx was placed exactly in place.

“Page 3, line 73: PCNL instead of OCNL”
We have revised (page 3, line 72, revised version).

“Figures 1-3: The quality of the pictures is not very good. It is not clear what the authors are trying to demonstrate.”

Figure 1 shows the visual puncture process under UMP nephroscope and Figure 2 shows the visual puncture process under Poly visible puncture nephroscope. Figure 3 shows the processes of establishing the channel by balloon dilation. We have explained in the Figure legends (page 22, line 493, revised version).

We are sorry that it is difficult for us to provide a clearer image due to limited equipment.

“Page 7, line 163: please write out in full DSA before using the abbreviation.”
We have revised (page 7, line 163, revised version).

“I realize that this is a retrospective study. Could the authors nonetheless elaborate on the potential reason of performing a visual puncture rather than a conventional puncture?”

In the past clinical practice, we found that conventional puncture in case without hydronephrosis is prone to bleeding and loss of channels (mentioned in page 14, line 333, revised version), so we hope to improve the puncture method, such as choosing visual puncture.
“With approximately 4mm, the average stone size is very small in both groups. Could the authors elaborate on why a 24F PCNL was performed for stones this small? Was ESWL or URS offered to these patients? Or expectant management?”

It is a written mistake, mm should be cm, we have revised in table1.

“Could the authors provide a reference for the classification of large/standard/mini and ultra-mini channel PCNL?”

We have provided reference (Reference 34, 35), and adjust the classification (page 10, line 236, revised version)

“Page 10, lines 246-249: Could the authors reference the statement that in absence of hydronephrosis, it is easy to lose the channel? I refer to my earlier comment of inducing hydronephrosis with irrigation through the ureteral catheter.”

We have provided the reference (Reference 32) to show that in absence of hydronephrosis, it is easy to lose the channel with Chinese experience.

“The authors report that they used the UMP nephroscope to assess the depth of the needle tip after ultrasound guided placement of the tip. How was needle tip depth assessed in the conventional way? Retrograde flow or irrigation through the ureteral catheter? Methylene blue in the collecting system? Contrast injection and fluoroscopy? This is currently unclear in the manuscript.”

As we mentioned above, in China, most hospital usually conduct puncture under the guidance of B-mode ultrasound. In conventional way, the depth of the needle is evaluated by B-mode ultrasound imaging, but there may be errors sometimes.

“Could the authors hypothesize on why the visual puncture provides better outcomes with respect to blood loss, pain score, hospitalization? Could the authors also comment on how this new knowledge has changed their practice? Do they now routinely use visual puncture rather than ultrasound only for non-hydronephrotic PCNL?”
We hypothesize that visual puncture combined with balloon dilatation standard channel PCNL lithotripsy could increase the accuracy of puncture and reduce the skin-kidney channel loss which might lead to repetitive puncture. Thus it can decrease blood loss and increase the tubeless rate which may relieve postoperative pain. So the length of hospital stay can be reduced (we have revised in the discussion part, page 15, line 351, revised version). At present, we tend to choose the visual puncture technique in the complicated cases without hydronephrosis. However, considering this is a new technique and the possible additional cost, we need to inform the patient and obtain consent before the operation.

In all, we found your comments are quite helpful. Thanks very much.

Sincerely yours,

Dr. Weiwen Yu

Department of Urology, Zhejiang Provincial People’s Hospital/People’s Hospital of Hangzhou Medical College, Hangzhou, China