Editorial

Recommendations for Tiered Stratification of Urological Surgery Urgency in the COVID-19 Era

The global pandemic of the virus SARS-cov-2 which causes the disease COVID-19 is unprecedented in our generation. For the moment it has changed the way all in health care work. As urologists we have been asked to limit surgeries and many of us will likely be called upon to help directly care for these patients.

This pandemic has spread extremely quickly. On December 16, 2019 a patient who worked in a wildlife market was admitted to Wuhan Central Hospital in the Chinese province of Hubei with a severe bilateral lung infection. On December 31 China alerted the World Health Organization of cases of an unknown illness and on January 2, 2020 researchers in China mapped the genome of the virus (this was not announced until January 9). On January 13 the first victim outside of China was reported (Thailand) and on January 15 the man who would become the first reported patient in the United States left Wuhan heading home to Washington state. In the interim hundreds of thousands have fallen ill, tens of thousands have died, countries are on lockdown and in many areas the health system is being stressed beyond all expectations.

In the interest of preserving hospital beds, personal protective equipment as well as keeping patients and health care workers safe, many hospitals have begun to limit surgical cases. A recent report from Bergamo, Italy noted that within 10 days of the first case two-thirds of the hospital beds were occupied by patients with COVID-19.[1] Within 2 weeks performance of urological surgery was reduced to 30% of normal volume, then 15% and then totally shut down as of March 19. As more ill patients are hospitalized anesthesiologists begin to staff the intensive care units, and ventilators and operating rooms are being used for patients with COVID-19, further limiting the ability to perform even somewhat urgent urology surgeries.

There are no urology guidelines to help prioritize urological procedures in the current setting, and it is likely that this is not an all or none situation. Some surgeries must be done immediately, some are urgent and some can be delayed for months. Stensland et al framed their recommendations for triage of urological surgery based on the rationale of proceed or delay surgery.[2]

However, many hospitals may just be starting to see patients with COVID-19 or may not have any at this time. Thus, there is a rationale for creating a tier system whereby surgeries can be prioritized by degree of urgency into multiple tiers so that as the situation in that geographic locale or at that specific hospital changes surgeries can be postponed in a logical fashion based on degree of urgency without wholesale cancellation of all but the most critical surgeries at once.

As this pandemic was evolving but before it had significantly affected our area, we developed just such a tier system and had surgeons assign tiers to all of their currently scheduled operations as well as when new surgeries were booked. A total of 5 tiers (0 to 4) were developed with 0 representing emergency cases and 4 representing those that could be delayed for a long time. The goal was to be prepared to postpone cases based on degree of urgency in a staged fashion if possible. Operations were tiered based on available data regarding risk of progression but primarily on expert opinion from the subspecialists in our department. The fact that there are potential risks to other noninvasive therapies (eg androgen deprivation) was also reviewed by others in the department and revised as needed (fig. 1).

On March 17 the governor of our state declared that as of 5 pm March 18 all "non-essential" surgeries must be postponed. Per the State Health Department surgery was to be delayed unless there was threat to the patient's life if surgery or procedure is not performed, threat of permanent dysfunction of an extremity or organ system, risk of metastasis or progression of staging and risk of rapidly worsening to severe symptoms.

Based on this ordinance we immediately postponed all tier 4 procedures scheduled for March 19 and beyond. All of these cases were rescheduled for a day in December in a holding spot from which they

0022-5347/20/2041-0001/0
THE JOURNAL OF UROLOGY®

https://doi.org/10.1097/JU.0000000000001067
Vol. 204, 1-3, July 2020
Printed in U.S.A.

Cleveland Clinic

Cleveland Clinic Department of Urology

Recommended Surgical Priority Tiers (COVID-19)

