

# The Polish Society of Gynecologists and Obstetricians statement on surgery in gynecology during the COVID-19 pandemic

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## ABSTRACT

The publication presents recommendations on the performance of surgical procedures in gynecology during the COVID-19 pandemic. The recommendations were prepared by the Polish Society of Gynecologists and Obstetricians, based on current knowledge of SARS CoV-2. These recommendations contain the latest guidelines of scientific societies related to the subject of operational procedures.

**Key words:** gynecology, surgery; SARS-CoV-2; COVID-19

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## OBJECTIVES

The purpose of these recommendations is to develop management in gynecological surgery during the Coronavirus disease 2019 (COVID-19) pandemic. The guidelines are based on the latest literature reports and the authors' experience.

## INTRODUCTION

We have been witnessing the COVID-19 pandemic for several weeks. Considering the growing problem related to the preparation and surgical procedure in gynecology, the Polish Society of Gynecologists and Obstetricians has developed recommendations in the field of dealing with patients requiring emergency, urgent and elective surgery. The purpose of the publication is to collect and present the most current information on surgical procedures during the Severe acute respiratory syndrome coronavirus 2 (SARS CoV-2) pandemic. The recommendations are based on the authors' experience and contain the latest guidelines of scientific societies related to the subject of operational procedures like

The American Association of Gynecologic Laparoscopists, The American College of Surgeons, The Society of American Gastrointestinal and Endoscopic Surgeons, The Society of American Gastrointestinal and Endoscopic Surgeons, The European Association for Endoscopic Surgeons, The Royal College of Surgeons of England, The Royal College of Surgeons of Edinburgh and The Royal College of Surgeons of Ireland, and The Spanish Association of Surgeon and The Society of Polish Surgeons. The authors reserve the right to update recommendations, according to the latest scientific reports and the development of a pandemic.

## RECOMMENDATIONS

The Polish Society of Gynecologists and Obstetricians recommends the following:

1. A multi-specialist team should be responsible for making decisions and prioritizing patients' surgical treatment.
2. If a patient is qualified for surgery during the COVID-19 pandemic, the urgency of the surgical procedure should be determined. We recommend the modified

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**Table 1. Suggestions for handling the scheduling of gynecological surgical cases during COVID19 pandemic [1]**

<b>Emergency surgeries — no delay</b>
Ectopic pregnancy Spontaneous abortion Adnexal torsion Rupture of tubal-ovarian abscess Tubal-ovarian abscess not responding to conservative therapy Rupture of ovarian cysts not responding to conservative therapy Acute and severe vaginal bleeding Cesarean section Emergency cerclage of the cervix based on pelvic exam/USG findings
<b>Surgeries that if significantly delayed could cause significant harm — urgent surgery</b>
Cancer or Suspected cancer Cerclage of the cervix to prevent premature delivery based on history Legal pregnancy termination
<b>Surgeries that could be delayed for a few weeks — elective surgery</b>
Chorionic villus sampling/amniocentesis D&C with or without hysteroscopy for abnormal uterine bleeding when cancer is suspected Cervix and cervical canal biopsy if cytology suspected Cervical conization or LEEP to exclude cancer if p16/Ki-67 test positive Excision of precancerous or possible cancerous lesions of the vulva
<b>Surgeries that can be delayed several months — elective surgery</b>
Surgery for fibroids (when sarcoma is not suspected) Surgery for endometriosis, pelvic pain Surgery for adnexal masses (when are most likely benign) Surgery for pelvic floor prolapse Surgery for urinary and/or fecal incontinence Therapeutic D&C for abnormal uterine bleeding when cancer is not suspected Cervical conization or LEEP for high grade squamous intraepithelial lesions Infertility procedures Genital plastic surgery

D&C — dilation and curettage; LEEP — loop electrosurgical excision procedure; p16 — protein encoded by the cyclin-dependent kinase inhibitor 2A; Ki-67 — protein encoded by the *MKI67* gene

triage proposed by the American College of Surgeons “COVID 19: Elective Case Triage Guidelines for Surgical Care” — Table 1 [1].

3. We recommend dividing surgical procedures into three categories: emergency, urgent and elective. Below we present an algorithm for emergency, urgent (Fig. 1) and elective procedures (Fig. 2) [2–4].

### Emergency procedure

Each patient should be considered potentially infected with SARS-CoV-2. We recommend conducting an epidemiological questionnaire with risk assessment, measuring body temperature, assessing typical symptoms of SARS-CoV-2 infection and performing a SARS-CoV-2 test.

