

Resuming Safe Orthodontic Practice in India, Post COVID– 19.

Dr.Diana Ashok¹, Dr.Amudha², Dr. Kannan Sabapathy³.

Type of article : A Review

Authors:

1. Dr.Diana Ashok,

*Post graduate, Department of Orthodontics, Sree Balaji dental college,
Bharath Institute Of Higher Education and Research,*

2. Dr. Amudha,

*Tutor, Department of Orthodontics, Sree Balaji dental college, Bharath Institute Of Higher
Education and Research.*

3. Kannan Sabapathy M

*Professor and Head of Department, Sree Balaji Dental College, Bharath Institute Of Higher
Education and Research.*

Corresponding author:

Dr. Diana Ashok,

*Post graduate, Department of Orthodontics, Sree Balaji dental college,
Bharath Institute Of Higher Education and Research,*

Velachery main road,

Pallikaranai,

Chennai – 600100

Mail – marjoriediana@gmail.com

Conflict of interest: We herewith state that the enclosed article is free of conflict of interest.

Source of Funding: Nil

Abstract:

According to OSHA, Dentistry is at a risk of COVID-19 infection through direct contact by means of droplet infection and indirect contact by means of contaminated surfaces. It is vital for any clinician to take necessary precautions to prevent oneself from getting infected as well as to prevent cross contamination. This article reviews the various methods in which a clinician can resume safe practice in the Post COVID Era.

Key words : *Post COVID-19, Safe dental practice, Resuming orthodontic practice, patient management, Safety against COVID-19*

1. INTRODUCTION:

COVID – 19 is the disease¹ caused by the new, highly mutated and contagious variant of corona virus (which earlier caused SARS) the Novel Corona Virus (nCoV -2019)(SARS Cov – 2)². The first case was reported in Wuhan City on December 31, 2019. On January 30, 2020 WHO Director – General Dr. Tedros Adhanom Ghebreyesus declared that the Novel Corona Virus outbreak was a Public Health Emergency of International Concern³. The first case reported in India was on January 27, 2020 in Thrissur, Kerala⁴. The first case

reported in Chennai, Tamil Nadu was on March 7, 2020. Since then the number of cases have grown exponentially high and still continue to do so.

2. DENTISTRY AND COVID-19:

According to OSHA⁵, Dentistry is at a risk of COVID-19 infection through direct contact by means of droplet infection and indirect contact by means of contaminated surfaces. Not only dentists but any Dental auxiliaries and the patients were deemed to be at high risk of cross- infection. Saliva is rich in viral load. The Ministry of health and family welfare⁶, Government of India – issued a Guidelines for Dental professionals in COVID– 19 pandemic situation on May 19, 2020 – according to which the dental clinics in the “*Containment zone*” was advices to remain closed and provide tele – triage. The Dental clinics in the “*Red zone*” were permitted to perform only emergency dental procedures. The Dental clinics in the “*Orange and Green zone*” were allowed to provide dental consults, but the operations were restricted to emergency and urgent treatment only.

Several Lockdowns were imposed in India, as means to stop the spread of COVID– 19. The Chief Minister of Tamil Nadu anticipated a huge revenue loss for the state⁷ due to the industries and businesses being shut during the lockdown. Now, as the number of cases in Chennai are starting to show a steady decline⁸ and keeping in mind the economic crisis, lot of relaxations have been permitted on the imposed lockdowns. All clinicians are slowly resuming practice⁹ and it is absolutely essential to ensure we take necessary precautions before we completely resume practice.

3. PREPARING THE ORTHODONTIC OFFICE:

In the event of resuming our dental/orthodontic practice, the first step is to prepare the dental office before we start practice. In the waiting area, we need to ensure 2 meter distance between patients. We can do this by spacing out the chairs in the waiting areas, blocking few chairs. There should be no clutter in the waiting area – remotes, magazines, pens, etc. which can serve as a source of indirect contamination or better yet we can close the waiting area and ask the patients to wait in their cars in the parking lot. A separate “*Hand Hygiene Station*”⁶ needs to be provided with a wash basin, hand wash, disposable tissues, dust bin with lid to dispose the tissues and a hand sanitizer. Make-shift cubicles can be used as physical barriers in the reception area. The clinical and non-clinical area need to be demarcated with a red line and where possible a door can serve as a physical barrier. Electronic gadgets (computers, keyboards, etc.) which will be difficult to disinfect need to have their surfaces wrapped with clean film. Plenty of patient education posters need to be pasted across the clinic. Cashless payment modalities need to be encouraged. A separate “*Changing room*” needs to be arranged where the doctors can change from their outside clothing to scrubs and also for donning, doffing of PPE. It is vital to ensure additional storage of PPE and disinfectants. The scrubs and PPE need to be laundered and disinfected in the office itself by a trained launderer.¹⁰ There should be a “*Temporary storage area*” to store the soiled / disposable PPE, along with other bio- medical waste. They should be stamped as “Bio- Hazardous” and can be disposed according to the Central Pollution Control Board Guidelines for Handling, Treatment and disposal of waste generated during Treatment/ Diagnosis and Quarantine of COVID-19 patients.¹¹

