




Status and strategies for the management of head and neck cancer during COVID-19 pandemic: Indian scenario

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Abstract

In India, oral cancer is the most common head and neck cancer (HNC) in men, mainly caused by the consumption of smoked and smokeless tobacco. During the current pandemic, delaying surgery for even 1 or 2 months may lead to more extensive surgery or inoperability, where only supportive care can be provided. Being semi-emergent in nature, treatment for these patients is currently on hold or delayed in most centers across the country. This study was conducted to assess the impact of COVID-19 pandemic and inability of the health system to treat HNC in a timely fashion and how surgeons are coping to this emergent situation. This article highlights the situation in India, a country burdened with one of the highest incidence rates of HNC.

KEYWORDS

COVID-19, head and neck cancer, Indian scenario, pandemic, strategies for management

1 | INTRODUCTION

Coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been declared a pandemic since the 11th of March 2020 by the World Health Organization (WHO).^{1,2} All over the world, “lock down” or “social distancing” has been found to be the most effective method to control this outbreak. Owing to the high infectivity and alarming increase in the number of cases affected by this contagious disease, most hospitals have decreased or all

together stopped elective interventions in patients with head and neck cancer (HNC). Ambulatory visits have been curtailed, wards and operating rooms are emptied for emergency services, and ventilators have been commandeered for COVID-19 patients.

In India, over 200 000 cases of HNC occur each year, where nearly 80 000 oral cancers are diagnosed every year.³ Overall, 57.5% of global HNCs occur in Asia, especially in the Indian subcontinent and they account for 30% of all cancers in India.⁴ In India, 60% to 80% of patients present with advanced disease as compared to 40% in

developed countries.⁵ Oral cancer is the most common HNC in men in India, mainly due to the consumption of smoked and smokeless tobacco.⁶ When patients with HNC present at a stage where resection is feasible, they can expect a reasonable outcome after the surgery and appropriate adjuvant treatment.⁷ During the current pandemic, delaying surgery for even 1 or 2 months may lead to more extensive surgery or inoperability, when only supportive care can be provided. Being semi-emergent in nature, treatment for these patients is currently on hold or delayed in most centers across the country.

This study was conducted to assess the impact of COVID-19 pandemic and inability of the health system to treat HNC in a timely fashion and how surgeons are coping to this emergent situation. This article highlights the situation in India, a country burdened with one of the highest incidence rates of HNC.

2 | MATERIALS AND METHODS

In this COVID-19 pandemic, the stakeholders (at least an attending surgeon) of major academic health institutions in India who are responsible for HNC care were contacted by phone or other electronic means of correspondence. Anonymity of the institute and the individual surgeons was ensured and verbal consent obtained. They were asked about the present situation of HNC services arising out of COVID-19 pandemic at their hospitals. The information was sought in the form of questions regarding such as status of outpatient and inpatient services, acceptance of new patients, type of cancer surgeries being performed, management of patients in the postoperative period, safety measures taken during surgeries, guidelines followed, treatment of COVID-19 patients in their respective hospitals, and availability of personal protective equipment (PPE). Recent guidelines on the management of patients with cancer during COVID-19 pandemic were searched on the web site of important health care bodies of India. All responses from different stakeholders and guidelines were analyzed to understand the present situation in India.

3 | RESULTS

A total of 16 major head and neck health care facilities were contacted across India including all regions (Table 1). The majority of the contacted stakeholders were working in government (public-funded) institutions (75%, $n = 12$) as they have the highest workload of patients in the Indian setup, where treatment is practically free to the patient. Out of the 16 hospitals, 50%

TABLE 1 Geographical distribution of head and neck cancer facilities from which the information was collected

Region	State/union territory	Tertiary care hospitals	Dedicated cancer centers
North	Delhi	4	4
	Punjab/Chandigarh	2	—
South	Karnataka	—	1
	Kerala	1	—
	Pondicherry	1	—
West	Gujarat	—	1
	Maharashtra	—	1
East	West Bengal	—	1
Total		8	8

