

## PRIMARY DELAY IN DIAGNOSIS IN HEAD AND NECK CANCER: NON-COVID CAUSES IN COVID-19 PANDEMIC ERA

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### ABSTRACT

#### INTRODUCTION

Corona virus disease (COVID-19) has been one of the cause for delay in diagnosing and management for all non-COVID diseases since the pandemic started especially for head neck cancer where exposure of sites is considered high risk for disease spread. Head neck cancer need to be addressed early as per reporting various oncological guidelines in view of better prognosis if addressed early. We evaluated the non-COVID cause for primary delay by patients so that it can be addressed for better oncological care.

#### MATERIAL AND METHODS

We evaluated 35 cases of head neck cancer reported in Outpatient Department of Otorhinolaryngology and head neck surgery. The inclusion criteria were the subsites (Oral cavity, oropharynx, larynx and hypopharynx) that need to be addressed promptly irrespective of COVID and the patients had given consent. Statistical package for the social sciences (SPSS) version 16 used for statistical analysis and Mann-Whitney U test applied for two independent variables.

#### RESULTS

Patient characteristics, tumor characteristics and symptoms were evaluated. Advanced age (>60 years) and male predominance were seen in 51.4% and 54.3% respectively. Median delay was noticed for four months. When variables were evaluated for delay, male sex and village residents showed significant primary delay in comparison to female sex and city residents with *p* value of 0.003 and 0.03 respectively.

#### CONCLUSION

Non-COVID cause for primary delay was prevalent. The median delay noticed four months and need to be addressed for proper good oncological outcome and proper health care delivery because of when the pandemic will last is not clear.

**KEYWORDS** Laryngeal cancer, Oropharynx cancer, Primary delay.

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## INTRODUCTION

COVID-19 pandemic has affected the healthcare delivery across the globe in all aspects and so the cancer care as well.<sup>1</sup> Head neck cancer is prevalent globally and more so in Asian countries including Nepal where social acceptance of using tobacco and alcohol related items are prevalent. It ranks the sixth most common cancer world-wide, third most common in Indian subcontinent and emerging first most common in male population.<sup>2</sup> The early diagnosis is crucial for management point as early stage (I, II) have better prognosis than advance stage (III,IV).<sup>3</sup> Not only oncological prognosis, functional and cosmetic morbidities are also less if diagnosed and treated early. The delay in treatment can be at many stages and many reasons. Many studies show delay affects survival.<sup>4</sup>

The onset of symptoms and consulting primary health care professional is called as primary delay while delay in referring to specialist is called as secondary delay.<sup>8</sup> The delay in treatment at hospital at specialist level is called as tertiary delay. The secondary and tertiary delay in our societies are mostly financial. So, it's the primary delay which is core in early diagnosis need to be analysed.

We conducted this study with aim to evaluate the causes for primary delay in diagnosis so that it can be implemented for awareness and possible solutions while policing local or national level oncological care programs.

## MATERIAL AND METHODS

A descriptive study was done in Department of Otorhinolaryngology and head neck surgery during the COVID-19 pandemic between 20<sup>th</sup> March to 20<sup>th</sup> August 2020. It included the clinically highly suspected or biopsy proven oral, oropharynx, larynx and hypopharynx head neck cancer patients. The reason behind allotting these group of patients only because these are fast growing tumor and need to address as soon as possible as per various oncological guidelines published for COVID-19 pandemic. Informed and written consent was obtained from the subjects and ethical clearance was obtained from institute ethical committee. Patients demographic profile and clinical parameters were recorded. Statistical analysis was performed using SPSS-16 software. Non-parametric test (Mann-Whitney U test) was applied for two independent variables. The *p* value <0.05 was considered significant.

## RESULTS

Thirty-five patients were enrolled in our study, out of which 19 were males (54.3%). The age wise distribution is shown in Table 1. Advanced age (>60 years) was noticed in 51.4% of cases.

**Table 1. Age distribution (N= 35)**

Age (in years)	Females (n, %)	Males (n, %)	Total (n, %)
= 40	5 (14.3%)	1 (2.8%)	6 (17.1%)
41-60	3 (8.6%)	8 (22.9%)	11 (31.4%)
= 61	8 (22.9%)	10 (28.5%)	18 (51.4%)

Median primary delay observed was 4 months and 57.1% cases were in delay of 2-4 months group (Table 2). COVID-19 as one of the causes of delay was dictated by all patients.

**Table 2. Primary delay**

Duration	Number (n, %)	Median duration of delay
=2 months	2 (5.7%)	
>2 to 4 months	20 (57.1%)	4 months
>4 months	13 (37.1%)	

Patient characteristics were evaluated in reference to primary delay by Mann-Whitney U test. Male sex and village residents showed significant primary delay in comparison to female sex and city residents with *p* value of 0.003 and 0.03 respectively as shown in Table 3.

