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Educational Article

Management of patients with oral cancer during the covid-19 pandemic

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Abstract – Introduction: The influence of the COVID-19 pandemic on healthcare to the public is severe. There is a high viral load in the nasal and oral cavities of infected patients, especially endangering those specialties focused around this region. Within the field of action of oral and maxillofacial surgeons, the approach and management of oral cancer is one relevant area. The present review aims to collect and discuss aspects of the management of inpatients and outpatients with oral cancer during the COVID-19 pandemic. **Corpus:** The care of the patient affected with oral cancer is imperative. Following strict biosecurity protocols, procedures such as clinical examinations for cancer patients and biopsies can be performed. In the case of benign slowly growing tumors, deferral of surgery until the COVID-19 pandemic situation has settled is recommended. In the case of malignant tumors, surgery must be performed using appropriate biosecurity measures. **Conclusion:** The reduction of elective surgery is necessary; nevertheless, urgent oncologic and emergency surgery still has to be performed. Strategies must be developed to reduce the number of infections. The adequate approach of the COVID-19 challenge merits significant changes in the infrastructure of outpatient units, inpatient units, and operating rooms.

Introduction

In late December 2019, a cluster of cases of SARS-like viral pneumonia emerged in Wuhan, Hubei province, China. In the following months, the disease spread rapidly to the whole of China as well as more than 120 countries worldwide, and the number of patients infected has been gradually increasing [1]. Coronavirus disease (COVID-19) is caused by the SARS-Cov 2 virus. The World Health Organization gave this disease the name of COVID-19 on February 11th, 2020. Outbreaks due to coronavirus had occurred before, such as the Severe Acute Respiratory Syndrome (SARS) [2]. Healthcare workers are in close contact with infected patients. Transmission of the virus seems to occur mainly by respiratory droplets [3]. There is a high viral load in the nasal and oral cavity of infected patients, especially endangering those specialties focused around this region. Besides ear, nose, and throat surgeons and dentists, oral and maxillofacial surgeons especially have to be aware of the new challenges and the risk of virus transmission between patients and medical staff. Within the field of action of oral and maxillofacial surgeons, the approach and management of oral cancer is one relevant area [4]. Squamous cell carcinoma represents the most common form of head and neck cancer, and its early approach plays a key role in reducing morbidity and mortality [5]. Based on this, the present review aims to collect and to discuss aspects of approaching the management of inpatients and outpatients with oral cancer during the COVID-19 pandemic.

Transmission of oral and maxillofacial surgeons in their practice

Angiotensin II converting enzyme (ACE2) is the cellular receptor through which the virus enters cells. The expression of ACE2 in the oral cavity has been observed especially in the tongue, and thus it is as a potentially high-risk site for infectious susceptibility of the virus. ACE2 receptors have also been observed on lymphocytes within the oral mucosa; similar results were found in various organs of the digestive system and the lungs. Although SARS-CoV-2 infection shows no oral signs or symptoms, ACE2 expression in the oral mucosa detects that the orofecal infection route cannot be excluded. Due to this fact and the field of action of surgeons, standard protective measures in daily clinical practice are not effective enough to prevent transmission of the virus. Oral and maxillofacial surgeons are directly exposed to inhalation of viral particles in

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aerosols (where the virus can remain viable for up to 3 h), especially when patients are in the incubation period, unaware that they are infected, putting the attention staff at high risk. Therefore, it is imperative to refine preventive strategies, reducing the activity of the surgeon to strict emergencies to cut the chain of contagion [6].

The use of personal protective equipment should be selected adequately and used appropriately. Currently, there are no specific guidelines for the protection of healthcare workers such as oral and maxillofacial surgeons dealing with oncology procedures in the head and neck area, specifically in the oral cavity. Because of the frequent exposure to saliva, sputum, and other body fluids, surgeons are exposed to a high risk of viral transmission [4]. When performing a clinical examination of the patient with oral cancer wearing a surgical mask, the use of goggles and gloves is necessary. Antiseptic mouth rinse is believed to reduce the viral load in the oral cavity; hand hygiene should be performed immediately after removing any kind of personal protective equipment. It must be ensured that proper cleaning and disinfection procedures are followed consistently in the examination room after each patient [7].

