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URS versus ESWL: another contribution to the never-ending debate

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January 2003 is still alive in my memory: a medical student during his IFMSA exchange in Egypt wanders the premises of the University Hospital in Assiut. Instead of the research in neural tube defects in newborns he is supposed to do, he spends his days until dusk in various operation theatres watching surgeries – many of them for the first time in his life – and has no idea about his future career. Eleven years later, I have the privilege to comment on a paper written by experts from the same institution. It is hard to avoid positive bias now, as that journey to Egypt had become one of the highlights of my student years.

The treatment of urolithiasis has been one of the cornerstones of urology, with cystolithotomy being one of the first surgical procedures to be performed [1]. As with many other procedures, the invasiveness of surgical stone treatment has diminished from open surgery as the only treatment available, to extracorporeal shock-wave lithotripsy (ESWL) with its golden years in the 1980–90s, to minimally invasive therapies such as ureteroscopy (URS), percutaneous lithotomy/mini-PCNL, and retrograde intrarenal surgery. Different parts of the world may have different availability of specific treatments, and one approach might be preferred to another for reasons such as physicians' experience, economy or material resources.

In the present study, Gamal et al. had assigned their patients with distal ureterolithiasis to one of three treatment groups: ESWL, URS and open stone surgery. Open surgery achieved the highest stone-free rates (100%) no matter the stone size. Endoscopy was somewhat less successful (SFR 97.5%) without a significant difference in stone clearance between smaller and larger stones. Not surprisingly, the least invasive treatment modality, ESWL was associated with the highest failure rate (SFR 75%) [2].

Randomized controlled trials comparing URS with ESWL have generally been scarce. Observational retrospective studies differ in SFR definition (after

the first versus after all procedures) and other parameters making direct comparisons difficult. SFR reported in the present study fell into the range reported in the literature: SFR of 73–91% for ESWL and 93–98% for URS [3]. A similarly sized, randomized controlled trial reported SFR of 94.9% and 92.7% for URS and ESWL, respectively, with a re-treatment rate of 7.8% for URS and 44.9% for ESWL [4]. This means that every other patient undergoing ESWL for a stone had to return to the lithotripsy table due to insufficient stone fragmentation and/or passage, compared to one in a dozen of those who underwent URS. Similar results were reported in a single-center retrospective study [5]. Ureteroscopy is the preferred method for the treatment of distal ureteric calculi larger than 10 mm and it is equal to ESWL for stones smaller than 10 mm, according to the EAU Guidelines [3].

The present study suffers from several drawbacks. First, the lack of randomization; the treatment choice was based on the patients' will, which in turn had been based on the physician's explanation and advice. Second, the groups were not comparable with regard to the patients' age, with younger individuals opting for endoscopy and older for open surgery. Third, the stone sizes were quite different among groups. I would also appreciate a more detailed description of the type and severity of complications (especially when as high as 100% in open stone surgery for stones smaller than 10 mm, Table 6).

The aim of the study presented by the authors, i.e. to "refine guidelines regarding the optimal selection of treatment modality" seems a little overstated. Nevertheless, this paper brings a useful contribution to the so-far unconcluded discussion on the treatment for this common urological condition. Keeping in mind that URS and ESWL for lower ureteric stones have quite similar treatment outcomes, the treatment modality can very well be selected based on the patient's informed decision.

References

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