

The Impact of the COVID-19 Pandemic on Head and Neck Cancer Services: The Leicester UK Multidisciplinary Team Experience'

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Received: 24 Aug 2022

Accepted: 03 Sep 2022

Published: 08 Sep 2022

J Short Name: COO

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Citation:

Olaleye O. The Impact of the COVID-19 Pandemic on Head and Neck Cancer Services: The Leicester UK Multidisciplinary Team Experience'. Clin Onco. 2022; 6(11): 1-6

Keywords:

SARS-COVID-19; Leicester; RNA

1. Abstract

1.1. Introduction: The COVID-19 pandemic has impacted on the delivery of healthcare across the UK. Patients with head and neck cancers (HNC) are faced with complex management strategies which are delivered by multidisciplinary teams (MDT) despite current restrictions. We present the challenges and strategies for providing cancer care.

1.2. Methods:

1.2.1. Objectives: To assess the impact of the COVID-19 pandemic on our HNC services in Leicester.

1.2.2. Design: A retrospective review of HNC services comparing the 3 months pre-COVID (1st April – 30th June 2019) to the COVID lockdown (1st April – 30th June 2020). An assessment of '2-week wait' cancer referrals and outcomes.

1.2.3. Setting: University Hospitals of Leicester, UK.

1.2.4. Participants: Data on referrals to the HNC services in the 3-month comparative periods.

Patient and Public Involvement: Patients were involved in the design and implementation of the telephone consultations and follow up strategies during lockdown. Their priorities and expectations

were communicated to the team during treatment. Results will be disseminated by publication.

1.2.5. Main outcome measures: Urgent cancer referrals, cancer diagnostic rates, changes in pathways and investigations, face-to-face appointments, cancer operations, palliative care referrals.

Study registration: Institutional approval was granted (Ref: 10959), University Hospitals of Leicester UK.

1.3. Results: There were 896 urgent HNC referrals in the 2019 study months compared to 585 referrals during the COVID lockdown in 2020. This is a 35% reduction in cancer referrals alongside a 58% increase in late presentations. There was reduction in face-to-face clinics and investigations (20-75%). Telephone consultations and direct access to radiologic tests, were used for screening. There were pressures on staffing from shielding, re-allocation and remote working.

1.4. Conclusions: The COVID-19 pandemic resulted in significant reductions in urgent HNC referrals. Telephone consultations and direct access to investigations are effective interventions during lockdown. Staffing pressures, clinic / theatre capacity, remote working and patient anxieties must be addressed.

2. Introduction

The worldwide outbreak of the coronavirus (COVID-19) pandemic that began in December 2019, has led to significant disruptions in the healthcare delivery system. It is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) which is a positive-sense, single-stranded RNA virus that is transmitted mainly by aerosol and droplets [1]. Transmission occurs with direct or indirect contact with droplets from an infected person [2]. The World Health Organization (WHO) designates the COVID-19 pandemic, a public health emergency of international concern [3]. In the UK, there was a pandemic-enforced national lockdown from 30th March 2020 – 4th August 2020 intended to reduce rising COVID infection rates [4]. National guidelines for limiting the spread of the infection included social distancing and self-isolation whenever required, wearing masks and the avoidance of large gatherings. Access to healthcare was modified to accommodate the restrictions on movement, both in primary care with general practitioners and in secondary level care. Leicester was put into an extended period of further local lockdown due to the rising cases of coronavirus infections in the county compared to the rest of the UK, with particular lessons for a multicultural population [5]. The restructuring of the head and neck cancer services across the UK led to challenges with providing prompt diagnosis and the delivery of complex treatments that include surgical resections, chemotherapy, radiotherapy, immunotherapy, speech and swallowing therapies and dietary modifications. The pandemic lockdown in Leicester affected staffing levels, clinic space availability for multidisciplinary reviews, theatre capacity for surgery, diagnostic pathways for radiology and histopathology, patient perceptions on seeking

help, and ultimately cancer stage at presentation. Patients also had limited access to rehabilitation during lockdown.

It is important to reflect on the impact of COVID-19 on our head and neck cancer services, identify the challenges and the strategies implemented by all teams that ensured our patients continued to receive the best care possible. This review of our experience in Leicester is all the more crucial on the eve of a second wave of COVID-19 across the UK. Our head and neck cancer multidisciplinary hope to share the lessons learned during this pandemic and the ways we have adjusted to manage this crisis with our cancer patients remaining the focus and beneficiaries of excellent care.