($n = 8$) were dedicated cancer centers and the other half were tertiary care institutions with HNC facilities. A dedicated cancer center, catering to a large urban population has been closed indefinitely due to the spread of COVID-19 in a large number of health care professionals. The majority (69%, $n = 11$) of the institutions have halted outpatient facilities and elective surgeries, only emergency admissions and surgeries were continued in these centers (Table 1). Only five (31%) institutes were providing all types of HNC services, but with an increased volume of outpatients despite a decreased volume of operations due to safety precautions and limited availability of PPE, four of these were dedicated cancer centers and were performing the full spectrum of surgical procedures. Most institutions are surveying patients by clinic visits or through telephone consultations. A few (12.5%, $n = 2$) institutions have started telemedicine consultations with patients. As per the present government regulations, COVID-19 test is not allowed for patients with no history and symptoms. The majority (69%, $n = 11$) of the institutes are following institutional guidelines, while others are either following state or other guidelines. Availability of (PPE) and N95 masks is limited (63%, $n = 10$) at most of the centers and they are using them judiciously. Current recommendations by the Government of India do not allow for preoperative COVID-19 testing, so decision making for surgery based on COVID-19 status is difficult (Table 2).

The Ministry of Health and Family Welfare, an apex health care body of India, has categorized all suspected/positive patients into three groups and are managed in the respective COVID-19 hospitals—dedicated COVID care center, dedicated COVID health center (DCHC), and dedicated COVID hospitals (DCH). Of the 16 institutions contacted, 4 have been designated as DCHC and 2 as DCH.

TABLE 2 Responses from the institutes with head and neck oncology services

Information sought	Responses	Tertiary care hospitals with oncology services (n = 8)	Dedicated cancer centers (n = 8)	Total (n = 16)
Outpatient department working	Yes	1	4	5
	No	7	4	11
Inpatient facilities working	All types (limited)	1	4	5
	Emergency only	7	4	11
Accepting new patients?	Yes	1	4	5
	No	7	4	11
Type of surgeries being performed	All types (limited)	1	4	5
	Emergency only	7	4	11
Safety precautions during surgery	PPE/N95	5	6	11
	Standard	3	2	5
Guidelines followed	Institutional	6	5	11
	State	2	1	3
	other guidelines	1	1	2
Management of immediate postoperative cases	Patient + telephone	1	4	5
	Telephone only	6	3	9
	Telemedicine	1	1	2
COVID-19 center	DCHC	4	0	4
	DCH	2	0	2
	No	2	8	10
Availability of personal protective equipment	Available	2	3	5
	Limited	6	4	10
	Not available	0	1	1

Abbreviations: DCH, dedicated COVID hospitals; DCHC: dedicated COVID health center.

Currently, there are no guidelines for the management of HNC in India during COVID-19 pandemic. The Foundation for Head and Neck Oncology (FHNO), a multispecialty national society in India has provided guidelines for the management of HNC patients. These guidelines are elaborative and cover all aspect of management of patients with HNC cancer, from surgical to nonsurgical modalities. As this is a nongovernmental body, they have advised to keep abreast of advisories and guidelines from the Government of India, as these will supersede their guidelines.

4 | DISCUSSION

Cancer is the second leading cause of death globally, accounting for an estimated 24.5 million incident cancer cases and 9.6 million deaths, or one in six deaths, in

2018.⁸ HNC in India has a distinct demographic profile, risks factors, food habits, and personal and family history. HNC is a major public health problem in India, mainly due to the widespread use of tobacco. In contrast to the West, where it is the sixth most common cancer, HNC in India is the commonest cancer in men in India.³ Already burdened with the high patient load and high percentage of late-stage HNC patients, the spread of COVID-19 has further deteriorated the situation.

