

Should All Patients Having Planned Procedures or Surgeries Be Tested for COVID-19?

Mohammed AR¹, Varma A¹, Abubaker M¹, Basheer SM², Manu L¹, Rafique MA¹, Vedasalam S¹, Aldahi A¹, Parvaze P², Al Naama A³ and Dergaa I⁴

¹Department of Primary Care, Consultant Family Medicine, Primary Health Care Corporation, Doha, Qatar

²Department of Primary Care, Specialist Dentist, Primary Health Care Corporation, Doha, Qatar

³Department of Primary Care, Health Centre Manager, Primary Health Care Corporation, Doha, Qatar

⁴Department of Primary Care, Wellness Instructor, Primary Health Care Corporation, Doha, Qatar

*Corresponding author:

Abdul Rafi Mohammed,
Department of Primary Care,
Consultant Family Medicine,
Primary Health Care Corporation,
Doha, Qatar,
E-mail: drmohdrafi@doctors.org.uk

Received: 14 Oct 2020

Accepted: 03 Nov 2020

Published: 09 Nov 2020

Copyright:

©2020 Mohammed AR. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and build upon your work non-commercially.

Citation:

Mohammed AR, Should All Patients Having Planned Procedures or Surgeries Be Tested for COVID-19?. American Journal of Surgery and Clinical Case Reports. 2020; 2(2): 1-3.

Keywords:

Asymptomatic; COVID-19; RT-PCR; Screening; Surgery

1. Abstract

The current pandemic of Corona Virus Disease-2019 (COVID-19) which is caused by Severe Acute Respiratory Syndrome Corona Virus-2 (SARS-CoV-2) has resulted in lockdown in many countries culminating in a major socio-economic crisis globally. COVID-19 can remain asymptomatic and so is crucial for early diagnosis to prevent further spread of this pandemic. Here we highlight the importance of screening asymptomatic patients prior to elective surgery, procedure or scheduled hospital admission. This analysis was done for the month of July 2020 during which 261 asymptomatic people were screened for COVID-19. Out of this, 6 patients (2.29%) were diagnosed to have COVID-19 on nasopharyngeal/oropharyngeal swabs and subsequently had to delay their elective procedure or surgery. This clearly shows how important it is to screen this cohort of asymptomatic people who could potentially have spread the virus to other patients as well as healthcare professionals.

2. Introduction

World Health Organization (WHO) was notified of a novel corona virus disease - Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) in Wuhan, China on 31st December 2019.

Subsequently this was termed as Corona Virus Disease-2019 (COVID-19) and it spread across over 210 countries causing more than 1,001,487 deaths and infecting over 33 million people globally (as of 28th September 2020), and was declared as a pandemic on 11th March 2020.

New guidance from Centers for Disease Control and Prevention (CDC) in September 2020 estimates that 40-45% percent of patients infected with SARS-CoV-2 are likely to be asymptomatic with a high infectivity rate of 75%, silently infecting other people at the same time [1].

This is even more pertinent when patients are being considered for an operative procedure or elective surgery, dental procedures and hospital admissions for other reasons, as this asymptomatic cohort of patients not exhibiting COVID-19 signs or symptoms can infect the health care staff involved in their care and this can be detrimental to the healthcare sector if not addressed meticulously. This is crucial not only for the patient to be treated in the right place with proper precautions and in quarantine, but also for the general population to protect and curb the spread of COVID-19.

3.3. Materials and Methods

3.3.1. Patient Population and Data Collection:

After a formal approval by the institutional review board at Primary Health Care Corporation (PHCC - Ref No. PHCC/DCR/2020/08/091), a retrospective observational data study was conducted at Rawdat-Al-Khail Health Centre (RAK-HC), which is a government designated COVID centre in Qatar, for the month of July 2020. We analyzed the medical e-records of a cohort of asymptomatic people who had a screening Reverse-Transcription-Polymerase-Chain-Reaction (RT-PCR) test for COVID-19 as a mandatory requirement prior to any planned procedures, surgery or scheduled hospital admissions. Demographic and clinical data were obtained from the medical e-records of this cohort of people after all identifiable variables were removed as per the research-study requirements.

Patients were instructed by hospitals to get a COVID-19 RT-PCR Negative Report, 72 hours prior to the procedure or planned surgery. During this one-month period, 261 asymptomatic people were screened for COVID-19 by RT-PCR testing of samples obtained from nasopharyngeal and oropharyngeal swabs by trained medical staff as per international standards of testing. The samples were processed at the testing laboratory in Hamad Hospital in Doha, Qatar, which is a tertiary level hospital.