3. Methods

This was a retrospective analysis of data on head and neck cancer services at the University Hospitals of Leicester, East Midlands UK. We compared the data of various disciplines involved in multidisciplinary cancer care between the 3 months last year pre-COVID (1st April 2019 – 30th June 2019) with the same period this year during the COVID lockdown (1st April 2020 – 30th June 2020). Institutional approval was granted by the quality improvement board (Ref: 10959), University Hospitals of Leicester NHS Trust.

We compared the following outcome measures: total number of urgent cancer referrals, cancer diagnostic rates, changes in diagnostic pathways and investigations, changes in clinic arrangements, number of face-to-face appointments / clinics by allied health, number of cancer operations, and number of referrals for palliative treatment. We also documented the qualitative impact of the COVID pandemic on multidisciplinary team staffing, emotional well-being, remote working and the anxieties of patients and healthcare access that could lead to delayed cancer presentations. Patients were involved in the design and conduct of the telephone consultations and revised follow up strategies.

Statistical analysis was done using STATA SE version 16. Mean data for both independent time periods was analysed using an unpaired t-test whilst categorical data was analysed with chi-square. A p-value less than 0.05 was taken as reaching statistical significance.

4. Results

There were 896 urgent head and neck cancer referrals from 1st April 2019 – 30th June 2019 compared to 585 referrals during the COVID lockdown period (1st April 2020 – 30th June 2020). This represents a significant reduction of 35% in cancer referrals ($p < 0.001$; unpaired t-test). The proportion of HNC diagnosed from these referrals was 6.4% in 2019 and 7.7% in 2020 series. There was significant reduction in the numbers of patients seen face-to-face in clinics by all specialties due to space constraints and infection prevention measures (Table 1). Telephone consultations and direct access to radiologic tests, were therefore utilised more frequently for triaging and follow-up. There were pressures on staffing instigated by shielding, re-allocation and remote working.

Table 1: COVID-19 impact on head and neck cancer services in Leicester

Cancer service	Pre-COVID-19	COVID-19 lockdown	COVID-19 Impact
	1 st April – 30 th June 2019	1 st April – 30 th June 2020	
<u>2-week wait clinic referrals:</u>			
Total	896	585	35% reduction ↓
ENT Surgery	529	423	20% reduction ↓
Maxillofacial Surgery	274	162	41% reduction ↓
H&N (uncategorised)	93	0	
<u>Cancer diagnosis rate:</u>			
Cancers diagnosed	57	45	21.1% increase ↑
Total referrals	896	585	34.7% reduction ↓
% cancer diagnosis rate	6.40%	7.70%	1.3% increase ↑
<u>Pathology reviews:</u>			
Histopathology	774	191	75.3% reduction ↓
Cytology	622	323	48.1% reduction ↓
<u>Radiology 2ww:</u>			
CT scans	203	147	27.6% reduction ↓
MRI scans	120	97	19.2% reduction ↓
Ultrasound scans	196	144	26.5% reduction ↓
Straight to test Thyroid Ultrasound scans	16	11	31.3% reduction ↓
<u>Oncology:</u>			
Radical Radiotherapy	24	25	4.2% increase ↑
Palliative radiotherapy	6	11	83.3% increase ↑
<u>Cancer stage & pathways:</u>			
Number of T3 tumours	2 (3.5%)	5 (11.1%)	7.6% increase ↑
Number of T4 tumours	3 (5.3%)	7 (15.6%)	10.3% increase ↑
Time from GP referral to review	13.7 days	11.6 days	2.1 days' reduction ↓
Time to cancer treatment	66.5 days	73.7 days	7.2 days' increase ↑
<u>Speech Therapy:</u>			
Laryngectomy (face to face)	48	42	12.5% reduction ↓
Laryngectomy (phone/email)	18	62	244.4% increase ↑
Outpatient (face to face)	166	46	72.3% reduction ↓
Outpatient (phone/email)	63	228	262% increase ↑
<u>Macmillan HNC specialists</u>			
Face to face clinics	100	0	100% reduction ↓
<u>Tracheostomy</u>			
Adult tracheostomy	20	9	55% reduction ↓
Tracheostomy for HNC	12	6	50% reduction ↓
Emergency tracheostomy HNC	2 (16.7%)	4 (66.7%)	50% increase ↑

