ISSN: 2582 - 3671
Pubmed - National Library of Medicine - ID: 101766917

International Journal of Dental Science and Clinical Research (IJDSCR)

IJDSCR : Dr.Angel Vaidic Publication
Available Online at: http://www.ijdscr.org
Volume – 2, Issue – 6, November - December - 2020, Page No. : 37 - 43

Management Oral Submucous fibrosis

[1]Dr. Mukesh Shrivastav, PG Student, MDS Periodontics, Al Badar Rural Dental College and hospital, kalaburagi,Karntaka, india

[2]Dr. Mohit Kumar Singh, Senior Lecturer, MDS Prosthodontics, HKDET'S Dental College and Hospital, Humnabad, Bidar, Karntaka, india

[3]Dr.Kanchan Gupta , Senior Lecturer, MDS Prosthodontics, Yogita Dental Dental college and Hospital, Ratnagiri, Maharastra, India

[4]Dr. Devansh Rampure, PG Student,MDS Periodontics, Al Badar Rural Dental College and hospital, kalaburagi, Karntaka, india

[5]Dr.Manisha Khandelwal, BDS, HKDET'S Dental College and Hospital, Humnabad, Bidar, Karntaka, india

Corresponding Author: Dr. Mukesh Shrivastav, PG Student, MDS Periodontics, Al Badar Rural Dental College and hospital, kalaburagi, Karntaka, India

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

The concern of the Corona virus in paediatric dentistry is one of the challenges that the majority of parents are facing. In the dental practice transmission of COVID-19 is commonly via aerosol & saliva. It is precisely during the COVID-19 epidemic period that an adequate management of the oral health of children becomes of crucial importance by implementing specific protocols relating both to the pathologies of the oral cavity that normally do not represent an emergency and to those clinical situations that fall within the category of pediatric dental emergencies. Through this literature search, we anticipate to assemble the various modifications in pediatric dentalpractice that have to be essentially brought into application, keeping in view the safety of the clinician, child patient and the parent visiting the dental clinic, during COVID 19 pandemic

Keywords: COVID-19, Corona virus, Paediatric dentistry, Pandemic.

Introduction

At the beginning of the 2020, the novel virus severe acute respiratory syndrome corona virus 2(SARS -CoV-2) appeared causing the corona virus disease (COVID 19).[1] The first encounter of the disease was in the city of Wuhan, China, in December 2019, after which a pandemic emerged and spread all over the world.[2] Recently, the concern of the Corona virus in Paediatric Dentistry is one of the challenges that the majority of parents are facing.

As Dental health care personnel are exposed to oral cavity which is a common route for infection transmission, he/she should be alert. In the dental practice transmission of COVID-19 is commonly via aerosol. As part of its efforts to mitigate the spread of the corona virus disease 2019 (COVID-19) pandemic, on March 18, 2020, the

American Dental Association (ADA) provided essential guidance on (i) emergency vs. nonemergency dental care and (ii) the use of teledentistry. In response to the current health crisis, teledentistry is emerging as a viable care option in an effort to help "flatten the curve" of the COVID-19 pandemic.[3]

It is precisely during the COVID-19 epidemic period that an adequate management of the oral health of children becomes of crucial importance by implementing specific protocols relating both to the pathologies of the oral cavity that normally do not represent an emergency and to those clinical situations that fall within the category of pediatric dental emergencies. Although there are no reported cases of corona virus transmission in a dental setting, given the high transmissibility of thedisease, dental teams should be alert and maintain a healthy environment for both the patients and themselves. Therefore, understanding aerosol transmission and its implications in dentistry is essential. In addition to standard precautions, some special precautions should also be implemented during this special period.

Therefore, the present study aims to provide safety & preventive measures which can be taken by dental health care professionals while providing urgent dental care to the patients.

Aims & Objectives

- To deliver infection-safe treatment to pediatric dental patients
- To modify the treatment procedures such that it minimizes the chances of exposure
- To counsel patients and their parents regarding self-protection against the corona virus

To Deliver Infection-Safe Treatment To Pediatric Dental Patients

a. Teledentistry in covid-19

Teledentistry is a unique way to deliver long-distance clinical training and continuing education and hands-on training to the dentist/dental hygienist at remote clinics. It even facilitates patient education about self-care. It saves the time and money spent on extra appointments by the patient as the preventive and diagnostic care. It requires low technical equipments so that users at both the ends can communicate face to face. In an effort to raise the dental hygiene student's awareness concerning the public health and community health issues.

Patients should only be referred for urgent dental care when there are severe or uncontrolled symptoms that they cannot manage themselves. It is essential to minimize the number of patients referred to designated urgent dental care centers both to reduce the risk of transmission of COVID-19 to healthcare workers and patients, and to lessen the pressure on these services.

