Endodontics in the era of COVID-19

Dear Readers,

We sincerely hope that you, your family and your loved ones are well.

The coronavirus (COVID-19) outbreak has become a pandemic and is now a global crisis. Its impact is widespread and limitless. Everyone is affected in one way or another and it is a fast-moving situation, changing minute by minute. However, indications are this COVID-19 pandemic will not be over quickly. Consequently, we are all facing many challenges, on many fronts, both professional and personal.

As part of the health care community, we are stakeholders in the battle against this pandemic. We all need to help and support each other, collaborate and cooperate, so that we can see it through together. These include abiding by mandated social distancing and movement control orders and practising meticulous personal hygiene. Many of us may have also been redeployed to help support frontline services. We all have to do our part, in any way we can, if we are to defeat this invisible enemy. Above all, as health care professionals, we have to keep calm and not knowingly or unknowingly contribute to the panic or mania surrounding the pandemic.

Currently, a moral dilemma that dental health care professionals are facing is the need to balance the provision of essential dental care for patients and yet mitigate the risk to our own personal health and welfare. In endodontics, emergency treatment for acute pain and dental trauma are undoubtedly the most pressing[1]. It has even been argued that dental treatment can still be provided, in certain circumstances, if the patient is symptom-free[1,2], i.e. if the patient is not considered, or there is no reasonable suspicion of being, infected. However, epidemiology has identified 'super-spreaders' – individuals who can pass on an infection to large numbers of people without themselves suffering any signs or symptoms. Super-spreaders have been implicated in the transmission of many infectious diseases. Analysis of the SARS (Severe Acute Respiratory Syndrome) outbreak, nearly 20 years ago and due to another coronavirus (SARS-CoV), suggested that approximately 75% of infections were caused by a small number of 'super-spreaders'[3]. Hence, the counter-argument is that not only is it impossible to avoid the risk of being infected, if it happens, there is the danger that health care professionals may end up being 'super-spreaders', inadvertently contributing rather than preventing the further transmission of COVID-19. In addition, health care professionals are often in daily contact with patients with less than optimum health, and well-meaning intentions of continuing to provide dental care could potentially put these patients at unquantifiable risk. Therefore, for maximum safety, it is not unreasonable to suspend all routine and elective dental care.

We remain guided by and must follow official advice. However, given the dynamic situation, inevitably, there is variance in the advice and guidelines issued. Unfortunately, not only do they not concur on all matters, advice and guidelines are country-specific, based on epidemiological data and availability of, especially, local resources and critical care services. Within legitimate limits, we must carefully interpret the official advice and guidelines. On a case-by-case basis, as part of the decision-making process, we must weigh the risks versus the benefits. We should only provide treatment considered prudent and necessary to enable patients to maintain an acceptable level of oral health.

We cannot and do not wish to be prescriptive. We can only share with everyone the commonly accepted recommendations based on current knowledge[2,4-9], which can be adapted accordingly if required. In principle, for risk assessment, an initial COVID-19 screening questionnaire should be completed for each patient beforehand (in the last 14 days: fever, cough, shortness of breath, loss of

taste or smell, gastrointestinal symptoms, severe runny nose; patient or a family member from, or had visited, a high transmission risk region, or has had contact with a COVID-19-positive person); a body temperature check should also be considered.

Although not exhaustive, the following infection control measures and dental treatment protocols for COVID-19-positive or -suspected patients[2,4-9] are worthy of note:

- Ideally, treatment should be carried out in negative pressure rooms.
- Use of appropriate personal protective equipment (gown, masks [FFP2 or FFP3] or respirators, goggles and/or face shields, two pairs of gloves, etc.).
- Preoperative mouth rinse of either 0.2% povidone-iodine or 0.5% to 1.0% hydrogen peroxide; note that chlorhexidine is not effective against COVID-19.
- Extraoral radiographs are preferred. Intraoral radiographs stimulate the production of saliva and can sometimes trigger a cough.
- Avoid aerosol-generating procedures (high-speed handpieces, ultrasonically or sonically activated instruments).
- If possible, refrain from using the 3-in-1 syringe; if unavoidable, only air should be used and not a combination of air-water spray.
- Take measures to reduce circulating aerosols (high-volume suction and time for air clearance).
- Wherever and whenever possible isolate the working field using a dental dam[9]; the dental dam should also cover the patient's nose.
- Ensure safe and meticulous waste disposal (e.g. double bagging contaminated waste).
- Thorough disinfection of the entire treatment room.
- Disposable, single-use instruments and devices are preferred.

In the effort to limit the likelihood of COVID-19 transmission, understandably, access to dental care during this pandemic will be very limited. There are bound to be many guidelines, statements, algorithms, etc., released on the management of dental patients. For the sake of everyone, we have to be careful with any information in the public domain; just because it is issued by a specialist society or advisory group, it does not necessarily mean it has been universally agreed or is safe. The overriding principle to keep in mind is, as expressed in the guidance issued by the General Dental Council (UK)[10], "We do not expect any dental professional to provide treatment unless, in their professional opinion, it is safe to do so for both patients and the dental team."

We hope by the time this Editorial is published we have all returned to some normality.

Keep well, stay safe and all the best.

Bun San Chong Edgar Schäfer

Editors

References

1. Frankenberger R. Es gibt für diese Krise kein Handbuch. Zahnärztl Mitt 2020;110:900–903.
2. Berlin-Broner Y, Levin L. 'Dental Hierarchy of Needs' in the COVID-19 era – or why treat when it doesn't hurt? Oral Health Prev Dent 2020;18:95.
3. Stein RA. Super-spreaders in infectious diseases. Int J Infect Dis 2011;15:e510–e513.
4. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. Int J Oral Sci 2020;12:9.
5. Ather A, Patel B, Ruparel NB, Diogenes A, Hargreaves KM. Coronavirus Disease 19 (COVID-19): implications for clinical dental care. J Endod 2020;46:584–595.
6. Meng L, Hua F, Bian Z. Coronavirus Disease 2019 (COVID-19): Emerging and future challenges for dental and oral medicine. J Dent Res 2020;99:481–487.
7. Wax RS, Christian MD. Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-nCoV) patients. Can J Anesth 2020;67:568–576.
8. Volgenant CMC, de Soet JJ. Cross-transmission in the dental office: Does this make you ill? Curr Oral Health Rep 2018;5:221–228.
9. Cochran M, Miller C, Sheldrake M. The efficacy of the rubber dam as a barrier to the spread of microorganisms during dental treatment. J Am Dent Assoc 1989;119:141–144.
10. General Dental Council (UK). COVID-19: GDC guidance for dental professionals. https://www.gdc-uk.org/information-standards-guidance/covid-19/covid-19-guidance-from-the-gdc. Accessed 24 April 2020.