Management guidelines for oral cavity squamous cell carcinoma

Squamous cell carcinoma represents the most common form of head and neck cancer comprising approximately 90% of all head and neck malignancies [8]. Unlike the treatment of cancer arising from other anatomic sites of the head and neck, the primary treatment strategy for squamous cell carcinoma remains mainly surgical. Although multimodal therapy, including adjuvant radiation therapy with or without chemotherapy, is frequently used for advanced-stage disease, surgery represents the cornerstone in the management of this pathology [9]. During the COVID-19 pandemic, performing surgical procedures that expose health personnel should be avoided as much as possible. Therefore, the analysis of each particular case, relying on world protocols for the management of oral cancer, should lead to the correct management, including surgery only in those cases that are strictly necessary.

The TNM classification of malignant tumors is the most widely used system for cancer staging internationally. The system not only serves as a common language among providers of different specialties who collaborate in the multidisciplinary treatment of cancer patients but also acts as a guide to determine if the treatment should (or should not) be surgical [10]. The National Comprehensive Cancer Network recently updated the Clinical Practice Guidelines for cancers of the head and neck. The preferred treatment of squamous cell carcinoma remains surgery [11].

All early-stage and even most advanced-stage of carcinoma are amenable to surgical resection. For early-staged disease, surgery alone may be adequate initial treatment, sparing adjuvant radiotherapy with the associated long-term sequelae and morbidity. Nonetheless, for most patients with intermediate-staged to advanced-staged disease, adjuvant radiation alone or chemoradiation is indicated to reduce the risks of local and regional recurrence. The role of adjuvant therapy is based on the pathologic T staging and N staging after resection of the primary tumor and dissection of the neck lymph nodes at risk for metastasis [9]. Oral and maxillofacial surgeons must continually remain apprised of the most current staging algorithms and treatment pathways and adapt their clinical practice patterns to reflect contemporary standards of care relative to the management of squamous cell carcinoma.

Procedures on patients with oral cancer: clinical examination, surgeries, and urgencies

During the peak of the COVID-19 pandemic, outpatient visits should be reduced to a minimum. Only urgent problems should prompt a patient to come to an outpatient unit or private practice. Among these urgent problems are patients who present oral cancer. Clinical examination must be carried out with personal protective equipment and should be limited to low risk cases or those patients where there is a low clinical suspicion of malignancy. Zimmermann *et al.* [4] typified benign slowly growing tumors with an intermediate care priority, proposing the deferral of surgery for this type of cases until COVID-19 pandemic situation has settled as long as risks are under control. In the case of malignant disorders like oral cancer that need urgent surgical procedures, performing surgery in otherwise healthy patients is proposed. In the case of oncologic patients infected with COVID-19, surgery can be performed in the same way, reinforcing biosecurity measures and thorough monitoring during the recovery period.

Biopsies are indicated in the case of suspected malignancy due to the fact that this is considered an emergency procedure. Absorbable sutures should be used to minimize a second postoperative contact. Cleaning and disinfecting the exterior of the container after taking the sample should be performed as well [6]. Bleeding is a common oncologic emergency in patients with cancer [12]: in case of severe hemorrhage, considered as an emergency condition [4], appropriate surgery should be performed on healthy or infected patients. Situations where the growth of the tumor causes (imminent) airway compromise should also be managed surgically depending on the staging.

Despite the above, several authors analyze with concern that although it is evident in many cases the superiority of oncological outcomes for oral squamous cell carcinoma managed surgically, clinicians must balance the risk to both patients and healthcare providers. Surgical management may involve increased duration and time spent inside hospitals, during the pre-operative, operative, and post-operative periods, potentially increasing the risk of nosocomial COVID-19 infections [13].

Head and neck oncologic surgeries are extraordinarily high-risk for SARS-CoV-2 viral aerosolization and transmission to operating room personnel; involves multiple routine

aerosol-generating procedures, such as bag-valve mask ventilation, intubation, nasogastric tube placement, tracheotomy, repeated endotracheal tube removal and replacement during total laryngectomy, and airway suctioning [14].

