Re: Micropercutaneous Nephrolithotomy (Microperc) vs Retrograde Intrarenal Surgery for the Management of Small Renal Calculi: a Randomized Controlled Trial
Sabnis RB, Ganesamoni R, Doshi A, Ganpule AP, Jagtap J, Desai MR
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Expert’s summary:
The authors compare a new surgical procedure, micropercutaneous nephrolithotomy (microperc), which was developed by their group [1], with retrograde intrarenal surgery (RIRS) for the treatment of kidney stones <1.5 cm in a prospective randomized study. Both procedures were performed under general anesthesia.

Microperc comprised the following steps:

1. Placement of a 7F ureteric catheter (supine position)
2. One-step puncture of the renal collecting system with a 4.85F needle under ultrasonic and/or fluoroscopic guidance, through which both a telescope and a 272-μm fiber were introduced for holmium:yttrium-aluminum-garnet (holmium:YAG) laser lithotripsy (prone position)
3. If a significant fragmented stone burden was left, exchange of the previously placed ureteric catheter with a JJ stent (supine position).

RIRS comprised the following steps:

1. Ureter dilatation over a Terumo guidewire and insertion of a 12F ureteric access sheath (supine position)
2. Flexible 7.5F ureterorenoscopy (URS) with a 272-μm fiber for holmium:YAG laser lithotripsy and stone removal with a 1.7F Zero Tip nitinol stone basket
3. Insertion of a JJ stent at the end of the procedure if there was any ureteric injury and/or a significant fragmented stone burden was left and/or the access sheath was in place for >45 min.

Operating times were similar for both groups. One patient in each group had to be converted to miniperc. The hemoglobin drop was <1 g/dl in both groups, although significantly lower in the RIRS group (no blood transfusions). Postoperative fever occurred in three and four patients after microperc and RIRS, respectively. The JJ rate was 20% and 62.8% for microperc and RIRS, respectively. Postoperative pain and use of analgesics were both lower in the RIRS group compared with the microperc group. After microperc, two patients required a secondary intervention (URS/JJ stenting). After a 3-mo follow-up, the stone clearance rates were 97.1% and 94.3% for microperc and RIRS, respectively.

Expert’s comments:
The obvious questions concerning this well-designed prospective randomized trial are, How small should we go? and Which procedure for what patient? Although operation time, surgical complications, and stone clearance rates were similar for both procedures, the choice of details for each surgical technique may have influenced the tested outcome parameters, as follows.

For microperc, the preoperative placement of a ureteric catheter required the patient to be in the lithotomy position, then to be turned to the prone position for calyceal puncture, and after the procedure to be turned to the supine position if insertion of a JJ stent was required (20%). It is debatable whether these time-consuming position changes can be avoided, either by omitting the prepuncture ureteral catheterization (which obviously makes puncture somewhat more difficult, but not impossible) or by using a supine–oblique position, which allows both transurethral and percutaneous renal access without repositioning the patient [2].

References

Conflicts of interest: Idir Ouzaid has nothing to disclose. Brian Rini receives research funding from Pfizer, GSK, and Immatics, and he is a consultant for Pfizer, GSK, AVEO, and Bayer.

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When a 7.5F flexible ureterorenoscope is used for RIRS and the stones to be disintegrated are relatively small (<1.5 cm), the necessity of using ureteral dilatation and inserting a 12F ureteric access sheath is debatable. While this step undoubtedly allows low-risk multiple insertions of the ureterorenoscope, such as is required when retrieving multiple stone fragments with baskets, it introduces another complex step in the procedure, which has its own stress to the ureteral wall and its own complications. The 62.8% JJ stent rate after RIRS (compared with 20% after microperc) is explained by the indications to insert a JJ stent if ureteric injury was visualized and/or the access sheath was in place for >45 min. One could argue that flexible ureteroscopy can be safely and effectively done in most cases without an access sheath.

