IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
Volume 4, Issue 2 (Jan. - Feb. 2013), PP 12-19
e-ISSN: 2279-0853, p-ISSN: 2279-0861.
www.iosrjournals.org

Retrospective Study Of Malignant Lesions Of Head & Neck In Rural Area Of Ahmednagar District

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Abstract: *In India head & neck cancers account for 30 -40 % of cancers at all sites. In Ahmednager district of Western India, where this study was conducted tobacco related oral cancer is very common which may be due to widespread habit of chewing tobacco. The lack of any study in this regard & alarmingly high prevalence of head & neck cancers in this part of India prompted us to take up this study. A retrospective study on prevalence of cancer in various head & neck regions like oral cavity, larynx, oesophagus, oropharynx, nose &paranasal sinuses, thyroid gland, salivary gland, nasopharynx,facial skin, eye & ear was conducted in Dept. of Otorhinolaryngology Pravara Rural Hospital,Loni. from June 2008 to December 2011 .This study hopes to quantify & analyze the spectrum of head & neck cancers & should help as a starting point for a much needed population based study in this region . A comprehensive effort is needed to identify cause of such high prevalence & generate awareness among general masses .*

Key words – *Carcinomas, Head andneck cancer ,Oral cavity, Total body Malignancy, Prevalence .*

I. Introduction

Oral cancer is one of the most common cancers in the world; commonest in India Bangladesh, Srilanka, & Pakistan. In India Head & neck cancers account for 23% of all cancer in males and 6% in females [1] .In the present study prevalence of HNCA was found to be higher than in any other studies. Carcinoma oral cavity formed the largest group. The morbidity & mortality associated with this disease is a cause of major concern in this region. Many factors that are implicated for its causations are consumption of tobacco in its various forms, alcohol, smoking habits, lack of awareness & lack of proper nutrition.

II. Materials And Methods

2.1 A retrospective study on prevalence of cancer in various head & neck regions like oral cavity , larynx, pharynx inclusive of nasopharynx, oropharynx &hypopharynx, oesophagus ,nasal cavity &paranasal sinuses , Thyroid, salivary glands , Ear, Eye & unknown primary with secondaries in neck was conducted in Department of Otorhinolaryngology Pravara Rural Hospital , LoniAhmednagar from 2008 to 2011.

2.2 Patients diagnosed in OPD & confirmed by histopathological evaluation were included in this study.

III. Results and Discussion

During this 4 Years Period a total of 3140 cases of total body malignancies (TBM) were seen. Out of this 1291 cases were of malignancies of Head & neck region. According to Various studies the prevalence of HNCA with respect to total body malignancies varies from 9.8 % to 42.7 % [2,3,4,5,6]. In our study, the prevalence was 41.11 % such high prevalence in this region is indicative of several factors that predispose to HNCA. The use of tobacco, lime, betel & smoking is a very common oral habit prevalent in this region which may be one of the prominent causes.

The commonest HNCA obtained was oral cavity carcinomas comprising of 533 cases (41.28%) followed by carcinoma larynx and carcinoma oesophagus comprising of 198 cases (15.33%) and 184 cases (14.25%) respectively [Fig. 1]. Oral cavity carcinomas comprised of 16.97 % of TBM followed by Laryngeal cancers (6.30%). In a study done in Sudan the commonest HNCA was Nasopharyngeal carcinoma (41.08%), followed by hypopharyngeal carcinomas (20.38 %)[7]. In Nigeria, Pakistan & in a rural district Barshi of Solapur, Maharashtra, oral cavity malignancies were the commonest[8,9,10](Table 1) .Carcinoma of Ear was the least common comprising of 0.16 % of TBM & 0.38 % of HNCA. With respect to oral cavity, the commonest site involved was tongue (39.28%). Carcinoma Buccal mucosa & alveolus formed more than 40% of oral cavity malignancies and about 5 % of TBM [Fig. 2].

