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ORIGINAL ARTICLE

Impact of the SARS-CoV-2 pandemic on the diagnostic delay of oral carcinoma: a retrospective analysis

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ABSTRACT

BACKGROUND: The aim of the present study is to investigate how the organisation of healthcare activity during the first wave of the SARS-CoV-2 pandemic affected the timing of diagnosis of oral carcinoma in the Functional Head and Neck Department of Padua (Italy). This study gives an effective temporal dimension of the diagnostic delay that occurred during the pandemic, compared with data from the literature.
METHODS: A retrospective analysis of the diagnostic path of a patient affected by oral cancer during COVID-19 pandemic was performed. The time elapsed from the patient's awareness of the problem to the first curative surgical intervention was considered both during the blockage of elective care activities and in the period immediately following. The results were compared to a group of patients treated in the same period of the year 2019.
RESULTS: The territorial time was 53.9% longer in the post-lockdown period than in the lockdown period (39.6 days) while the hospital time was 56.6% shorter than in the post-lockdown period (56 days)
CONCLUSIONS: The response time of territorial medicine has been longer during the pandemic peak. The unintentional creation of exclusive pathways for oncological patients speeded up the diagnostic process. The organization and accessibility of operating theatres can become particularly problematic during the acute phases of a pandemic.

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KEY WORDS: Mouth neoplasms; Head and neck neoplasms; COVID-19; SARS-CoV-2.

Coronavirus disease 2019 (COVID-19) is a multisystem disease, whose severity varies from asymptomatic disease to acute respiratory distress syndrome, caused by the RNA severe acute respiratory syndrome coronavirus type-2 (SARS-CoV-2).[1] Firstly reported in Wuhan, China, in December 2019 as a result of several pneumonias of unknown aetiology, on the 21st of February 2020, the first Italian death caused by SARS-CoV-2 infection was ascertained at the hospital of Schiavonia (Padua, Italy).[2] The spread of SARS-CoV-2 rapidly increased nationwide and worldwide, and the World Health Organization (WHO) declared the disease pandemic on 11th March 2020.[1] From that moment on, the Italian National Health System was on the verge of collapse and had to design new effective health strategies to deal with the pandemic, by redefining health priorities. In the University Hospital of Padua, the target was taken charge of the growing number of hospitalizations connected to COVID-19, trying to guarantee at the

same time the essential levels of care. The pandemic led to a prolonged break of routine hospital services globally.[3] Elective surgical activities were reduced in order to avoid possible in-hospital viral transmission and many operating theatres were converted to intensive care units. These measures have enabled for more intensive care unit beds dedicated to COVID-19-patients and a redistribution of the health care professionals to support the critical areas of the hospitals. Despite attempts to maintain adequate standards of care, the cancellation of large-scale elective surgery is inevitably having a significant impact on patients and cumulative consequences. The importance of differentiated care pathways for patients with COVID-19 symptoms became immediately clear.

The COVID-19-free surgical pathway means that the inpatient room, the operating room, the post-operative room and the resuscitation room should be for the exclusive use of patients with a negative for SARS-CoV-2.[4] An Italian study reported that 61% of the Maxillofacial Surgery units were merged with other operating units, while 17% remained open with a reduced number of beds. A total of 9% of maxillofacial wards were converted to COVID-19 units.[5] Also 45.5% of otolaryngology units was merged with other units, 10.4% was closed and 11.6% were converted into COVID-19 wards.[6] Generally, with regard to head and neck surgeries, it is estimated that about 4,325,155 surgical procedures might not have been performed globally. There was a decrease from 2823/week to 472/week inpatient surgical procedures, with a global reduction of 83.28%.[6, 7] Outpatient visits showed a significant decrease in number of procedures per week, passing from 26035 evaluations usually performed during the pre-COVID-19 period to 5067 registered outpatient procedures during the COVID-19 pandemic.[7] As a result, the well-known problem of the diagnostic delay in oral cancer inevitably had to deal with the national pandemic containment measures adopted.

The aim of the present study was to evaluate whether (and how) the changes related to COVID-19 pandemic in health care activities of our institution have affected the timing of diagnosis and treatment of oral neoplasms. We retrospectively analyzed the diagnostic path of patients affected by oral cancer during the blockage of elective care activities and in the period just after, starting from the time of patients' awareness of symptoms, to the first medical and specialist evaluation and thereby the time elapsed from diagnosis to surgery. The results were compared with oral cancer patients managed in the same period of the year 2019.