Based on this, actions such as considering a short delay in surgery if possible are postulated. The National Comprehensive Cancer Network implicitly supports the delaying oncologic surgery during this crisis [15]. For example, the Huntsman Cancer Institute advised rescheduling all "time-sensitive" but non-emergent surgeries (*i.e.* have to be performed within 48 h) by a "fewweeks" [16]. Surgery and subsequent admission of head and neck oncology patients will compete for valuable, limited hospital resources in real-time during the pandemic (*e.g.*, intensive care unit), further justifying this type of actions.

Despite the amplified risks, surgery will still be indicated for many patients with oral squamous cell carcinoma and appropriate preparation will be critical to ensure the safety of the patient, provider and all other involved health workers [14]. The current recommendations of the American Academy of Otolaryngology-Head and Neck Surgery is that all elective surgical treatments should be rescheduled, but it is unavoidable to provide surgical care to patients with time-sensitive, urgent, or emergent medical conditions [17].

The AO CMF International Task Force [18] about it makes recommendations regarding the management of patients with oral cancer during the pandemic. If non-surgical methods (*e.g.*, radiation) can achieve similar results as a surgical approach, non-surgical therapy are recommended. However, surgical intervention is warranted in the following scenarios:

- Cases in which a worse outcome is expected if surgery is delayed more than 6 weeks (squamous cell carcinoma of the oral cavity, oropharynx, larynx, hypopharynx).
- Cancers with impending airway compromise.
- High grade or progressive salivary gland malignancy.
- T3/T4 melanoma.
- Salvage surgery for recurrent/persistent disease.
- High grade sino-nasal malignancy where non-surgical options will not be equally efficacious.

All follow up appointments should be minimized in order to reduce patient-surgeon contact: 6–9 months for patients beyond the period of highest risk for recurrence (*e.g.* 18–24 months post-treatment). Patients in the immediate post-treatment phase must be prioritized and longer intervals between follow-ups as soon as suitable should be considered, even opting for telephone follow ups when possible and appropriate. Patients over 70 years of age (and/or with high risk co-morbidities, frailty) who fulfill urgent cancer criteria should be prioritized [19]. The guides for the provisioning of head and neck cancer services during the pandemic period are intended to guide and support the decisions of the surgeons.

Radiotherapy has a crucial role in oral squamous cell carcinoma management during COVID-19 pandemic. While radiotherapy does not have a role in the routine management of oral squamous cell carcinoma, it may provide symptomatic relief and effectively delay the need for surgery for a finite pandemic period of time. The multidisciplinary team should weigh the risks and the benefits to patients in deciding whether to modify the conventional surgical treatment approach. Each decision requires an individualized assessment [14,20].

Recommended personal protective equipment for the attention of patients with COVID-19

Several recommendations can be implemented worldwide, others must be adapted according to the resource availability [17]. In the case of clinical examination, surgeons should be using a medical mask (FFP1 respirator/FFP2 respirator/N95 respirator/equivalent), a gown, gloves, cap and eye protection (goggles/face shield). Before taking a patient to the operating room, a test for SARSCoV-2 should be performed. Any type of surgery performed on COVID-19 patients in the operating room should be practiced with FFP3 or N99 respirators, a disposable sterile gown, sterile gloves, a surgical hood cap and eye protection (goggles/face shield). Negative pressure must also be established to reduce the dissemination of the virus. The surgical team should not be present in the operating room during the process of intubation and extubation. At any time, the number of staff members in the operating room should be minimal. During the procedure, leaving or entering the operating room should be limited to a minimum. A time interval of 15 minutes must pass after the patient has left the operating room before the cleaning and disinfection process starts [21,22].

