

High Prevalence of Sars-Cov-2 Infection In Patients Undergoing Cataract Surgery

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Abstract

Purpose

The coronavirus disease 2019 (COVID-19) prevalence has rapidly been increased worldwide in the last a few months. Asymptomatic COVID-19 cases scheduled for elective surgeries can be a risk factor for the healthcare professionals. The aim of this study was to estimate the prevalence of SARS-CoV-2 infection in patients undergoing cataract surgery.

Methods

Patients scheduled for cataract surgery in months of November and December 2020 were included in the study. COVID 19 PCR (polymerase chain reaction) test was taken routinely from all patients within 48 hours before the operation date.

Result

In this study, 151 patients who planned cataract surgery were included. The average age of the patients was $64,6 \pm 12,6$ years. The study population consisted of 94 (%62,3) men and 57 (%37,7) women. According to COVID 19 PCR test results, there were 16 (%10.6) positive cases. All cases were asymptomatic.

Conclusions

Asymptomatic covid patients continue to be contagious. We need to be careful when taking elective cases to minimize the risk of adverse outcomes after surgery and transmission of viruses to medical staff and other patients.

Introduction

COVID 19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) first appeared in Wuhan, China, in December 2019 and spread rapidly around the World. Over 79 million reported cases and over 1.7 million deaths globally since the start of the pandemic are reported according to the latest data of the World Health Organization (WHO) [1].

The disease may present with many different symptoms such as can be asymptomatic [2,3]. Diarrhea, muscle pain, fever, cough, fatigue and pneumonia are some of these symptoms [4]. While all symptomatic patients are tested and isolated due to the outbreak, individuals without symptoms unfortunately continue to be contagious. Thousands of healthcare professionals have been reported to be infected from asymptomatic individuals, despite paying attention to preventive measures [5,6].

The COVID-19 prevalence has rapidly been increased worldwide in the last a few months. A big proportion of people are asymptotically infected with COVID 19 [7]. Asymptomatic COVID-19 cases scheduled for

elective surgeries can be a risk factor for the healthcare professionals. In Turkey, COVID-19 prevalence peaked in November and December. In our Hospital, the administration started to COVID-19 testing for all elective surgeries before the hospitalization in November 2020. Therefore, the aim of this study was to estimate the prevalence of SARS-CoV-2 infection in patients undergoing cataract surgery. We are aware of this is the first study estimating SARS-CoV-2 infection in patients undergoing cataract surgery.

Materials And Methods

Patients scheduled for cataract surgery in months of November and December 2020 were included in the study. File information of all patients were evaluated retrospectively. COVID 19 PCR test was taken routinely from all patients within 48 hours before the operation date. SARS-CoV-2 test is first oropharyngeal and then nasopharyngeal swabs were taken from the patients with the same test stick. The sample taken was evaluated with the reverse transcription polymerase chain reaction (RT-PCR) test, which is currently used [8,9]. Patients with negative PCR tests were hospitalized and underwent cataract surgery. Positive individuals were placed in isolation and quarantine, and surgery was postponed.

Individuals with presence of COVID-19-related symptoms as fever, cough, sore throat, shortness of breath, coryza, and reduced sense of smell while testing were excluded from the study.

Our study is accordance with the Helsinki Criteria, the information was made over the file, without using personal data. An informed consent form was obtained from all subjects. A work permit was obtained from the Ministry of Health Scientific Research Platform. This study protocol was approved by the local ethics committee. Statistical analysis was performed using SPSS 22.0. The explanatory statistics for the variables are given as mean±standard deviation and frequencies n (%).

Result

In this study, 151 patients who planned cataract surgery were included. The average age of the patients was 64,6±12,6 years. The study population consisted of 94 (%62,3)men and 57 (%37,7) women. According to COVID 19 PCR test results, there were 16 (%10.6) positive cases. Positive case consisted of 12 (%75) men, 4(%25) women. The mean age of positive cases was 68.8±9.7 (range 51 to 88), and the mean age of negative cases was 64.1±12.9 (range 19 to 89) (Table 1). Cataract surgery was performed in 125 patients under topical anesthesia and 10 under general anesthesia.

Patients whose surgery was postponed were quarantined at home and treated with the COVID 19 treatment protocol recommended by the Turkish Ministry of Health. All COVID 19 cases did not need to be hospitalized and no deaths occurred.

