JMSR
Journal of Medical and Surgical Research

Research Article

ISSN: 2351-8200

JMSR 2020 Vol. VII, n 2: 838- 843

EVALUATION OF TURKISH SURGEONS KNOWLEDGE AND AWARENESS LEVEL OF SARS-CoV-2 AND THEIR COMPLIANCE WITH PERSONEL PROTECTIVE MEASURES: A SURVEY STUDY

Afig Gojayev, Ogün Erşen*, Ali Ekrem Ünal, Salim Demirci
Ankara University Medicine Faculty
General Surgery Department, Clinic of Surgical Oncology, Ankara, Turkey

ABSTRACT

Introduction : Since December 2019, the whole world has been fighting the new coronavirus pandemic, and healthcare professionals are at the forefront of this fight. Surgeons also had to react to this unprecedented clinical challenge by reorganizing their daily work. The aim of this study is to evaluate surgeons' knowledge and awareness of the novel coronavirus, their role in the pandemic process, their compliance with personal protective measures, and their attitude during surgery.
Material Method : This survey includes surgeons working in different branches in different regions of Turkey. A survey consisting of 21 questions was prepared to evaluate the demographic characteristics of the participants, surgical branch and workplace characteristics, general information about COVID-19, contact status and their attitudes in surgical operations during the pandemic process.
Results : A total of 231 forms were evaluated. As a result of the survey, it was seen that many surgeons were involved in the treatment of COVID-19. Although most surgeons have had a PCR test, the number of infected surgeons has been low. Personal protective measures have been followed. About half of surgeons are in favor of performing minimally invasive surgery. However, it was observed that the necessary precautions to reduce the risk of COVID-19 transmission were not taken into account during minimally invasive surgery.
Discussion : Turkish surgeons play an important role in this war by taking part in both the primary treatment of the new coronavirus and the surgical treatment of patients with identified or suspected COVID-19. Although they have some different attitudes regarding preoperative preparation and surgical strategy, Turkish surgeons appear to adhere to personal protective measures seriously. During the pandemic period, information is needed about the necessary precautions during minimally invasive surgery.

Keywords: Coronavirus; pandemics; surgery; surgeons, Turkey.

Corresponding Author:

Ogün Erşen, **MD.**
Address: Ankara Üniversitesi Tıp Fakültesi Cebeci Araştırma ve Uygulama Hastanesi, Balkiraz Mahallesi, Tıp Fakültesi Cd. No:23, 06620 Mamak/Ankara, Turkey.
Phone: + 90 536 749 4399
Fax: + 90 (0312) 310 6371
E-mail: ogunersen@hotmail.com

*****Published in December 31, 2020.*

doi: 10.46327/msrjg.1.000000000000xxx
doi url: https://doi.org/10.46327/msrjg.1.000000000000xxx

INTRODUCTION

In December 2019, a number of pneumonia patients caused by the novel coronavirus (COVID-19) emerged in Wuhan, China [1]. Covid-19 epidemic has spread very quickly all over the world, including Turkey. Healthcare professionals are at the forefront in the fight against the COVID-19 pandemic, which has caused many social and economic impacts all over the world.As healthcare professionals take a role in the treatment of this disease, the risks of exposure to the disease and getting sick increase, and this also causes the reduced health manpower in the fight against the COVID-19 outbreak [2].As of

JMSR
Journal of Medical and Surgical Research
Research Article
ISSN: 2351-8200
JMSR 2020 Vol. VII, n 2: 838- 843

February 11, 2020, 1700 healthcare workers have been infected with COVID-19 in China. In Italy (as of March 15), 2026 healthcare workers have been infected [3]. While healthcare professionals are worried about both themselves and their relatives getting sick, they also do their job and try to treat their patients.Turkish surgeons play an important role in this war by taking part in both the primary treatment of the new coronavirus and the surgical treatment of patients with identified or suspected COVID-19.During the pandemic process, surgeons experienced a number of changes in their daily operating practices.Most of the surgeons in Turkey during this period made only emergency and cancer cases [4].During the pandemic process, some guidelines have been identified regarding personal protective measures for surgeons. Some algorithms have been developed for the use of personal protective equipment and compliance with preventive measures during elective-emergency surgery or during outpatient clinic examination [5].Having sufficient information about the disease, using the necessary protective equipment and applying infection control protocols will prevent the spread of this infection among surgeons.In this survey study consisting of 21 questions, we aimed to learn the general knowledge and awareness level of surgeons about COVID-19, their role in the pandemic process, their compliance with personal protective measures and their attitude during surgery.