Materials and methods

Patients

A retrospective search of all patients who had undergone surgery for primary oral cavity carcinoma at the Oral and Maxillofacial Surgery and Otolaryngology Units of Padua between the 21st of February 2020 and the 14th of July 2020 was conducted. Nineteen patients were identified. The same search criteria was applied for the same period a year before (from 21st of February 2019 to the 14th of July 2019), finding thirteen patients.

Exclusion criteria were patients with recurrent oral cancer and patients with previous history of other malignancies. Being these potential cases already followed in our hospital system, they would have not been subjected to the same diagnostic or wait times of patients with primary lesion coming from outside the institution.

Demographic data, predisposing factors, symptoms onset, time of first evaluation, ASA (American Society of Anesthesiology) physical classification, comorbidity, tumor subsite and clinical stage were collected for all enrolled patients. Surgical details (type of reconstruction and lymph node dissection), histopathological features (stage and grading), days of hospitalization and any short or middle term (30 days) complications were also recorded. In order to rank a complication in an objective and reproducible manner we used the Clavien-Dindo Classification (Table I).[8]

Patients' data were mainly collected from their digital medical records available on the hospital-computerized system. When these data were insufficient, patients were contacted by telephone and interviewed.

TABLE I.—*The Clavien/Dindo classification[8] system for postoperative complications.*

Grade	Definition
Grade I	Any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic and radiological interventions Allowed therapeutic regimens are: drugs as antiemetics, antipyretics, analgesics, diuretics and electrolytes and physiotherapy. This grade also includes wound infections opened at the bedside.
Grade II	Requiring pharmacological treatment with drugs other than such allowed for grade I complications. Blood transfusions and total parenteral nutrition are also included.
Grade III	Requiring surgical, endoscopic or radiological intervention
Grade III a	Intervention not under general anesthesia
Grade III b	Intervention under general anesthesia
Grade IV	Life-threatening complication (including CNS complications)* requiring IC/ICU-management
Grade IV a	Single organ dysfunction (including dialysis)
Grade IVb	Multiorgan dysfunction
Grade V	Death of patient

*Brain hemorrhage, ischemic stroke, sub-arachnoidal bleeding, but excluding transient ischemic attacks (TIA).
IC: intermediate care; ICU: Intensive Care Unit.

Selectively for patients operated in 2020, we detected the presence of SARS-CoV-2 infection in the preoperative phase. A nasopharyngeal swab and qRT-PCR analysis was performed 5 days before surgery. Patients were suggested to isolate themselves until the day of surgery. During the hospitalization, the presence of COVID-19 was evaluated clinically; in case of an increase in body temperature lasting more than two days or if there were symptoms attributable to COVID-19, a diagnostic nasopharyngeal swab was performed.

Defining periods

The following four periods were defined to conduct the analysis reported in the aim of the study:

• the lockdown period (LP), from February 21st, 2020 to May 3rd, 2020 (72 days);

• the post-lockdown period (PLP), from May 4th, 2020 to July 14th, 2020 (72 days);

• the control period 2019 (CP 2019), from February 21st, 2019 to July 14th, 2019 (144 days);

• the whole period LP+PLP, from February 21st, 2020 to July 14th, 2020, for the comparison with the same CP2019.

The 72-day window of the LP was obtained counting the days from the notification of the first ascertained death for Sars-Cov-2 in Italy[2] to the date of resumption of ordinary hospital activities of the Head and Neck Functional Department of the Padua (May 4th, 2020). This 6-week period is in line with the 76-day blockade of health systems in the city of Wuhan (China) described in literature.[9]

For each patient we calculated the days elapsed between one phase to another of the diagnostic-therapeutic management, thus from the first symptoms adverted by the patient to the surgical treatment. The diagnostic pathway has been divided as follows (Figure 1):

• time A: period between symptoms onset and first visit. It represent the time the patient needed to go to the dentist, be visited by a General Practitioner or be assessed at Dental Emergency Room. When the patient could not remember the exact date of symptoms onset, it was arbitrarily set on the 15th of the reported month;

• time B: time elapsed between the initial medical evaluation (dentist or general practitioner) and the date of the first specialist consultation performed by a Maxillofacial Surgeon or an Otolaryngologist working at our institution. Private specialist examinations or partial evaluations done in other hospitals were not considered;