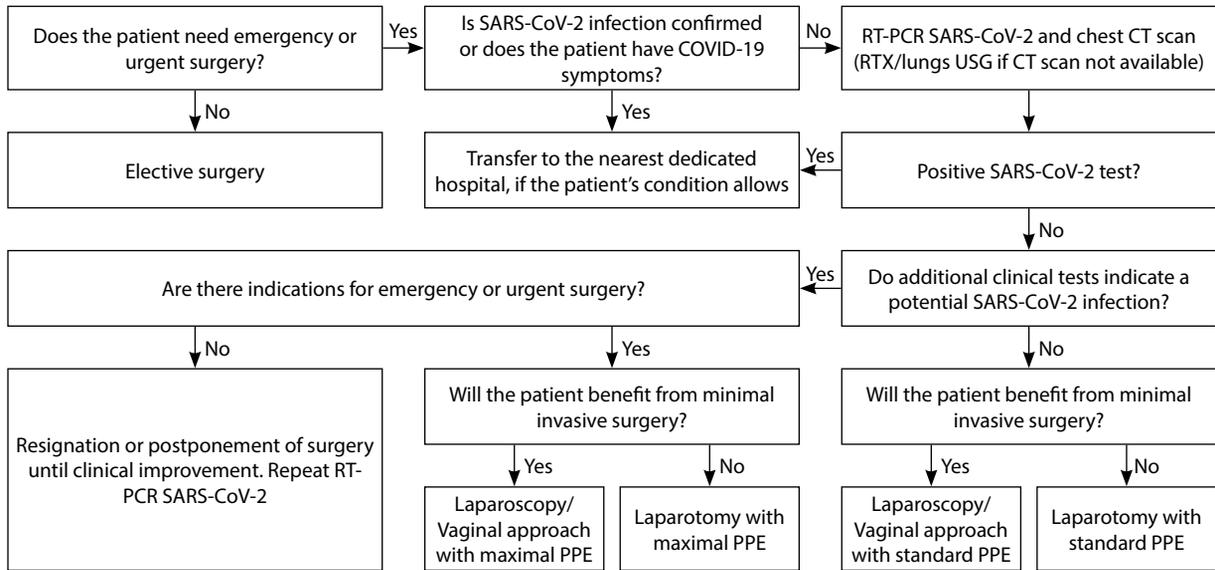
Reverse-transcriptase polymerase chain reaction (RT-PCR) is the gold standard. Before surgery, it is recommended to perform a SARS-CoV-2 test if the patient’s condition allows waiting for the test result. Chest computer tomography (CT)/radiograph (X-Ray) and 3 quadrant lung ultrasonography (USG) may also be helpful to assess the risk of pneumonia. If it is necessary to perform a CT scan of the abdominal cavity, it is recommended to extend the test by a CT scan of the chest. In situations where conservative therapy is possible, it should be performed. The typical laboratory findings of COVID-19 patients should also be considered, such as normal leukocytes or mild leukopenia, decreased platelets and lymphocytes, elevated CRP, D-dimer, lactate dehydrogenase (LDH), serum ferritin and Interleukine 6 (IL-6) [5]. In all cases where epidemiological assessment is not possible, we recommend treating the patient as a positive SARS-CoV-2 result.

### Urgent procedures

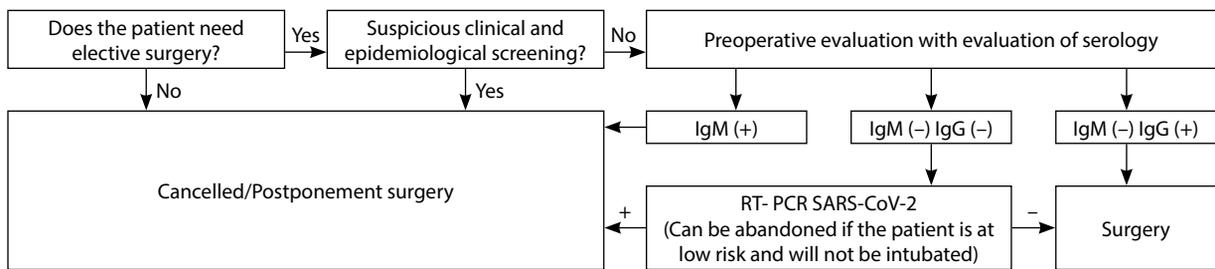
Each patient admitted to the ward must undergo a thorough epidemiological questionnaire with risk assessment, measuring body temperature and assessment of the most common symptoms of SARS-CoV-2 infection. Each patient requiring urgent surgery reports a CoV-2 test result or has a swab taken in the clinic no earlier than 2 days before admission. RT-PCR is the gold standard. Suspected or positive patients should be referred to hospitals dedicated to patients with SARS-CoV-2 (dedicated hospitals). Initial diagnostics should include a CT or X-Ray of the chest or alternatively 3 quadrant lung USG if CT scan not available. Procedures for oncological indications should be approved by multidisciplinary oncological consultations. In the absence of the possibility of using alternative treatment and threatening the progression of cancer, the patient should be qualified for surgical treatment.

