

Gynecological surgeries during the COVID-19 pandemic in Turkey

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Whilst urgent gynecological and oncologic operations have continued, the SARS-CoV-2 (COVID-19) pandemic has impacted patient management through postponement of elective surgeries.^{1–5} Cohen et al.⁶ suggested that during the pandemic each patient should be evaluated individually with added measures for the protection of both the patient and healthcare professionals. Therefore, we conducted a study evaluating patients' and hospital workers' health status during the pandemic in Turkey.

This prospective follow-up study was a re-examination of clinical and post-discharge telephone call survey data of patients for whom major gynecological surgeries were performed at our hospital during the COVID-19 pandemic between March 10 and April 20, 2020.

Ethical approval for this study was provided by the Research Ethics Committee (2020/76) of The Zeynep Kamil Women's and Children's Disease Training and Research Hospital, where COVID-19 patients were not primarily treated. Informed consent was obtained from all patients. Statistical analyses were performed using SPSS version 20 (IBM, Armonk, NY, USA).

Surgical attendants were protected with surgical masks, caps, gowns, sterile gloves, and face shields during surgery. The choice of surgical mask type and face shield was subject to the availability of equipment and discretion of the medical staff and surgeons. Only essential personnel remained in the operating room during patient intubation/extubation. Our hospital did not have a negative-pressure operating theater, and a high-efficiency particulate air filter was not available in the operating rooms.

During the study period, 1515 surgical procedures were performed. After excluding ambulatory surgical procedures (Fig. 1), 141 operations remained to be analyzed. We managed to reach 127 (90%) of these patients within 14 postoperative days. Since none of the patients presented with COVID-19 symptoms, reverse transcriptase-polymerase chain reaction (RT-PCR) and antibody testing had not been

performed preoperatively. During telephone calls, patients were asked whether they had symptoms including fever or cough, and whether they had a positive COVID-19 test following their surgery. The type of surgery, indications, pathological results, length of stay in intensive care unit and/or hospital, blood transfusions, and data including any symptoms/tests for COVID-19 (RT-PCR testing, detection of SARS-CoV-2 antibodies, chest CT, etc.) obtained during the telephone conversations are presented in Table 1.

After discharge, fever was reported in three patients (2.4%) and cough in nine patients (7.1%). COVID-19 tests were performed in two of the three patients with fever, and four of the nine patients with cough. In the postoperative period 1.6% (2/127) of all patients tested positive for COVID-19.

As the pandemic progressed, we found that the total number of surgeries decreased by 77.9%, and the number of oncologic surgeries decreased by 20% in the last 3 weeks of the study period. However,

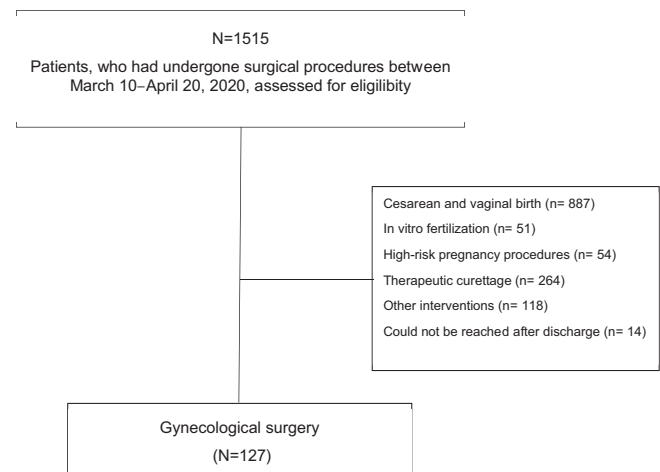


FIGURE 1 Flow diagram of the study.

TABLE 1 Surgical and clinical characteristics of the study population (N = 127).