• time C: time between specialist examination and conclusion of staging procedure. It includes the date of biopsy and the time needed to determine the stage of the oral cancer. It ends with the date of the preoperative Head and Neck multi-

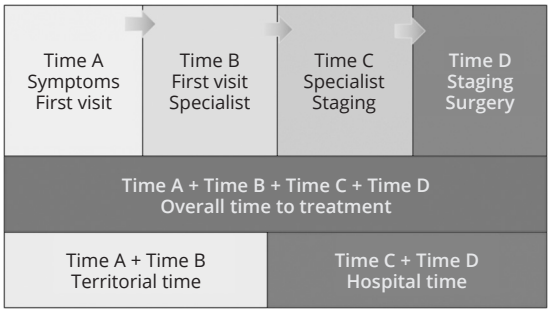

Figure 1.—Temporal division of diagnostic pathway in oral cancer.

disciplinary tumor board assessment or with the date of the latest staging imaging if performed after the multidisciplinary evaluation;

• time D: interval between staging and surgical treatment;

• territorial time: sum of time A and time B; it represents the period during which the patient has been managed outside the hospital.

• hospital time: sum of the last two periods (time C + time D); it expresses the time required by the head and neck specialist to conduct the patient's staging and perform surgery.

• overall time to treatment: the whole days of the four times (A+B+C+D), from first symptoms adverted and surgical treatment.

Statistical analysis

The Microsoft Excel 2019 for Windows was used for collecting data. The statistical analysis was done with SPSS v. 21 program. Median, means and standard deviations were calculated for each period. The Mann-Whitney U-Test was applied to verify if the pandemic influenced the length of above-mentioned time intervals.

Ethics committee

The approval of institutional ethics committee is unnecessary according to national regulations (Low 11 January 2018, n. 3, Italy).

Results

Demographic, clinical and surgical data of all patients

Thirty-two patients (mean age 67.5±13.9 years) were enrolled. Eighteen patients were men and fourteen women, with a mean age of 67.2±16.4 and 68.0±9.1 years, respectively.

About 87.5% of patients presented comorbidity, of which 46.9% had two or more. The most represented associated pathology was arterial hypertension (43.7% of all patients). In 18.75% of cases, cardiac problems were present. The most represented ASA class was ASA 3 (53.1% of patients). About 37.5% were ASA 2 and 9.4% (N.=3) were classified as ASA class 1.

The 75% of patients presented risk factors for oral carcinoma. In particular, 28.1% were smokers and 43.7% ex-smokers. In 15.6% anamnesis positive for a precancerous lesion was noticed.

The histological diagnosis was squamous cell carcinoma (SCC) in 28 patients (87.5%) and a mucoepidermoid carcinoma of the minor salivary glands in the other four. Half cases of SCC were located on the tongue, 37.5% and 12.5% were gingival and palatal SCC, respectively.

In 30 out of 32 cases the excision of the primary tumor along with a neck dissection was performed. The surgical procedure required a reconstructive time by free flap in 20 patients (62.5%) and by a pedicle flap in 10 patients (31.2%). In the remaining cases the surgical site was directly closed. Five patients (15.6%) did not require postoperative intensive care monitoring. Table II, III, and IV describe the population in the two years of analysis.

TABLE II.—*Characteristics of the whole population.*

Characteristics	Value
N. of patients	32
Age	67.5±14
Sex	
Male	18
Female	14
Presence of risk factors	87.5%
ASA Class	
III	53.1%
II	37.5%
I	9.4%
Histology	
SCC	87.5%
Mucoepidermoid	12.5%
Neck dissection	93.7%
Free flap reconstruction	62.5%

TABLE III.—*Characteristics of the 2020 population.*

Characteristics	Value
N. of patients	19
Age	66.1±14.3
Sex	
Male	10
Female	9
Presence of risk factors	78.9%
ASA Class	
III	47.3%
II	47.3%
I	5.3%
Histology	
SCC	84.2%
Mucoepidermoid	15.8%
Neck dissection	89.5%
Free flap reconstruction	47.4%

TABLE IV.—*Characteristics of the 2019 population.*

Characteristics	Value
N. of patients	13
Age	68.4±13.3
Sex	
Male	9
Female	4
Presence of risk factors	100%
ASA Class	
III	61.5%
II	23.1%
I	15.4%
Histology	
SCC	100%
Neck dissection	100%
Free flap reconstruction	84.6%

TABLE V.—*Clinical and pathological stage of the whole population studied and divided for year, according to AJCC 8th edition TNM staging*[10].