### Elective procedures

Each patient admitted to the ward must undergo a thorough epidemiological questionnaire with risk assessment, measuring body temperature and assessment of the most common symptoms of SARS-CoV-2 infection. Each patient requiring elective surgery reports a CoV-2 test result or has a swab taken at the outpatient clinic no earlier than 2 days before admission. RT-PCR is the gold standard. Keep in mind that RT-PCR may remain positive for as long as 6 weeks with SARS-CoV-2 infection. Pharyngeal virus shedding is highest during the first week of symptoms. Negative RT-PCR tests may result from improper sampling techniques, low viral load in area sampled and mutations in viral genome. However, due to the limited possibilities of performing RT-PCR testing, we allow the possibility of testing for antibodies if RT-PCR is not available. Antibody testing confirms



**Figure 1.** Algorithm for emergency and urgent gynecological procedures; PPE — Personal protective equipment; RT-PCR — reverse-transcriptase polymerase chain reaction; CT — computer tomography; USG — ultrasonography



**Figure 2.** Algorithm for elective gynecological procedures; RT-PCR — reverse-transcriptase polymerase chain reaction; IgM — Immunoglobulin M; IgG — Immunoglobulin G

previous exposure and immunity to SARS-CoV-2 but may not be specific. Because of this, surgery should be delayed at least 14 days from positive antibody test or RT-PCR SARS-CoV-2 should be performed to validate no active infection [4, 6, 7].

**Recommended personal protective equipment**

In the current pandemic situation, there are three types of patients requiring surgical interventions:

1. Patient with confirmed SARS-CoV-2 infection or high suspected infection, referred and operated in dedicated hospitals.
2. Patients with suspected SARS-CoV-2 infection or with equivocal coronavirus testing.
3. Patients who are not suspected of having an infection or have a negative RT-PCR SARS-CoV-2 test or with positive IgG antibodies indicating a disease history.

In the first and second case, we recommend maximal personal protective equipment, which should include:

1. Surgical disposable mask and disposable head cap for patient
2. Filtering facepiece certified by the U.S. National Institute for Occupational Safety and Health (N95)/ Filtering facepiece certified by European Union — EN 149 standard (FFP3) mask (FFP2 if there is no FFP3 mask)
3. Surgical mask
4. Protective goggles and visors
5. Disposable head caps
6. Waterproof disposable overall
7. Waterproof barrier coat
8. Disposable three pairs of nitrile gloves
9. Disposable long shoe covers

For patients with low risk or with negative RT-PCR SARS-CoV-2 swab or with immunologically confirmed recovery from COVID-19, we recommend standard personal protective equipment, which should include:

1. Surgical disposable mask and disposable head cap for patient

2. Surgical mask
3. Protective goggles or visors
4. Disposable head caps
5. Waterproof barrier coat
6. Disposable pair of nitrile gloves
7. Disposable shoe covers

In addition, participation in surgeries should be limited only to personnel essential to the safe performance of the surgery in order to avoid exposure and preserve PPE resources [8, 9].

### Surgical approach

The available literature lacks conclusive evidence for SARS-CoV-2 transmission through an abdominal route from patients to the operating theatre. The main problem is the aerosolization of particles during electrosurgery and the use of ultrasound devices during laparotomy and transvaginal surgery. It is important to be aware of the risks and be able to deal with them. It should be emphasized that the decision on the use of a particular technique should be made individually in relation to the patient, the disease and the gynecologist's experience. However, according to publications, minimally invasive surgery (vaginal and laparoscopic access) is associated with lower mortality, shorter hospitalization and lower hospital costs. Laparoscopy allows for faster discharge from hospitals and less dealing with surgical wounds and surgical site infections and can reduce the aerosol spread in relation to open surgery. [2, 8–10]. It should also be emphasized that transvaginal surgery under regional anesthesia is appropriate to avoid aerosol-generating intubation and extubation. [11, 12].

### Laparoscopy/robot-assisted approach

The following procedures should be followed during laparoscopic and robot-assisted surgeries:

1. Pre-operative examination of laparoscopic equipment
2. Set up electrosurgical and ultrasonic devices to minimize production of plume
3. If available, use closed smoke evacuation/filtration system with ultra low particulate air filtration (ULPA) capability
4. Use laparoscopic suction to remove surgical plume and desufflate the abdominal cavity
5. Pneumoperitoneum loss into the theatre is prohibited
6. Use low intra-abdominal pressure 8–11 mmHg
7. Avoid rapid desufflation or loss of pneumoperitoneum
8. Tissue extraction should be performed with minimal CO<sub>2</sub> loss
9. Minimize blood/fluid droplet spray or spread
10. Minimize leakage of CO<sub>2</sub> from trocars [11–13]

### Vaginal/laparotomic approach

The following procedures should be followed during vaginal surgeries:

1. Dissection and vascular control using non-electrosurgical techniques where possible
2. Set up electrosurgical and ultrasonic devices to minimize production of plume
3. Monopolar devices are preferred
4. If available, use smoke evacuation/filtration system with ULPA capability
5. Use a suction device to remove any surgical plume as it is produced
6. Minimize blood/fluid droplet spray or spread
7. Stoma formation rather than anastomosis to reduce post-operative critical care for complications [11–13]

### SUMMARY

These recommendations standardize and summarize publications on women's surgery during the SARS-CoV-2 pandemic. The authors are aware that coronavirus situation is very dynamic and unpredictable, which is why we plan to update our remarks in the near future, along with the latest scientific data on pandemic.

### Conflict of interest

The authors declare that there is no conflict of interest in the presented recommendations.

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