



THE SOCIETY
OF REPRODUCTIVE
SURGEONS



A Message from the SRS and ASRM Regarding Surgery During the COVID-19 Pandemic

The COVID-19 pandemic is an emerging, and rapidly evolving crisis. The Society of Reproductive Surgeons (SRS), its members, and our ASRM colleagues are facing the immense impact that COVID-19 is having on our reproductive community, our patients, our families, and our communities. ASRM, along with its affiliate societies and groups, is working to build a common front for addressing the impact this virus has on the surgical aspects of gynecologic and reproductive care. SRS is unique in that we not only perform Minimally Invasive Reproductive Surgery (MIRS) and other more invasive surgeries related to fertility and reproductive care in both men and women, but also provide longer term continuity of care to these patients. Our goal during the COVID-19 pandemic is to provide guidance and recommendations regarding reproductive surgery to our members and their patients in a clear, timely, and accurate manner. Though our understanding of COVID-19 is still evolving, we hope this information helps both the reproductive surgery and MIRS community of professionals, their staff, and their patients.

1. Should I continue to schedule elective surgeries?

Both national calls for action, and many local, regional, state and hospital mandates, have led to the suspension of all elective or non-urgent surgery in order to preserve critical resources, including personal protective equipment (PPEs), ventilators, and trained staff, for more urgent needs, including preparing for what is anticipated to be an enormous surge in affected individuals needing advanced respiratory care in the coming weeks. SRS fully supports these recommendations and mandates, which have the goal of flattening the transmission curve for COVID-19 and minimizing the use of resources that are needed on the front lines for addressing this pandemic.

For many of our patients with symptomatic surgical issues, including fibroids, endometriosis, ovarian cysts, Mullerian anomalies, and other benign conditions, it is reasonable to consider medical therapies to control symptoms until surgery can be scheduled. If medical therapy has been unsuccessful, and the extent of symptoms warrant immediate intervention, then these cases may be considered non-elective or urgent. National and local health department guidelines should be followed in scheduling reproductive surgeries, recognizing that the pandemic, for now, is evolving at different rates in different locations.

2. Has COVID-19 been seen in the reproductive system?

The COVID-19 virus appears to be isolated to the respiratory and gastrointestinal systems. At the time of writing this statement, it does not appear that the virus resides in the female reproductive tract, peritoneal surface, or in peritoneal fluid. There is some evidence that the virus may infect the renal and

male reproductive systems based on the large presence of the Angiotensin Converting Enzyme 2 (ACE2) receptor in these areas, one of the major receptors that the SARS-CoV-2 virus causing COVID-19 attaches to for entry into the human cell. This receptor is rarely, if ever, seen in the female reproductive system. (www.proteinatlas.org/ENSG00000130234-ACE2/tissue)

3. If I must do an urgent laparoscopic surgery (e.g., for an ectopic pregnancy or ovarian torsion), what should I be considering?

The use of electrical or ultrasonic equipment leads to large amounts of aerosolized particles in the smoke or plume. If there are viral particles in the aerosol escaping into the operating room, this can lead to staff exposure. Theoretically, if surgery is directed to the reproductive tract, there does not seem to be clear risk for COVID-19 dispersion. Nevertheless, in-line filters for CO2 insufflation and active smoke evacuation systems should be employed and should be rated, as most are, to trap particles 0.1 microns or larger at 99.999% efficiency. Passive smoke evacuators should be avoided, as they do not allow adequate CO2 circulation and smoke evacuation. Adequate CO2 circulation ensures that smoke is cleared rapidly which reduces the risk that aerosolized particles can escape through leaky trocars or trocar sites.

The use of cautery and ultrasonic devices should be minimized, although in many cases this is unavoidable. At the completion of the procedure, the insufflation of CO2 gas should be stopped, and the smoke evacuator should be allowed to clear all gas. Consider pulling trocars out immediately, but taking care not to entrap bowel, once the gas is removed, instead of opening the trocar valves and allowing the gas to escape at the end of the case.

Procedures should be performed with recommended PPE, including goggles, masks, gloves and gowns. If the patient has symptoms associated with COVID-19, or has recently tested positive, the patient's surgery should be performed in a designated OR room that is appropriate for these cases. The greatest risk for viral transmission will not be from the actual surgery, but rather from the intubation and the viral aerosolization that may occur during this process. N95 masks and other protective gear may be required in these cases.

4. Should I consider an open over a laparoscopic procedure?

At this time, there is no reason to think that an open case is more protective than laparoscopy, as long as adequate PPE and gas/smoke filters are employed. If the patient is symptomatic or COVID-19 positive, communicate with your anesthesiologist to determine if intubation is needed versus a spinal or epidural. This is consistent with recent recommendations from the Joint Task Force of the Chinese Society of Anesthesiology and the Chinese Association of Anesthesiologists (1). A mini-laparotomy can often be used to manage ectopic pregnancy or ovarian torsion, with most of these patients going home the same day. In these cases, a surgical mask, or N95 respirator if the patient is COVID-19 positive or high risk, should be placed on the patient with an oxygen mask placed over the respirator. It may also be prudent that non-anesthesia staff leave the operating room during any intubation and extubation process. Staff should also consider wearing powered air-purifying respirators (PAPRs) during cases where a patient is COVID-19 positive.

5. Will the N95 respirator protect me from COVID-19 during a surgical case?

The virus is 0.125 microns in size, but the N95 respirator can trap particles greater than 0.3 microns. The greatest benefit of NP95 respirator masks is during normal use when working with patients with

aerosolized bacterial infections (bacteria are typically 0.2 to 10 microns) or protecting from respiratory droplets, which are typically greater than 0.3 microns. However, during aerosolization in COVID-19, the virus is often attached to respiratory particles less than 0.1 microns. In this situation, the effectiveness of the N95 respirator is unclear. There are masks that can trap smaller particles, such as the N100. However, one of the greatest risks for viral transmission in the surgical suite seems to be during the intubation/extubation process and not from the actual surgery. Face shields and goggles can protect from fluid splatter, but are not designed to protect from infection by aerosolized particles (2). The risk for infectivity of aerosolized particles is concerning, but it is unclear if respiratory aerosolized virus has a different infectivity than virus aerosolized from the abdomen, including the pelvis and reproductive tract.

REFERENCES

1. Chen et al. "Perioperative Management of Patients Infected with the Novel Coronavirus: Recommendation from the Joint Task Force of the Chinese Society of Anesthesiology and the Chinese Association of Anesthesiologists." *Anesthesiology*, March 19, 2020 (<https://doi.org/10.1097/ALN.0000000000003301>).
2. van Doremalen et al. "Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1." *N Engl J Med*, March 17, 2020 (<https://www.nejm.org/doi/full/10.1056/NEJMc2004973>).