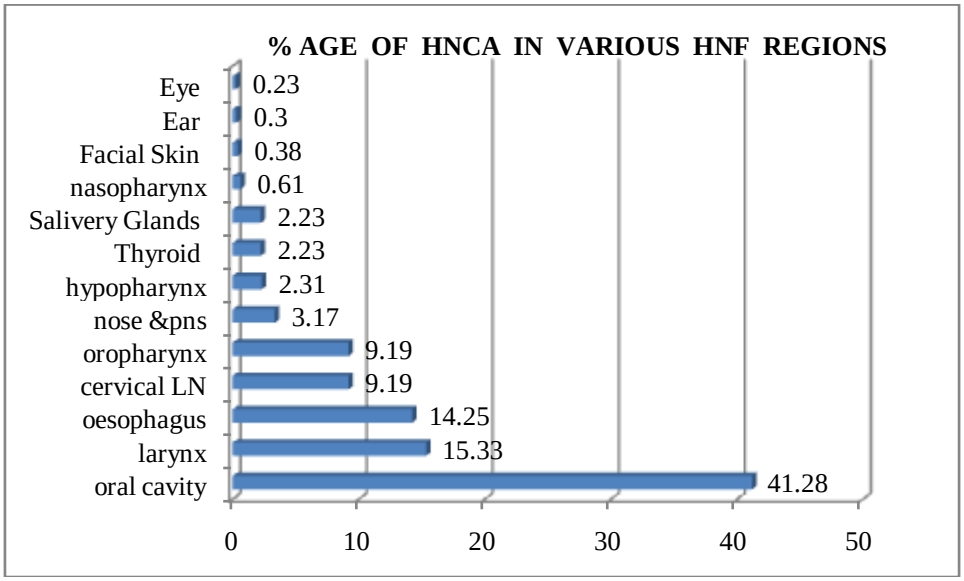

Figure 1

TABLE1 : Distribution Of %Age Of HNCA In Various HNF Region

Site	*Our Study*	*African Countries*		*Asian Countries*	
		Sudan	Nigeria	Pakistan	India (Barshisolapur)
Oral Cavity	41.28%	18.47%	36.80%	60.00%	7.00%
Larynx	15.33%	1.90%	15.23%	15.00%	
Oesophagus	14.25%	---	5.10%	-----	----
Cervical Ln	9.19%	--------	26.80%	---	5.00%
Orophrynx	9.19%	0.64%	3.20%	10.22%	------
Nose &Pns	3.17%	3.50%	0.30%	------	5.00%
Hypopharynx	2.31%	20.38%	----	13.55%	------
Thyroid	2.23%	-------	13.70%	----	---------
Salivary Glands	2.23%	4.78%	1.60%	---	--------
Nasophrynx	0.62	41.08%	3.20%	1.55%	5.00%
Facial Skin	0.38%	-----	2.20%	-------	-----
Ear	0.30%	------	0.30%	------	------
Eye	0.23%	----	4.80%	-----	----

