

Covidorthodontics: the new normal

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ABSTRACT

The purpose of this review article is to summarize the contingency management guidelines of major orthodontic procedures to enable us set new norms for orthodontics keeping in mind the implications of the prevailing pandemic. Studies on efficacy of stringent infection control during COVID 19 era for orthodontic procedures published in 2020 were retrieved from various databases like COVID 19 Open Research Dataset, PubMed, MEDLINE, Scopus and Google Scholar. Thus, considering the unreliability and the worrisome environment of this COVID era it is evident that clear guidelines are required for defining orthodontic emergencies, prioritizing COVID 19 testing and PPE requirements for orthodontists and secure virtual consultation platforms. It's extremely mandatory for us to evolve with the ever evolving world and successfully strive together as a community maintaining our patients trust as well as the standard of orthodontic care being offered by us. This unity amongst us and balance of our duties need to become part of our daily lives and be adopted as a new normal.

KEYWORDS: Covid-19; Emergencies; Orthodontics; Preventive measures

INTRODUCTION

The year 2020 has brought with it an unprecedented COVID -19 pandemic along with its uncertain health, humanitarian and financial impact. Bringing the entire world into a halt, with a global lockdown and only essential services continuing. Thus, grossly effecting our orthodontic practice, being compelled to discontinue any elective procedures. However, unlike other dental procedures since orthodontic treatment is a long and continuous process which needs a regular follow up, therefore, special guidelines for clinical management of orthodontic cases in this COVID era is the need of the hour. The purpose of this review article is to summarize the contingency management guidelines of major orthodontic procedures to enable us set new norms for orthodontics keeping in mind the implications of the prevailing pandemic.¹

MATERIALS AND METHOD

This review included the most relevant and recent publications of the year 2020 on implications of COVID 19 taking into account its evolving nature. Studies

specifically on efficacy of stringent infection control during COVID 19 era for orthodontic procedures were retrieved from various databases like COVID 19 Open Research Dataset, PubMed, MEDLINE, Scopus and Google Scholar.

RESULT

Though handling of orthodontic emergencies has been legalized by various countries worldwide, it has been realized that circumstance specific protocols and the definition of orthodontic emergencies in order to maintain uniformity is lacking.

The following scenarios in general fall under orthodontic emergencies

1. Loose intra oral fixed appliance
2. Impinging intra oral fixed appliance
3. Lost/ill-fitting/damaged /impinging removable appliance
4. Missing/broken bracket or wire
5. Broke / loose ended fixed retainers
6. Situations which cannot be left unattended more than 10 weeks eg. Reverse curve Niti, open coil springs etc.

It is extremely important for the government authorities as well as orthodontists themselves to be actively involved in uniformly defining and then spreading among the general public the procedures included under orthodontic emergencies to retain the public's trust on our orthodontic fraternity for being cooperative and uniform globally and to adequately maintain a balance between self-protection and patient's expectations.²

With Orthodontic bonding/rebonding being a common orthodontic emergency being encountered the following are the norms being outlined by Reliance Orthodontic products with about ten percent lesser bond strength being achieved.³

Initial Bonding/Rebonding with No Adhesive on Enamel

1. Have the patient brush vigorously for two minutes with a unidose first & Final pumice. Instruct the patient to thoroughly rinse the teeth at least three times.
2. Blot dry thoroughly with a cotton roll or 2 x 2.
3. Acid etch with liquid phosphoric acid for 30 seconds.
4. With a disposable-tip squeeze bottle† filled with water, rinse for 10 seconds per tooth. Blot dry thoroughly with a cotton roll or 2 x 2. Do not scrub.
5. Apply one coat of Unidose Assure Plus†† with a bristle brush and stroke over several times.
6. With a new, dry brush, stroke over the surface again several times to evaporate the solvent. This dry brush may be used for four teeth until needing to be discarded. Light- cure the tooth for 10 seconds.
7. Apply one thin coat of Assure Plus to the bracket base and stroke over several times. Apply GoTo paste to the bracket base, place the bracket on the tooth, and light-cure. NOTE: Applying Assure Plus to the bracket base is an optional step, but recommended because overall strength is slightly compromised due to less-than-ideal surface conditions.

Rebonding with Residual Composite on Enamel

1. Remove as much composite as possible with adhesive-removing pliers without crazing the enamel.
2. Manually roughen the composite on the enamel with a paper disk.
3. With a disposable-tip squeeze bottle† filled with water, rinse for 10 seconds per tooth. Blot dry thoroughly with a cotton roll or 2 x 2.
4. If there is enamel present, follow the steps for acid-etching above.

5. Apply one coat of Unidose Assure Plus with a bristle brush and stroke over several times.
6. With a new, dry brush, stroke over the surface again several times to evaporate the solvent. This dry brush may be used for four teeth until needing to be discarded. Light- cure the tooth for 10 seconds.
7. Apply one thin coat of Assure Plus to the bracket base and stroke over several times. Apply GoTo paste to the bracket base, place the bracket on the tooth, and light-cure. NOTE: Applying Assure Plus to the bracket base is an optional step, but recommended because overall strength is slightly compromised due to less-than-ideal surface conditions.