Role of virtual multidisciplinary team meetings

Multidisciplinary team meetings that are attended by surgeons, medical oncologists, radiotherapists, radiologists, pathologists, and other specialists depending on the type of tumor to manage cancer patients provides the opportunity for patients to benefit from the experience of a larger number of professionals, especially when there is a complex or advanced case [23]. Currently, due to the risk of cancer patients being exposed to COVID-19, the role of a multidisciplinary team as an appropriate reference for deciding whether or not to undergo surgery and determining other treatment plans is crucial for the outcome. However, holding these meetings and bringing specialists (and patients, if necessary) together turns practically impossible due to hygienic conditions and social distancing.

In these particular circumstances, holding a virtual multidisciplinary team meeting via social media or video-conference is a more sensible way. One person as a coordinator can take history and all patient records, such as imaging and lab data, and share it to the rest. By examining the patient's condition and considering the current crisis, a treatment plan can be decided [5].

Impact of covid-19 on the early detection of oral cancer

The mayhem caused by COVID-19 has brought about substantial changes in oral cancer diagnosis [24]. (Dx 1),

Owing to the transmission of COVID-19 through droplets and aerosols, which are inherent features of dental practice, most of the countries followed a strategy of suspension of all elective dental care services and reserving dental care only for emergency cases. This translating on missing opportunities for the early detection of oral cancer and minimize the risks of delayed diagnosis [25].

Generally, dentists play a pivotal role in the early detection of oral cancer through opportunistic screening when a patient presents in a dental practice for routine care and by rapid referral of suspicious lesions. In the time of COVID-19, nevertheless, the whole world being in lockdown, and dental clinics are closed. Therefore, opportunities for screening the oral cavity might be significantly disrupted, and consequently diagnosis of malignant and/or potentially malignant lesions might be delayed, a matter that inevitably leads to a missed diagnosis of oral cancer or, at best, diagnosis later on but at a late stage [25].

Many patients already diagnosed with oral potentially malignant disorders (*e.g.* oral leukoplakia) are under surveillance by oral medicine specialists in hospitals. Due to clinic closures, the regular clinic visits for review of their conditions are also heavily disrupted putting these patients at risk. New approaches are needed for continuing care for these special groups of patients, often neglected during emergency closure of clinics. Telemedicine for educating, interviewing and examining the patients is one of these approaches. There are a plethora of applications and/or social media that can be used for this purpose including zoom, messenger, and Facebook. Dental practitioners/oral medicine specialists can arrange virtual visits to follow up, interview, do clinical examination, and even to conduct oral habits cessation counseling for their patients [26]. All of this contributing to not leaving aside the early diagnosis and management of oral cancer during this pandemic period.

Conclusion

The influence of the COVID-19 pandemic on healthcare to the public is severe. The reduction of elective surgery is necessary; nevertheless, urgent oncologic and emergency surgery still has to be performed. Strategies must be developed to reduce the number of infections. The adequate approach of the COVID-19 challenge merits significant changes in the infrastructure of outpatient units, inpatient units, and operating rooms. Protecting patients as well as the medical staff is crucial. The care of the patient affected with oral cancer is imperative. Following strict biosecurity protocols, procedures such as clinical examinations for cancer patients and biopsies (to clarify diagnosis when malignancy is suspected) can be performed. In the case of benign slowly growing tumors, deferral of surgery until the COVID-19 pandemic situation has settled is recommended, as long as risks of deferral are under control. In the case of malignant tumors, surgery must be performed using appropriate biosecurity measures. Bleeding and tumors that interfere with the airway of the patient should also be approached surgically when possible. During the COVID-19 pandemic, performing surgical procedures that expose health personnel should be avoided as much as possible. If non-surgical methods (*e.g.*, radiation) can achieve similar results as a surgical approach, non-surgical therapy are recommended. Therefore, the analysis of each particular case, relying on world protocols for the management of oral cancer (like TNM classification of malignant tumors), should lead to the right management, including surgery only in those cases that are strictly necessary. These recommendations are based on the best, trustworthy and currently available information. As mentioned above, these are just recommendations and thus, the ultimate decision of the treatment of patients still relays with the health professional. New tools for the early diagnosis of oral cancer must be implemented during the current pandemic period. The objective is to minimize the risk of infection, safeguarding what matters most: the lives of the patients.

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