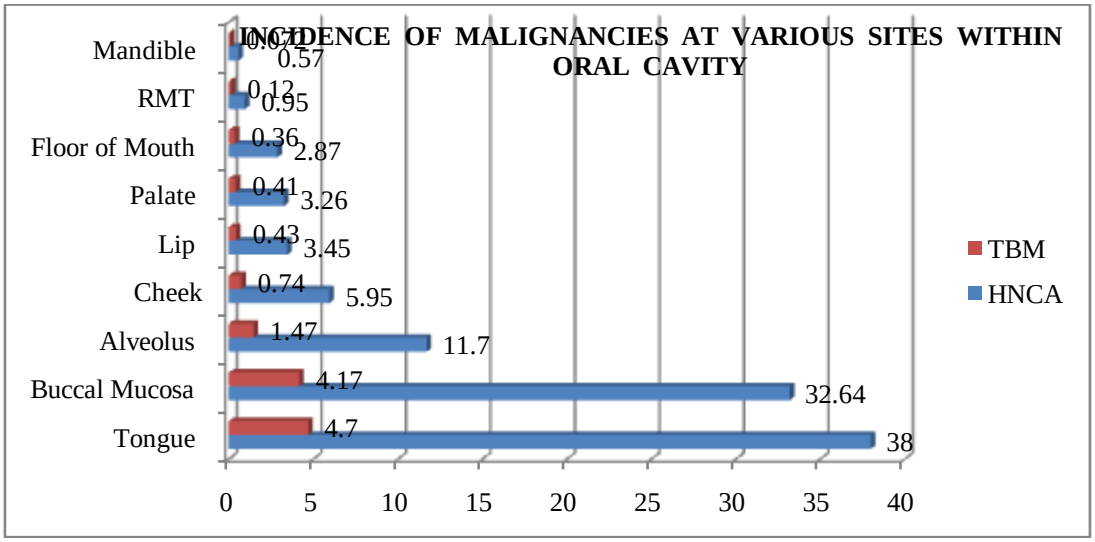

Figure 2

3.1 Age and Gender Distribution

The commonest age group is 6th decade comprising of 511 cases (39.58 %) (Table 2). 19.20% cases were from the age group 61-70 years and 15.41 % in 41 – 50 years. Only less than 1 % cases were below 20 year of age (n = 10). In contrast , in studies in African countries like Nigeria, 19.20% cases were from the age group 0-10 years[8] . In a study done in Pakistan , majority of the cases were in age group 51- 60 years[9].(Table 3).

In the gender distribution male cases were far more common than female comprising of 860 males to 431 females (1.99:1) (Fig.3). Oral cavity cancer is commonest in males (n = 346) as well as in females (n= 187)

This male:female ratio is in accordance with other studies ranging (1.5:1 to 2.1: 1) [4,5,6]. Males formed more than 65 % of oral cavity and oropharyngeal cases, the tongue (n= 210) being the most commonly involved site followed by buccal mucosa & alveolus which comprised of 43.89% of all oral cavity malignancies.The male predominance is due to the fact that males are more exposed to habit of smoking & tobacco chewing & of their increased awareness & accessibility to health care service .

On the other hand, in females, cheek followed by tongue & Palate were the commonest sites involved.

TABLE 2

Age (Yrs)	*Oral Cavity*	*Larynx*	*Oeso Phagus*	*cervical LN*	*Oro-Pharynx*	*Nose &PNS*	*Hypo-Pharynx*	*Thyroid*	*Salivary glands*	*Naso Pharynx*	*Facial Skin*	*Ear*	*Eye*	*Total (% age)*
0-10	1	0	0	0	0	0	0	0	1	0	0	0	3	5(0.38)
11-20	0	1	1	0	1	2	0	0	0	1	0	0	0	6(0.46)
21-30	20	1	2	2	1	0	2	0	0	0	0	0	0	28(2.16)
31-40	30	16	20	15	20	4	2	4	10	0	0	0	0	121(9.37)
41-50	49	40	40	20	30	6	2	5	4	2	0	1	0	199(15.41)
51-60	250	50	60	60	40	11	17	10	4	2	4	3	0	511(39.58)
61-70	75	70	49	9	21	10	3	5	4	2	0	0	0	248(19.20)
71-80	98	15	10	7	2	6	2	2	4	1	0	1	0	148(11.46)
81 +	10	5	2	2	-	2	1	2	1	0	0	0	0	25 (1.94)
Total	533	198	184	115	115	41	29	28	28	8	4	5	3	1291

TABLE 4 Age Distribution of Head & Neck Malignancies

Age (Yrs)	*% age* Present Study	*%age* African Country Nigeria	*Asian Country Pakistan*
0-10	0.38%	19.20%	0.16%
11 to 20	0.46%	13.70%	0.36%
21-30	2.16%	11.80%	2.01%
31-40	9.37%	8.30%	5.47%
41-50	15.41%	16.00%	16.07%
51-60	39.58%	11.80%	40.56%
61-70	19.20%	12.50%	20.14%
71-80	11.46%	4.50%	14.23%
81-90	1.94%	1.90%	1.00%
>90	----	0.30%	-------