5. Cancer referrals to ENT & Maxillofacial Surgery

During the lockdown triggered by rising cases of COVID-19 infections in Leicester, the urgent 2-week wait cancer referrals from GPs to the ENT surgery unit reduced from 529 in the pre-COVID 2019 period to 423 patients in 2020. This is a 20% reduction in referrals. Similarly, urgent referrals to the Maxillofacial surgery reduced by 41% as the unit were referred 274 patients in 2019 compared to 162 in 2020 in the 3 months of lockdown (Table 1). Urgent uncategorised head and neck referrals to the MDT from non-standard pathways also dropped precipitously from 93 to 0 cases. The clinic capacity for head and neck services was affected with the necessary infection control measures limiting the number of patients that could be seen at any one time.

Theatre capacity for complex head and neck cancer surgery was also significantly affected with few theatre lists available for all surgeons during COVID lockdown. This was due to the redeployment of theatre staff to intensive care unit and the strict infection prevention guidelines on aerosol generating procedures with protocols on use of personal protective equipment, theatre

airflows, decontamination procedures which all added to the total time available per operation. Patients who may have required major resections for their cancers alongside with microvascular flap reconstruction were offered non-surgical treatment with chemoradiation. This became necessary due to cancer presentations in advanced stage and the lack of post-operative intensive care unit capacity which was under stretch from care of COVID positive patients on ventilato

6. Radiology Services

Diagnostic radiology was universally affected due to the reduced numbers of cancer referrals for scans. Cross-sectional imaging with CT scans reduced from 203 scans to 147 scans (27.6% reduction) in the same 3 months' period pre and post-COVID shown in Table 1. There was also a 19.2% reduction in the number of MRI scans performed for cancers from 120 to 97 during lockdown. Ultrasound scans were offered in joint clinics with clinicians to provide an effective service however scans reduced from 196 to 144 (26.5% reduction) during lockdown.

A unique Leicester initiative called ‘straight to test ultrasound’ service established to facilitate prompt diagnosis of suspected thyroid malignancies allows General Practitioners to request ultrasound thyroid scans if there were clinical concerns prior to reviews in secondary care. In the pre-COVID months in 2019, this service performed 16 thyroid ultrasound scans but this reduced to 11 scans during COVID lockdown in 2020 (31.3% reduction).

7. Pathology Services

At the time of the initial lock down, there was a dramatic reduction in the number of routine head and neck cases being submitted for pathology review. Over the 3 months April – June compared, there were 774 histopathology reviews in 2019 and 191 such reviews in 2020. This is a significant reduction of 75.3% directly due to the COVID-19 pandemic (Table 1). Since the easing of national lockdown, the number of cases has gradually increased to approximately 50% of pre-COVID numbers. Anecdotally the complexity of the cases seems to have increased, although this is likely to be explained by them not hiding amongst the routine work.

Cytological examination with fine needle aspiration (FNA) and frozen sections were suspended during the initial phases of the COVID-19 pandemic, following recommendations from the Royal College of Pathologists. These services are now restored. There was discontinuation of the joint rapid on-site evaluation clinic done with radiologists for adequacy assessments which are yet to be restored. Reduced theatre capacity for surgeons also affected the number of cancer resections sent for histopathologic examination.

8. Oncology Services

There was a significant increase in referrals from the head and neck MDT for palliative radiotherapy during COVID lockdown 2020 when compared to the same 3 months in 2019. In pre-COVID April – June 2019, palliative radiotherapy was administered to 6 patients compared with 11 patients in 2020 lockdown. This represents an 83.3% increase which was directly due to the increase in advanced cancer presentations. There was a 7.6% increase in T3 tumours and a 10.3% increase in T4 tumours treated during the COVID lockdown. There was no significant change in radical radiotherapy treatments delivered during COVID lockdown although there was a slight 4.3% increase. The lack of theatre and intensive care unit capacity for all major cancer resections for our surgeons also created a shift towards radiotherapy +/- chemotherapy for curative treatment instead for some patients. This led to a backlog of treatment schedules and some delay in time from GP referral to commencement of cancer treatment of a week (Table 1).