MATERIAL AND METHODS

This survey includes surgeons working in different branches in different regions of Turkey.This study was approved by the Ministry of Health, General Directorate of Health Services and Ankara University Faculty of Medicine Ethics Committee (Decision number: İ7-469-20).A survey consisting of 22 questions was prepared to evaluate the demographic characteristics of the participants, surgical branch and workplace characteristics, general information about COVID-19, contact status and their attitudes in surgical operations during the pandemic process.Google forms (Google Inc, California, USA) were used in the preparation of the survey.Surveys were sent to all surgeons who could be reached(371 surgeon), to their phones or e-mail addresses via social media applications.Access to the survey was provided between 21-30 August 2020.Two hundred thirty six surgeons participated in the survey and answered the questions. During the evaluation, 5 forms were excluded due to missing information.Most of the participants were from Ankara (161 surgeons).Results were evaluated after the survey had expired and results were expressed as mean ± standard deviation and numbers with percentages (%).

RESULTS

At the end of the survey period, the total number of participants reached 236 in 10 days. During the evaluation, 5 forms were excluded due to missing information. A total of 231 forms were evaluated. When the demographic data of the participants were questioned, it was seen that 74% of the participants were male and approximately half (50.6%) of them were between the ages of 25-40. Figure 1 shows the institution where the participants work.

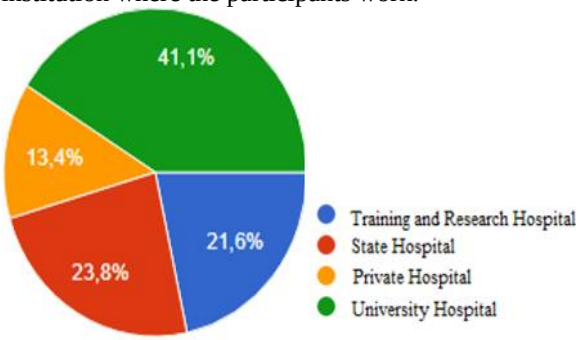

Figure 1. Hospital types where the participants work.

Most of the participants were surgeons working in general surgery (50%; n = 116), urology (14.3%; n = 33) and obstetrics (12.1%; n = 28) departments. The least participation was from maxillo-facial and oral surgery (0.9%; n = 2). Covid-19 positive patient contact status of the participants was questioned. It was determined that 24.2% of surgeons (n = 56) worked in the service where patients with Covid-19 were treated, and 11.3% (n = 26) participated in the surgery of the patient who was Covid-19 positive (Figure 2). COVID-19 test was performed for 81.8% (n = 189) of surgeons themselves. Three percent (n = 7) of the participants had COVID-19 positivity and treatment.

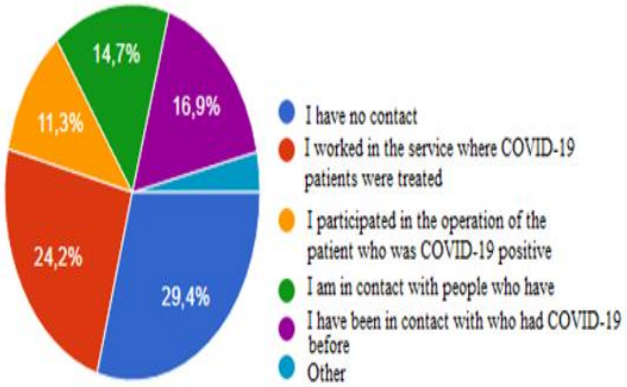

Figure 2.COVID-19 contact status of the participants.

JMSR
Journal of Medical and Surgical Research
Research Article
ISSN: 2351-8200
JMSR 2020 Vol. VII, n 2: 838- 843

Surgeons' knowledge of basic information about COVID-19, ways of transmission, clinical and laboratory findings and diagnostic methods were also questioned.Participants' attitudes towards pre-operative preparation of asymptomatic patients in terms of COVID-19 during the pandemic period were questioned. It was found that 43.7% (n=101) of the surgeons had a PCR test 24 hours before the operation, 34.2% (n=79) 48 hours before the operation, and 3.9% (n=9) 72 hours before the operation.13% (n = 30) of the participants do not have PCR on asymptomatic patients.

