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## Head and neck cancer management in the Covid-19 era: Our experience



Paola Bonavolontà<sup>a,\*</sup>, Giovanni Dell'Aversana Orabona<sup>a</sup>, Alfonso Sorrentino<sup>a</sup>,  
Vincenzo Abbate<sup>a</sup>, Federica Goglia<sup>a</sup>, Piombino Pasquale<sup>b</sup>, Giorgio Iaconetta<sup>b</sup>, Luigi Califano<sup>a</sup>

<sup>a</sup> Maxillofacial Surgery Unit, Department of Neurosciences, Reproductive and Odontostomatological Sciences, University Federico II, Via Pansini 5, 80100, Naples, Italy

<sup>b</sup> Neurosurgery Unit, Department of Medicine, Surgery and Odontoiatrics, University of Salerno, Via Giovanni Paolo II 132, 84084, Fisciano, Salerno, Italy

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## ABSTRACT

**Introduction:** In March 2020 a new viral pandemic was declared. As etiological factor a virus belonging to the coronavirus family was isolated. This virus was named SARS-CoV-2 or COVID-19. This virus can cause different clinical frames, varying from mild symptomatology to cases of ARDS or death. Although the pandemic outbreak in China, COVID-19 had one of first hotspots in Italy, where the Public Health System needed a re-arrangement to face the disease. The incidence of oncological disease doesn't suffer any variation in relation to pandemics or emergency period, but need to be managed as soon as possible in every situation. In our maxillo-facial surgery Unit we continued our regular activities to treat all oncological patient that needed surgery during the pandemic. Because of the absence of knowledge about the COVID-19, first periods were very difficult to manage, due to the risk of infection of patients and health professionals. We decided to share our experience.

**Materials and methods:** Between March and June 2020, 34 patients affected by head and neck cancer were admitted at our Unit. All patients underwent surgical treatment and were hospitalized until their situation guaranteed a safe discharge.

**Results:** All patients treated for head and neck cancer underwent surgery. All the medical and nurse post-operative management was performed by health operators by using all the personal protective equipment (PPE) to prevent any possible infection. All contacts between patients and their family were suspended.

During phase 1, all patients were submitted to a short verbal triage, measurements of physiological parameters and qualitative COVID-19 test. They were also screened by imaging to guarantee there were not any bronchopulmonary diseases referable to viral infections. During phase 2, patients were also screened by serological tests. During phase 3, all patients practiced oropharyngeal swap before being hospitalized.

**Discussion:** During lockdown a re-arrangement of the management of oncological patients was mandatory. The difficulties were caused by the restriction of several activities that guarantee a normal health care system function. To date there is not a standardized therapeutic protocol to face the infection. Main therapies are symptomatic and a lot of patients need to be treated in ICUs. To prevent any possible infections, surgical activities were reserved only for urgent disease that cannot be delayed. In our Unit we continued to manage oncological patients. Social distancing and confinement measures were necessary and mandatory, in order to manage our patients. During first phases we had not any valid instrument to totally exclude COVID-19 infection. During phase 3, when oropharyngeal swaps were introduced in the screening of our patients, we could start to work in a safer way.

**Conclusion:** There are still a lot of difficulties in the management of patients during COVID 19 pandemic. Because of the important consequences deriving from the delay of oncological patients their management must to be clearly defined.

## 1. Introduction

On 11th of March 2020 the World Health Organization declared COVID-19 a global pandemic [1].

An outbreak of pneumonia cases of unknown etiology was reported

for the first time on 31st of December 2019 in China, in the City of Wuhan, Hubei District [2].

On 9th of January 2020, the Chinese CDC recognized the new coronavirus belonging to the SARS-CoV family, as the causative agent of the epidemic. Virus-associated disease is defined as new coronavirus disease

\* Corresponding author.

E-mail address: [paola.bonavolonta@unina.it](mailto:paola.bonavolonta@unina.it) (P. Bonavolontà).

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2019 (COVID -19) [3].

SARS-CoV-2 belongs to the same family of viruses that causes Acute Severe Respiratory Syndrome (SARS) [4].

Starting from February 2020 the diffusion of the virus also extended to Europe. One of the main areas of the contagion until May 2020 is located in Lombardy Region in Northern Italy [5].

To date, the symptoms reported in patients with SARS-CoV-2 infection mainly include fever, cough, dyspnea, myalgia, asthenia. More severe cases develop severe acute respiratory syndrome (SARS), acute respiratory distress syndrome (ARDS), sepsis and septic shock which can lead to death.