4. PREPARING THE DENTAL STAFF FOR PRACTICE:

In the IDA¹² protocol covid -19 it says that, according to the CDC guidelines – it is not absolutely necessary for everyone to get tested for COVID-19. If the dentist or the clinical staff fall under anyone of the following categories,

1. Symptomatic individual
2. Symptomatic contact with laboratory confirmed cases
3. Hospitalised with Severe Acute Respiratory illness
4. Asymptomatic and high risk contacts with a confirmed case,

Then they should be tested for COVID – 19 (ICMR guidelines). Also, since majority of clinical staff in the Indian context do not have health professional background and carry the risk of exposure from neighbourhoods, it would be a wise idea to follow ‘Tele-screening and Triaging’ for clinical staff by conducting initial telephone screening using the screening questionnaire suggested for patients, before they resume their duties in the clinics. A record of the daily temperature check of the clinicians and the dental staff is mandatory, to keep a check on the health of the dental health care workers.

TELE- TRIAGE AND VIRTUAL CONSULTATION:

Tele – Triage means to assess the degree of urgency of the illness and to decide the order of treatment over a telephonic conversation. Tele – consultation and tele – triage can be done in the dental office using office hotline. The patient’s need for a dental visit can be assessed and the patient’s requiring emergent care can be screened prior to the appointment through tele-screening. Pre – appointment screening should be carried out with the CDC self- assessment tools, which is available in the form of a questionnaire. Non – emergent cases can be given tele-counselling and virtual support. Phone Advice Line tools have been given by the CDC¹⁴ and it can serve as guide on how to provide tele- triage though it might require slight alterations to fit the dental scenario.

5. SURFACE DISINFECTION:

The floors need to be cleaned in a 2 step⁶ protocol. 1st with detergent and then 2nd with 1% Sodium Hypochlorite solution. It needs to have a contact time of 10 mins with the floor for effective disinfection. This needs to be repeated every 2 hours or after every patient, whichever is the earliest. The rest of the surfaces should be cleaned with a freshly prepared 1% sodium hypochlorite solution, with a contact time of 10 minutes. This needs to be repeated before and after every procedure. The Delicate electronics can be cleaned with an alcohol based rub/ spirit, after every patient. The environmental protection agency- EPA has published a list¹⁵ of disinfectants that are effective against the corona virus, called the List-N. They can be used to disinfect the surfaces.¹⁴

SEPERATION OF POWERS:

The clinical staff and the receptionist, administrative staff need to be separated by a Red line or a physical barrier like a door. New roles need to be assigned to the staff.

“**Greeter**”¹⁸ is the person who will receive the patient in the dental office. They will be asking the patients the screening questions, be explaining what to expect during the appointment and will make note of any specific concerns of the patient. The patient alone should enter the clinic with a mask on, their temperatures will be recorded before they enter the office. Accompanying person can wait in the car or in the waiting area. The patient is then asked to practice hand hygiene in the station provided. Before they move ahead for treatment they are then asked to sign consent for their treatment. The Indian Orthodontic society¹⁶ and the Indian Dental Association¹⁷ have both released a screening / declaration form and an informed consent form for taking treatment during the pandemic situation.

“**Scribe**” is the person who welcomes and accompanies the patient into the clinical area but has no clinical contact. They must be in clinical PPE. They need to make note of the appointments, prescriptions, take clinical photos, provide the clinician with the needed supplies. They will then convey to the attender of the patient, information about the procedure done, progress and concerns in treatment, over phone/ text/ email or through video call. This method helps conserve clinical PPE and also protects personnel’s from actually meeting the attender.

Instructions to the patients before arrival - patients are instructed to wear minimal accessories, avoid use of restrooms in the clinic. They are advised to use 10 ml of 0.5 PVP – I solutions as mouth rinse. They need to wear face masks and practice social distancing.

