SUNTEXT REVIEWS

SunText Review of Dental Sciences
ISSN: 2766-4996

Open Access
Commentary Article
Volume 1:2

COVID-19 Information-Orthodontics

Garg D[1,*], Shaji R[2], Mugundan RN[3], Janani SR[3], Shivashankari S[3] and Shunmugavelu K[3]

[1]Orthodontics and Dentofacial Orthopedics, Shri Bankey Bihari Dental College and Research Centre, Ghaziabad, India
[2]Consultation Orthodontist, Dentistry, Chennai, India
[3]Consultant-Dentistry/Oral and Maxillofacial Pathology, Mercy Multispeciality Dental Centre, Tamil Nadu, India

[*]Corresponding author: Garg D, Orthodontics and Dentofacial Orthopedics, Shri Bankey Bihari Dental College and Research Centre, Ghaziabad, India; Tel: +91-9891002766; E-mail: deepti.bansal.snp@gmail.com

Received date: 27 October 2020; **Accepted date:** 06 November 2020; **Published date:** 10 November 2020

Citation: Garg D, Shaji R, Mugundan RN, Janani SR, Shivashankari S, Shunmugavelu K (2020). COVID-19 Information-Orthodontics. SunText Rev Dental Sci 1(2): 110.

DOI: https://doi.org/10.51737/2766-4996.2020.010

Commentary Article

Introduction

The purpose of this document is to address specific needs and considerations for essential oral health services in the context of on maintaining essential Orthodontic services. Our current situation is critical. India has the second highest number of patients with coronavirus disease 2019 in the world, behind only the United States. The numbers are intimidating. On Oct 12, the Indian Ministry of Health counted 109,917 deaths [1]. If this trend is maintained, we will soon overtake the USA. In addition, the contamination curve is still rising.

Transmission of COVID-19 in clinical settings

Transmission of SARS-cov-2, the virus that causes COVID-19, can occur through

- Direct transmission through inhalation of droplets generated through coughing or sneezing,
- Direct transmission via exposure of mucous membrane such as eye, nasal or oral mucosa to infectious droplets.

Indirect transmission via contaminated surfaces (Figure 1) [2]

Droplets <5µm in diameter are referred to as droplet nuclei or aerosols [3]. Many orthodontic procedures such as the bonding, debonding of brackets and attachments generate a substantial number of aerosols which, in turn, pose potential risks of infection transmission [4]. Depending on the size of the office, it will be advisable to designate an isolated and adequately equipped space to carry out those procedures that require the use of rotatory instruments as handpieces or ultrasonic scalers and, if possible, concentrate these appointments when organizing agenda.

Numerous other studies also favour to postpone the aerosols generating procedures till the time this pandemic comes under control. However the science of Fluid Physics state that by altering the physical response of water to the rotary or ultrasonic forces that are used in, the generation of aerosol particles and the distance any aerosol may spread beyond the point of generation can be markedly suppressed or completely eliminated in comparison to water for both the ultrasonic scaler and dental handpiece [5].

Orthodontic Emergencies

WHO advises that routine non-essential oral health care – which also includes aesthetic dental treatments be delayed until there has been sufficient reduction in COVID-19 transmission rates from community transmission to cluster cases or according to official recommendations at national, sub-national or local level.

However, urgent or Emergency Orthodontic interventions should be provided, which can arise from the following scenarios: loose intraoral fixed appliances that are fully retrievable by the patient or parent or Partially loose appliances that require orthodontic intervention; fixed intraoral appliances impinging on the palate or gingival tissue; broken, ill-fitting, or missing removable appliances, aligners, or retainers; a missing or broken bracket; pokey wire; and broken or loose ended fixed retainer [6].

In addition, there are scenarios where the Orthodontist may not be able to leave a patient unattended for 10-12 weeks. Examples include when a recurved nickel-titanium arch wire is placed upside down to close an open bite. One of the side effects, if it is left in for too long, is for the molars to dump mesially under the anteriorly adjacent tooth. If left unchecked, the resulting malposition of the molar can be significant-no, make that significant-resulting in several problems. When a torqueing auxiliary or a reverse curve nickel-titanium arch wire is placed, it causes the apices of the anterior teeth, either maxillary or mandibular, to move through the lingual or palatal cortical plates. When a canine being retracted with active mechanics is left unchecked, result in the apex completely perforating the buccal plate. When a power chain is left in for too long, we must deal with the rotational and axial negative sequelae on the terminal teeth [7].

