Reviewer’s report

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

Version: 1 Date: 15 Jan 2019

Reviewer: Thomas Tailly

Reviewer's report:

The manuscript would benefit from revision by native English speaker.

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.

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?

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

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?

Page 3, line 73: PCNL instead of OCNL

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

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?

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

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.

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.

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?
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