	Percentage (%)	N (number)
Type of surgery		
Abdominal approach	67.7	86
Laparotomy (L/S)	26.8	34
Laparoscopy (L/T)	40.9	52
Vaginal approach	32.3	41
Hysteroscopy	15.0	19
Conization	7.1	9
TOT or TVT	4.7	6
VH	1.6	2
Other	3.9	5
Indications of operation		
Emergency	4.7	6
Ectopic pregnancy	10.2	13
Adnexal mass	20.5	26
Malignancy	7.9	10
Myoma uteri	10.2	13
Abnormal bleeding	11.9	15
Cervical dysplasia	8.7	11
Infertility	10.2	13
Genital prolapse	6.3	8
Urinary incontinence	4.7	6
Other	4.7	6
Pathology results		
Benign	85.8	109
Malign	14.2	18
Cervical cancer	1.6	2
Endometrial cancer	6.3	8
Ovarian cancer	5.5	7
Borderline ovarian tumor	0.8	1
Length of stay in hospital		
≤1 day	60.6	77
2 day	18.1	23
3 day	8.7	11
4 ≤ day	12.6	16
Length of stay in ICU		
None	83.5	106
1 day	11.0	14
2 day	5.5	7
Abdominal drainage		
No	63.8	81
Yes	36.2	46
Blood transfusion		
No	87.4	111
Yes	12.6	16

(Continues)

TABLE 1 (Continued)

	Percentage (%)	N (number)
Polyclinic visits		
1	59.1	75
2	33.0	42
3≤	7.9	10
Fever^a		
No	97.6	124
Yes	2.4	3
Coughing^a		
No	92.9	118
Yes	7.1	9
Covid-19 testing^a		
Test positive and use of CT ^a	1.6	2

Abbreviations: CT, Computerized tomography; ICU, Intensive care unit; TOT, Transobturator tape; TVT, Tension-free vaginal tape; VH, Vaginal hysterectomy.
^aAfter discharge.

proportionally speaking, the ratio of malignant cases operated on at our hospital continued to increase in parallel with the increasing incidence of COVID-19 and intensifying precautions (Table 2). The weekly proportion of malignant cases within the total number of major surgical interventions are presented in Figure 2. Nationwide COVID-19 cases and all data from this study within 6-week time segments are shown in Table 2.

During the COVID-19 outbreak, all health institutions in our country were rearranged to serve patients who were diagnosed with or suspected of having COVID-19 while scheduled elective surgeries were postponed.^{4,7}

Since our institution did not accept known or suspected cases of COVID-19, we did not change our strategy in planning for gynecologic oncological surgeries. Therefore, due to additional referrals, we operated on a higher proportion of malignant surgical cases during the 6 week period.

Despite postponing elective cases, we performed a considerable number of surgical procedures. Whilst 127 major gynecological surgical procedures were performed, two patients developed COVID-19 symptoms following discharge. Meanwhile, eight healthcare workers (3 doctors, 2 nurses, 2 personnel, and 1 security guard) began treatment for COVID-19 as of May 15. Since COVID-19 symptoms appeared between 10 and 11 days after discharge, later than reported in several other studies, we can deduce that these patients had not been contaminated during their hospital stay.²⁻⁴ Considering a total of 453 healthcare employees in the obstetrics and gynecology department, an 8/453 (1.7%) disease prevalence is not comparable with the prevalence reported in Istanbul, the worst hit city by the pandemic.

Preoperative COVID-19 test results for both patients and health professionals are lacking in Turkey due to the fact that regular screening of preoperative patients and healthcare professionals for