**Table 3. Primary delay (in months) and patient characteristics**

	Parameters	Number (%)	Delay (median)	<i>p</i> value
Sex	Female	16 (45.7%)	3	<b>0.003</b>
	Male	19 (54.3%)	5	
Addiction	Tobacco	12 (34.3%)	3.5	0.31
	Tobacco + alcohol	23 (65.7%)	4	
Education	Uneducated /primary school	20 (57.1%)	4	0.12
	High school /college	15 (42.9%)	4	
Occupation	Farmer	16 (45.7%)	5	0.04
	Non-farmer	19 (54.3%)	4	
Residence	Village	21 (60%)	5	<b>0.03</b>
	City	14 (40%)	4	

When tumor characteristics were evaluated in terms of site and histology, no significant delay difference noticed (Table 4).

**Table 4. Primary delay (in months) and tumor characteristics**

	Parameters	Number (%)	Delay (median)	<i>p</i> value
Site	Oral cavity	25 (71.4%)	4	0.73
	/oropharynx			
	Larynx /hypopharynx	10 (28.6%)	4	
Histology	Well /moderate differentiated squamous cell	30 (85.7%)	4	0.25
	Others	5 (14.3%)	5	

Similarly presenting main complains were evaluated with delay in reporting and there were no statistically significant as shown in Table 5.

**Table 5. Primary delay (in months) and symptoms**

	Parameters	Number (%)	Delay (median)	p value
Pain	No	23 (65.7%)	4	0.71
	Yes	12 (34.3%)	4	
Lump	No	18 (51.4%)	4	0.44
	Yes	17 (48.6%)	4	
Voice change	No	29 (82.9%)	4	0.14
	Yes	6 (17.1%)	5	
Swallowing problem	No	23 (65.7%)	4	0.48
	Yes	12 (34.3%)	4	

## DISCUSSION

Delay assessment gives clue not only for social awareness but also the health care management level. Primary delay defines the subjective or social level awareness while secondary and tertiary delay reflects the health care delivery model effectiveness in the country. Olesen F, et al defined the various delay in treatment into patient delay, primary health care delay and specialist health care delay.<sup>9</sup> We categorized delay in our study by terms primary, secondary and tertiary delay which defines the patient delay, primary health care delay and specialist health care delay respectively.

We observed advancing age (>60 years), male population and oral cavity/oropharynx cancer dominance which occupied 51.4%, 54.3% and 71.4% respectively. Many studies show delay in treatment affects survival.<sup>4-7</sup> Median primary delay observed was 4 months in our study which is in concordance with studies by Nieminen M, et al<sup>8</sup> and Stefanuto P, et al<sup>10</sup> noticed primary delay of 4.3 months and 3.5-5.4 months respectively. Stefanuto study was survey in oral cancer. Our study had also maximum patient lying in group of oral and oropharynx cancer (71.4%). Common symptoms or signs which are prevalent in head neck cancer are pain, ulcer, lump, voice change and swallowing problems which encourage patients to seek for medical attention sooner. But these parameters were not statistically significant in our case. Study by Nieminen M, et al observed these parameters significant.<sup>8</sup> The possible discrepancy could be because of the COVID-19 pandemic fear being more prevalent in our cases.

We evaluated sociodemographic factors (Gender, addiction, education, occupation, residence), and noticed male sex and village resident having significant primary delay in comparison to female sex and city residents. Various studies showed that sociodemographic factors were not associated with delay.<sup>11-13</sup> The small discrepancy could be because of COVID-19 pandemic, the geographical variation, social awareness and health care available facility difference between our country and developed countries.

There is discrepancy of whether tumor subsite linked to delay in diagnosis in literature. Some studies showed correlation<sup>12,13</sup> while others not.<sup>13,14</sup> We didn't notice any difference.

Our study is probably the first study to my knowledge from Nepal during COVID-19 pandemic evaluating the non-COVID causes for primary delay for head neck cancer precisely. We have some limitations and the small sample size being the major one. But it is difficult to get more sample size at one centre during the nationwide lockdown for the pandemic period that affected the mobility from one place to other place.

## CONCLUSION

Median delay of 4 months is undoubtedly more for head neck cancer patients. COVID-19 is one major cause and looks overemphasized and reflects the poor social awareness and health care delivery in our setup. The awareness of COVID-19 and non-COVID factors need to be addressed for proper good oncological outcome and proper health care delivery because of when the pandemic will last is not clear.

## CONFLICT OF INTEREST

None

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