9. Speech & Language Therapy

The COVID-19 pandemic has impacted significantly on the delivery of the speech and language therapy (SLT) service. All face to face clinics were discontinued resulting in a lack of capacity for supporting patients with their swallow assessments, voice and

speech rehabilitation. Usually clinics would allow joined up care by allied health professionals but the reorganisation of clinic space for a COVID-safe environment resulted in loss of a clinic room for SLT. A number of solutions were put in place including setting up telephone clinics for pre-surgery assessments and post treatment reviews. In addition, there were assessments of radiotherapy patients in mask fit appointments, ad-hoc laryngectomy valve changes and regular telephone contacts. Extensive written emergency care advice for laryngectomy patients, increase in home visit assessment and reviews, set up of video consultations, and working from home wherever possible, were also solutions.

All instrumental assessments for swallowing were also discontinued. The SLT solution was the development of the RAG rating for video-fluoroscopy (VF) which highlighted urgent cases to be reviewed. The SLT Royal College stated that SLT’s should discontinue fiberoptic endoscopic evaluation of swallowing (FEES) immediately during the first wave. There was also the lack of access to GPs and follow up care. SLT however has access to ‘Systemone’ which is a community electronic system for recording notes which has helped with communication. There are still difficulties liaising with GPs about patients in the community given the remote working arrangements. This has led to an increase in patients contacting SLT to resolve issues. Patients cannot receive rehabilitation in the community as services are not running or are running with a backlog e.g. physio, lymphedema, and occupational therapy.

A Virtual MDT occasionally had variable connection leading to limited SLT contribution. This resulted in communication via email or at other points in the week, which was more time-consuming. The RCSLT states that a swallow assessment is an aerosol generating procedure (AGP). Therefore initially during the pandemic, SLT had issues getting hold of adequate PPE for swallow assessments. Going forward it means that any swallow assessment needs to be carried out in a space which can be used for AGP assessment. This has reduced SLT ability to assess patient in clinics. Access to rehabilitation for speech, swallow and voice remains reduced including suspension of the laryngectomy support group.

10. Dietetics

COVID-19 has significantly affected the dietetic service that is provided to Head and Neck Cancer patients. The cessation of all face to face outpatient clinics impacted the pre-treatment assessment of patients, monitoring of those on chemotherapy and radiotherapy and the follow up of patients post treatment. These clinics were predominantly transferred to telephone consultations but the assessment and care it is possible to provide in this manner is greatly diminished compared to seeing patients face to face. It is also difficult to build relationships with patients and nearly impossible with family members when you do not see them in person. Towards the beginning of the summer we started to see patients for pre-assessment within existing face to face appointments in the radiotherapy department. Whilst this is much better for patient care, it is harder

to manage within the caseload due to the ad hoc nature of these appointments. We have adapted to working from home to allow for social distancing within offices and this has forced the availability of adequate IT and virtual systems to connect with UHL. Online meetings have also proved more time efficient although IT issues have affected full participation of dietetics in the virtual MDT.

Due to the limited PPE within the Trust initially, Dietetic staff were not permitted to attend the wards in person. For 3 months all inpatient dietetic reviews were done using 'nerve centre' - the hospital online portal, and speaking to ward staff over the telephone. This clearly negatively impacted the service provided.

Finally, the effects of lockdown have had significant impacts on a number of patients. Many have presented with large tumours, significant dysphagia and often needed emergency admissions for feeding. They then have reduced treatment options and poorer outcomes. In this second wave of the pandemic, dietetics will utilise telephone consultations and continue to plan face-to-face meetings that coincide with the treatment pathways for chemo-radiation.

11. Macmillan Head and Neck CNS

There were peculiar challenges during the COVID pandemic and resulting lockdown on the delivery of specialist Macmillan nursing care. The necessary emotional bond we create for our patients and the outlet we provide for helping them through their cancer diagnosis, answering their questions and providing support, were all stretched. Our team of three nurses was further affected by the reassignment of staff to critical areas of need. The lack of face-to-face consultations was particularly challenging before and during treatment especially as we also lost clinic space due to the hospital infection control restrictions. Strategies adapted included telephone and video consultations, timing patient contacts to those times when they attend hospital for radiotherapy (alongside allied health professionals), and sending emails / texts and letters with all the required information. We contributed regularly at the virtual MDT and continued to be advocates for our vulnerable patients. There were more referrals for palliative radiotherapy during COVID lockdown as patients presented in advanced stage (Table 1). These were cases where both the patients and their relatives required a lot of our support.