Apart from orthodontic emergencies, a guidance for COVID 19 testing and types of Personal protective equipment for the safety of orthodontists is also required to be laid down. A special care to follow these guidelines is required while performing high risk procedures involving hand drills which include:

1. Cleaning residual cement adhesives
2. Debonding /Bonding of aligner attachments
3. Modifying fixed orthodontic appliances intra orally
4. Removing bite turbos

Currently, only medical practitioners are being priority on being provided with appropriate personal protective equipments and get COVID 19 testing which needs to include orthodontists too to enable us to safely carry out the above procedures with proper training of donning and doffing of PPE. The importance of same needs to be emphasized and spread for common welfare of our community and the patients.⁴

Adoption of the following preventive measures needs to be mandated for a successful and safe orthodontic practice in this COVID era

1. Patient screening and history taking

Screening procedures must include body temperature recording and looking for any COVID 19 symptoms.

History recording must include patients medical history, history of high temperature or antipyretics in last 14 days, history of respiratory tract infection in last 14 days, history of travel to any COVID 19 affected region or contact with any confirmed COVID 19 patient in last 14 days.

A signed consent form affirming the above information must be obtained from the patient prior to initiating any dental procedure.

If the patient seems to be a suspected case then reschedule the appointment and advice a fourteen days home quarantine, if seems an active case then it is your duty to inform and refer to the nearest COVID 19 prepared hospital.⁵

2. Daily self-evaluation of our own health is also required with suspension of duties upon developing any COVID 19 symptoms.⁶

3. In order to minimize the microbial count in the oral cavity it is advisable to make the patient rinse with 0.12%- 0.2% chlorhexidine gluconate before carrying out any dental procedure.⁷

4. Since COVID 19 virus has been shown to transmit through mucosal tissue of eyes, nose and mouth hence the entire personal protective equipment must be duly worn including facial mask, face shield, eye protection, gowns, and gloves

5. Despite of COVID 19 being categorized as group B infectious disease, health care providers are being advised to carry out personal protection equivalent to group A infections like use of particulate respirators such as N95, EU FFP2, or equivalent in addition to face shield and restrict aerosol production.⁸

6. For successful combating of this virus proper hand hygiene measures are recommended by World Health Organization with 20 seconds minimal washing time needs to be adopted.

7. It is extremely beneficial in this difficult times to be train all the orthodontists on disease symptoms, infection control measures, routes of transmission and keep ourselves updated with the changing regulation guidelines.

8. Special attention must be given for minimizing the number of patients at the same time and maintaining adequate airflow in the clinic operatory as well waiting area with appropriate ventilation and high airflow.⁹

9. Strict surface disinfection after every patient must be reinforced with special emphasis on stainless steel and plastic where the viability of the virus is claimed to be 5.6 hours and 6.8 hours respectively in contrast to 3 hours in aerosol.

10. All wastes must be handled as infectious medical waste with Double- layer yellow antileakage and a special tag.¹⁰

Orthodontic supplies and instruments

The following recommendations for handling

orthodontic supplies and instruments must be adopted to enhance patient and self-safety.

1. It is recommended to duly sterilize the orthodontic pliers with steam auto- clave , ultrasound bath and thermal disinfection, in an open position or carry on chemical disinfection with 2% glutaraldehyde or 0.25% peracetic acid. Though, instrument cassettes may also be effectively used.¹¹

2. For arch wires to avoid negative surface characterization an autoclave is preferred over cold sterilization.¹²

3. Glutaraldehyde solution to be employed for disinfecting orthodontic markers

4. Washer-disinfector to be used for cleaning cheek retractors.

5. Effective decontamination of debonding burs must be done to avoid bacterial infection spread.

6. After adequate cleaning and sterilization tried in orthodontic bands are claimed to be safe to be used.

7. It is important to reinforce that these decontamination procedures do not hamper the stability of mini implants or the properties of elastomeric chains as commonly thought and hence must be re enforced as well.

8. It is recommended to flush the dental unit waterline for at least two minutes or use disinfectants which have been proven to reduce the risk of infections and improve the water quality.¹³

Finally, the new approach of providing virtual orthodontic consultation worldwide to cater the needs of our patients worldwide is also worrisome. With the approach being young and no clear established guidelines for protection of both the orthodontist and our patients its safety is still unreliable. There is a need to assure that theses online portals being used for orthodontist and patient interaction are Health Insurance Portability and Accountability Act compliant. These mushrooming virtual consultations has brought with it the following concerns:¹⁴

Required of an informed consent and proper documentation for medicolegal purposes and record maintenance.

- The option of connecting only through audio depending upon the comfort of the patient and the orthodontist.

- Maintaining the privacy of an orthodontist by not disclosing his private number and working only in business hours.
- All financial and treatment related information disclosure to be done via emails instead of just verbal virtual interaction for medicolegal and record maintenance purpose to avoid difficulties post COVID era.
- Requirement of maintenance of a professional attire and professional setting if a virtual consult is scheduled.
- Having a Health Insurance Portability and Accountability Act-compliant application to enable protection of information being shared across these virtual portal.¹⁵

CONCLUSION

Thus, adopting the above new measures in our daily practice has become extremely imperative for all of us. It's completely mandatory for us to evolve with the ever evolving world and successfully strive together as a community maintaining our patients trust as well as the standard of orthodontic care being offered by us. This unity amongst us and balance of our duties need to become part of our daily lives and be adopted as a new normal.



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