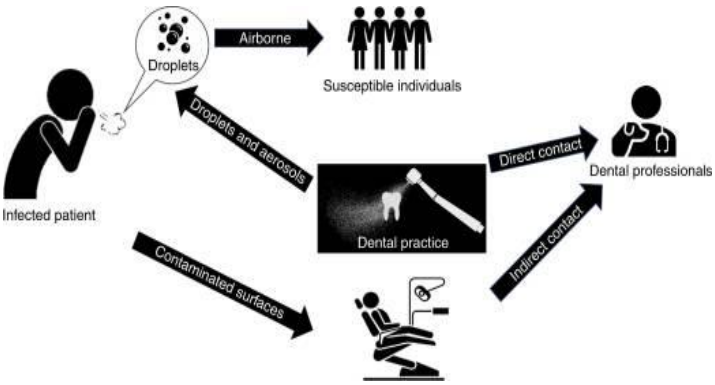

Figure 1: *Illustration of transmission routes of 2019-nCoV in dental clinics and hospitals.*

There is a word for this iatrogenicity. All the mechanics described above are defensible if they are being supervised, because we then can make timely changes as clinical necessity dictates. Public memos about these orthodontic emergencies, prepared by Orthodontic Societies, would be beneficial in communicating a uniform message to our patients.

Orthodontists would then share this public memo on social media platforms and web sites, which can serve to educate the public and allow orthodontists to defend their position during this challenging time. Moreover, the uniformity of the message would also serve to build the specialty's trust among the public.

Screening and triaging of patients

If possible, screen patients before their appointments either by virtual/remote technology or telephone. Otherwise triage should be done on arrival to the Orthodontic Clinic. The aim is to ensure that only patients requiring urgent or emergency receive treatment and that they have no symptoms suggestive of COVID-19 infection or previous risk exposure. It is important to note that not all people infected with SARS-CoV-2 exhibit symptoms, and cases without symptoms can transmit to others [3].

If emergency care is medically necessary for a patient who has, or is suspected of having, COVID-19, the patient should be referred to Specialized Centres to separate possible COVID-19 Cases from other patients.

Infection Prevention and Control in Orthodontic Settings

Patients should be unaccompanied unless they require assistance. There should be adequate ventilation in Orthodontic clinical settings to reduce the risk of transmission in closed settings. According to the type of ventilation available (mechanical or natural), increase ventilation and airflow (door closed, adequate exhaust ventilation, negative pressure, or mechanically ventilated equivalent air exchange capacity in room where Possible - an average of 6-12 air exchanges per hour) [8].

Avoiding split air conditioning or other types of recirculation devices and consider installation of filtration systems. The following approaches can be considered: installation of exhaust fans; installation of whirlybirds (e.g. Whirligigs, wind turbines) or installation of High-efficiency Particulate Air (HEPA) filters [8].

Protection of orthodontists and patients during treatment

Ask the patient to rinse mouth with 1% hydrogen peroxide or 0.2% povidone iodine for 20 seconds prior to examination or starting any procedure for the purpose of reducing the salivary load of oral microbes, including SARS-COV-2 [2].

Ensure that oral health care personnel are trained to use appropriate Personal Protective Equipment (PPE), following a risk assessment and standard precautions: gloves; fluid resistant disposable gown, eye protection (face shield that covers the front and sides of the face or goggles) and a medical mask. A fit tested N95 or FFP2 respirator (or higher) is recommended when AGPs are performed [9].

Conclusion

Considering the uncertainty surrounding the COVID-19 situation, it is evident that there is a need for clinical measures and guidelines for use in orthodontic practices during pandemic situations. These Guidelines should provide (1) clear legislation that explains which emergencies are ones that orthodontists can attend to in their clinics and which are ones that they should defer, (2) priority for COVID-19 testing and guidelines for PPE needed in Orthodontic practices and (3) For Aerosols generating procedures, scientists from Fluid Physics should come forward to guide that how water modulation can be achieved in the clinical settings.

References

1. Coronavirus Updates. Worldometer.
2. Peng X, Xu X, Li Y, Cheng L, Zhou X. Transmission routes of 2019-ncov and controls in dental practice. Int J Oral Sci. 2020; 12: 9.
3. World Health Organization. Scientific Brief. Transmission of SARS-Cov-2: implications for infection prevention precautions. 2020s.
4. García-Camba P, Marcianes M, Varela Morales M. Changes in orthodontics during the COVID-19 pandemic that have come to stay. Am J Orthod Dentofacial Orthop. 2020; 158: 1-3.
5. Plog J, Wu J, Dias YJ, Mashayek F, Cooper LF. Reopening dentistry after COVID-19: Complete suppression of aerosolization in dental procedures by viscoelastic Medusa Gorgo. Phys Fluids (1994). 2020; 32: 083111.
6. Saltaji H, Khaled S. COVID-19 and orthodontics - A call for action. Am J Orthod Dentofacial Orthop. 2020; 158: 12-13.
7. Jerrold L. Exceptional circumstances. Am J Orthod Dentofacial Orthop. 2020; 157: 852-855.
8. World Health Organization. Interim guidance Infection prevention and control during health care when coronavirus disease (COVID-19) is suspected or confirmed. 2020.
9. World Health Organization. Interim guidance Rational Use of personal protective equipment for coronavirus Disease (COVID-19) and considerations during severe Shortages. 2020.