Surgeons' attitudes towards the use of personal protective equipment were also questioned.Figure 3 shows the surgeons' attitudes towards personal protective equipment while working in the surgical service or outpatient clinic.It is observed that surgeons use surgical masks, surgical gowns and gloves more frequently in the outpatient clinic or service.It is seen that approximately half of surgeons use N95 mask in the operation of COVID-19 negative patients (Figure 4). Other personal protective equipment materials are used less.All elements of personal protective equipment were widely used in the operation of the patient whose preoperative PCR test was positive (Figure 5).

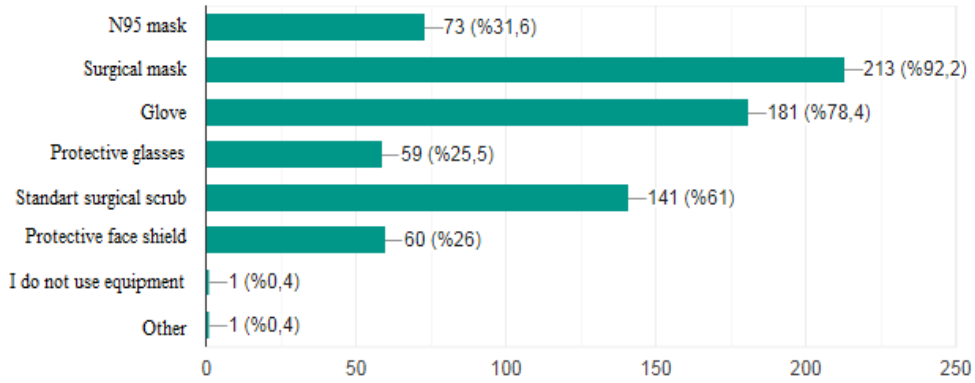

Figure 3. Surgeons' attitudes to using personal protection equipment in policlinic or service.

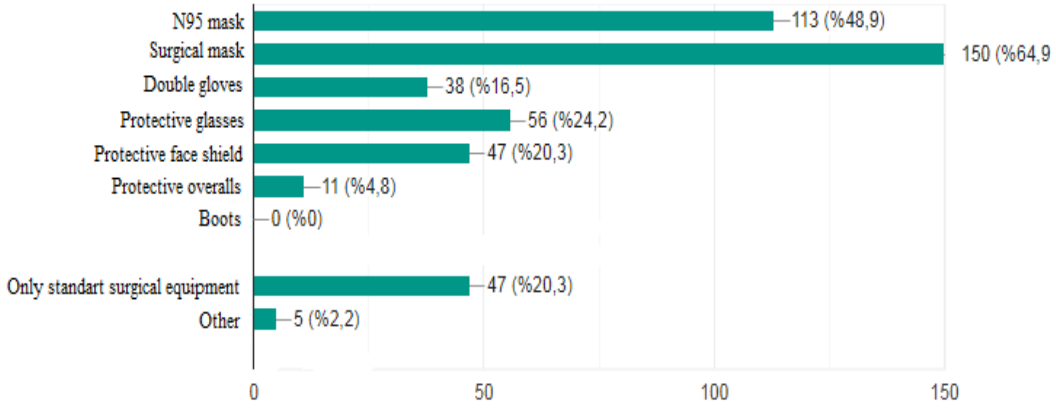

Figure 4. Surgeons' attitudes to using personal protection equipment in COVID-19 negative patient operation.

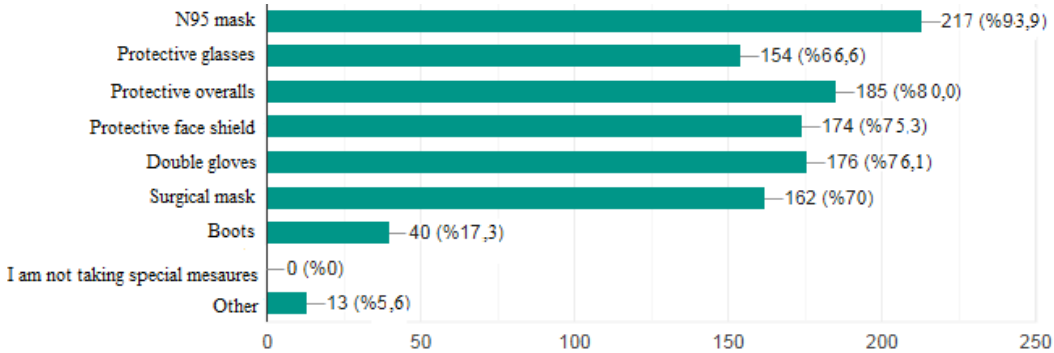

Figure 5. Surgeons' attitudes to using personal protection equipment in COVID-19 positive patient operation.