4. Results

Amongst the tested population, 103 patients (39.47%) were males and 158 patients (60.53%) were females. The results showed that 6 patients (2.29 %) were found to be Covid positive, and hence had to cancel their planned procedure or elective surgery. Of the 6 positive patients, the distribution of positive patients was equal amongst males and females- 50% each of males and females (Figure1). 245 people were fortunately Covid negative and went ahead as planned for their procedure or elective surgery (Table1). 10 patients (3.83%) had inconclusive results and were instructed to repeat the test as per protocol. These patients could be potentially positive which could then probably increase the number of positive patients to 16 (6.13%).

Table 1: Gender based analysis of results of asymptomatic people prior to elective procedure or surgery

		Gender		Total
		Male	Female	
Positive	Actual number of patients	3	3	6
	% within Diagnostic	50%	50%	100.00%
	% within Gender	3.03%	2.05%	2.29%
	% of Total	1.14%	1.14%	2.29%
Negative	Actual number of patients	99	146	245
	% within Diagnostic	40.41%	59.59%	100.00%
	% within Gender	96.11%	92.40%	93.86%
	% of Total	37.93%	55.93%	93.86%
Inconclusive	Actual number of patients	4	6	10
	% within Diagnostic	40%	60%	100.00%
	% within Gender	3.88%	3.79%	3.83%
	% of Total	1.53%	2.29%	3.83%

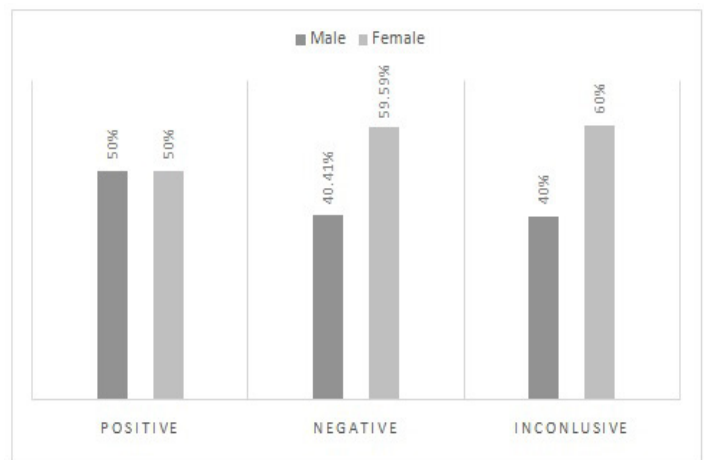


Figure1: Graph showing male and female distribution of patients

5. Discussion

COVID-19 is a global pandemic which can result in severe infection leading to respiratory failure and is associated with significant morbidity and mortality. COVID-19 has features of rapid transmission, high infectivity, insidious onset and prolonged incubation period of up to 14 days on average. Therefore, timely diagnosis of this potentially life-threatening condition is crucial. RT-PCR testing is considered as the “gold standard” for clinical diagnosis of COVID-19 [2]. The case fatality rate for COVID-19 tends to be much higher than the typical influenza seasonal viral illness, and disproportionately affects the elderly population and patients with major cardiac or pulmonary co-morbidities [3].

During initial days of COVID-19 pandemic, screening patients prior to surgery or procedures was done by contact history and symptom-based screening questionnaires. However, as community spread of this virus is well recognized and established, relying purely on contact history and symptoms to screen asymptomatic pre-procedural and surgical patients is no longer adequate and is in fact unsafe too.

The R_0 value represents the average number of people infected by one infectious individual and shows how quickly the virus can spread. The R_0 value of COVID-19 is between 2-3 which is very high and therefore it is vital to mitigate further spread of this virus and reduce case fatality rate [4]. If the number of COVID-19 positive patients picked up in this cohort were extrapolated taking into consideration the R_0 value, one positive patient could have possibly infected 406 people in a month’s duration which would have equated to 2436 positive cases from the 6 cases who were initial-COVID-19 confirmed patients in this cohort [5], and regrettably the majority of them could potentially have been health care professionals treating those COVID positive patients.

Our goal as clinicians is to not only help control the pandemic in the general population but also to prevent infection amongst

healthcare professionals who provide essential services to patients. The testing of patients for SARS-CoV-2 has been proposed as a mechanism for protecting patients and healthcare workers during the current COVID-19 pandemic [6]. Performing surgery or any other procedure without excluding COVID-19 increases the risk of COVID-19 contamination in the hospital exposing patients and healthcare staff and putting them at high risk of contracting the virus [6].

