Guidelines and Recommendations for Patient Management, Surgical Activities, and Safety in the Maxillofacial Unit and Head and Neck Department During COVID-19 Pandemic

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Abstract: The recent pandemic has led to an unprecedented overload of sanitary systems around the world. Despite that a maxillofacial department is not a frontline specialty in the treatment of coronavirus disease 2019 infections, our department has found itself faced with numerous problems in keeping the care system active and efficient while ensuring safety for patients and healthcare professionals. Massive redistribution of health personnel was needed to improve prevention and personal safety measures. The education and training system has been kept active, giving residents a decisive role in managing the state of emergency response. This article outlines new guidelines for infection prevention: from clinical control, treatment processes, clinical management, protection, and disinfection of healthcare professionals.

Key Words: Coronavirus disease 2019, head and neck, maxillofacial, pandemic safety, severe acute respiratory syndrome coronavirus 2

The new coronavirus outbreak, following the rapid spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus worldwide, has imposed a reshaping of the health system. In Italy, the onset of infection in February 2020 was followed by a rapidly escalating cluster of infections.

Physicians and healthcare professionals are at the forefront of the pandemic response and are certainly the ones most dangerously at risk of infectious disease. The Department of Oral and Maxillofacial Surgery is particularly vulnerable to coronavirus disease 2019 (COVID-19) infection due to the close exposure to the oral and nasal areas of patients in routine clinical practice.

During the SARS-CoV-2 pandemic, it is mandatory to organize the treatment of patients in such a way that the transmission of infection is minimized.[1–6]

The aim of this work is to draw up new guidelines for infection prevention in clinical control, treatment processes, clinical management, protection, and disinfection of healthcare professionals. The resultant guidelines may be used by all maxillofacial surgeons during the pandemic, supporting decision making that is likely to be different from current practice. Especially for the next phases of the pandemic where will be crucial the correct approach to the patient to avoid the same errors made at the beginning of the pandemic.

METHODS

For certain time intervals, healthcare may need to focus on COVID-19 patients in critical patients. In addition to infectivologists, anesthesiologists, and pneumologists, oral and maxillofacial surgeons must be aware of the new challenges in the risks of viral transmission between patients and medical staff. To reduce the pressure on the health system, it may be necessary to request the postponement of elective surgeries. The departments of maxillofacial surgery should focus their activity on oncologic patients, deep head-neck infections, and facial-skull traumatology.

Given the high number of asymptomatic patients that are SARS-CoV-2-positive, all patients should be considered infectious.[7,8]

Patient Recruitment

All patients should undergo a telephone triage for any signs or symptoms that may suggest COVID-19 infection and/or pending problems, such as severe dysphagia or airway impairment. Patients who are believed to be at risk for significant negative results if they are not evaluated should be offered a visit to the clinic in person. Those with symptoms that suggest possible COVID-19 infection should be directed to specialized departments.[9,10]

Outpatient Activities, First Visits, and Checks

During the peak of the COVID-19 pandemic, any potential outpatient visits should be carefully considered and kept to a minimum. At the current stage of infection, patients with re-infection for insufficient acquired immunity cannot be ruled out; every patient should be treated as potentially positive. Medical masks must be provided to the patients in the waiting room while maintaining the necessary safe distances. Patients with respiratory symptoms should be separated if other patients are present; if the reason for the visit proves to be low priority, they should be reprogrammed.

Before accessing the hospital, all patients should disinfect their hands and monitor their body temperature. The examination of the head and neck, which will include the mucous membranes, should be performed while maintaining the suggested level of precaution.

Given the frequent exposure to saliva and sputum, which are related to a high risk of viral transmission, the clinical examination of a patient must be practiced in a separate room away from other patients with only the necessary staff authorized to be present. The examination must be carried out by the most experienced medical staff for a more targeted assessment. When performing clinical examination, use of safety devices such as a mask, glasses, gloves, headdress, and disposable gown is recommended. The patient should practice washing the mouth with an antiseptic solution to reduce any potential viral load (eg, with 50% solutions of chlorhexidine, hydrogen peroxide, povidone iodine). In addition, the nose and nasopharynx have been referred to as reservoirs for high concentrations of the SARS-CoV-2 virus, so for endoscopic examinations of the nasal cavities it is vital to take the same precautions.[11–13]

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Inpatient Management

During the COVID-19 pandemic, all patients admitted to a hospital unit shall have to undergo a SARS-CoV-2 test on a routine basis. Patient admitted to a department of maxillofacial surgery, waiting for surgery, or in immediate postoperative, should undergo monitoring of their oxygen levels and temperature every 6 hours.

Patients should be placed in single rooms whenever possible, or alternating beds (as it is obvious that infected and uninfected patients must be separated); rooms must be aired every 2 hours, and visits by family members must be suspended to limit the infectious risk. Visitors who must enter by absolute necessity should be screened for acute respiratory illnesses before entering the health facilities. Each patient must be provided with a new protective mask on a daily basis.

Patients should be instructed to limit their movements within the hospital; if instrumental examinations are scheduled outside the department, this must be carried out following the established COVID-19 guidelines by providing the patient and medical staff with personal protective equipment.[11,12]

During the dressing of postoperative patients, the same precautions should be taken as for an outpatient examination: each patient should be considered as infected. Before taking a patient to the operating room, a SARS-CoV-2 test must be performed. An emergency patient who does not have sufficient time for testing should be treated the same way as an infected patient.

