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UROLITHIASIS

## Large impacted distal ureteric stones are treated better by URS: putting priorities

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Treatment of ureteral calculi has dramatically changed over time. Open surgery was the method of choice before the 80s, however, two events strongly influenced the management of ureteral lithiasis: the development of rigid ureteroscopy and the application of shock waves. Since then, many papers have been published to assess the efficacy of each technique. They take into account several endpoints: stone-free rate, number of procedures, cost, and complication rate.

The most recent EAU and AUA Clinical Guidelines on Urolithiasis defined levels of evidence and recommendations for the treatment of ureteral stones, and stated that both ureteroscopy (URS) and extracorporeal shock-wave lithotripsy (ESWL) are acceptable first line treatments (Level of Evidence 1 A). However, URS provides significantly better success rates than ESWL for distal ureteral stones  $\leq 10$  mm (97% vs. 86%) and  $>10$  mm (93% vs. 74%) accordingly [1]. In the present study [2], the authors compare the results of treatment with all of these methods (ESWL, URS and open surgery) applied to a large number of cases of lithiasis in the distal ureter, with smaller stones (7.8 mm on average) being treated by URS and the larger stones (29 mm) by open surgery. There was a highly significant difference between groups in stone impaction. Most of the impacted stones patients have been treated with URS and open surgery.

The study shows that unlike in ESWL, stone size does not affect the results of URS in the treatment

of the lower ureteric stones. URS stone-free rate for stones  $<10$  mm was 92.8%, and 89.5% for  $\geq 10$  mm stones. Also, the study demonstrates the superiority of URS over ESWL for treatment of stones sized  $>10$  mm. Another important point of this study is that stone-free rate in ESWL treatment of lower ureteric stones, is strongly affected by stone impaction (50% vs. 76%). While the opposite is true for URS in which stone-free rate does not depend on this parameter, demonstrating 90% success rate in patients with impacted stones. The study also revealed high stone-free rate for impacted stones (100%) after open surgery. Although open surgery is a highly effective technique, it is not the first-line treatment in most cases of ureteral calculi due to its greater invasiveness, longer postoperative recovery time, and higher number of complications than URS or ESWL.

With the recent developments of ureteroscopes, such as reduction of the caliber, the use of lasers for calculi fragmentation URS appears to have become a more efficient and rational option because of its lower cost and minimal invasiveness. Nevertheless, decisions regarding treatment of ureteral stones should be made on an individual basis, based on the patient preference, personal experience, and hospital equipment. However, in this article the authors managed to cogently demonstrate that URS might be considered a method of choice in the treatment of selected patients with distal ureter stones  $>10$  mm and evidence of stone impaction.

### References

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