

EDITORIAL

What are the future roles of shock wave lithotripsy and ureteroscopy in stone management



¿Cuáles son los futuros roles de la litotricia por ondas de choque y de la ureteroscopia en el manejo de la litiasis?



Kidney stones are a common disease, and if a surgical intervention is ultimately required for stone removal the most commonly utilized techniques are ureteroscopy (URS) and shock wave lithotripsy (SWL). The question of which of these treatment options is the “better” approach is, at present, an unresolved issue. Both SWL and URS each have relative advantages and disadvantages that drive this debate. For example, SWL is an extracorporeal intervention – unlike URS, no invasive instrumentation is required. However, URS, by virtue of its endoscopic nature, permits active stone fragment extraction during the procedure, which may provide for a more definitive outcome. One can readily conceive of other advantages and disadvantages beyond these two simple points – in fact, a more thorough analysis reveals the debate to be much more nuanced than it might first appear.

When one undertakes a comparison of SWL and URS, the efficacy of these procedures should be quantified with both clinical and economic metrics. Clinical efficacy addresses the measure that is of perhaps greatest concern to both the patient and the surgeon: a stone-free state. Economic efficacy, which can be alternatively defined as cost-effectiveness, incorporates the aforementioned clinical outcomes with the costs inherent in the procedure selected. Taking these two analytic approaches together best informs and advances the discussion of how patients may be optimally selected for one approach over the other.

Randomized controlled trials (RCTs) are one of the best ways to compare competing treatment modalities, such as in the case of SWL and URS. Systematic reviews of RCTs are, therefore, particularly valuable as they may best inform the healthcare community on these clinical treatment selections. Given the competitive nature of SWL and URS, these two modalities have been the subjects of numerous comparative assessments. In 2016, the American Urological Association (AUA) published the Surgical Management of Stones Guidelines, to better define the effect of advances in surgical technology and technique on clinical outcomes. As the Guidelines panel abstracted and analyzed the source data, they found that URS was associated with a greater stone-free rate than SWL. However, it was noted that the ultimate decision-making regarding stone treatment should be made in a “shared decision-making” approach with the patient.

Going forward, efforts to continue to improve our understanding of clinical efficacy and cost-effectiveness in stone management will serve the urologic community well. The healthcare system as we know it is going through a dynamic period of change, due primarily to the fact that healthcare spending is growing at an unsustainable rate. Consequently, clinical outcomes and cost-effectiveness measures of competitive treatment modalities will be the subject of increasing scrutiny. In the United States of America, the recent passage of the Patient Protection and Affordable Care Act (“Obamacare”), one of the payment reform pilots being introduced to the American medical community is the Accountable Care Organization (ACO). In brief, there is a concern that in the traditional fee-for-service model of healthcare delivery, physicians may be incentivized to perform procedures but not necessarily to improve health. In the ACO model, reimbursement is structured such that incentives will reward physicians who perform procedures that have the lowest cost and greatest outcome. To assess

these metrics, one of the cornerstones of the ACO design is the continuous measurement of a core set of performance metrics – clinical efficacy and cost-effectiveness, among others.

As urologists, we can begin to address these concerns. Our present understanding suggests that URS may be more effective than SWL for ureteral stone management, both from a clinical and cost standpoint. Going forward, it is important that we begin to more completely characterize the clinical and cost advantages of SWL and URS in the management of renal calculi as well – our present understanding of this complex issue is too limited to make any nuanced assessments. In the not too distant future, though,

it is likely that we will begin to see a redistribution of the healthcare dollar from low performing and low value procedures or providers to comparatively high performing and high value procedures or providers. Given this natural progression, organizations that successfully understand the clinical and economic efficacy of their surgical interventions will not only deliver better care to their patients, but also may begin to hold a strategic market advantage.

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