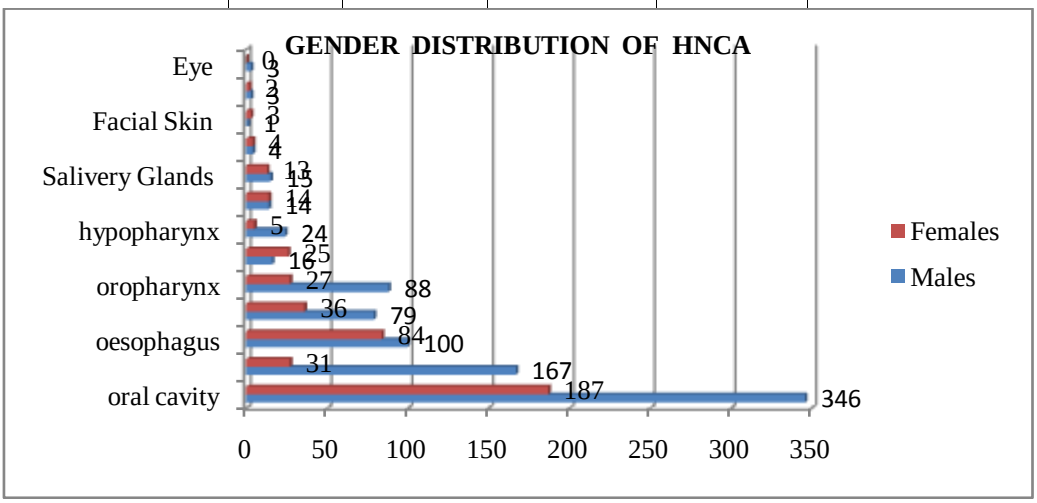

Figure 3

3.2 HistopathologicalPattern :-

Squamous cell carcinoma was the commonest histological type in HNCA comprising of 89.85% of total number of cases (Table 4). It is followed by Adenoid cystic carcinoma (2.09 %). Similar results were reported in other studies, values raging from 88.1 % to 95.5 %[5,11]. SCC is also the commonest type seen is laryngeal (100%) &hypopharyngeal (100 %) cancers. In cancers of oral cavity, verrucous carcinoma &acinic cell carcinoma formed only 1.9% cases, rest being SCC. 5 cases of Ameloblastoma, 2 cases of adenoid cystic carcinoma, one case of plasmacytoma were encountered SCC is also the commonest histological type seen in carcinomas ofoesophagus, nasopharynx& nose&paranasal sinuses . 6 cases of inverted papilloma of nose were also encountered. About 86.95% of cases of cervical lymph node cancers were found to be SCC & rest 15% cases were Hodgkins diseases & non hodgkins disease (Fig.4). Among thyroid malignancies, 78 % of cases were papillary carcinoma, less than 22 % cases comprised of follicular Adenocarcinoma &Hurthle cell carcinoma. Adenoid cystic carcinoma comprised of 85 % malignancies of both salivary glands in parotid as well as submandibular glands , rest being Acinic cell carcinoma. 3 cases of retinoblastoma eye were also diagnosed. Among facial skin malignancies 50 % cases were basal cell carcinoma & remainder Malignant melanoma [Table 4].In African studies done in Nigeria , commonest histological type in HNCA was Non-Hodgkins lymphoma (38.10%) followed by Squamous cell carcinoma [8] However, In studies from Sudan, Pakistan and rural area Barshi , Solapur of Maharashtra, India , squamous cell carcinoma was the commonest histological type.[7,9,10] (Table 5)