As of April 14, 2020, COVID-19 has affected 1 914 916 persons worldwide. The death toll in the highest affected countries like Italy is approaching 12 000 people, with Spain not far behind. The United States has reported more than 164 000 cases of the disease, including more than 38 000 cases in New York City alone.⁹ India, a country of 1.35 billion people, has also come in the grasp of this highly contagious disease with its first case reported on 30 January in the state of Kerala.¹⁰ Now the footprint

of COVID-19 has spread in almost all states, affecting more than 11 000 people and with the death of more than 370 people as on April 14, 2020.⁹

Due to the rising number of COVID-19 patients in India, almost all government hospitals and teaching health care institutions are on high alert, and doctors are the main task force for managing this pandemic. After the announcement of 21 days lock down throughout the India on March 24, 2020, by the Indian government, all elective surgeries and outpatient services at majority of hospitals were withheld to control this menace and vacating the facilities in stagewise manner to harness the resources. Only emergency services were continued for the management of life-threatening problems.¹¹ Most of the major government hospitals were aligned to assess their resources and convey the present status of the availability of ICU beds, ventilators, and beds. Gradually, beds in the wards were vacated by discharging stable patients, and only critical patients were kept in hospitals. Beds of each department catering emergency patients were asked to join hands and combine their beds in a limited area on a sharing basis so that other areas can be made available as isolation wards with sufficient number of beds for the growing number of COVID-19 patients.

Recently to contain the spread of disease, the Indian government has earmarked selected facilities dedicated for COVID-19 management. It has proposed three types of COVID dedicated facilities as CCC, DCHC, and DCH. All these facilities will have separate earmarked areas for suspected and confirmed cases. Suspected and confirmed cases will not be allowed to mix under any circumstances. Out of these, both DCHC and DCH would be the existing hospitals and most of them are secondary or tertiary care government hospitals.¹² HNC surgeries together with other cancer surgeries are majorly affected after major health care institutions were converted into dedicated COVID-19 centers. Meanwhile, a few dedicated cancer centers are able to continue doing HNC surgeries, but only in limited numbers by following their own institutional guidelines. But this situation is dynamic and an expected exponential increase in the number of COVID-19 patients and probable community spread may lead to overburdened health care facilities and more stringent policies to take up new cases.

India, which has a high burden of HNC, is compounded with long waiting lists in all hospitals of India. A problem that is particularly worse in government-funded hospitals, which cater to the poorest of society. With further delays in surgery during the pandemic of COVID-19, the burden will exponentially increase. The biggest problem will be to manage such a high load of these malignancies after the situation is normalized. The patients may become inoperable and deemed only for

TABLE 3 Brief of guidelines and recommendations given by FHNO for the management of HNC during COVID-19 epidemic¹⁵

I. DIAGNOSIS

- Fiber optic and direct laryngoscopies should be avoided unless absolutely mandatory, to help protect health care workers from aerosol generated during procedure.
- Biopsies of benign lesions need to be avoided.
- FNACs from neck nodes should be preferred for obtaining diagnosis, in case of laryngeal/hypopharyngeal primaries, where biopsies will entail some form of endoscopy.

II. TREATMENT

A Surgery

- It should be taken in consideration with its likely outcomes, likelihood of curing the cancer, safety considerations and utilization of infrastructure which may be required for management of COVID-19 related emergencies.
- All patients should be considered as asymptomatic carriers and adequate precautions to be taken prior to performing any surgical procedure like use of appropriate/best available PPE.
- Delay or postpone surgery in patients with low grade tumors.
- Avoid extensive surgery in patients with advanced age (>65 years) with comorbidities.
- For reconstruction, avoid complex microvascular reconstructive surgery requiring long hours and use of local and regional flaps should be considered.
- Avoid performing surgeries that require elective tracheostomies.
- Avoid surgeries that require powered instrumentation (bone cutting instruments, saws, micromotors, drills, and so forth).
- Avoid surgeries on patients with low hemoglobin to avoid the use of blood and blood products.