0 Emergency	1	2	3	4 nonessential
Obstructed kidney/infection	Cystectomy – high risk CA	CAP GG3-5 or GG2 with more than 2 cores or tumor length > 5mm or Gleason 3+3 w >50% core positivity in number of cores or any PSA >10	Cystectomy – not high risk	CAP GG1 or GG2 with 2 or fewer cores of max length <5mm
Urologic abscess/wound washout	Nephrectomy – IVC thrombus	RPLND	Partial Nx >4cm	Partial Nx SRM
Torsion	TURBT high risk	Radical Nx	TURBT low risk	Adrenalectomy (CA not suspected) and assymptomatic
Clot retention	Stage 2 sacral neuromodulation	Adrenalectomy (CA suspected) or symptomatic	Neurogenic cysto/Botox	Assymptomatic non-obstructing renal stone
Hemorrhage	Orchiectomy – CA	Urogenital/colovesical fistulas	Ureteroscopy for presumed low risk upper tract UC	Slings
Pregnant with obstruction	Nephroureterectomy	Adult ureteral reimplant or pyeloplasty	Stone with stent/neph tube or symptomatic	Pelvic organ prolapse
Cadaveric renal tx	Penile CA	BPH requiring indwelling catheter	Urethral diverticula	Sacral neuromodulation stage 1 or total
Urinary retention unable to place catheter	Ureteral stone	Stent change	Mesh removal/ sling incision	Artificial urethral sphincter
Penile fracture	Urethral Stricture with imminent obstruction		Ureterolysis	Penile prosthesis
Infected prosthesis/device	Recto/pubo urethral fistula		SNM IPG change	Infertility/non CA scrotal surgery
Priapism	Ureteroscopy for suspected high risk upper tract UC			Pediatric: reimplant, penile and benign testicular cases
				Living donor renal tx
				Vasectomy/circumcision
				BPH on self cath or safely voiding
				Urethral stricture no imminent obstruction
				Buried penis
				Peyronies

Figure 1.

could be moved up once this crisis passed. In addition, surgeons were given guidance to weigh the individual patient risks (specifically age and comorbid conditions) versus benefits of surgery, and to postpone tier 1 to 3 cases when the risks in the current climate outweighed the benefits to the patient. We also produced similar guidance for our office and nursing procedures (fig. 2 and Appendix, https://www.jurology.com).

As of this writing (March 27, 2020) our institution continues to have an adequate supply of PPE, operating rooms and available anesthesiologists, and patients with COVID-19 are a distinct minority in our hospital system. The goal of our tiered system is that as the situation changes, we can easily stop less urgent cases in a staged fashion if warranted. Clearly, this template should be adapted per local need. Based on the supply of PPE, number of hospitalized patients with COVID-19 and other factors our tier system may not be practical for some geographic areas. Our hope is that the prioritization recommendations we formulated for this pandemic can be adapted per locale for use by others at this time or in the urology community during future crises.

Howard B. Goldman* and George P. Haber
Department of Urology
Cleveland Clinic
Cleveland, Ohio

*Correspondence: 9500 Euclid Ave./Q10, Cleveland, Ohio 44195 (telephone: 216 445-5121; e-mail: goldmah@ccf.org).

Cleveland Clinic Urology Office Procedure Rescheduling Tiers 2020 (COVID-19)

PROCEDURE	TIER
Circumcision	
Asymptomatic	4
Symptomatic	3
Cystoscopy for/and:	
Bladder CA F/U	2
Botox – Established	1
Botox – New	4
Bulking agent – New	4
Bulking agent – Repeat	3
Dilation – Asymptomatic	3
Dilation – Symptomatic	1
Hematuria – Macro	1
Hematuria – Micro	2
Retrograde pyelogram	1
Stent removal and/or insertion	1
Urethral eval (cuff erosion, etc.)	1
UTIs	4

PROCEDURE	TIER
Hydrocele drainage	4
Neph dialysis cath placement	1
Penile Doppler	4
Peripheral nerve evaluation	4
Permacath/Hohn removal	1
Prostate biopsy	
PSA > 15	3
PSA < 15	4
Retrograde urethrogram	
Asymptomatic	3
Symptomatic	1
Rezum	4
Suprapubic tube/catheter change	2
Transplant kidney biopsy	
For cause	1
Protocol	3

PROCEDURE	TIER
Trigger point injection	
Established	1
New	4
TRUS	4
Urodynamics	
Neurogenic	2
Non-neurogenic	3
Urolift	4
Vasectomy	4

TIERS	
1	Continue as scheduled, schedule
2	Can be delayed up to 4 weeks, schedule
3	Can be delayed 4 weeks – 12 weeks, Do not schedule now
4	Can be delayed beyond 12 weeks. Do not schedule now.

Figure 2.

REFERENCES

1. Naspro R and Da Pozzo LF: Urology in the time of corona. Nat Rev Urol 2020;doi: 10.1038/s41585-020-0312-1.

2. Stensland KD, Morgan TM, Moinzadeh A et al: Considerations in the triage of urologic surgeries during the covid-19 pandemic. Eur Urol 2020; https://www.europeanurology.com/covid-19-resource?.