TABLE 4

Histtopath Types	*Oral Cavity*	*Larynx*	*Oeso Phagus*	*cervical LN*	*Oro-Pharynx*	*Nose &PNS*	*Hypo-Pharynx*	*Thyroid*	*Salivary glands*		*Naso Pharynx*	*Facial Skin*	*Ear*	*Eye*	*Total %*
Squamous cell carcinoma	505	198	169	100	115	32	29	-	Parotid	Submandi-bular	8	-	4	-	1160(89.85)
Adenocarcinoma	-	-	15	-	-	1	-	-	-	-	-	-	-	-	16(1.2)
Adenoid cystic carcinoma	2	-	-	-	-	1	-	-	12	12	-	-	-	-	27(2.09)
Plasmacytoma	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 (0.07)
Ameloblastoma	5	-	-	-	-	-	-	-	-	-	-	-	-	-	5 (0.38)
Inverted papilloma	-	-	-	-	-	6	-	-	-	-	-	-	-	-	6 (0.46)
Acinic cell carcinoma	10	-	-	-	-		-	-	2	2	-	-	-	-	14 (1. 08)
Verrucous carcinoma	10	-	-	-	-	1	-	-	-	-	-	-	-	-	11 (0.85)
Basal cell carcinoma	-	-	-	-	-	-	-	-	-	-	-	2	1	-	3 (0.23)
Malignant melanoma	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2 (0.15)
Hodgkins lymphoma	-	-	-	10	-	-	-	-	-	-	-	-	-	-	10 (0.77)
Non hodgkins lymphoma	-	-	-	5	-	-	-	-	-	-	-	-	-	-	5 (0.38)
Papillary carcinoma	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22 (1.7)
Follicular adenocarcinoma	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4 (0.3)
Hurthle cell 0carcinoma	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2 (0.15)
Retinoblastoma	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3 (0.23)
TOTAL	533	198	184	115	115	41	29	28		28	8	4	5	3	1291

