



Impact of Covid-19 On Progressive Orthodontics

**Aarti Sethia¹, Veera Sawant², Pranita Jadhav³, Shikha Trambadia⁴,
Mrunal Gaikwad⁵, Rashil Bhutia⁶**

^{1,2,3}Assistant Professor, Department of Orthodontics & Orthopaedics D Y Patil University, School of Dentistry, Nerul, Navi Mumbai, India; ^{4,5,6}Post Graduate Students, Dept of Orthodontics & Orthopaedics D Y Patil University, School of Dentistry, Nerul, Navi Mumbai, India.

ABSTRACT

With the Global Pandemic of COVID-19 chewing up the headlines and our lives, Dentistry has come to an abrupt standstill. COVID-19 with its affection to salivary glands reforms in orthodontic clinical practice in all aspects from doctor to the patient to the clinic personnel all will have to change. This article entails just that, the precautions and change in mindset are just the stepping stones to a better and more importantly, a safe practice.

Key Words: COVID-19, Orthodontics, Acute Respiratory Syndrome, Dentistry, SARS-CoV-2 virus, Precautions and change

INTRODUCTION

The practise of dentistry and orthodontics has ceased during these trying times of a global pandemic brought on by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. The World Health Organization (WHO) named the coronavirus illness (COVID-19) a pandemic on 30/1/2020. In this instance, all governing bodies and professional associations advise treating only dental patient emergencies, and those only with the utmost caution and preparation.

The coronavirus illness (COVID-19) is said to have started in the Chinese province of Hubei, in the city of Wuhan. Infection with Coronavirus 2, often known as the severe acute respiratory syndrome coronavirus, causes it. (SARS-CoV-2). The SARS-CoV-2 virus belongs to the family of single-stranded RNA viruses. Both the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), identified in 2012, and the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), identified in 2002, are single-stranded RNA viruses that belong to the Coronaviridae family.⁷ Because COVID-19 is a cross-species viral-mediated disease, SARS-CoV-2 coronavirus has been mostly related to bats. A zoonotic infection is one that generally affects animals but can also infect people, meaning that it can be transmitted from humans to animals.^{1,2,3}

After the virus' genome was analysed, it was discovered that it shared 79.5% of its genomic sequence with the SARS-CoV virus.

Symptomatology and Source of transmission

After a person is exposed to the virus, it takes five to six days for symptoms to appear. On rare occasions, it could take up to 14 days and even longer.¹⁰

Different people are affected by the COVID-19 in various ways. The most typical symptoms are strikingly similar to seasonal flu symptoms. Patients complain of a dry cough, a high temperature, and exhaustion or shortness of breath. Joint problems, headaches, loss of taste or smell sensations, sore throats, rashes, and/or diarrhoea have all been reported in some people. Asymptomatic people can also serve as "carriers" and a reservoir for infection.

Patients with advanced infections have ground-glass opacities on their chest radiographs. Most people with strong immune systems and no co-morbidities eventually overcome these symptoms by producing the required antibodies. Others who are already compromised experience consequences like pneumonia or a scenario of severe respiratory distress, which sets off the disease's progression.^{2,6}

Human angiotensin-converting enzyme 2 receptors are targets for SARS-CoV-2. There is a significant danger of COV-

Corresponding Author:

Dr. Aarti Sethia, Assistant professor, Dept of Orthodontics & Orthopaedics D Y Patil University, School of Dentistry, Nerul, Navi Mumbai, India.

ISSN: 2231-2196 (Print)

ISSN: 0975-5241 (Online)

Received: 24.12.2020

Revised: 22.01.2021

Accepted: 23.02.2021

Published: 10.03.2021

ID-19 transmission through respiratory droplets in the air, which easily move to a radius of no more than 4 to 6 feet, and can then directly enter the body through the eyes, nose, ears, and mouth due to the presence of these receptors in human salivary glands. As the virus may survive on such objects and surfaces for up to three days, virus spread can also occur in this manner. One to two weeks are reported to pass during the incubation stage. Although many rapid studies are ongoing, there is currently no human vaccine to treat this lethal illness.

During the COVID-19 pandemic, clinical orthodontic practice:⁹

The government also suggests limiting care to urgent cases or those who will need the least amount of assistance while battling such a difficult and contagious illness. You can manage them in one of two ways:

1. Use telecommunication to guide and assist them remotely.
2. You can set up your clinic by adhering to all sanitization guidelines and then only allowing certain patients to use it.

DISCUSSION

The orthodontist must be patient and comprehend the patient's mindset in order to handle the patient remotely.⁸ The topic of the conversation should be carefully considered and planned. More common terms should be prepared because patients may not be familiar with dental jargon. When people talk about their problems, there should be a lot more of a listening mentality instilled. The most crucial thing is to speak in a calm and encouraging manner because, while the government-mandated limits are in place, the patient is suffering more than the orthodontist because their appliance is still in place and therapy will undoubtedly take longer. Now that the wire sequence duration is extended, orthodontics should adhere more strictly to Alexander's advice to "Let It Cook" rather than becoming worried.