Stage	cTNM	pTNM
I	3 (9.4%)	4 (12.5%)
II	7 (21.9%)	3 (9.4%)
III	5 (15.6%)	4 (12.5%)
IVa	17 (53.1%)	12 (37.5%)
IVb	0	7 (21.8%)
IVc	0	2 (6.3%)

TABLE VI.—*Pathological stage of population divided per year, according to AJCC 8th edition TNM staging* [10].

Stage	pTNM 2020	pTNM 2019
I	3 (15.8%)	1 (7.7%)
II	0	2 (15.4%)
III	3 (15.8%)	2 (15.4%)
IVa	6 (31.6%)	4 (30.8%)
IVb	5 (26.3%)	3 (23.1%)
IVc	2 (10.5%)	1 (7.7%)

Table V summarizes the clinical and pathological TNM staging according to the 8th Edition[10]. 53.1% of patients were clinically in stage IVa, 21.9% in stage II, 15.6% in stage III and three patients (9.4%) in stage I.—Stage IVa was still prevalent in pathological staging, but with lower percentage (37.5%).

Table VI reports the pathological TNM staging according to the 8th edition divided per year.

Histological grading was G2 in 50% of cases, while G1 and G3 were present in 25% each.

Period comparative analysis

Of the 13 patients who had surgery in the 2020, five patients belonged to the LP and eight to the PLP. The other nine patients were operated in CP 2019.

The mean time of hospitalization for all patients was 16.4±8.1 days. In the LP it was 10.6±3.4 days and in the PLP 20.5±10.1 days. In the CP 2019 mean time of hospitalization was 15.9±5.2 days. Statistical analysis ruled out ruled out any difference in term of hospitalization time between periods.

Considering the short-term postoperative complications, none of patients developed complications nor symptoms attributable to COVID-19 during LP. In PLP we found short-term complications in four of eight patients (50%); none manifested COVID 19 symptoms. Complications were classifiable as grade 2 according to the Clavien/Dindo[8] scale in two cases, as grade 1 and grade 3b in one case each. Two patients during the PLP developed also mid-term (30 days) complications. No cases of late post-hospital COVID-19 infection were reported.

In CP 2019 we observed four cases of short-term postoperative complications, all of them classified grade 2. None of patients treated in 2019 developed mid-term complications.

Table VII summarize the days elapsed between a diagnostic phase to another for each period considered. Comparisons between periods in each diagnostic phase are reported in Table VIII.

Time A was 57.4% (24.8 days) longer during PLP than LP. It was 31.2% (26.5 days) shorter in LP+PLP 2020 than CP 2019.

Also time B was longer in PLP than in LP (48.8%; 14.8 days) and shorter in LP+PLP 2020 in comparison to CP 2019 (31.2%, 17.9 days).

Time C was significantly shorter in the PLP than LP (65%, 42.4 days; U-value 5.5, the critical value of U at $P<0.05$ is 6). No significant difference was found between 2019 and 2020 (29%, 8.9 days longer in 2020).

Time D was 39.3% (13.5 days) shorter in PLP than in the LP. It was 10% shorter in CP 2019 than in LP+PLP 2020.

With regard to the territorial time, in the PLP it was 53.9% (39.6 days) longer than the LP and during the CP 2019 it was 31.2% (44.4 days) shorter than 2020.

Conversely, the hospital time was significant-

TABLE VII.—*Days of each diagnostic period considered.*

Parameter	Lockdown period	Post-lockdown period	LP+PLP 2020	Control period 2019
Time A				
Mean±SD	43.2±24.9	68±47.1	58.4±41.8	85±53.8
Median	31	66	33	90
Time B				
Mean±SD	30.4±15.1	45.2±39.1	39.5±30.2	57.4±47.7
Median	33	25.5	32	30
Time C				
Mean±SD	64.6±35	22.1±9.2	38.4±30.8	29.8±20.5
Median	49	21	32	28
Time D				
Mean±SD	34.4±22.6	20.9±9.8	26.1±17.3	58.7±28.4
Median	28	17.5	22	30
Territorial time				
Mean±SD	73.6±31.7	113.2±69.4	98±61	142.4±78.2
Median	70	93	89	120
Hospital time				
Mean±SD	99±36.5	43±13.7	64.5±37	58.7±28.4
Median	118	42.5	46	63.5
Time to treatment				
Mean±SD	172.6±16	156.7±63.1	162.8±51.1	202.3±91.8
Median	166	146.5	163	198