JMSR
Journal of Medical and Surgical Research
Research Article
ISSN: 2351-8200
JMSR 2020 Vol. VII, n 2: 838- 843

Considering the current guidelines and protocols, it was questioned which issues Turkish surgeons attach importance to in the surgery during the pandemic period.It was observed that approximately 81% (n=187) of the surgeons were not in the operating room during intubation and participated in the operation with a limited number of people, and 64% (n = 144) did not open the operating room doors unless necessary.When the surgeons' attitude was questioned in the patient who had suspicious symptoms in terms of COVID-19, although the elective preoperative PCR test was negative, it was determined that 66% wanted to exclude the COVID-19 condition by requesting Thorax CT.The attitude of 19% of the participants was to accept this patient as positive and to perform the surgery by taking appropriate precautions accordingly.

Participants' attitudes were questioned in a patient who had a history of contact with a COVID-19 positive patient before elective surgery.Approximately 68% of the surgeons (n = 157) stated that the patient who had a history of contact with a positive patient before elective surgery, even if the PCR test was negative, they postponed the operation for 14 days later.

Figure 6 shows the surgeons' attitude towards minimally invasive surgery (laparoscopic; thoracoscopic) during the COVID-19 pandemic.It was seen that approximately half of the Turkish surgeons thought that this type of surgery could be performed in patients with COVID-19 PCR negative.30% of the surgeons stated that they were hesitant about minimally invasive surgery during the pandemic period.Surgeons who performed this type of surgery during the pandemic period were asked what precautions they applied while performing minimally invasive surgery. The survey revealed that most of the participants did not take any special precautions when performing minimally invasive surgery.

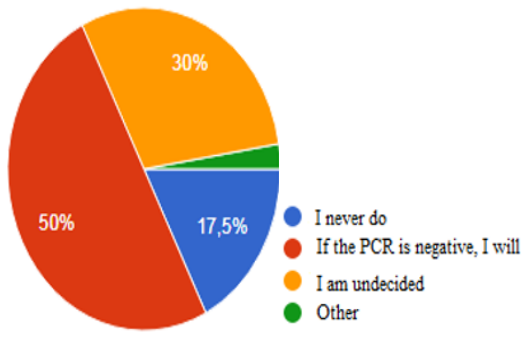

Figure 6. Surgeons' attitude towards minimally invasive surgery.

DISCUSSION

Healthcare systems around the world are struggling with the COVID-19 pandemic known as the coronavirus disease. The recent global spread of COVID-19 has caused considerable concern among healthcare professionals. Sahu et al. in his meta-analysis, the rate of healthcare workers who were SARS-CoV-2 positive among all COVID-19 patients in general was approximately 10% [6].According to the official statement of the Ministry of Health of Turkey until now in Turkey, 29 thousand 865 health workers caught coronavirus, 52 health worker has lost his life.Surgeons, who are always ready to respond to medical disasters for the community, are also at the forefront of the fight against the new coronavirus in Turkey.It is very important for surgeons, who have played an important role in the war against the new coronavirus, to protect themselves firstly in order to achieve victory against the epidemic in Turkey.In Turkey, health professionals and surgeons taken many measures to protect themselves [7, 8]. Following these precautions will prevent the spread of the new coronavirus among surgeons and will also make it easier for us to achieve victory in the fight against COVID-19.

About half of the survey participants were general surgeons. As a result of the survey, it was seen that 24.2% of surgeons worked in the ward where COVID-19 patients were treated, and 11.3% participated in the surgery of patients with COVID-19 identified.These figures indicate that surgeons in Turkey plays an important role in the fight against the new coronavirus. When we look at the world experience, during the pandemic process, many surgeons in Italy, especially in Lombardy region, worked in intensive care or emergency services [9].This situation is not only related to the insufficient number of healthcare personnel and the excessive workload, but also can be explained by the sufficient experience and knowledge of surgeons in forty patient care. It is because of his close role in the fight against the new coronavirus that 81.8% of the participants were tested for PCR and 6% (n = 14) were COVID-19 positive.As a result of this study, it is seen that Turkish surgeons answered the questions including basic, clinical and laboratory findings about COVID-19 with a high rate correctly and have sufficient theoretical knowledge.