6. DENTAL PROCEDURES:

Separate days need to be allocated for aerosol generating and non-aerosol generating procedures. If that is not possible, appointments for aerosol generating procedures can be given in the mornings and for the non-aerosol generating procedures in the evenings. In order to efficiently suck the aerosols being generated in the dental procedures, a High -volume evacuation unit is essential. The dental office needs to be consulted by a HVAC engineering professional to ensure that the room had sufficient negative pressure ventilation, 40 -60 % humidity and a minimum of 6-12 air change cycles per hour.²⁰ HEPA filters can help with filtering the air inside the room before it is re-circulated into the same room, but the efficiency of the filter needs to be assessed for the area of the room which it is filtering. It is advisable to have a small room, which has a HEPA filter and a negative pressure ventilation, where all the aerosol generating procedures can be done.¹⁹ when clinicians can't afford to have separate operatories for aerosol generating procedures, and for those who find it hard to invest on a HEPA filter, the MoHFW guidelines⁶ suggests, to maintain air circulation with natural air by frequently opening windows. Ceiling fans can be avoided while performing procedures and rather a table fan can be placed behind the operator to let the airflow towards the patient. This generates a positive pressure ventilation. In buildings which use centralized AC, the air that is re-circulated back into the building needs to be blocked to ensure adequate outdoor air supply.

AFTER DENTAL PROCEDURE:

The assistant will collect the used instruments, rinse in water and prepare for sterilization. The 3 way syringe, handpiece, waterlines, water containers – all need to be cleansed with 1% solution of sodium hypochlorite for 30 to 40 seconds.⁶ All surfaces need to be disinfected with 1% sodium hypochlorite solution and the floors need to be mopped unidirectionally. There need to be separate mops for clinical and non – clinical areas.

PROTOCOL FOR CLINIC CLOSURE:

A 20% working solution of Hydrogen peroxide is to be prepared. 1000ml is required for 1000 cubic feet. After the procedure, no negative pressure ventilation for 30 minutes. This will allow all the droplets to settle. Then the 2 step floor cleaning protocol is to be carried out, followed by fogging for 45 mins. The contact time is 1 hour, post which the room can be opened for aeration. The wet surfaces can be cleaned with a sterile cloth.

7. CONCLUSION:

It would be wise to not succumb to panic and fear, but rather try and educate, equip, prepare ourselves for this battle against the global pandemic. A battle well prepared for, is half won.

8. REFERENCES:

- [1] <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>
- [2] Riou, J. and Althaus, C.L., 2020. Pattern of early human-to-human transmission of Wuhan 2019 novel coronavirus (2019-nCoV), December 2019 to January 2020. *Eurosurveillance*, 25(4), p.2000058.
- [3] [https://www.who.int/dg/speeches/detail/who-director-general-s-statement-on-ihr-emergency-committee-on-novel-coronavirus-\(2019-ncov\)](https://www.who.int/dg/speeches/detail/who-director-general-s-statement-on-ihr-emergency-committee-on-novel-coronavirus-(2019-ncov))
- [4] Andrews, M.A., Areekal, B., Rajesh, K.R., Krishnan, J., Suryakala, R., Krishnan, B., Muraly, C.P. and Santhosh, P.V., 2020. First confirmed case of COVID-19 infection in India: A case report. *Indian Journal of Medical Research*, 151(5), p.490.
- [5] <https://www.osha.gov/SLTC/covid-19/dentistry.html>
- [6] <https://www.mohfw.gov.in/pdf/DentalAdvisoryF.pdf>
- [7] Ganesan, S. (26 June 2020). "[Tamil Nadu could lose ₹85,000 crore in revenue due to COVID-19, says Chief Minister](#)". *The Hindu*. ISSN 0971-751X. Retrieved 26 June 2020.

- [8] <https://indianexpress.com/article/cities/chennai/tamil-nadu-coronavirus-news-live-updates-chennai-covid-19-lockdown-universities-exams-anna-university-6597827/>
- [9] <https://www.thehindu.com/news/cities/bangalore/gps-dentists-resume-practice-hike-consultation-fees/article31749951.ece>
- [10] <https://www.cdc.gov/mmwr/PDF/rr/rr5217.pdf>
- [11] <https://www.cpcb.nic.in/uploads/Projects/Bio-Medical-Waste/BMW-GUIDELINES-COVID.pdf>
- [12] <https://www.ida.org.in/pdf/Covid19-IDA-Protocol.pdf>
- [13] <https://www.cdc.gov/coronavirus/2019-ncov/phone-guide/phone-guide-H.pdf>
- [14] Guidance on Preparing Workplaces for COVID-19, OSHA
- [15] <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19>
- [16] <https://www.iosweb.net/images/covid-19/Screening-form-For-Covid-19.pdf>
- [17] https://www.fdiworlddental.org/sites/default/files/media/documents/covid-19_pandemic_dental_treatment_consent_form.pdf
- [18] Jackie Dorst, Back to work, Corona virus Infection control, JCO 2020
- [19] SRIRENGALAKSHMI, M., MOrth ADITH VENUGOPAL, B.D.S. and MANZANO, P., Orthodontics in the COVID-19 Era: The Way Forward.
- [20] <https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html>