Treatment options and outcomes for lower pole stone management: are we there yet?

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Kidney stone disease (KSD) is on the rise with a life-time prevalence of up to 15% (1). Stones in the lower-pole tend to be more common than other locations in the kidney, and arguably are the most difficult to manage successfully due to challenges with anatomical configuration (2). The various treatment modalities to treatment lower pole stones (LPS) vary from shock wave lithotripsy (SWL) through to ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL), thereby increasing in their invasiveness. While treatment aims focus on complete stone clearance, this has to be balanced against the risks of the procedure involved (3).

Donaldson *et al.* (4) present their results of a systematic review and meta-analysis for treatment of LPS comparing SWL, URS and PCNL procedures. They compare the outcome of stones ≤20 mm treated with SWL, retrograde intra renal surgery (RIRS) and PCNL procedures. After an initial search of 2,741 records and scrutinizing 21 articles, twelve articles (7 RCTs for 691 patients) were included. Their data suggests a rise in RIRS for these LPS with a high stone free rate (SFR) when compared to SWL for stones from 10 to 20 mm in size. Although SWL was the least invasive option with highest acceptability to patients, PCNL achieved highest SFR and was also the most invasive intervention with longest hospital stay.

Although recent data suggests better results of RIRS when compared to SWL, the former is still considered to be more invasive (5). Furthermore, with larger stones in the lower pole SWL is considered less often. With the advent of micro, ultra mini, and mini PCNL, wide variation now exist in the percutaneous stone treatment with these miniaturized techniques, which can is likely to change the management of LPS (6,7). However for outcomes to be comparable, the definition of SFR and the duration of follow-up also need to be standardized. Ideally the surgeons and hospital treating these stones should be able to offer all modalities of treatment, guided by their audited outcomes, realistic patient expectations and patient preference (8,9).

Comparison of ideal LPS management seems to be incomplete without patient focused outcomes such as length of stay, quality of life, analgesia required along with the cost comparison between different modalities. Along with SFR and complications, this information may be important in surgeon and patient decision-making. The debate for optimal management of LPSs still goes on while we look for more answers in the modern era.

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Footnote

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