

Adapting our Professional Life with Corona: A Challenge That Oral & Maxillofacial Surgeons are Bound to Accept

Pankajakshi Bai K^{1*} Fareedi Mukram Ali² N.S. Mamatha³ Parth Raviya⁴

¹Professor and Head, Department of Oral & Maxillofacial Surgery, College of Dental Science & Hospital, Amargadh, Bhavnagar, Gujarat, India.

²Assistant Professor, Department of Oral & Maxillofacial Surgery, College of Dentistry, Jazan University, Jazan, KSA.

³Professor, Department of Oral & Maxillofacial Surgery, Raja Rajeshwari Dental College & Hospital, Bangalore, India.

⁴Senior Lecturer, Department of Oral & Maxillofacial Surgery, College of Dental Science & Hospital, Amargadh, Bhavnagar, Gujarat, India.

ABSTRACT

Background: With the outbreak of the pandemic Covid-19, which has shattered the life of the people worldwide and with continuously emerging asymptomatic carriers and symptomatic positive cases predicts that it is imperative for all surgeons to accept to live with a corona in future with more descriptive aseptic precautions. The spread of the disease worldwide within a short span and claiming many lives is in itself, self-explanatory that cessation of COVID-19 worldwide is mandatory for everyone to be free of threatening from this dreaded disease; with this experimental stage of its treatment. In this stage of uncertainty, it is ESSENTIAL for all the surgeons to cast away the undue apprehension and ADAPT TO A professional life with this novel coronavirus, as an addition to any other infectious diseases. And hence an attempt has been made by using various sources available, to summarise all the preventive measures to be adopted.

Keywords: Corona, Covid-19, SARS-Cov.

INTRODUCTION

The world has encountered the rarest of the global health crisis this year with the outbreak of pandemic COVID -19, throwing a challenge at the world to combat with the novel coronavirus. Covid-19, also known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)¹ previously referred to as 2019-nCoV has stretched out within a short span of duration from Wuhan district of China to various countries around the globe². Worldwide incidences of many frontline warriors like doctors, health care workers, paramedics, sanitising workers, police personnel being afflicted with the virus while saving corona afflicted people and also through an asymptomatic carrier in the process of containing the spread of corona during this pandemic outbreak are noted and acknowledged.

The 'T' ZONE in the maxillofacial region, Eyes, Nose and oral cavity being the main entry for the virus into an individual-, alerts all the maxillofacial

surgeons and all dental professionals to be doubly careful while doing any procedures as they are more vulnerable to this infection. With the treatment options under trial and error and vaccination yet to be discovered for COVID-19, its prevention is the only cure.

When the mode of spread of this deadly virus is through saliva and aerosols, maxillofacial surgeons and all dental health professionals have been hypothesising irrevocable changes in the hospital protocols and refined aseptic measures that may be adapted in the future.

DISCUSSION

Transmission of Covid-19 from asymptomatic individuals within incubation period have been reported ^{3,4} The incubation period varies from 3 to 7 days up to 2 weeks as per the investigations

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*Correspondence Dr. K Pankajakshi Bai.

Department of Oral & Maxillofacial Surgery, College of Dental Science & Hospital, Bhavnagar, Gujarat, India.

Email: drpankaja06@rediffmail.com

conducted by the CDC china and local CDC'S as the longest time noted from infection to symptoms was 12.5 days. Early stages of infections of Covid-19 ranging from 2.3 days to 0.7 days prior to symptoms is proven to be more infectious⁵

Hence considering the highly infectious early stage of Covid-19, we should be following cross infection control measures considering asymptomatic individual to be COVID positive unless proven otherwise. Dentistry has the most risk of exposure amongst all other professions as reported by the New York times⁶ as they are more prone for blood, saliva and droplet exposure while treating an infected or an asymptomatic carrier⁷.

The modes of transmission of the Covid-19 disease is through - i) airborne spread ii) contact spread iii) contaminated surface spread; which includes direct or indirect contact of the mucous membrane of the mouth, nose and eye; direct or indirect transmission through saliva; Direct transmission through cough, sneezing or respiratory droplet infection, direct transmission through fomites. Fomites are the objects or materials which are likely to carry infection as the virus can retain its infective potential for a specific period of time on them⁸⁻¹¹. The coronavirus is known to remain infectious on inanimate surfaces for 2 hrs up to 9 days, depending on the temperature, humidity, type of surface and viral load¹². For aerosol splatter, it is 3-8 hours, for copper 5 hours, for stainless steel 12 hours and for cardboard, plastic, and paper is up to 24 hours⁸⁻¹⁰.

A study from Singapore³ revealed that viral RNA was present on all the tested surfaces of the operating room like light switches, handles, bed and handrails, interior doors and windows, washbasin, toilet bowl etc. where infected Covid-19 patient was treated.

As most of the procedures of the maxillofacial surgeons produce aerosols, they are prone to the transmission through droplets infection and also through fomites in the operation theatre. Hence a modified standard operational protocol becomes mandatory.

Modified Adaptive protocols in future: ^{9,13-20}

General precautionary measures: The general precautionary measures to be adopted include the incorporation of the hand hygiene facility with

alcohol-based hand wash or hand scrub to all -the patients, visitors and hospital staffs; limiting the number of accompanying people with the patient; following strict social distancing protocol; mandatory use of mask and gloves by the patients, visitors, hospital staffs; displaying hoardings about various modes of prevention of Covid-19 at various areas of the hospital and inclusion of sanitisation of the areas in and around the hospital as a normal protocol.