Human infections with common coronaviruses are mostly mild and asymptomatic, but serious and fatal infections have been observed. This evolution is more frequent in immunocompromised people, and in patients affected by cardiopulmonary diseases.

The incubation period for COVID-19 (i.e. the time between exposure to the virus and the onset of symptoms) is currently estimated to be between 2 and 14 days [6–9].

The transmission takes place through respiratory secretions, aerosol and droplets. Nosocomial transmission has been described as an important factor in the epidemiology of SARS [10].

Italian data updated to 21st October 2020 show that 449,648 people contracted the virus, with a total of 36,832 deaths for COVID-19 [11].

The emergency that Italian hospitals have faced has led to a substantial reorganization of hospital activities to avoid the risk of contagion.

In consideration of the urgent provisions concerning the contrast and containment of the diffusion of the COVID-19 virus infection, the Italian Government issued some measures, the DD.PP.CC.MM. of 8.03.2020 and 9.03.2020, in order to standardize any initiatives for the re-organization of hospitalization and outpatient activities. This was necessary to front the potential increase of hospital places reserved for COVID-patients in all care-facilities through the national territory [12].

The DD.PP.CC.MM previewed to stop any elective medical performance, reserving hospital places for urgent and unavoidable diseases.

Elective oncological hospitalizations were guaranteed by the Italian National Health System.

For these reasons, according to national measures, during all lockdown period, in our Maxillo-Facial Surgery Unit we treated all patients that presented oncological and traumatic diseases.

There are about 9300 new cases and 3216 deaths every year [13].

Among head and neck cancer, oral cancer is one of the most common malignancies of the face [14,15].

The main therapeutic strategy for these tumors is still represented by surgery [16].

COVID-19 pandemic represents a difficult period to manage these patients, due to the delayed time that it caused in diagnostic and therapeutic strategies.

Although some studies suggested the possibility to suspend surgery for some cases of cancer, in our Unit we decided to always use surgery as first therapeutic choice [17].

Hospital activities continued regularly, but some precautionary measures were introduced, in order to protect the health of healthcare professionals and patients.

The aim of this work is to present our experience in the treatment of oral cancer during the COVID-19 period.

## 2. Material and methods

In the period between the 1st of March 2020 and the 1st of June 2020 (during the Italian Lockdown), we admitted 34 patients affected by head and neck cancer in the Maxillofacial Surgery Unit of Federico II University of Naples.

All patients underwent surgery.

## 3. Results

### 3.1. Demographic characteristics and pathology of the study population

We hospitalized 32 patients, 16 women and 20 men. Five patients underwent tumor removal and reconstruction with surgical flaps.

The use of local flaps was preferred for the reconstruction of the surgical gap, instead of using free or pedicled flaps that can have an higher possibility of complications and require longer time of surgery, according with the literature [17,18].

In our Unit patients that underwent surgery with flap reconstruction were generally managed in the Intensive Care Unit (ICU) for the awakening. This protocol is generally due to need of guarantee safer awakening in patients that may present obstruction of the upper airways, due to oedema and/or bleeding from the surgical site [19].

By the way during Covid-19 period, all the awakenings were performed in the same operative room to prevent any risk of external infection. This choice was also motivated by the fact that during the Covid-19 period in our hospital there was a contraction in the number of ICU stays, as they were redistributed in favor of Covid-19 positive patients.

All patients had a positive outcome after surgical treatment, with an average hospitalization time of four/five days.

During this post-operative time, all medications were performed by the medical team that was equipped with proper personal protective equipment (PPE).

Until the discharge, the patient was not allowed to enter in contact with other people, except the medical and nurse team. The access of the patient's relatives was forbidden in any case.

At the discharge the patients were properly trained on a correct personal hygiene, in order to reduce surgical complications, and also the contagion by Covid-19, by an early identification of symptoms related to the infection.

All our patients are on post-surgical follow-up. None of them has experienced symptoms related to COVID -19 infection.

Only one patient died due to complications related to his general health status.

### 3.2. Management of maxillofacial patients

The patients followed the procedures outlined by our hospital about limiting the spread of Covid-19.

Specifically, during Phase 1, the measurement of body temperature for all patients incoming in our clinics was provided. Each patients was also subjected to a short verbal triage, in order to look for any contact with suspected cases Table 1.

Subsequently, the patients were subjected to the qualitative test before undergo the visit.