TABLE VIII.—*Comparison between lockdown and post-lockdown period and between LP+PLP 2020 and Control Period 2019 in each diagnostic phase.*

Parameter	Mean±SD	P value
A. Symptoms - first visit		
Lockdown - post-lockdown	+57.4±12.4%	NS
CP 2019 - 2020	-31.2±13.3%	NS
B. First visit- Specialist visit		
Lockdown - post-lockdown	+48.8±7.4%	NS
CP 2019 - 2020	-31.2±8.75%	NS
C. Specialist visit - stadiation		
Lockdown - post-lockdown	-65±21.2%	U=5.5
CP 2019 - 2020	+29±4.3%	NS
D. Stadiation - surgery		
Lockdown - post-lockdown	-39.3±6.7%	NS
CP 2019 - 2020	-10±6.3%	NS
A+B. Territorial time		
Lockdown - post-lockdown	+53.9±19.8%	NS
CP 2019 - 2020	-31.2±12.2%	NS
C+D. Hospital time		
Lockdown - post-lockdown	-56.6±12.2%	U=5
CP 2019 - 2020	+9.8±2.9%	NS
A+B+C+D Time to treatment		
Lockdown - post-lockdown	-9.2±3.2%	NS
CP 2019 - 2020	-19.5±9.7%	NS

ly shorter in the PLP than in the LP (56.6%, 56 days; U-value 5, the critical value of U at P<0.05 is 6). No statistical significance was detected in the comparison between LP+PLP 2020 and CP 2019 (+9.8%, 5.7 days).

The overall time to treatment was 9.2% (15.8 days) shorter in LP than in the PLP. In 2020, it was 19.5% (39.5 days) shorter than in CP 2019; no statistical significance was found.

Discussion

Oral cavity cancer and the issue of diagnostic delay

Oral and oropharyngeal cancer represents the sixth more common type of cancer affecting the worldwide population. The main risk factors for oral cancer have been deeply investigated such as new trigger for the carcinogenesis process that should not be underestimated.[11]

The restrictions of the global health care system caused by the COVID-19 pandemic inevitably intersect with the issue of diagnostic delay of oral cavity cancer already known in literature.[12] With regard to the non-pandemic era, the mean time from the first oral cancer signs or symptoms to the treatment is 195 days in Australia,[13] 206 days in the US[14] and 185 days in India.[15] Italian data are slightly better, with reported time of 152 days.[16] Even if the current literature addressing the influence of delay in head and neck cancer shows inconsistent results, it overall indicates that oncologic outcomes worsen with increased delay time, independent of the pandemic.[17] Head

and neck carcinoma can potentially double in volume within 61-112 days (mean 87 days), as observed by Jensen *et al.*;[18] in 28 days the volume of the primary lesion (tumor bed or lymph node) could increase around 38%. Mackillop *et al.*[19] reported that 1 month of treatment delay in patients with carcinoma of the tonsil, causes a decline of local control rate by approximately 10%. This may also be applied to other squamous cell cancers of the upper aerodigestive tract. Additionally, patients with a more advanced tumor stage have a worse health-related quality of life (HQL).[20]

The main factor influencing the diagnostic delay in oral carcinoma is the latency period between the onset of symptoms and the initial medical visit.[21] The first medical referent for patients complaining symptoms suggestive for oral cavity neoplasms is usually the General Practitioner.[22] The time that elapses between the visit to patient's own general doctor and the subsequent specialist visit, and therefore the entire diagnostic pathway, could have a significant impact on the diagnostic delay.

Analysis of the response of the territorial health system

Our analysis, comparing the diagnostic time between the PLP and LP, showed a wider delay in PLP both to bring the patient to the initial medical examination (+57.4%, 24.8 days more than LP) and to present the case to the head and neck specialist (+48.1%, 14.8 days more than LP). The response time of territorial medicine seems to be worsened (+53.1%), with an average lengthening of 39.6 days between LP and PLP. Conversely, if we compare the 144 days of CP 2019 with those of LP+PLP 2020, we observed a 31.2% reduction in mean response time in 2020 in comparison to the previous year.

These observations are consistent with changes in health care resources pandemic related. The difficulty of General Practitioners to intercept patients during the LP increased due to their priority to take care of home COVID-19 affected patients. Likewise, the closure of many dental clinics may have reduced the number of asymptomatic oral cancer detection.