General Principles

- Assessment of patients should take account of patient and staff safety, the best interests of the patient, professional judgment, local urgent dental care center arrangements and prioritization of the most urgent care needs.
- During the assessment, each patient's COVID-19 status must be established and recorded using your health board or local health system protocol. This will determine how their care is managed at the designated urgent dental care centers if referral is required.
- Primary care dental triage should focus on the provision of the three As[4]:
  - Advice;
  - Analgesia;
  - Antimicrobials (where appropriate).

Clinic sanitization & modifications in dentist's attire

Patient evaluation: Upon patient arrival in dental practice, patients should complete a detailed medical history form, COVID-19 screening questionnaire and assessment of a true emergency questionnaire. Dental

- professionals should measure the patient's body temperature using a noncontact forehead thermometer or with cameras having infrared thermal sensors.[5] Compulsory testing with a pulse oximeter as soon as the patient enters the dental clinic can tell you if he has silent hypoxia - even if the patient has not been tested for the virus, or even if his swab test was negative.
- **Mouth rinses:** The effect of Chlorhexidine, which is commonly used for pre-procedural mouth washing in dental practice, has not yet been demonstrated to be capable of eliminating 2019- nCoV. However, oxidative agents containing mouth rinses with 1% hydrogen peroxide or 0.2% povidone-iodine are recommended. Pre-procedural use of mouthwash, especially in cases of inability to use a rubber dam, can significantly reduce the microbial load of oral cavity fluids.[5] Chlorine dioxide (ClO_2) in the form of oral rinse can limit the droplet contamination thereby preventing the further spread of the disease if used carefully within the given dosage.[6]
- **Rubber dam isolation:** Using rubber dams due to the creation of a barrier in the oral cavity effectively reduces the generation of droplets and aerosol mixed with patient saliva and/or blood in 1m diameter of the surgical field by 70%. Following the placement of the dam, extra high-volume suction is also required for maximum prevention of aerosol and spatter from spreading. If it is not possible to use rubber dams for any reason, manual tools such as Carisolv or hand scalers are preferable.[5]
- **Anti-retraction hand piece:** Throughout the COVID-19 pandemic, the use of any dental hand pieces that do not have an anti-retraction function should be avoided. For emergency treatment, anti-retraction hand pieces designed with anti-retractive valves can play an effective role in preventing the diffusion and dispersion of droplets and aerosol.[5]

It is important for doctors and healthcare workers to have been tested for the Covid-19 before resuming work in the clinics. Health care workers who are asymptomatic and do not fall under the category of being exposed to corona virus infection are not required to undergo a test before resuming to work in the clinics. Dental Clinic Ventilation and air quality management by maintaining air circulation with natural air through a frequent opening of windows and using an independent exhaust blower to extract the room air into the atmosphere. Avoid the use of a ceiling fan while performing procedure. Place a table fan behind the operator and let the airflow towards the patient.A strong exhaust fan to be so located to create a unidirectional flow of air away from the patient. Use of indoor portable air cleaning system equipped with HEPA filter and UV light may be used.[7]

Clinic entrance, reception and waiting should display visual alerts at the entrance about respiratory hygiene, cough etiquette, social distancing and disposal of contaminated items in trash cans. Installation of glass or plastic barrier at the reception desk, preferable. Ensure availability of sufficient three-layer masks and sanitizers and paper tissue. Distant waiting chairs, preferably a meter apart. All areas to be free of all fomite such as magazines, toys, TV remotes or similar articles. Cashless/contactless payment methods are preferred. A bin with lid should be available at triage where patients can discard used paper tissues. [7]

Changing room to be available for staff and all workers to wear surgical top and pyjama and clinic shoes Dedicated area for donning and doffing of PPE. A dedicated and trained person should be available to undertake Transport, Cleaning, Drying, Packing, Sterilization, Storage and Testing the quality of sterilization as per the standard guidelines and manufacturer's instructions.[8] Sufficient and dedicated space for storage of additional items of PPE and sterilization and disinfection instruments and chemicals must be ensured. For preparing the operatory for each patient , flush all waterlines for 30 seconds before attaching hand pieces to the lines. If an ultrasonic scaler is to be used, flush the scaler line for 30seconds before attaching the tip. Cover the following items with Plastic bags of appropriate size (large, small) if they will be touched at anytime during treatment i.e ,chair back ,computer keyboard, curing light tip, arm that holds the suction, Light handle(s) , Light switch(es) , the adjustment handle under the operator chair. [7]

Mop entire clinic floor with 1% sodium hypochlorite. Metal surfaces which cannot be bleached should be cleaned with 70% alcohol scrub every 2 hours. Disinfect heat-sensitive equipment with 2% glutaraldehyde. Run 0.01% sodium hypo through handpiece, suction and three-way waterlines. Hand pieces should be cleaned using a hand piece cleaning solution to remove debris, followed by packing in the autoclave pouches for autoclaving. Record to be maintained for the same. Impressions should be thoroughly disinfected before pouring or sending to the laboratory using an appropriate disinfectant.