As can be understood from the survey, most of the Turkish surgeons (87%) had a preoperative routine PCR test on patients who were asymptomatic in terms of COVID-19. However, there is a difference in the timing of the preoperative PCR test. Some surgeons performed a PCR test 24 hours before

JMSR
Journal of Medical and Surgical Research
Research Article
ISSN: 2351-8200
JMSR 2020 Vol. VII, n 2: 838- 843

surgery, some 48 hours before and others 72 hours before surgery.Thirteen percentof the participants did not require PCR testing in asymptomatic patients. As can be seen from the survey, the number of surgeons who are in contact with positive or suspected patients is not small.Especially, cancer patients can take a long time to prepare for surgery after hospitalization. Considering this, although patients were asymptomatic and COVID-19 negative prior to hospitalization, they may be infected with COVID-19 while in hospital.Surgery increases the mortality due to the new coronavirus, especially in cancer patients [10]. Therefore, in our opinion, while the disease has become so widespread, necessary preoperative measures such as PCR testing should be taken even if the patient is asymptomatic. In the literature, routine testing is recommended for COVID-19 before elective or emergency surgery [11].

It is seen that Turkish surgeons give superiority to personal protective equipment (PPE) such as surgical masks and gloves in the service or outpatient clinic.In the operating room conditions, it is seen that the N95 mask is frequently used in the COVID-19 negative patient and the boot is not used at all, and all the materials including personal protective equipment are widely used in the COVID-19 positive patient.According to the Spanish Association of Surgeons, all patients are considered positive even in cases where COVID-19 has not been confirmed during the pandemic period, and healthcare personnel are recommended to use personal protective equipment [11]. PPE is very important in surgical intervention or procedures performed in the operating room (intubation, regional anesthesia, catheterization), which are considered as "close contact".Personal protection equipment, as established by Spanish Royal Decree 773/1997 regarding usage, provides effective protection against infec- tion [11].

When the Turkish surgeons were questioned during the pandemic period and their importance during the surgical procedure, it was determined that they were not present in the room during intubation, participated in the surgery with a limited number of people and did not open the operating room door unless necessary. It was observed that the participants paid less attention to issues such as manipulation with instruments, use of surgical drape and mechanical sutures, and avoidance of sharp instrument use instead of manual manipulation. Current guidelines and protocols were taken into account when preparing questions on this issue [11, 12, 13]. The limited number of people in the operating room during surgery, including intubation, reduces the risk of contamination. The choice of mechanical sutures is important in terms of shortening the operation time. When the Turkish surgeons' attitudes towards minimally invasive surgery during the pandemic period were questioned, the answer of about half of them was to be done in COVID-19 negative patients, and the answer of 30% was that they were undecided on this issue.There are few studies in the literature evaluating the viral transmission risk of laparoscopic surgery and its reliability during the pandemic period [14, 15]. The most important part of laparoscopic surgery is the creation of an artificial pneumoperitoneum. This causes the surgical team to be exposed to aerosol. At the same time, ultrasonic scalpel and energy devices widely used in laparoscopic surgery cause excessive surgical smoke. Especially low temperature aerosols from ultrasonic scalpels cannot deactivate cellular components of the virus in the patient. In some studies, active corynobacterium, papillomavirus and H. I. V. were detected in surgical smoke [16-18].Therefore, it cannot be excluded that there is no risk of new coronavirus infection in surgical smoke.Chun-I Li et al. in his study, it was stated that the smoke concentration after the use of electrical or ultrasonic devices for 10 minutes in laparoscopic surgery was significantly higher than traditional open surgery [19]. Although there is no consensus in the literature regarding the use of laparoscopic surgery in the pandemic period considering all these factors, there are a number of recommendations to reduce the risk of viral transmission in minimally invasive surgery.Suggestions such as creating a pneumoperitoneum with low pressure, closing the taps before placing a port, attaching a CO2 filter to one of the ports to remove smoke when necessary, reducing the insertion and removal of instruments from the port, and emptying the abdominal air with a suction device and a CO2 filter from the port at the end of the operation can be listed [14].As a result of our survey, we see that Turkish surgeons have low compliance with these measures and need information.