In fact, patients operated during LP had mainly completed their diagnostic pathway before the pandemic started, while those operated during PLP were mostly patients who had experienced the first symptoms in January 2020. This is manifested in both fraction of time (A and B) and, as a result, the territorial time is also affected.

During the 72 days of lockdown between March and April 2020 it was more difficult for a patient with oral neoplasia to be examined by a maxillofacial or otorhinolaryngologist. The hesitancy and fear of elderly patients to go to the doctor and, at the same time, social distancing and isolation may have induced to postpone medical visits.[23]

Doctors and dentists, for their part, may have had difficulties in managing the ordinary pathology themselves during the lockdown period;[24] the remote evaluation methods (mainly telephone contact) adopted are not suitable for an adequate objective assessment of the oral cavity.

However, there was an overall reduction in territorial time between 2019 and 2020. This could indicate a greater propensity of the territorial doctors to send patients directly to the specialists, avoiding managing them themselves, under suspicion of oral cancer.

However, this part of the analysis can be highly influenced by the patients' ability to remember the beginning of the disease, as reported in literature.[25]

Analysis of the response of the Functional Head-Neck Department

As reported in current literature,[4, 6, 8, 26-30] during the LP, there was a distortion of normal clinical practice that we can summarize below:

- selection of patients on clinical severity criteria;
- creation of specific diagnostic pathways for urgent and non-deferrable patients;
- availability of the operating theatres only for urgencies;
- collective evaluation of surgical indications and availability of operating theatre staff, together with anesthetists and theatre nurse chief.

The COVID-free pathways were realized using common guideline, but most surgeons used more than one as reference to manage patients.[31] Protocols for the containment of SARS-CoV 2

infection have also been developed in territorial dentistry.[32] Only recently widely shared guidelines for the management of SARS-CoV-2 positive or recovered patients in oncology have been developed.[33]

Guidelines recommend performing oncologic surgeries within no more than 8 weeks during COVID-19 pandemics.[34]

Recent data support the idea that head and neck cancer surgery can be executed safely even in high-incidence communities.[35, 36]

However, data showing the possibility that patients treated in 2020 may have presented with locally more advanced head and neck cancers than in 2019.[37]

In our department, we had a shortening of intra-hospital diagnostic and staging times. The specialists needed about 65% (42.5 days) more time to perform a complete staging during LP compared to PLP. But, as we mentioned earlier, patients operated during the LP had been prepared for the operating room before February 21st, 2020 (only one patient completed staging inside the LP window, on March 5th, 2020). This result was statistically significant

Access to the operating theatres was more difficult during the LP: this is demonstrated by the significant increase of 39.3% (13.5 days) in the average staging time (time D) between LP and PLP.

The hospital time taken by the specialist to bring the patient from his first visit to the operating table (time C+D), between the lockdown period and the post-lockdown period, has grown by 56.6%, about 56 days. The time C, first visit-staging, is the heaviest component in the Hospital Time. Supported by the statistically significant value, we can say that the creation of specific pathways for patients with oral cancer, with the possibility of concentrating diagnostic efforts mainly on them, has led to a shortening of the time needed to study the case.

It is plausible to think that the reduction of ordinary non-oncological elective activity and a contraction in traumatic pathology[38-40] may have created a greater ease of access for patients with oral cancer to diagnostic and staging investigations, making their journey to the operating theatre shorter.

Early complications in the LP were zero compared to PLP. Maybe the decreased burden of elective care had favored a better quality of surgery and accurate postoperative care that prevented complications.

Overall, the diagnostic process took less time during the first pandemic wave in 2020 than in the control group in 2019. Probably because of this, there was no significant worsening in the pathological between years.

Limitations of the study

Limitations of the present study regards the low number of patients considered and the retrospective setting, with related difficulty in obtaining precise information about duration of the outpatient phase.

Conclusions

The problem of the COVID-19 pandemic is an evolving issue, so it is difficult to give conclusions about it intersects with the outcomes of other pathologies, oral cancer included.

What can be deduced from this study on the impact of the COVID 19 pandemic on healthcare organization is as follows:

- the response time of territorial medicine (and dentistry) has been longer;
- the unintentional creation of exclusive pathways for oncological patients speeded up the diagnostic process;
- the organization and accessibility of operating theatres can become particularly problematic during the acute phases of a pandemic;
- there is no evidence of a deterioration in the quality of the level of care offered, despite the difficulties mentioned above.

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