

Lessons learned in the operating theatre during the COVID-19 Pandemic.

By Kalli Spencer

At the COVID-19 pandemic's peak or during one of its waves when there are many active cases in the community, the management of viral cases is given precedence over less acute cancer cases. In such circumstances a triage system is established in order to prioritise cancers according to stage and type.

Rigorous measures need to be implemented in the operating theatre and the rest of the hospital to prevent the acquisition or transmission of the virus. During the pandemic, urological operations have been limited to emergency cases during an acute phase (or wave) with a staggered exit strategy planned, based on scientific risk stratification. Telemedicine (e-clinics or virtual clinics) have also helped attain the goal of risk stratification¹.

Urologist Vipul Patel, a robotic surgeon with one of the highest global case series of prostatectomies from the Advent Health Global Robotics Institute in Florida, states that surgery is recognized as the gold standard treatment for several malignancies, including prostate cancer (PCa)². With global health care systems focused on virus control, however, oncologic surgery has experienced a reduction worldwide.

How long is it safe for a PCa patient to have their surgery deferred for? As PCa is a heterogeneous disease and most hospitals worldwide are affected by COVID-19, prioritization of cases could take advantage of stratification into risk classes as outlined above. High-risk PCa is still diagnosed in almost 27 000 patients annually in the USA, representing 15% of all cases. By the end of the last decade, a higher rate of aggressive PCa patterns (Gleason 4 + 4 and high D'Amico risk) was detected; the 2012 US Preventive Services Task Force (USPSTF) recommendation against screening may have contributed to this occurrence.

As part of a multimodal approach, surgery remains the basis of treatment for high-risk PCa. The role of radical prostatectomy (RP) in this setting is emphasized: when compared to radiation therapy (RT), surgery was associated with higher overall and cancer-specific survival. Aside from the theoretical advantage of RT in eliminating local micrometastases, practice shows that a real multimodal approach is probably applied for patients choosing RP, whereas patients choosing RT first are infrequently recipients of salvage RP. Recognizing the role of surgery in high-risk PCa, what are the drawbacks of delayed RP?

The answer to this question can be derived from surgical experience in the post-2012 USPSTF setting. Cases with aggressive PCa treated with RP are susceptible to impaired functional outcomes and a higher rate of disease recurrence at 12 months, despite no change in surgical margin status. The latter—representing effective tumor excision but impaired oncologic follow-up—may reflect the harm of aggressive PCa, deriving either from delayed detection or treatment. If delays have the propensity to affect outcomes and RP needs to be carried out in a timely manner, how can clinicians be assured of a safe intervention while reducing the risk of COVID-19 infection during hospitalization?

In the setting of a pandemic and to reduce the burden of surgical interventions and their impact on patient health, high-risk PCa patients should be referred to high-volume centres and surgeons, where there is the likelihood of a speedy discharge and use of an enhanced recovery after surgery (ERAS) protocol.

Safe surgery should be performed in COVID-19– free facilities, otherwise postoperative mortality can reach 20%, as reported from the Wuhan experience. In addition, according to the Italian experience, preservation of virus–free areas within mixed facilities proved to be impossible: both caregivers and patients may act as carriers of the infection while asymptomatic, contributing to further nosocomial (hospital acquired) spread. Achievement of an effective COVID-19–free facility should rely on a preoperative quarantine period and laboratory testing to confirm the absence of the virus prior to admission to the institution for both hospital staff and oncology patients.

Once the decision has been taken to undergo surgery the next step is to decide on the type of surgery. Urologist Nathan Lawrentschuk (Peter MacCullum Cancer Centre, Melbourne) suggests that when weighing the risk and benefits of an open, laparoscopic or robotic procedure, it remains a difficult decision³. The theoretical risk of an escalation in COVID-19 transmission posed by laparoscopic surgery needs to be considered. In comparison with open surgery, there are concerns that laparoscopic surgery confers a higher risk from an infection control perspective, of particular importance during the pandemic. This concern arises from the heightened aerosolisation risk associated with desufflation of the pneumoperitoneum (release of gas after a keyhole procedure) and exposure to surgical plumes, particularly with the utilisation of ultrasonic scalpels and electrical surgical devices. Desufflation causes a surgical plume to be created, which is a source of biological contaminants containing blood cells, cell debris and potential viruses. Compared to open procedures, laparoscopic approaches also generally allow improved social distancing between staff. Nonetheless, the benefits of a minimally invasive surgical approach are long established, and these risks remain purely theoretical. No evidence has to date confirmed direct infection of members of a theatre team with the SARS-CoV-2 virus, or other viruses, from either the laparoscopic or open approach. The increased hospital admission in a high-risk environment after open surgery should also not be downplayed to a patient’s overall risk of infection.

With good reason, elective surgery has had to be reduced to ensure capacity within the health system – emergency medicine resources, intensive care beds and protection of staff, with patient safety of paramount importance⁴. Concerns surrounding personal protective equipment also remain, as do modes of spread – relevant to anaesthesia and staff exposure not just in the operating theatre. During this post COVID era, ‘donning’ and ‘doffing’ protocols and the wearing of appropriate PPE have also necessitated stringent observation. As time has progressed, thankfully resources have not been tested to breaking point (here in Australia at least) and time to ‘catch up’ has been provided – as Dr Lawrentschuk says “we can only hope it remains that way”. As the pandemic poses unique challenges, so too should unique solutions be sought to avoid viral transmission while ensuring appropriate cancer treatment and timing during this unpredictable crisis.

References:

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About the Author

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Kalli is an internationally renowned Urological Surgeon, specialising in oncology and robotic surgery. He trained and worked in South Africa, before relocating to Australia where he has worked at Macquarie University Hospital and Westmead Hospital. His passion for what he does extends beyond the operating room, through public health advocacy, education and community awareness of men's health, cancer and sexuality.

Kalli has been involved with the Prostate Cancer Foundation of Australia for many years, advocating for improved cancer care and facilitating community prostate cancer support groups.