TABLE 2 Clinical data of this study and COVID-19 cases in Turkey over 6 weeks

	1st Week	2nd Week	3rd Week	4th Week	5th Week	6th Week
	March 10–16	March 17–23	March 24–30	March 31– April 6	April 7–13	April 14–20
Nationwide case ^a						
New	47	1482	9298	19390	30832	29931
Total	47	1529	10827	30217	61049	90980
Active	46	1492	10497	28242	55796	75410
Nationwide death ^a						
New	1	36	131	481	647	844
Total	1	37	168	649	1296	2140
Nationwide recoveries ^a						
New	0	0	162	1164	2631	9473
Total	0	0	162	1326	3957	13430
Surgical procedures ^b						
Laparoscopy	28 (38.9)	9 (37.5)	4 (50.0)	4 (44.4)	1 (16.7)	6 (75.0)
Laparotomy	15 (20.8)	3 (12.5)	4 (50.0)	5 (55.6)	5 (83.3)	2 (25.0)
Vaginal approach	29 (40.3)	12 (50.0)	–	–	–	–
Age ^c	41.0 (22–70)	38.5 (20–81)	41.5 (24–66)	53.0 (30–70)	42.0 (31–60)	37.0 (23–48)
Pathology results ^b						
Benign	67 (93.1)	22 (91.7)	5 (62.5)	4 (44.4)	4 (66.7)	7 (87.5)
Malign	5 (6.9)	2 (8.3)	3 (37.5)	5 (55.6)	2 (33.3)	1 (12.5)
Blood transfusion ^b	3 (4.2)	1 (4.2)	5 (62.5)	3 (33.3)	3 (50.0)	1 (12.5)
Abdominal drain ^b	15 (20.8)	6 (25.0)	7 (87.5)	8 (88.9)	6 (100.0)	4 (50.0)
Length of stay in hospital ^c	1.0 (0–13)	1.0 (1–8)	2.5 (1–7)	4.0 (1–10)	3.0 (2–5)	2.0 (1–4)
Length of stay in ICU ^c	0.0 (0–2)	0.0 (0–1)	0.5 (0–2)	1.0 (0–2)	0.5 (0–1)	0.0 (0–1)
Duration of surgery ^d	80 (10–270)	60 (20–150)	150 (60–210)	180 (60–210)	180 (60–180)	90 (60–240)
Fewer ^a	3 (4.2)	–	–	–	–	–
Cough ^b	8 (11.1)	1 (4.2)	–	–	–	–
COVID-19 testing ^b	4 (5.6)	–	–	–	–	–
Use of CT and positive test ^a	2 (2.8)	–	–	–	–	–

Abbreviations: CT, Computerized Tomography; ICU, Intensive Care Unit.

^aNumber (n).

^bn (percent [%]).

^cMedian (Minimum[*min*]-Maximum[*max*]) (day).

^dMedian (min-max) (minute).

COVID-19 is restricted by national regulations in the absence of suggestive symptoms. Surgical procedures performed within the aforementioned time were not all covered. We specifically performed surgeries for major gynecologic operations including malignant cases. On account of the fact that our hospital did not take on the duty of sharing the pandemic load of other institutions, these figures do not represent all gynecologic surgery cases and healthcare professionals' COVID-19 status during the pandemic period. Therefore, ongoing surgical procedures in multi-disciplinary hospitals during the pandemic and their results need to be analyzed in a similar fashion to other published studies.⁸

The present study found that surgical operations could continue during the COVID-19 pandemic in a specialty hospital (i.e. in a

women's and children's diseases hospital) that was not primarily serving as a pandemic hospital. This conclusion could possibly be extended to other specialty hospital settings. The prevalence of COVID-19 in specialty hospitals could be lower than the regional prevalence; therefore, performing surgeries may be safer for both patients and healthcare providers in these specialty clinics.

AUTHOR CONTRIBUTIONS

SA, UKO, SEO performed the literature review. EK and UKO acquired the data. MA, SA, and EK designed the study. All authors contributed to drafting the manuscript critically for intellectual content, and approved the final version of the manuscript.

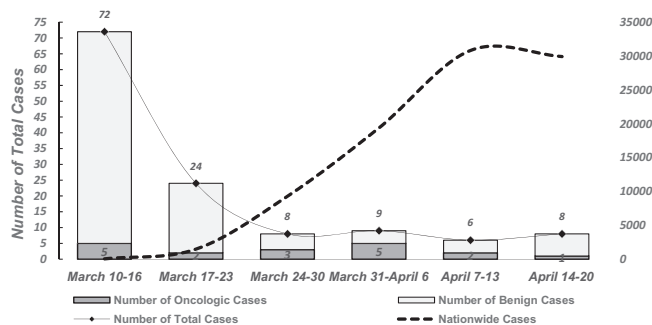


FIGURE 2 Number of new COVID-19 cases and surgeries in our institution.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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Gynecology

Impact of cervicitis on performance of cervical cancer screening using HRHPV testing and visual evaluation in women living with HIV in Botswana

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