12. Emergency Services / Tracheostomy

During the COVID lockdown, there was a 50% reduction in the number of semi-elective tracheostomy done for patients with head and neck cancers partly due to the reduced numbers of complex resections. These tracheostomy cases were performed as part of their major cancer operations to protect their airway and microvascular reconstruction. There was however a 50% increase in the number of emergency tracheostomy done during the COVID lockdown 2020 (Table 1). These patients presented to the accident and emergency department with advanced head and neck cancers and airway compromise. The on-call team had to intervene with often awake tracheostomy under local anaesthetic, panendoscopy, clinicsfoncology.com

biopsies and tumour debulking prior to treatment discussions at the MDT meeting.

13. Discussions

The challenges from the COVID pandemic and lockdown have led to evolutions in our way of working as a multidisciplinary cancer team delivering head and neck services. These include the development of innovative diagnostic pathways, triage systems, and treatment strategies that minimise the risk of infection transmission to both healthcare workers and the population. People affected with cancers are a particularly vulnerable group and it is essential that measures are in place to ensure the continued delivery of excellent care despite the COVID pandemic. Head and neck cancers can be distressing for patients and challenging to manage given the consequences on daily functions like breathing and swallowing. Early diagnosis and individualised treatment therefore determines survival, quality of life and the risk of cancer recurrence.

13.1. 2-week wait cancer referrals

It is important to implement a system that enables early identification of possible malignant conditions. This helps in early diagnosis and appropriate management of these cancers improving their prognosis. The efficacy of the two-week wait (2ww) system in identifying HNC patient has always been a subject of interest, as it helps in improving patient care, with a UK study reporting the targets were met during lockdown,[6]. NICE guidelines have provided an urgent referral check list which helps GP to triage their referral. We found that the number of patients referred to head and neck services on 2ww referral has reduced by 35% during lockdown. This may be due to limited access of patients to GPs during this pandemic. Moreover, with the number of GP clinics reduced significantly during lockdown, these reduced 2ww referrals were anticipated. The cancer diagnosis rate from these referrals has increased from 6.4% in 2019 to 7.7% in 2020. This increase in conversion rate may be due to overall reduction in the number of 2-week wait referrals. A systematic review studied a total of 1,809 2ww referrals which yielded 199 cancer patients [7]. The proportion of 2ww referrals that were positive for head and neck cancer also ranged from 6.3% to 14.6% among the included studies. They suggested that this low yield may be due to inappropriate referral or the guideline for referral has low specificity. In order to improve the accuracy, we have started straight to test referral which enables appropriate triage of the patients by GP.

Our study has confirmed delayed presentation of head and neck cancers in some patients during the COVID lockdown in Leicestershire. The proportion of advanced cancers (T3 and T4) managed by our MDT increased by 7.3% and 10.3% respectively. The factors contributing to delayed presentations will include patient factors like anxieties and the fear of a cancer diagnosis, access to clinical examinations given the majority of the increased primary care consultations were conducted over the telephone as well as the restrictions on movement in the community due to a surge of COV-

ID infections.

The average time it took from GP referrals to commencement of cancer treatment was 67 days pre-COVID and increased by a week to 74 days during the COVID lockdown. The lack of theatre and ICU capacity for some cancer resections led to curative intent treatment with radiotherapy +/- chemotherapy and a longer wait time to get through appointments. There was pressure also on the alternative treatment modality of chemoradiation as there were more patients needing planning CT scans, mould-making and delivery of radiation over 6 weeks. There was less time available for surgery during COVID lockdown particularly because our trained perioperative staff were redeployed to acute areas such as the intensive care unit. There were also reduced theatre lists with the head and neck surgeons (ENT & Maxillofacial) sharing an all-day list twice a week. Aside reduced lists, it was imperative that new strict protocols on the perioperative use of personal protective equipment (doffing & donning) as well as the extra taken to decontaminate a used theatre and ensure appropriate air flows. This trend is nationally recognised as many units had to make these difficult decisions with less operating time. It is not only the cancer cases that suffered an impact this way as it also includes significant waits for elective surgery, with the RCS confirming approximately 5 million people are on the elective surgery waiting lists across the UK.