- Since the majority of patients are teenagers and schools and colleges are closed, it is important to make general calls about the foods to avoid in order to avoid breakages. Patients in the adult population will understand the instructions better and will be more obedient.
- Patients may be instructed through video call to use a toothpick to remove any loose dental implants, brackets, or tubes that have been glued to the teeth.
- The patient can be instructed on how to use elastics by sending them an internet video or by having a model demonstrate them during a video chat.
- When the public transportation is shut down, a nail clipper that has been cleaned with an alcohol-based sanitizer or heated for 20 minutes in water at 100 de-

grees can be used to quickly cut an impinging wire. As long as the arch wire is a smaller gauge, this can be used. A heavy-duty cutter that is simple to acquire online will be required in the case of rigid rectangular wire. Always recommend guiding the patient via a video. If the patient has used up all of the relief wax, an alternative is to poke a ball of wet cotton from the end of the poking wire.

- With the aid of a phone call, patients can be reminded about and given new instructions regarding the expansion screws.
- The expansion should be seen during a video chat or by examining photographs of the patient's teeth, and it should be stopped when it is necessary. It is safer to err on the side of caution and prevent over-expansion in such circumstances. Prior to the appointment, the patient should receive email links with instructions on how to take their own dental pictures.
- Patients who use removable functional equipment should be instructed on how to clean it and reminded to wear the device. A hand hygiene video protocol should be distributed to all patients in general.
- Routine topical anaesthetic ointments that are available over-the-counter should be recommended in cases of aphthous or traumatic ulcers. Considering the many ulcer diagnoses, a photographic examination of the ulcer's size and severity is recommended.
- Retention plates may be delivered without difficulty using contactless delivery technology, and if they fit properly, they can also be used and instructions followed remotely.
- The use of mouthwash and a minimum of twice daily brushing procedure must be more rigorously adhered to and often reminded because the usage of ultrasonic scalers will be almost non-existent.
- In the case of patients using aligners, their next aligner can be readily given without contact, and patients' treatment proceeds without interruption.
- You might ask them to wear the previous aligner if they believe their current one doesn't fit properly or there is any other problem. Once more, patient-taken images can be used to monitor progress, and the patient should be supplied in before any internet links with instructions on how to take ethical dental photos.

CONCLUSION

In conclusion, orthodontics is a constantly evolving field. There are numerous parameters and variables that are bundled up with one another in countless permutations and combinations. As a result, we are accustomed to the topic and practise constantly evolving. Change is the one thing that is "constant," thus we must approach the current crisis with extreme caution and focus. Patients' expectations will evolve, treatment approaches will adapt, and although corona virus entered our lives very rapidly, it might not be

going anywhere very soon. Therefore, creative thinking and minor adjustments will greatly benefit us. At no cost should the wellbeing of our employees or those who provide assistance be jeopardised. The current strategy should involve as little direct patient interaction as possible and as much distant management as possible Cost-Risk-Benefit Analysis for the patient and the doctor should be considered while taking difficult actions in difficult times.

ACKNOWLEDGMENT

Authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors / editors / publishers of all those articles, journals, and books from where the literature for this article has been reviewed and discussed.

Conflict of Interest: None

Source of Funding: Self

Authors' Contribution: All authors contributed equally towards the data collection, data analysis & compilation

REFERENCES

1. Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, et al. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. *N Engl J Med*. 2020 Mar 5;382(10):970–1.
2. Li T. Diagnosis and clinical management of severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) infection: an operational recommendation of Peking Union Medical College Hospital (V2.0) *Emerg Microbes Infect*. 2020 Mar 14; 9(1): 582–5. Available from: <http://dx.doi.org/10.1080/22221751.2020.1735265>
3. Park SE. Epidemiology, Virology, and Clinical Features of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2; Coronavirus Disease-19). *Pediatric Infect Vaccine*. 2020; 27:1. Available from: <http://dx.doi.org/10.14776/piv.2020.27.e9>
4. Chan JF-W, Yuan S, Kok K-H, To KK-W, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet*. 2020 Feb 15;395(10223): 514–23. Available from: [http://dx.doi.org/10.1016/s0140-6736\(20\)30154-9](http://dx.doi.org/10.1016/s0140-6736(20)30154-9)
5. Backer JA, Klinkenberg D, Wallinga J. Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travellers from Wuhan, China, 20-28 January 2020. *Euro Surveill*. 2020 Feb;25(5):2000062 Available from: <http://dx.doi.org/10.2807/1560-7917.ES.2020.25.5.2000062>
6. Ye G, Pan Z, Pan Y, Deng Q, Chen L, Li J, et al. Clinical characteristics of severe acute respiratory syndrome coronavirus 2 reactivation. *J Infect*. 2020 May;80(5): e14–7. Available from: <http://dx.doi.org/10.1016/j.jinf.2020.03.001>
7. Xu H, Zhong L, Deng J, Peng J, Dan H, Zeng X, et al. High expression of ACE2 receptor of 2019-nCoV on the epithelial cells of oral mucosa. *International Journal of Oral Science*. 2020 Dec;12(1). Available from: <http://dx.doi.org/10.1038/s41368-020-0074-x>
8. Voudouris JC, Suri S, Tompson B, Voudouris JD, Schismenos C, Poulos J. Self-ligation shortens chair time and compounds savings, with external bracket hygiene compared to conventional ligation: Systematic review with meta-analysis of randomized controlled trials. *Dent Oral Craniofac Res*. 2018; 4. Available from: <http://dx.doi.org/10.15761/docr.1000262>
9. COVID-19 Management in the Ortho Practice: FAQ – AAO. AAO. [cited 2020 May 13]. Available from: <https://www1.aao-info.org/covid-19/covid-19-management-in-the-ortho-practice-faq/>
10. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *Journal of Hospital Infection*. 2020;104:246-251. Available from: <http://dx.doi.org/10.1016/j.jhin.2020.01.022>