Precautionary measures at the level of patient care services :

Tele screening/ telemedicine/teledentistry should be advocated for the patients who can be treated by the use of medications and counselling to minimise the exposure of the individual to the external environment; exclusive screening area is to be maintained for triage evaluation process; clear documentation of staff involved in the screening should be maintained for future reference if the situation demands; a detailed history of signs and symptoms of Covid-19 including the history of travel, or contact with suspected or confirmed COVID-19 patients should be mandatorily recorded; suspected patients should be segregated immediately and sent for RT-PCR to confirm COVID-19 and sent for medical management; the investigation reports of all patients should also be well documented for future reference; Operating room set up exclusively for COVID-19 patients should be introduced to minimise the risk of community spread; every patient to be treated as COVID positive unless proven otherwise. When in doubt, advice RT-PCR (Reverse Transcription-Polymerase Chain Reaction) to arrive at a definite diagnosis of COVID-19

Precautionary measures at the level of emergency care services

In case of an emergency where the situation demands the patient should be operated immediately without testing for COVID-19, the patient should be considered as COVID positive and hence to be taken for treatment in the exclusive operating room for covid-19 patients with all the necessary precautions. A designated pathway is to be allocated for transferring the COVID-19 or suspected patients to the operation theatre to minimise the risk of exposure to others. The

preferably short path is to be used. Sanitisation of the route of transfer of the patient should be made mandatory. In the operating room, negative pressure ventilation is recommended relative to the surrounding area.

All patients should be given mask and wearing of tested PPE by all staff while treating suspected or confirmed COVID-19 be mandatorily adapted. Minimum. A number of staff List to be maintained in the operating room.

One should ensure that all necessary instruments, equipment and materials are available to avoid frequent opening and closing of door considering the hazardous effect of the spread of infection. The OT personnel should restrict or preferably avoid frequent in and out movements from the OT complex during surgery.

Anaesthetic and surgical team are equally prone for exposure of infection as both are dealing with the respiratory passage, oral and nasal cavities. Hence only anaesthetic personals are allowed to be in OT and all others including surgeon to be outside the OT till the time of induction and intubation is completed to minimise the risk of cross-infection spread through aerosols and respiratory droplets. Disposable airway equipment has to be used during intubation. Preferably fiberoptic intubation is to be avoided unless indicated to reduce the aerosolisation of the virus with the use of automated local anaesthetic agents.

High-quality heat and moisture exchanging filter (HMEF) should be placed between the facemask and the breathing circuit or the reservoir bag whichever is applicable. This HMEF are known to filter 99.97% of airborne particles of 0.3 microns or greater. Guidelines on donning and doffing as prescribed by the Ministry of Health and Family Welfare, Directorate general of health services should have strictly adhered to ¹⁷.

Precautions in relation to armamentarium during surgery:

Use of armamentarium which can cause particle aerosolisation, should be minimised; namely, ultrasonic dissectors, monopolar electrosurgeries and bipolar devices. Monopolar devices can be used with attached smoke evacuators. Lowest possible settings which can give the desired effect should be

set while using electrosurgery units. While using energy devices, surgical intervention time should be as minimal to reduce the surgical smoke.

Damage to the PPE with the sharp instruments should be avoided, which can pave the way for the entry of the infections.

Post-surgical precautionary measures:

While transporting the patient after surgery, the transport personnel should not be wearing the same PPE worn during the operative procedure. Decontamination of all surfaces like light, handles, monitors anaesthetic types of equipment, trolleys, door handles etc. should be performed using sodium hypochlorite 0.1% left wet for one minute¹²; Glutaraldehyde based compounds should not be used because of their potential toxicity. The cleaning personnel should wear an N95 mask, face shield, goggles, gowns, and housekeeping gloves/nitrile rubber gloves during the whole process of cleaning and disinfection. All unused consumable items like drugs in the anaesthetic trolley and tray should be considered to be contaminated and hence discarded. The next patient should be considered in the same operation theatre only after the disinfection process is completed and confirmed. The rate of air exchange of the operating room also should be assessed before the next patient is posted for surgery. Minimum 15 ACH (Air exchange per hour is recommended) for any operatory room as per the guidelines for design and construction of health care facilities. American Institute of Architects, Academy of architecture for health, (2006)^{18,19}

All used airway types of equipment should be sent for disinfection and sterilisation in a sealed double-layered plastic bag. After discarding the PPE hand hygiene should be performed.

Biomedical waste management guidelines of 2016, amended in 2018 and 2019 should be strictly adhered to.

Adaptive measures to avoid medicolegal issues:

The patient may be infected while travelling to and fro from the hospital on the way and claim to have acquired the infection during the treatment from the hospital. And in spite of taking all the measures, the patient may be infected as the transmission is

airborne. The Covid-19 infection has been claiming many lives, and hence it is a serious concern to all, and our legal frame includes the doctor-patient relation under consumer protection act and so, may call for a legal claim against the doctors. Hence as a precautionary measure, every doctor should include the exclusive consent form on Covid-19 apart from the usual consent for the anaesthetic and surgical procedures.

The COVID -19 consent should be the patient's acceptance for the treatment in spite of knowing the risk of transmission of infection from anywhere from his home to the hospital. It should also include his acceptance of the fact that the hospital has taken all precautionary measures to prevent or minimise the community spread of infection.

CONCLUSION

With the existence of many asymptomatic carriers and with the experimental stages of the vaccine and medicinal treatment for COVID-19; Prevention is the only cure. And hence every patient should be considered to be a COVID-19 positive unless proven otherwise. Apart from the routine cross infection control measures, we should try to live with this novel coronavirus with extra precautionary preventive measures and adapt our professional life to its demands to prevent its community spread.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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