Challenges during the COVID-19 lockdown included reductions in the physical space available for outpatient clinics to review urgent cancer referrals. This was due to the strict guidelines on ensuring infection prevention in a pandemic with all attendees to clinics required to wear face masks and adequate spacing between patients in the waiting room area. Aerosol generating procedures such as tracheostomy manipulations, flexible nasendoscopy were performed in a designated, well-ventilated procedures clinic room with decontamination of equipment after each use. These COVID-related challenges to the delivery of speech and language therapy, instrumentation, nutritional assessments and support for head and neck cancer patients has been highlighted by a UK discussion paper [8].

A number of strategies were adopted to ensure prompt identification of any head and neck cancers and delivery of excellent care by our MDT. One of such diagnostic pathway modifications was the utilisation of the 'straight to test thyroid ultrasound scan' service run by our head and neck radiology team. Any patients with a thyroid lump and suspicious clinical features, was referred directed for an ultrasound scan by their General Practitioner. The scan images and results were then reviewed by our thyroid MDT. This led to a reduction in the time to either a cancer diagnosis, further investigations or return to GP for discharge if benign pathology was identified.

A telephone triaging service was widely utilised by our MDT especially allied health specialists. Our team ensured holistic contact

with our cancer patients, reassuring them of their treatment progress, and promptly recognising whenever there was deterioration in speech or swallowing from radiation effects. Modifications to optimise nutritional intake and treatment outcomes were achieved using the telephone service. There are however challenges to the use of telemedicine for head and neck cancer surveillance broadly during this COVID pandemic that include preference of patients for face-to-face visits, technology barriers and the need to clinically assess [9].

14. Conclusions

The COVID-19 pandemic has affected head and neck cancer services in Leicester where lockdown restrictions have been in place longer than most UK cities. Our study shows an increase in advanced stage cancers during lockdown and an increase in palliative cancer treatment as a consequence. There has been a reduction in the number of urgent cancer referrals from primary care during lockdown and our service has continued to deliver an excellent service by adapting to the use of telemedicine. Challenges of lockdown included reduction in available clinic space for face-to-face reviews as well as the limited theatre and intensive care unit capacity for major cancer resections.

References

1. Gavriatopoulou M, Ntanasis-Stathopoulos I, Korompoki E, et al. Emerging treatment strategies for COVID-19 infection. *Clin Exp Med.* 2021; 21(2): 167-179.
2. Guan WJ, Ni ZY, Hu Y, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med.* 2020.
3. Adil Md T, Rahman R, Whitelaw D, et al. SARS-CoV-2 and the pandemic of COVID-19. *Postgrad Med J.* 2021; 97(1144): 110-6.
4. Davies NG, Barnard RC, Jarvis CI et al. Association of tiered restrictions and a second lockdown with COVID-19 deaths and hospital admissions in England: a modelling study. *The Lancet Infectious Diseases.* 2021; 21(4): 482-92.
5. Nazareth J, Minhas JS, Jenkins DR et al. Early lessons from a second COVID-19 lockdown in Leicester, UK. *The Lancet.* 2020; 396(10245): E4-E5.
6. Taylor R, Omakobia E, Sood S, Glorie RJ. The impact of coronavirus disease 2019 on head and neck cancer services: a UK tertiary centre study. *J Laryngol Otol.* 2020; 134(8): 684-7.
7. Kumar R, Drinnan M, Mehanna H, Paleri V. Efficacy of the two-week wait referral system for head and neck cancer: a systematic review. *Ann R Coll Surg Engl (suppl).* 2012; 94: 102-6.
8. Patterson JM, Govender R, Roe J et al. COVID-19 and ENT SLT services, workforce and research in the UK: A discussion paper. *International Journal of Language & Communication Disorders.* 55(5): 806-17.
9. Fassas S, Cummings E, Sykes KJ et al. Telemedicine for head and neck cancer surveillance in the COVID-19 era: Promise and pitfalls. *Head Neck.* 2021; 43(6): 1872-80.