Discussion

COVID-19 is primarily transmitted by droplets. Droplets formed by coughing, sneezing and gagging have a high contagiousness at a distance of 1 meter [10]. In addition, infection may occur as a result of

contact with surfaces contaminated by these droplets. When the COVID 19 virus is examined, it is seen that the average incubation period is 5-6 days (2-14 days), and in some cases it can extend up to 14 days [11,12]. The contagious period of COVID-19 is not known exactly. It is thought that it starts 1-2 days before the symptomatic period and ends with the disappearance of symptoms. Viral shedding time is appears to be in a wide range according to the severity of the disease [13,14].

Although the severity of the disease increases with age and additional diseases such as HT, it can also be severe in young individuals without any disease [15]. Many healthcare professionals were lost during pandemic era. Therefore, healthcare professionals are concerned about encountering undiagnosed individuals with asymptomatic SARS-CoV-2 infection.

Surgeons have responded to this outbreak in a variety of ways. Many organizations, including the American Academy of Ophthalmology, have recommended stopping elective surgeries to reduce the rate of transmission and to better serve emergency patients at the beginning of the COVID 19 epidemic [16,17]. In some studies, it has been emphasized that the surgical results of patients with COVID 19 who are asymptomatic or whose symptoms have not yet appeared, are worse than patients followed without surgery [18,19]. However, the uncertainty of how long the virus will continue and increasing proportion of patients awaiting elective surgery made it necessary to start surgery on condition that the protective rules are followed again. Postponement of elective cases also caused important problems in cataract surgeries.

Routine preoperative screening prior to elective surgery has been broadly discussed. Who will be tested before surgery depends on the severity of the disease and the implementation of the health policy in the country. Each country has established its own policy for surgical preparation. Identifying SARS-CoV-2 carriers prior to surgery is important to avoid adverse surgical outcomes and contamination, and to provide effective health care [20]. In Turkey, COVID 19 PCR test is recommended before elective eye surgery.

Our study provides an estimate of the prevalence of PCR-positive SARS-CoV-2 infection in asymptomatic patients admitted for cataract surgery at our hospital. To our knowledge, this is the first study for estimating prevalence in ophthalmology patients presenting for cataract surgery. In our study, the result was positive in 16 of 151 patient. 10.6% of patients were asymptomatic COVID 19 carriers. The fact that this rate is too high for the possibility of virus transmission. However, the 2 months in which we applied the test coincides with the peak of COVID 19 prevalence in our country. In addition, since the patient profile in our study is composed of elderly and comorbid people compared to the general population, it may not give its asymptomatic rate completely.

In a study conducted in 2019 on patients who received intravitreal injection, the prevalence was 0.36% [21]. However, the low rate may be related to the low prevalence of the COVID 19 at the time of the study.

Since the distance between the patient and the ophthalmologist during eye examination is very close, care should be taken in terms of contamination. In a study investigating the possibility of encountering

the virus by ophthalmologists, the presence of SARS-COV-2 was investigated in the eye examination room. After the surfaces were sterilized, 22 asymptomatic patients underwent eye examination. At the end of the day, the researchers found SARS-CoV-2 material in 2 samples taken from the area 1 meter from the patient chair, specifically on the slit lamp, breathing shield, and phoropter surface [22].

Vaccines approved for COVID 19 give us hope for an end to the disease. But all over the world, vaccination has just begun and it is known that it will take a long time. In conclusion, there is a high prevalence of asymptomatic SARS-CoV-2 infection in patients undergoing cataract surgery in this study. This results suggest that due to the high prevalence of asymptomatic SARS-CoV-2 infection, testing for COVID 19 prior to elective surgery is crucial preventing transmission of the virus to the healthcare professionals.

Declarations

Funding: No funding was received for conducting this study.

Conflicts of interest/Competing interests: The authors have no conflicts of interest to declare that are relevant to the content of this article.

Availability of data and material: Data can be shared if there is an editorial request.

Code availability: Not applicable

Authors' contributions: Conceptualization: [Şerife Gülhan Konuk]; Methodology: [Alper Güneş]; Formal analysis and investigation: [Fatih Kaya]; Writing - original draft preparation: [Şerife Gülhan Konuk]; Writing - review and editing: [Şerife Gülhan Konuk]; Resources: [Şerife Gülhan Konuk]; Supervision: [Raşit Kılıç].

Ethics approval: This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Tokat Gaziosmanpaşa University (Date 14.01.2021/No: 21-KAEK-009).

Consent to participate: Informed consent was obtained from all individual participants included in the study.

Consent for publication: Patients signed informed consent regarding publishing their data.

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Tables

Table 1: Demographic characteristics of patients

COVID 19 (+)	16 (%10,6)
COVID 19 (-)	135 (% 89,4)
Man	94 (%62,3)
Women	57 (%37,7)
COVID 19 (+) Mean Age	68.8±9.7
COVID 19 (-) Mean Age	64.1±12.9