Fumigation of the operatory is important. The fumigation procedure is carried out after properly sealing the operatory and allowing a contact time of about 12 hours for routine cases, and of 24 hours if any gross contamination occurs during the procedure operation of septiccases.

Fogging is used as 'No-touch surface disinfection' and not for disinfection of air after a large area has been contaminated. The commercially available hydrogen peroxide is 11% (w/v) solution which is stabilized by 0.01% of silver nitrate. A 20% working solution should be prepared.The volume of working solution required for fogging is approximately 1000ml per 1000 cubic feet. After the procedure has been completed in the operatory (in case of no negative pressure), exit the room and close the operatory for half hour for the aerosols/droplets to settle down. The fogging time is usually 45min followed by contact time/dwell time of one hour. After that the room can be opened, fans can be switched on for aeration. Wet surfaces can be dried/cleaned by using a sterile cloth or clean cloth (other surfaces).[7]

To Modify The Treatment Procedures Such That It Minimizes The Chances Of Exposure

Dental Management during the COVID-19 Outbreak

- **Management of orodental pathologies that do not represent an emergency**

We list here several clinical situations that do not require emergency treatment and can therefore be remotely managed.

- **Deciduous or permanent teeth affected by previous carious lesions and treated with temporary dressings**: in this case if the dressings were to decement from the prepared cavity, it is recommended to keep the cavity always free of food debris through careful removal with mechanical brushing after meals to prevent the onset of painful symptoms. It is also recommended to avoid too hot or too cold foods that could trigger the onset of painful symptoms if the original treatment involved the removal of carious dentin-enamel tissue.

- If the dressing concerns an endodontically treated deciduous or permanent tooth and the spontaneous removal of the dressing paste occurs, home treatment may involve washing the endodontic cavity with water diluted with hydrogen peroxide by means of a special syringe without a needle, followed by application of a cotton pellet during the child's meals.
- Delay of deciduous teeth exfoliation with the simultaneous eruption of the corresponding permanent tooth are quite common occurrences. In this case, parents should be advised to encourage the child to chew hard consistency foods such as raw fruit and vegetables, that can stimulate the loss of the deciduous tooth by mechanically inducing its complete removal from the alveolar support.
- Eruptive gingivitis of the permanent first molar is an additional clinical condition, which can be managed during this period. It manifests itself with swelling, edema and redness of the gum in distal position to the erupting first permanent molar. The advice to give to the parents is to use cleaning swabs that help the removal of food debris in the gingival bag between tooth and gum, by rinsing with anti-inflammatory mouthwashes alternating during the day with local chlorhexidine antiseptic sprays, in order to reduce the inflammatory state and the painful symptoms.
- Malocclusions associated with crowding of the dental elements and with overjet and overbite alterations do not represent an emergency. Parents must be instructed to postpone the correction to the end of the epidemic.[10]

- **Non-urgent dental treatments that can be postponed**
  - Initial or periodic oral examinations and recall visits, including routine radiographs
  - Routine dental cleaning and preventive therapies
  - Orthodontic procedures other than those to address acute issues (e.g. pain, infection, trauma) or other issues critically necessary to prevent harm to the patient
  - Extraction of asymptomatic teeth
  - Restorative dentistry including treatment of asymptomatic carious lesions
  - Aesthetic dental procedure [11]
- **Management of oro-dental pathologies that represent an emergency**

  The following presenting conditions require urgent paediatric dental care:
  - Presence of a swelling likely to or compromising swallowing and/or breathing, causing trismus or extending to the eye or a significant oral/facial swelling with associated pyrexia.
  - Traumatic dental injuries resulting in a complex injury to the permanent dentition: avulsion of a permanent tooth; severe luxation (tooth displaced, mobile, and/or interfering with occlusion), crown root fracture (coronal portion displaced, mobile and/or interfering with occlusion), complicated crown fracture (pulp exposed).
  - Traumatic dental injuries to the primary dentition resulting in: pulp exposure or severe luxation such that tooth mobility constitutes a potential airway risk and/or is severely interfering with occlusion/function.
  - Uncontrolled bleeding which has not responded to self-care measures.
  - Severe dental pain (irreversible pulpitis) which has not responded to over the counter analgesics and is impacting on eating and sleeping. [10]

Counsel Patients And Their Parents Regarding Self-Protection Against The Corona Virus

- **Guiding the child patient about self-protection from Covid19** [12,13]

The COVID-19 pandemic has upended the lives of children and their families as health systems buckle, borders close, and schools and businesses shutter.