When several options are available for stones <1.5 cm, such as extracorporeal shock wave lithotripsy, standard percutaneous nephrolithotomy (PNL), reduced-size PNL such as miniperc and now microperc, and retrograde flexible URS, the advantages and disadvantages of the respective methods must be weighed against one another.

URS and microperc have fewer bleeding problems than RIRS but carry the risk of ureteral injury, which rarely is severe but, if it is, may be devastating and even require surgical reconstruction such as ureteral replacement by bowel segments or renal autotransplantation [3]. If the goal of the surgical procedure is not only to disintegrate the stones for spontaneous passage but also to remove most or all of the stones, which obviously requires multiple insertions of the ureterorenoscope, there is a distinct role for an access sheath. If fragments remain in a dependent calyx with either procedure, stone clearance is uncertain; however, this variable was similar in both arms of the study.

Puncture of the kidney and PNL have the problem of bleeding, which is related to the size of the percutaneous tract [4]. Consequently, miniaturization of the tract (microperc) will reduce this risk, even if at some point there could be a disproportion between access size and stone size, which makes stone clearance more cumbersome and difficult over time. The short, straight access of PNL and microperc has definite advantages over flexible URS to access a calyceal diverticulum or a lower calyx with an acute infundibular angle. How small should we go? Bleeding is reduced with single-step needle scopes; however, vision and instrumentation are still limited compared with larger instruments (eg, in miniperc). A randomized study between miniperc and microperc would give more insight into the advantages and disadvantages of reduction in tract size.

Do we need to have all techniques (standard PNL, miniperc, and microperc) on hand, and if so, which procedure should we choose for what patient? I believe (but do not know for sure) that we should add microperc to our armamentarium of PNL and become smarter in determining the indications: The smaller the stone, the smaller the access? Definitely in children?

Microperc is a great innovation whose potential and scope of indications have not yet been completely defined.

Conflicts of interest: The author has nothing to disclose.

References

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Re: Refractory Chronic Pelvic Pain Syndrome in Men: Can Transcutaneous Electrical Nerve Stimulation Help?
Schneider MP, Tellenbach M, Mordasini L, Thalmann GN, Kessler TM
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Experts’ summary:
Schneider and colleagues report on a consecutive single-arm series of 60 men (mean age: 47 yr; range: 21–82 yr) with refractory chronic pelvic pain syndrome (CPPS). The patients were treated with transcutaneous electrical nerve stimulation (TENS) at home, applying circular penile electrodes (80 Hz for 30 min, twice a day). After 12 wk of treatment, TENS was discontinued in all men and restarted in patients in whom pain recurred. Primary end points were changes in the pain visual analog scale (VAS) and in the quality-of-life item of the National Institutes of Health Chronic Prostatitis Symptom Index at baseline and after 12 wk of therapy. Further outcome measures included changes in the pain VAS and in quality of life at last known follow-up, as well as any adverse events.

TENS was successful (>50% decrease in the pain VAS and a VAS ≤3) after 12 wk of treatment in 29 of 60 patients (48%). Mean pain VAS decreased significantly, from 6.6 to 3.9, and quality of life improved. The positive effect was sustained during a mean follow-up of 44 mo (range: 6–88 mo) in 21 of 29 patients (72%). No adverse effects related to TENS were noted during the entire study period.

Experts’ comments:
CPPS is defined as a nonmalignant pain perceived in structures related to the pelvis in both genders for at least half a year, excluding infection or any other obvious pathology [1]. CPPS is a disabling disease, with an impact on the quality of life similar to that of congestive heart failure, Crohn disease, or diabetes mellitus [2]. It gives rise to considerable costs for every health care system and is highly prevalent—not so much in academic tertiary referral centers but rather in every practicing urologist’s daily routine.

Because the pathogenesis of CPPS is poorly understood, numerous therapeutic approaches have been tried including antibiotics, analgesics, α1-blockers, 5α-reductase inhibitors,