Protocol for post COVID scenario: How prepared are we & lessons for the future

Ramen Sinha and Uday Kiran Uppada*
Department of Oral & Maxillofacial Surgery, Sri Sai College of dental surgery, Vikarabad, Hyderabad, India.

ABSTRACT

COVID – 19 is considered to be the most frightening pandemic the world has faced in over a century. It is posing a great treat to healthcare workers particularly Maxillofacial surgeons and otorhinolaryngologists. This necessitates the formulation of novel protocols to warrant the operator and patient safety from the virus for interventions in the head & neck region.

Keywords: COVID; Oral & maxillofacial surgery; pandemic.

INTRODUCTION

It is a well known fact that the Novel Coronavirus (nCoV) is a unique virus that affected the human beings by causing severe respiratory disease and is responsible for a high fatality rate globally. Based on the current available literature, it is understood that COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes and not by airborne transmission. The most frightening pandemic the world has faced in over a century pose a great treat to healthcare workers particularly the dental health professionals. This is based on the fact that the virus may be transmitted to the clinician from the infected patients through aerosols.

Bearing in mind the numerous types of dental equipment that are employed to deliver dental care in the form of handpieces, air-water syringes and ultrasonic scalers; a significant amounts of aerosols are invariably produced. Thus, the potential for the spread of infections from patients to the operator or operating subordinates is relatively high. This is attributed to the fact that the incubation period of this virus ranges from 2 to 14 days, with a mean of 5 or 6 days and nearly four in five virus-positive patients could turn out to be asymptomatic.

Literature reveals that Maxillofacial surgeons and otorhinolaryngologists in addition to dentists are at high risk of being exposed to and infected by COVID-19. This necessitates the formulation of novel protocols to warrant the operator and patient safety from the virus for interventions in the head & neck region.

Current scenario

Throughout the world, the professional experts in infectious diseases, respiratory diseases, and intensive care units (ICUs) rose to the occasion to face this unique and unprecedented health emergency. The spectrum of work that an Oral & Maxillofacial surgeon undertakes encompasses procedures which not only saves lives but also those which improves the quality of life by delivering enhanced function and aesthetics. Pertaining to maxillofacial surgery, elective surgeries have been postponed in almost all units and many contributed to the human resources and day-to-day care. In countries like Italy, Maxillofacial surgeons and residents have worked in emergency departments and performed tracheostomies to patients and nasopharyngeal tests for health-workers and patients.

It was clearly evident that ever since the outbreak of the COVID-19 epidemic, elective surgeries in the maxillofacial region progressively decreased worldwide in order to prevent risk to both the healthcare workers and patients. The same trend continued in India as well. A recent study conducted a questionnaire focusing the attention on the missed visits and surgical procedures since the outbreak of COVID-19 epidemic. The study noticed a huge reduction of outpatient vis-

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**Corresponding Author**
Name: Dr. Uday Kiran Uppada  
Email: udaymaxfax@gmail.com  
Contact: +91-9948885515

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its (-87%) and outpatient (-86%) and inpatient surgical procedures (-78%) within four weeks after the beginning of the pandemic.\textsuperscript{[11]}

**Protocols for post COVID scenario**

Oral & Maxillofacial surgeons are always stringent with regards to following infection control protocols. However, the need of the hour is to review our current infection control protocols and refine them further. Similar to most respiratory infections, droplets are the main source of transmission from COVID-19 patients. Literature shows that COVID-19 can remain infectious on inanimate surfaces for 2 h up to 9 days, depending on the temperature, humidity, type of surface and viral load.\textsuperscript{[12]} This necessitates the use of appropriate disinfectants and methods like the triple-bucket method for mopping of surfaces. Sodium hypochlorite 0.1% for 1 min is advocated to be effective against coronavirus.\textsuperscript{[12]}

The collection, segregation, and transport of biomedical waste in the clinics should be done under the strict guidance of the Biomedical Waste Management Officer of the institute.\textsuperscript{[12]} Telescreening, teledicine, and triaging will have to be put to optimal use in the current scenario. These would invariably reduce the footfall in the clinics and allow the operator to plan when an operative intervention is necessary.\textsuperscript{[13]} The CDC (Centers for Disease Control) and the AOCMF had suggested rescheduling of all elective surgeriees during the pandemic till clear management strategies are identified.\textsuperscript{[12,13]}