A recent publication from the international Covid Surg Collaborative found that surgical patients already infected with SARS-CoV-2 infection had a postoperative pulmonary complication rate of 51.2%, which was further associated with a much higher mortality [7]. Isolation is almost impossible to practice in the operating room because an anesthetist has to stand very close to the patient during intubation procedure, which can exponentially increase the risk of exposure to aerosols containing COVID-19. The virus can also spread through biological fluids which can compromise the safety of all the healthcare professionals in the surgical environment [8].

During this COVID-19 pandemic, it is advisable to postpone non-urgent procedures and promote non-operative treatments in order to delay or avoid the need for surgery although this might not always be possible [9]. Confirmed and suspected patients of COVID-19 carry a higher risk of severe events needing admission to the critical care unit, mechanical ventilation support and even death [10].

6. Limitations

A systematic review of 39 studies has revealed that 29 of those have suggested screening for all surgical patients prior to surgery to rule out COVID-19 [11]. However, it is important to remember that there is the possibility of false negative results with RT-PCR tests [12]. In addition, the test detects presence of virus at a single point in time, and if a patient is still in the early phase of incubation, the virus may not be detected. Both of these factors may falsely reassure healthcare workers by a negative RT-PCR test result. Despite this, it is now mandatory in most places to screen patients prior to any procedure, surgery or elective hospital admission. Several International reputed healthcare organizations including the American College of Surgeons have recommended screening patients before surgery [13].

7. Conclusion

Though there are several reports which claim efficacy of different drugs and vaccines against COVID-19, none are effective and completely safe yet, to receive approval by regulatory authorities [14]. With rising number of COVID-19 cases all over the world, this is a desperate time for infection prevention and control, both for the safety of patients and healthcare professionals alike. Hence we propose that the identification of infected individuals is extremely

important to prevent the spread of this virus not only to protect healthcare professionals and other people but also to identify those who are likely to be at risk from disease-associated complications.

References:

1. Chau NVV, Lam VT, Dung NT, Yen LM, Minh NNQ, Ngoc NM, et al. The natural history and transmission potential of asymptomatic SARS-CoV-2 infection. medRxiv. 2020; c1aa711.
2. Esbin MN, Whitney ON, Chong S, Maurer A, Darzacq X, Tjian R. 2020. Overcoming the bottleneck to widespread testing: A rapid review of nucleic acid testing approaches for COVID-19 detection. RNA. 2020; 26: 771-83.
3. Kharasch ED, Jiang Y. Novel coronavirus 2019 and anesthesiology. Anesthesiology: The Journal of the American Society of Anesthesiologists. 2020; 132: pp.1289-91.
4. Viceconte, G. and Petrosillo, N. COVID-19 R0: Magic number or conundrum?. Infectious disease reports. 2020; 12: 8516.
5. Abbasi K. The scandals of covid-19. 2020.
6. Schlosser M, Signorelli H, Gregg W, Korwek K, Sands K. COVID-19 testing processes and patient protections for resumption of elective surgery. The American Journal of Surgery. 2020; S0002-9610: 30438-4.
7. Nepogodiev D, Glasbey JC, Li E, Omar OM, Simoes JF, Abbott TE, et al. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. The Lancet. 2020; 396: 27-38.
8. Xu K, Lai XQ, Liu Z. Suggestions for prevention of 2019 novel coronavirus infection in otolaryngology head and neck surgery medical staff. Zhonghua er bi yan houtoujingwaike za zhi= Chinese journal of otorhinolaryngology head and neck surgery. 2020; 55: E001.
9. Jean WC, Ironside NT, Sack KD, Felbaum DR, Syed HR. The impact of COVID-19 on neurosurgeons and the strategy for triaging non-emergent operations: a global neurosurgery study. Acta neurochirurgica. 2020; 162: 1229-40.
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. The Lancet Oncology. 2020; 21: 335-7.
11. Hojaij FC, Chinelatto LA, Boog GHP, Kasmirski JA, Lopes JVZ, Sacramento FM. Surgical Practice in the Current COVID-19 Pandemic: A Rapid Systematic Review. Clinics. 2020; 75: e1923.
12. Woloshin S, Patel N, Kesselheim AS. False Negative Tests for SARS-CoV-2 Infection—Challenges and Implications. New England Journal of Medicine. 2020; 383: e38.
13. American College of Surgeons. Local Resumption of Elective Surgery Guidance. Available. (accessed April 17, 2020).
14. Shanmugam C, Mohammed AR, Ravuri S, Luthra V, Rajagopal N, Karre S. COVID-2019—A comprehensive pathology insight. Pathology-Research and Practice. 2020; 216: 153222.