

# SF Community Medicine and Health

## Experience in Oral and Maxillofacial Surgery during COVID-19 Pneumonia

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### Abstract

The Corona Virus Disease 2019 (COVID-19) is caused by a new beta coronavirus-the 2019 coronavirus (SARS-CoV-2) which invades human respiratory epithelial cells and results in lung lesions in patients and secondary to a systemic inflammatory response. COVID-19 is mainly spread by respiratory droplets and close contact. Because Oral and Maxillofacial Surgery is a high-risk department infected with 2019-ncov virus in clinical work, we summarize some skills and work experience during the period of COVID-19 pneumonia.

**Keywords:** Oral and Maxillofacial Surgery; COVID-19; Protection

### Introduction

Since December 2019, a new type of pneumonia has broken out in Wuhan, Hubei province, and rapidly spread to many provinces in China and all over the world [1-3]. In January 2020, scientists took samples from patients with the pneumonia in Wuhan and sequenced their genes, and found that the pneumonia was caused by a new beta coronavirus, which was named 2019 novel coronavirus (2019-ncov) [4]. On February 11, 2020, The International Virus Classification Commission officially named the new coronavirus as Severe Acute Respiratory Syndrome Corona Virus (SARS-CoV-2) [5]. The pneumonia caused by SARS-CoV-2 is named Corona Virus Disease 2019 (COVID-19) [4]. On January 30, 2020, the outbreak which has brought great harm and challenge to human health and global public health security was recognized by the World Health Organization (WHO) as a Public Health Emergency of International Concern (PHEIC) [6,7]. COVID-19 is mainly spread by respiratory droplets and close contact. The incubation period of COVID-19 is about 1 ~ 14 days, and clinical Symptoms of COVID-19 include fever, fatigue, muscle pain and dry cough. Most patients have mild onset symptoms, no fever or gastrointestinal symptoms. The number of white blood cell did not increase or even decrease. The number of lymphocyte decreased. Interstitial pneumonia was found by radiography. Most patients had a good prognosis after 1 week [8]. Some patients developed dyspnea one week after infection, and the severe cases developed rapidly into severe pneumonia, ARDS, septic shock, metabolic acidosis and coagulation dysfunction which were difficult to correct, and even a few patients died. Most of the patients with critical illness or death were elderly, with lung disease or other chronic disease.

During the epidemic period, as a high-risk department infected with 2019-ncov virus in clinical work, oral and maxillofacial surgeons should master some basic skills to carry out daily diagnosis and treatment, and avoid 2019-ncov virus infection.

### Skills that Clinicians Should Master

**Hand hygiene:** Remove watches and jewelry. Firstly, palms facing each other, fingers close together and rub each other with liquid soap; Secondly, one palm rubbed the other back of the hand along the finger seam, and the hands are exchanged; Thirdly, palms facing each other, fingers of hands are crossed and rubbed together; Fourthly, bend each finger joint and put the back of the finger on the palm of the other hand, rotating and rubbing, and the hands are exchanged; Fifthly, one hand held the thumb of other hand, rotating and rubbing, and the hands are exchanged; Sixthly, close the fingertips in the palm of the other hand, rotating and rubbing, and the hands are exchanged; Seventhly, rub the wrist and arm, and the hands are exchanged; finally, wash hands and arms with running water for more than 20 seconds.

**Wear protective clothing:** Step 1: hand hygiene, Step 2: wear protective mask, Step 3: wear protective goggles, Step 4: wear inner gloves, Step 5: wear protective clothing, Step 6: wear outer

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gloves and Step 7: check whether the whole body is surrounded and whether the protective clothing is damaged.

**Take off protective clothing:** Step 1: take off protective clothing in first buffer zone: sterilize outer gloves, remove the outer gloves. Sterilize inner gloves, take off the protective clothing, sterilize inner gloves, remove inner gloves, hand hygiene; Step 2: take off protective goggles and mask in second buffer zone: wear sterile gloves, take off protective goggles, sterilize gloves, take off protective mask, sterilize gloves, take off gloves, hand hygiene.

Note: No beating or body shaking during the removal process. The whole process should not be too fast. If you suspect that your clothes or skin are contaminated, take a bath and put on clean clothes. Pay attention to cleaning your nose, ears and mouth.

## Experience for Clinicians

When patients and their companions enter the hospital gate, they should have a temperature test. If the temperature is higher than 37.3°C, the patients should go to the fever clinic.

### Outpatient department

Before the patient enters the clinic, the nurse should ask about the patient's medical history. The questions should include the following aspects: (1) Have you had fever in the past 14 days? (2) Have you had any respiratory distress in the past 14 days, such as coughing or dyspnea? (3) Have you ever visited Wuhan or its surrounding areas, or other epidemic areas in the past 14 days? (4) Have you had contact with a confirmed COVID-19 patient in the past 14 days? (5) Have patients with fever or respiratory problems been in close contact with you in the past 14 days? (6) Have you been to any party, meeting recently, or in close contact with many strangers? If the patient answer "yes" to any screening question and his temperature is below 37.3°C, the dentist may postpone the treatment to 14 days or a month later. The patient should be instructed to isolate himself at home.

Doctor's protective equipment include N95 mask, disposable sterile gown, sterile gloves, disposable medical cap, protective goggles and disposable shoe covers. The diseases that need urgent treatment in oral and maxillofacial department mainly include tooth pain, tooth injury, temporomandibular joint dislocation, oral and maxillofacial injury and infection. Before oral examination, patients should use povidone iodine (1%) or cetylpyridinium chloride (0.05% ~ 0.10%) to gargle, effectively reducing the number of microorganisms in the droplets and aerosols produced by oral operation. During oral examination, the patient should be in a relaxed state. The doctor's action is gentle to avoid coughing of the patient. The spit aspirator should be used in time to avoid the generation of droplets. When the dentist treat the patient's teeth, the rubber barrier should be used. When the dentist use the drill, water output should be reduced and strong suction device should be used. When the doctor washes the wound or pus cavity, the action should be gentle and the suction device should be used to avoid the generation of droplets. Only one patient and one doctor in one clinic room. Pay attention to disinfection of the clinic before the patient enters and after the patient leave. Avoid patients waiting in a centralized. The non emergency treatment in oral and maxillofacial department can be carried out after the epidemic.

### Inpatient ward

After the diagnosis of the outpatient, the patients who need hospitalization can go to the ward. Before they enter ward, the patients should receive chest CT and 2019-ncov nucleic acid examination by PCR. If a patient go to hospital with his partner, his partner should receive chest CT and 2019-ncov nucleic acid examination. The patient and his partner enter ward after negative results are obtained. One room for one patient. If the patient is diagnosed as novel coronavirus pneumonia after emergency operation, all medical staff who are join in surgery should be immediately isolated for at least 14 days. Adequate personal protective equipment is essential when patients with COVID-19 receive surgery. Personal protective equipment include FFP3 respirator, disposable sterile gown, sterile gloves, disposable protective clothing and protective goggles. The operating room must have a negative pressure and the formation of aerosols must be minimized. The number of doctors and nurses in the operating room should be minimized .

In ward, doctors and patients should wear surgical masks and gloves. People are not allowed to gather to have food in the restaurant. Pay attention to strengthen the psychological guidance of doctors, relieve the psychological pressure of doctors and help patients build confidence to overcome disease. Keep the office clean and ventilated, wash hands frequently and avoid crowded personnel. Pay attention to classification of medical waste.

All the above experiences are for the protection of patients as well as doctors and the normal operation of medical institutions.

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