In case of a positivity to the rapid qualitative test, the patients were sent to be screened by an oro-pharyngeal swab in Infectious Diseases Unit. Otherwise, they were sent back home to be managed by their family doctor, who was appointed to report their health status to the local health Authority.

**Table 1**  
Triage questionnaire.

<i>Have you recently been in locations at risk?</i>
<i>Have you had contact in the last ten days with cases ascertain yourself?</i>
<i>Have you had contact with people who have returned from risk areas?</i>
<i>Have you had contact with family members of suspected or confirmed cases?</i>
<b>Investigated signs and symptoms</b>
<i>Cough</i>
<i>Respiratory disorders</i>
<i>Sore throat</i>
<i>Muscle/joint pain</i>
<i>Smell or taste disturbances</i>

Preliminary hospitalization procedures consist in the execution of qualitative test and chest x-rays.

The importance of lung instrumental images has been widely documented in Literature [20].

During Phase 2, we continued to adopt the same procedures for outpatients. While, as regards the hospitalized patients, they were also subjected to the serological test, for the specific quantitative dosage of the antibodies.

In Phase 3, all hospitalized patients have been previously screened by a oropharyngeal. Particular attention was attributed to social distancing. All people inside our Unit were provided with individual protection devices.

Our hospital provided a limitation of the number of patients for each room. Socialization between patients was not allowed, and they were obliged to wear a mask when they were not in their rooms.

With regards to personal protective devices, each health care worker was obliged to wear always FFP2 (KN95) masks, single use gloves and also an eye-shields.

#### 4. Discussion

Coronaviruses (CoV family) are RNA viruses with tropism for respiratory and gastrointestinal epithelial tract cells.

The "spill over" of animal to human tropism viruses is considered the mechanism that made origin to SARS-CoV-2.

In order to reduce the risk of spreading new coronavirus infections, it is recommended to promote sanitation; frequent thorough hand washing; avoiding touching the eyes, mouth and nose; sanitary disposal of oral and nasal secretions, avoiding contact with sick patients [21,22].

Strict infection's prevention and control procedures (IPC) are critical for a safe working place and for the control of these pathogens.

The World Health Organization (WHO) recommends that healthcare professionals apply appropriate prevention and control measures. For procedures that generate aerosols, such as tracheal intubation, broncho-alveolar washing and manual ventilation, the use of PPE is recommended.

While during the first period there were no recommended therapies to treat the Covid-19 infection, today there are some therapeutic protocols, nevertheless still not approved by the World Health Organization (WHO).

The systematic implementation of public health measures such as the active detection of cases, the rapid isolation of cases and the quarantine of contacts, as well as the rigorous application of infection control practices, have been successful in the control of outbreaks [23].

In our region, since the beginning of the pandemic, we registered a change in the Healthcare management. Regional Government imposed an increase of the places reserved to the treatment of Covid-19. This was possible due to the suspension of any elective hospitalization and operation. Starting from March 2020, until June 2020, public and private hospitals it was possible to hospitalize only patients affected by urgent diseases. In our Maxillo-facial Unit it was only possible to treat traumatological and oncological patients, because of their not deferrable clinical status. During the A-phase (March 2020–May 2020) 92 places were reserved to Covid-19 infected patients in the whole Campania Region. During this phase the Campania region had little incidence of infections due to the important restrictions imposed by the regional government. This number of places has been always increased, during next months, to 1651 during our D-phase, starting from October 2020 [24].

By our analysis lockdown determined a delay in the diagnostic and therapeutic protocols. Patients started to neglect their health status, due to the confinement and the isolation measures set up by the Italian Government. It was really difficult to accede to the family doctors for a preliminary evaluation, because of their priorities to face up patients that presented signs to refer to a coronavirus infection. Oncological patients generally delayed their clinical examinations, also troubling for the risk to be infected. When they finally were addressed to specialist consulting

in our Unit, they were founded to be in an advanced TNM stage.

#### 5. Conclusion

With this editorial we want to share our experience in managing the treatment of patients with head and neck cancers, in this difficult pandemic period that we are facing.

Considering that the incidence of head and neck cancer does not undergo variation depending on this period, due to independent etiological factors, oncological patients need to receive their surgical treatment without any delay. To date there are still many difficulties related to the management of oncological patients during this pandemic, so our hospitalization protocol may furnish an instrument in helping to define clearer guidelines.

#### Ethics statement/confirmation of patient permission

Yes.

#### Declaration of competing interest

No.

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