B Radiotherapy

- Patients should be triaged and prioritized based on their diagnosis, prognosis and urgency for initiating treatment.
- Hypofractionation schedules have proven to be equivalent in many clinical scenarios in head and neck cancers and should be pursued where appropriate.
- Palliative radiotherapy treatment for symptomatic relief can be delivered in single fraction or weekly once regimens.

C Chemotherapy

- The decision to use concurrent therapies like chemotherapy/targeted therapy should be taken judiciously on the expected benefit of the concurrent therapy to overall outcomes vis a vis the risk of the patient acquiring COVID-19 infection and succumbing to it.

III. FOLLOW-UP

- It is advised to minimize all follow-up appointments.
- Defer follow-up for patients with low risk of recurrence (eg, 18-24 months posttreatment).
- Prioritize patients in immediate posttreatment period and those with high risk for recurrence.
- Consider longer intervals between follow-ups and consider teleconsultation for follow-up where possible to triage follow-up requirements.

Abbreviations: FHNO, Foundation for Head and Neck Oncology; HNC, head and neck cancer; PPE, personal protective equipment.

palliative treatment. The Government of India is taking a lot of measures to contain this disease and purchasing a large number of ventilators to cater the expected increase of COVID-19 patients in the near future. But we also need guidelines and a mechanism to surgically treat at least those patients with HNC who are in dire need of surgery for a reasonable survival.

The practice in other countries where the infection is more severe than in India has been to create new and innovative care pathways. In the United Kingdom, NHS England has rapidly supported the creation of “cancer hubs,” where patients with cancer from multiple tumor groups are fast tracked on priority basis. To ensure full stakeholder participation, the hubs have suspended conventional regulatory requirements to referring surgical teams to operate at the hub. The hub is maintained as COVID-19 free by requiring patients to self-isolate when they have been accepted for intervention and regular testing for COVID-19 in the pretreatment period. Patients needing urgent cancer surgeries are referred to such dedicated centers and are scheduled for treatment as decided by the tumor board. Their tumor boards conduct virtual multidisciplinary team (MDT) meetings and decisions are taken accordingly.¹³ The American College of Surgeons has given guidelines for triage of cancer surgeries during this pandemic and recommended the decision to be taken by the MDT team based on the available resources and situation pertaining in their region.¹⁴

During the current pandemic, the important points to consider are that all head and neck procedures, including simple clinical examinations, are potentially aerosol-generating and should be considered high risk. Testing for COVID-19 is limited and cannot be performed in all patients. Protective supplies, such as N95 masks, PPE gowns, gloves, and other protective materials, are in short supply or unavailable in many institutions. As the illness progresses, our systems may be burdened with potential shortage of beds and health care manpower. Also there will be difficulty and uncertainty in mobility of patients due to lockdowns and quarantine. Availability of blood and blood products may become a challenge. ICU bed/ventilators may be at a premium and scarce. Patients with cancer are likely to be more vulnerable in India during COVID-19, so decisions to treat the patient should be taken on the basis of risk-benefit ratio during this epidemic period.

At present, there are no national guidelines for patients with cancer from the Government of India, so we have to depend on institutional, state, or association guidelines. The FHNO has given guidelines, which covers diagnosis, treatment, and follow-up of HNC patients and is described in Table 3.¹⁵

5 | CONCLUSIONS

HNC is an important public health problem in India. The current COVID-19 pandemic has presented an unprecedented situation in human history, with massive disruption of health care activities. In India, the treatment of HNC patients has been severely disrupted, with increased waiting times, patient anxiety, and potentially worse patient outcomes. With the disruption likely to continue for the foreseeable future, we believe that lockdown measures may be appropriately amended to suit local needs. Patients need to be directed to alternative treatment facilities, separate from a COVID-19 facility. Preoperative screening for COVID-19, availability of PPE, and isolation of suspected patients will act as confidence builders for health care teams treating patients with cancer during these challenging times. In the absence of clear views on the future trends of this pandemic, all measures must be taken to prevent patients with non-COVID diseases coming to harm.

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