According to Xu et al, when dealing with patients with or without symptoms of COVID 19, practitioners should wear Level 2 protection gear (N95/FFP2 masks, medical protective glasses, disposable gown, gloves, medical hat, and boot covers).\textsuperscript{[14]} In addition to this, patients have to use disposable surgical masks in order to decrease one-way diffusion.\textsuperscript{[15]}

Literature has shown that SARS and MERS are extremely susceptible to betadine rinse and hence a preprocedural rinse with this agent would reduce the viral load in saliva.\textsuperscript{[16]} Povidone Iodine is proved to exhibit significant virucidal activity for nearly three hours and hence it is advocated to coat the oral cavity and nasal passages of both the patient and the operating team before the procedure.\textsuperscript{[17,18]} Literature also shows that the use of prophylactic perioperative hydrogen peroxide is also effective since 2019-nCoV is vulnerable to oxidation.\textsuperscript{[19,20]} Intraoral radiographs like IOPA or occlusal views can stimulate gag reflexes and induce coughing should be avoided and substituted by extraoral techniques like OPG and cone beam CT.

Literature has shown that intubation, airway suctioning, and tracheotomy, are considered aerosol-generating procedures.\textsuperscript{[6,7]} The use of high-speed devices like piezoelectric devices and drills are also considered aerosol-generating procedures, due to the amount of blood and saliva aerosolized.\textsuperscript{[19]} Due to the above mentioned reason these techniques are considered high-risk procedures and requires to be employed with a high level of protection.\textsuperscript{[21]}

Intubation should be performed by only an expert in the field in order to reduce the number of attempts in addition to ensuring that it generates less coughing.\textsuperscript{[13]} It is advocated that the surgical team should enter the theater only after 20 min of intubation with appropriate PPE to minimize the aerosol-based transmission. For surgical interventions, scalpel should be preferred over monopolar cautery and repeated suction/irrigation should be minimized; and when achieving hemostasis with bipolar cautery lowest power settings should be used.\textsuperscript{[13,22]} Absorbable sutures should be preferred to minimize the number of appointments.

Surgical interventions should be limited to management of maxillofacial trauma including emergent airway management and bleeding, patients who need drainage of infections (e.g., Ludwigs angina) and oncosurgery procedures where a delay in management would adversely affect the outcome or could cause a permanent disability will need urgent attention.\textsuperscript{[13]} Closed reduction of fractures (using IMF screws, Bridle wire stabilization or Eyelet wiring) should be preferred over open surgery where stability can be achieved without ORIF. This shall shorten operating time and facilitate early discharge. In situations where ORIF is absolutely necessary, transcutaneous approach should be preferred over an intraoral approach.\textsuperscript{[13]}

Treatment for deformities of the cleft lip and palate need not be delayed over 9 months of age in order to avoid subsequent impairment of speech. In addition to this, patients with facial paralysis have to be considered as elective surgeries in order to avoid losing the chance to reanimate mimetic musculature.\textsuperscript{[23]} Malignant neoplasms in advanced stages should employ neo-adjuvant therapy to control the development of the disease.\textsuperscript{[24]} For non-critical cancer patients, elective surgery should be postponed, provided that this choice does not negatively affect the prognosis. Emphasis should be on good hygiene and disinfection to limit the spread of the infection.\textsuperscript{[22]}

**CONCLUSION**

The COVID-19 pandemic continues to be threatening and for a sustained period of time prevention measures need to be incorporated to prevent or slow down the spread of the infection. Even though oral and maxillofacial surgeons are not involved in the management of the current pandemic, their contribution is necessary to prevent or control the spread of infection. The choice of surgical technique should be based on careful evaluation and compliance with the treatment principles to simplify the intervention and reduce operating times. It is also necessary to establish continuous contact with the administrative control bodies of the hospital to minimize the risk of infection and spread of COVID-19.
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