Surgical Activity

Patients who need surgery should practice mouth washing and hand disinfection before leaving their room; they must wear an FFP2 or N95 respirator mask without a valve and a disposable gown when they are taken to the operating room. The nursing staff responsible for the transfer must wear an FFP2 or N95 respirator with valve, as well as the proper dress and gloves. The operating room must have negative air pressure to reduce the spread of the virus. Before entering the operating room, all staff members must wear personal protective equipment: a disposable coat, gloves, mask, and face shield. The surgical team must come in to the operating room only after the patient has been intubated. Operating room staff must be reduced to the necessary minimum, and the surgical team must be equipped with the aforementioned protective equipment complemented by a watertight sterile dress.

During surgery, aerosol formation should be reduced as much as possible; thus, it is necessary to limit the use of rotating and piezoelectric instruments in favor of osteotomes where possible.[1] The electrocauterization should be avoided or used at the least possible power if strictly necessary. The operating field should be strictly limited to the area of surgical interest, and an extraoral approach should be preferred to the intraoral one whenever possible. The surgical team must leave the operating room before the patient is extubated. After the patient has left the operating room, at least 15 minutes must pass before the operating room disinfection procedures begin; waste management must follow well-defined rules.[11–15]

Treatment Algorithm Based on Urgency and Severity of Pathology

During the SARS-CoV-2 pandemic, the treatment of the patient must be organized in such a way that the transmission of the infection is minimized. Concepts need to be developed that account for the possible need to assess patients based on the degree of treatment urgency.[16] All patients who need elective procedures, such as for cleft lip and palate, dentofacial deformities, chronic respiratory deficits, and benign nondebilitating pathologies, are recommended to postpone surgery. Patients with clinical priority, such as malignant tumors and chronic infections, are not deferrable; they must be admitted to hospitalization and administered a full assessment with blood tests, electrocardiogram, chest radiography, and anesthesiologic evaluation. Lung computed tomography and laboratory tests for SARS-CoV-2 should be carried out according to the anesthesiologist's instructions. Patients in critical conditions, or surgical emergencies due to life-threatening conditions such as bleeding and upper respiratory obstructions, should be treated in accordance with all protocols for infection prevention and control in addition to the routine universal precautions.

Subacute patients with stable vital parameters, which includes patients with stable closed fractures where there is no risk of infection or death, should be thoroughly screened for COVID-19 and receive accurate anamnestic and preoperative assessment to avoid possible exposure to COVID-19. Subacute patients with stable vital parameters that may be subject to rapid clinical deterioration (including patients with exposed fractures, fractures with bone stump mobility, functional deficits, risk of nerve vascular injury, or soft-tissue substance loss) should be treated in accordance with all protocols.

Availability of blood products during the COVID-19 emergency may be limited, so requests for strictly necessary patients is recommended; surgical and treatment plans that are as simple as possible are recommended. Patient stay times should be limited to that which is strictly necessary, within the limits of patient safety, to avoid unnecessary exposure to COVID-19 (Fig. 1).

Redistribution of Health Staff

Both medical and nursing health staff must be reduced to the necessary minimum as well as residents, researchers, and students. Separate teams should be created such that the eventually infected team can be isolated while safeguarding the remaining teams. It is necessary to limit aggregation during meals and meetings while always maintaining interpersonal distances. Meetings and teaching must be done using video conferencing.[9] The time spent by medical and nursing staff in the ward and in the operating room must be limited to the minimum necessary.[12,13]

Protective Devices

Personal protection devices must be properly selected and used appropriately. Staff training on the use, elimination, and disposal of equipment may currently be required, as there are conflicting practices regarding the use of masks and tight-fitting glasses or the use of powered air-control respirators in the published literature. Healthcare personnel have to be provided with the proper amount of protective masks, disposable gowns, headdresses, overshoes, double gloves, and protective glasses or facial shields. The hospital

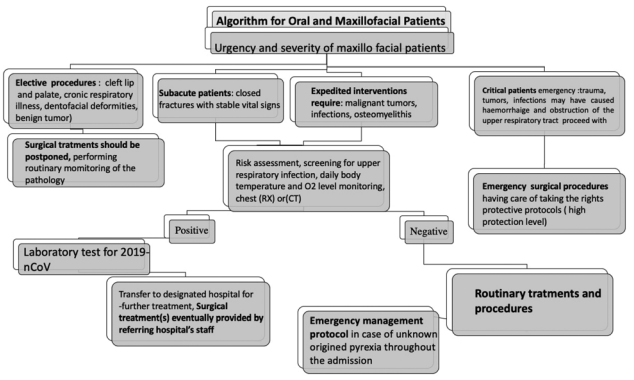

FIGURE 1. Treatment algorithm based on urgency and severity of pathology.

could provide for the in house production of protective devices, such as masks and shields, with 3-dimensional printers.[17–19]

DISCUSSION

Despite the pandemic emergency, the protocols we have implemented have allowed us to respond to COVID-19 infection while ensuring the efficiency and safety of the health service. These guidelines will help all maxillofacial department as well as all head and neck departments that are located in, or unfortunately will soon find themselves in, our situation.

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