LIMITATIONS

The low sample size is one of the most important limitations of this study.

CONCLUSION

Turkish surgeons play an important role in this war by taking part in both the primary treatment of the new coronavirus and the surgical treatment of patients with identified or suspected COVID-19. Although they have some different attitudes

ISSN: 2351-8200
JMSR 2020 Vol. VII, n 2: 838- 843

regarding preoperative preparation and surgical strategy, Turkish surgeons appear to adhere to personal protective measures seriously. At the same time, it is seen that surgeons need to be informed about the necessary personal protective measures related to minimally invasive surgery during the pandemic period.

REFERENCES

1. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;395(10223):497-506.
2. Ti LK, Ang LS, Foong TW, Ng BSW. What we do when a COVID-19 patient needs an operation: operating room preparation and guidance. Can J Anaesth. 2020;67(6):756-8.
3. Huh S. How to train health personnel to protect themselves from SARS-CoV-2 (novel coronavirus) infection when caring for a patient or suspected case. J Educ Eval Health Prof. 2020;17:10.
4. Gok AFK, Eryilmaz M, Ozmen MM, Alimoglu O, Ertekin C, Kurtoglu MH. Recommendations for trauma and emergency general surgery practice during COVID-19 pandemic. Ulus Travma Acil Cer. 2020;26(3):335-42.
5. Liu Z, Zhang Y, Wang X, Zhang D, Diao D, Chandramohan K, et al. Recommendations for Surgery During the Novel Coronavirus (COVID-19) Epidemic. Indian J Surg. 2020:1-5.
6. Sahu AK, Amrithanand VT, Mathew R, Aggarwal P, Nayer J, Bhoi S. COVID-19 in health care workers - A systematic review and meta-analysis. Am J Emerg Med. 2020;38(9):1727-31.
7. Agalar C, Ozturk Engin D. Protective measures for COVID-19 for healthcare providers and laboratory personnel. Turk J Med Sci. 2020;50(SI-1):578-84.
8. Karaca AS, Ozmen MM, AD UC, Yasti AC, DemIrer S. General Surgery Operating Room Practice in Patients with COVID-19. Turk J Surg. 2020;36(1):i-v.
9. Verzaro R, Nishida S. The surgeon and the COVID-19 pandemic. Int J Surg. 2020;78:160-1.
10. Liang W, Guan W, Chen R, Wang W, Li J, Xu K, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. Lancet Oncol. 2020;21(3):335-7.
11. Balibrea JM, Badia JM, Rubio Perez I, Martin Antona E, Alvarez Pena E, Garcia Botella S, et al. Surgical Management of Patients With COVID-19 Infection. Recommendations of the Spanish Association of Surgeons. Cir Esp. 2020;98(5):251-9.
12. Flemming S, Hankir M, Ernestus RI, Seyfried F, Germer CT, Meybohm P, et al. Surgery in times of COVID-19-recommendations for hospital and patient management. Langenbecks Arch Surg. 2020;405(3):359-64.
13. Coccolini F, Perrone G, Chiarugi M, Di Marzo F, Ansaloni L, Scandroglio I, et al. Surgery in COVID-19 patients: operational directives. World J Emerg Surg. 2020;15(1):25.
14. Angioni S. Laparoscopy in the coronavirus disease 2019 (COVID-19) era. Gynecol Surg. 2020;17(1):3.
15. Vigneswaran Y, Prachand VN, Posner MC, Matthews JB, Hussain M. What Is the Appropriate Use of Laparoscopy over Open Procedures in the Current COVID-19 Climate? J Gastrointest Surg. 2020;24(7):1686-91.
16. Capizzi PJ, Clay RP, Battey MJ. Microbiologic activity in laser resurfacing plume and debris. Lasers Surg Med. 1998;23(3):172-4.
17. Hensman C, Baty D, Willis RG, Cuschieri A. Chemical composition of smoke produced by high-frequency electrosurgery in a closed gaseous environment. An in vitro study. Surg Endosc. 1998;12(8):1017-9.
18. Johnson GK, Robinson WS. Human immunodeficiency virus-1 (HIV-1) in the vapors of surgical power instruments. J Med Virol. 1991;33(1):47-50.
19. Zheng MH, Boni L, Fingerhut A. Minimally Invasive Surgery and the Novel Coronavirus Outbreak: Lessons Learned in China and Italy. Ann Surg. 2020;272(1):e5-e6.