As a parent and health care professional, want to do everything you can to protect child. The corona virus disease (COVID-19) pandemic has brought with it new challenges for families across the globe. It is the duty of health care professional to navigating this health crisis by providing you with accurate, reliable information on the best ways to keep your family safe.

As the corona virus has spread, so it has misinformation – fueling discrimination and stigma. The aim is to promote facts over fear, bringing trustworthy guidance to parents, caregivers and educators. Thus, the need is to keep children healthy and learning, protected from sickness and violence.

Conclusion

Although reports of COVID-19 in children are generally less severe than those of adult patients, young children, and particularly infants, remain vulnerable to infection and pose a significant transmission risk. Dental teams must ensure they remain current in their understanding of local, regional, and national guidance in a climate of uncertainty and frequent change to optimize safety for dental care providers and patients.

References

1. Mallineni SK, Innes NP, Raggio DP, Araujo MP, Robertson MD, Jayaraman J,Coronavirus disease (COVID-19):Characteristics in children and considerations for dentists providing their care, Int J Paediatr Dent, Vol 30,2020, p. 245-50.
2. Adhikari S, Meng S, Wu Y. et al, Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review, Infect Dis Poverty, Vol 9, no. 29, 2020, p. 1-12.
3. D9995 and D9996 ADA Guide – Version 1 – July 17, 2017 – Page 1-10 ©2017 American Dental Association (ADA).
4. SDCEP. Management of Acute Dental Problems During COVID-19 Pandemic March 2020.
5. Fallahi HR, Keyhan SO, Zandian D, Kim SG, Cheshmi B, Being a front-line dentist during the Covid-19 pandemic: a literature review, Maxillo fac Plast ReconstrSurg, Vol 42, no. 1, 2020, p.12.
6. https://dentalreach.today/dental-research/chlorine-dioxide-as-an-anti-covid-19-oral-rinse/
7. Guidelines For Dental Professionals In Covid-19 Pandemic Situation Issued On 19/05/2020
8. Covid-19 Guidelines For Dental Colleges, Dental Students And Dental Professionals By Dental Council Of India. 16th April, 2020
9. COVID-19 - Control and Prevention _ Denstistry Workers and Employers _ Occupational Safety and Health Administration(OSHA).
10. Luzzi, Valeria &Ierardo, Gaetano &Bossù, Maurizio & Polimeni, Antonella. (2020). COVID-19: Pediatric Oral Health During and After the Pandemics. 10.20944/preprints202004.0002.v1.
11. Recommendations for Paediatric Dentistry during COVID-19 pandemic 2020 /www.rcseng.ac.uk/dental-faculties/fds/coronavirus.
12. Colombo AP, et al. Comparisons of subgingival microbial profiles of refractory periodontitis, severe periodontitis, and periodontal health using the human oral microbe identification microarray. J Periodontol 2009: 80: 1421–1432

13. Susan Kinder Hooke and George T.-J. Huang Molecular Biology of the Host-Microbe Interaction in Periodontal Diseases: Selected Topics-Carranza 9th edition pg-153
14. Bruce Beutler Innate immunity: an overview: Molecular Immunology 40 (2004) 845–859
15. Burnet m. Auto-immune disease. Modern immunological concepts. Br Med J. 1959 Oct 10;2(5153):645-50
16. Kenneth T. Miyasaki, Russell. Nisengard, and Susan Kinder Haake. Immunity and Inflammation: Basic Concepts-Textbook Of Clinical Periodontology 9th Edition pg-116-125
17. Susan Kinder Haake, Russell. Nisengard, Michael G. Newman, and Kenneth T. Miyasaki Microbial Interactions with the Host in Periodontal Diseases-Carranza 9th edition pg 132.
18. Maurizio S. Tonetti and Andrea Mombelli, Aggressive Periodontitis, Textbook-clinical periodontology and implant dentistry-5th edition: pg no-447-459
19. Rowland. Necrotizing periodontal disease: a manifestation of systemic disorders. Ann Periodontol. 1999; J Periodontol. 1986; 57: 141-50. 20.
20. David Herrera et al, Acute periodontal lesions: Periodontology 2000, Vol. 65, 2014, 149–177
21. Jeffrey. Ebersole, et al .Periodontal disease immunology: double indemnity in protecting the host Periodontology 2000, Vol. 62, 2013, 163–202