EDITORIAL COMMENT

The authors report their retrospective experience with tubeless percutaneous nephrolithotomy (PCNL). While the literature to date on the tubeless technique has generally been restricted to patients undergoing relatively straightforward procedures (small stone burdens and normal anatomy), this manuscript is unique in that it describes the application of the tubeless concept to patients with more complicated stone disease. Patients in this series had total or partial staghorn stones, underwent bilateral procedures, suffered from renal insufficiency or had infundibular stenosis or calyceal diverticuli. All tracts were subcostal, procedures were performed via a single tract and all patients underwent antegrade stent placement at the completion of each procedure. The authors report their stone free rates, the need for ancillary procedures and complications in this challenging population.

A recently reported randomized trial[1] has demonstrated the tubeless technique is associated with less pain in the immediate postop period and associated with shorter hospital stays in the uncomplicated patient with comparable stone free rates to those in whom a nephrostomy tube was placed. While these are obvious advantages, the application of the tubeless technique in the patient with a more complex stone problem, does mandate some pause and reflection.

The main issue raised by this paper, is whether the tubeless technique compromises the efficacy of conventional PCNL, forcing the need for additional interventions, and their associated inconvenience, morbidity and cost among those patients with more complex stone problems. In this series, the single procedure stone free rate was 74.5% which may be an inflated number given the use of KUB x-ray imaging to assess stone free rates in a quarter of the patients. With the application of ancillary procedures such as ureteroscopy (URS) and shock wave lithotripsy (SWL), the two procedure stone free rate increased to 91.5%. Ten (25%) of the patients required ancillary procedures at a later date. Complications were minimal in this report. Only one patient required blood transfusion and there was one case of urosepsis. The mean hospital stay was 2.1 +/- 1.0 days.

When considering the merits of the tubeless technique especially if there is a significant chance that additional treatment(s) will be required, the issues of efficacy, patient convenience and ancillary treatment cost need to be addressed. In terms of efficacy, it could be argued that by leaving a nephrostomy tube and having the ability to perform 2nd look flexible nephroscopy, is a more definitive treatment strategy for those patients in whom stone fragments are known or likely to be present after the initial PCNL. The ability to physically remove fragments at the time of flexible nephroscopy and prior to hospital discharge, ensures a quicker stone free state than delayed salvage SWL or URS. In our own PCNL series which employed the liberal use of flexible nephroscopy, our stone free rate at the time of hospital discharge was 89.1%.[2] With the judicious use of flexible nephroscopy the potential need for a stent, a well-recognized source of patient morbidity and inconvenience is also obviated. Finally with respect to cost, the authors correctly point out that a financial comparison of second look PCNL versus staged outpatient SWL or URS has not been conducted. Costs vary widely depending on the jurisdiction, and are not generalizable to other institutions or countries. Admittedly however, the application of 2nd look flexible nephroscopy under intravenous sedation or local anesthesia prior to hospital discharge is likely to compare favorably with either URS or SWL. At my institution most 2nd look flexible nephroscopy procedures are performed with no anesthesia or IV sedation in our clinic procedure room. The 2nd look procedure does not prolong the patients' hospital stay, typically requires minimal disposable items and is therefore not a significant cost burden.

The authors are to be commended for their courage and determination in attempting to advance percutaneous stone surgery. Before adopting an expanded application of tubeless PCNL into mainstream practice however, it is essential that we thoroughly assess patient outcomes and the economics of this practice.

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References

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