

Stone Care Triage During COVID-19 at the University of Washington


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THE SARS-CoV-2 PANDEMIC (COVID-19) has caused widespread disruption of routine surgical care and forced every surgeon to make triage decisions, in some geographic areas on par with war-time medicine. Our treatment choices now require greater ethical and community health consideration. We must balance the surgical risks and benefits and the medical risks of any perceived delay in treatment, with the costs of utilizing limited personal protective equipment (PPE) and potential exposure of health care workers and/or patients to the deadly virus. The mandate to postpone all “elective” surgical cases by the University of

Washington (UW) on March 16th following recommendations by the American College of Surgeons and US Surgeon General¹ was an important step in conserving health care resources as we prepared for the expected surge of COVID-19 cases, but the clinical reality is not so black-and-white. Debates ensued with regard to cancer care and other disease states at an institutional and more widespread level, many taking place on social media.

Acute kidney stone care is arguably the most common urologic issue our specialty confronts on a routine basis. In contrast to complex cancer care, the majority of urologists

TABLE 1. CATEGORIES OF URGENCY FOR PRIORITIZATION OF KIDNEY STONE PROCEDURES DURING COVID-19

0—Emergent	1—Urgent	2—Short wait	3—Long wait	4—Postpone
<24 hours	<2–4 weeks	<4–8 weeks	<9–12 weeks	
<i>Timeline is a rough guide for scheduling and prioritizing patients depending on local restrictions</i>				
Obstructing ureteral stone with infection— <i>drainage</i>	Obstructing ureteral stone failed MET (>4 weeks) or too large to pass (e.g., >8–10 mm)	Ureteral stone, symptoms controlled, undergoing trial of MET	Ureteral/renal stone with pre-existing stent with well-tolerated symptoms	Asymptomatic, nonobstructing renal stones
Obstructing ureteral stone in solitary kidney or bilateral ureteral obstruction— <i>treatment vs drainage</i>	Symptomatic ureteral stone, not controlled with medication, or recurrent ED visits	Ureteral stone with pre-existing stent with bothersome stent-associated symptoms requiring medications		Majority of stones requiring PCNL
Obstructing ureteral stone with intractable symptoms requiring admission— <i>treatment vs drainage</i>	Obstructing ureteral stone with AKI Recurrent infections in obstructing ureteral stone despite drainage and antibiotics	Recurrent infections in nonobstructing renal stones requiring suppressive antibiotic		

- Comorbidities such as immunocompromise, frailty, diabetes, or renal dysfunction should be considered.
- Stone treatment preferred over drainage procedures unless active infection or staged treatment expected.
- Ureterscopy may be preferred over shock-wave lithotripsy because of higher stone-free rate and lower rate of secondary stone treatment.
- Consider stentless or stent-on-string to avoid clinic visit if appropriate.
- Rare PCNL may be warranted based on (a) recurrent infections, (b) indwelling NT with tube-related complications (c) chronic renal deterioration

AKI=acute kidney injury; MET=medical expulsive therapy; NT=nephrostomy tube; PCNL=percutaneous nephrolithotomy.

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are involved in decisions with management of acute nephrolithiasis. Urgency of care is a spectrum, with case by case considerations, and sometimes treating sooner may limit exposures or greater resource expenditures later. The acuity of presentation can range from emergent (infected obstructing ureteral stones) to completely nonurgent (nonobstructing renal stones) with varying and fluid scenarios between, influenced by degree of symptoms, duration of obstruction, presence of indwelling stent, and likelihood of using the emergency department or other health care. Considering principles of the American Urological Association/Endourological Society Surgical Management of Stones Guidelines from 2016,² here we provide a triage framework that was created and implemented within the UW Medicine Health System to align all providers evaluating stone patients, to facilitate decisions on surgical care, to advocate level of acuity to operating room administration, and, importantly, to prioritize which patients to treat first as operations return to normal after creating a large expected backlog of cases.

We categorized patients into five groups (see Table 1): *0—emergent* cases are any patients who would be added on to the operating room (OR) emergently because of life- or organ-threatening conditions that must be immediately resolved, either with drainage or treatment. *1—Urgent* cases are patients with obstructing or ureteral stones that have or will likely fail conservative management and require significant health care resources because of hospitalization or multiple emergency visits. *2—Short wait* cases are those with symptomatic stones because of pain or infections that can be managed medically without admission and are not expected to threaten kidney failure. *3—Long wait* cases are those patients with stones temporized by ureteral stenting or nephrostomy drainage without the need for medical management of symptoms. *4—Postpone* cases are those patients who can be delayed until the prior are completed and include asymptomatic nonobstructing stone in patients with low risk of infections, including the majority of renal stones >2 cm or staghorn stones without obstruction that would normally require percutaneous nephrolithotomy.

It is important to note that this framework is meant to provide a structure for case-by-case consideration, as there are many nuances contributing to individualized care that could shift a patient between categorization levels of urgency. Comorbidities such as immunocompromise, frailty, diabetes, or renal dysfunction should be specially considered and balanced with the risks of exposure to the virus versus delaying. When treatment can be completed in one procedure with few additional resources, it is recommended to treat a stone versus temporary drainage only (e.g., ureteral stent) to potentially minimize repeated health care exposures and resource expenditure. Although shockwave lithotripsy is an option for the appropriate patient and may use less PPE for a single procedure, at our institution, it was felt that ureteroscopy was preferred given higher stone-free rate, less need for retreatment, and that general anesthesia is used for both cases.³ Table 1 timelines provide rough scheduling periods for providers and surgery schedulers but are dependent on local resources and evolving restrictions.

This framework has been incorporated into a weekly UW stone-specific endourology conference to discuss any non-emergent cases for decisions on who to schedule for the OR

within the week versus further delay. For those delayed, close follow-up is recommended by phone or telehealth, and change in categorization may occur if a clinical situation changes. For the 2 weeks between March 15th to 31st, 25 scheduled cases were postponed, 6 new patients were added to the surgery queue, and 12 underwent a procedure, including 3 (7%) *0—emergent* and 9 (21%) *1—urgent* cases. For the delayed cases, we categorized 10 (23%) as *2—short wait*, 8 (19%) as *3—long wait*, and 13 (30%) as *4—postpone*. Categorization at this level provides greater granularity to manage patients, consistency between team members, including independently practicing advanced practice providers, and a communication tool with the OR scheduling staff to facilitate equitable OR utilization. At the UW as of March 30th, all non-emergent cases are being tested for COVID-19 preoperatively in the 48–72 hours before planned OR, alleviating some concern for health care workers. The endourology section has also shifted to an attending of the week for these cases to help preserve the workforce. As the COVID-19 crisis resolves regionally, categorization will allow quick and equitable prioritization of patients as normal hospital operations resume.

References

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Abbreviations Used

AKI	= acute kidney injury
AUA	= american urological association
COVID-19	= SARS-COV-2 pandemic
ED	= emergency department
MET	= medical expulsive therapy
NT	= nephrostomy tube
OR	= operating room
PCNL	= percutaneous nephrolithotomy
PPE	= personal protective equipment
UW	= University of Washington