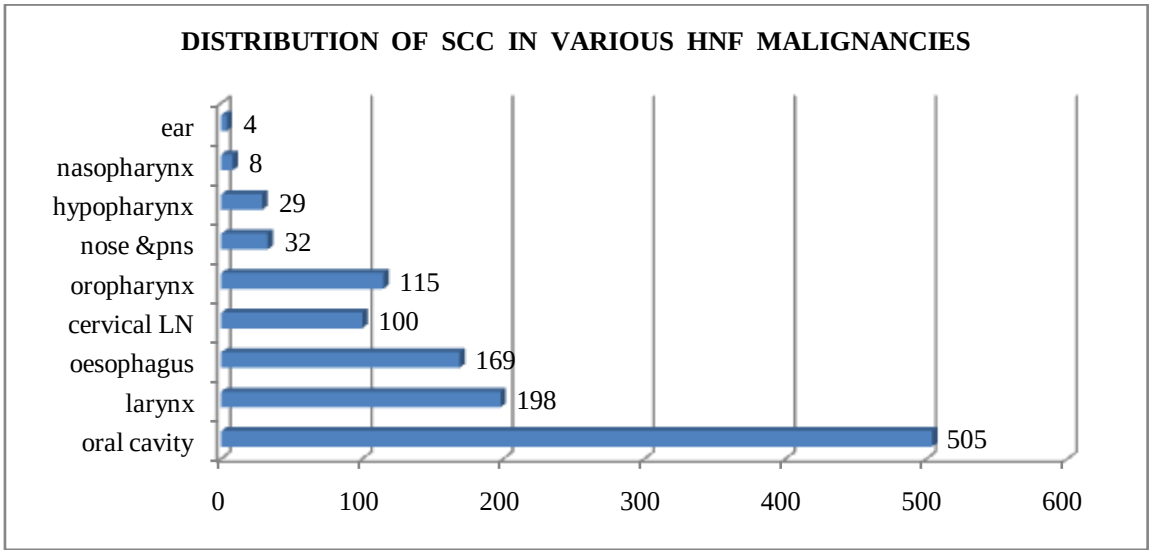

Figure 4

Table 5Histopathological Study of Hnf Malignancies

HPR	*Present Study*	*African Countries*		*Asian Countries*	
		Sudan	Nigeria	Pakistan	Rural Dist of Maharashtra
SCC	89.85%	90.77%	25.23%	96.50%	97.00%
Adeno carcinoma	1.20%		7.00%	3.50%	3.00%
Adenoid cystic ca	2.09%	5.73%	----	----	----
Plasmacytoma	0.07%	----	----	-----	----
Inverted papilloma	0.38%	----	----	----	----
Acinic cell ca	0.46%	----	----	-----	----
Verruconsca	0.83%	----	----	----	----
BCC	0.23%	----	----	-----	----
Malignant melanoma	0.15%	----	----	----	----
Hodgkins lymphoma	0.71%	----	21.40%	-----	----
Non Hodgkin lymphoma	0.38%	3.50%	38.10%	----	----
Papillary Ca	1.70%	----	4.00%	-----	----
Follicular Adenocarcinoma	0.30%	----	3.00%	----	----
Hurthle Cell Ca	1.50%	----	----	-----	----
Retinoblastoma	0.23%	----	0.00%	----	----
Sarcoma	----	----	2.60%	-----	----

3.3 Pattern of malignancies at various sites

3.3.1. Oral cavity is the most common site involved comprising of 16.97 % of TBM and 41.28 % of HNCA, male: female ratio 1.85: 1. It is also the commonest HNCA in males forming 40.23% among all males as well as 43.38% among all females and comprising 41.28% of HNCA and 16.97% of TBM. As reported in other series, oral cavity cancers comprised of 10.2-10.5 % of TBM & 24.42 to 42.2% of HNCA [5,6,12,13] with male:female ratio of 1.6 : 1 to 3.9. SCC is the most common histology seen (94.73 %).The dominant site involved was tongue (39.39 %).About 56.09 % of cases in the study were between 41 to 60 yrs of age which is similar to findings in other studies [5,14].

3.3.2 Laryngeal carcinoma is 2nd commonest of HNCA comprising of 6.30 %of TBM & 15.33 % of HNCA. Male: female ratio (5.38 :1) various workers have reported it to be 1.4 – 12.1 % of TBM and 11.3- 26.85

% of HNCA [4,5,6] with m:f ratio in range of 3.34 :1 to 11.5 :1 [4,5,6,13,15]. Maximum no. of such cases seen between age group 41-60 yrs .

3.3.3 Oesophageal carcinoma – is 3rd commonest accounting for 5.85 % of TBM and 14.25 % of HNCA .Male: female ratio (1.19: 1) It is reported to comprise of 3.8 % to 8.1 % of TBM with male: female ratio 1.3:1 to 5.1 :1 [4,6,13].

3.3.4 Oropharyngealcancer : is the 4th commonest HNCA comprising of 3.66 % of TBM and 8.90 % of HNCA. male : female ratio: (3.25 : 1).Other studies ranges from 6.6 % to 17.1 % of HNCA with m:f ratio from .7:1 to 8.3 :1 [2,11]. This may be due to tobacco chewing, smoking, & consumption of pan masala (flavouring agents taken along with betel leaf & betel nut) ,more seen amongst males. The commonest histological type seen in such cases is SCC comprising of 100 % which is higher compared to other studies (93.3 % to 98.2 %) [5,6].

3.3.5Nose& PNS – It is 5th most common comprising of 3.17 % of HNCA & 1.30% of TBM with male: female ratio of (0.64:1) more common in females. Studies have reported carcinoma nose &PNS in range of 0.9 % -2.4% of TBM [2,5,6]& 5.9 – 11.55 % of HNCA [5,6,16] with m:f ratio 1.5:1-2.48 :1 [2,5] . Histologically again SCC was commonest . 6 cases of inverted papilloma& 1 case each of adenocarcinoma, Adenoid cystic carcinoma &Verrucous carcinoma were also encountered [Table 2]

3.3.6 Hypopharyngeal carcinoma is the 6th commonest HNCA comprising of 0.92 % of TBM & 2.24 % of HNCA with male :Female ratio of 4.8 :1 which in our study is much lower as compared to other workers who have reported it to be 2.3 % to 5.8 % of TBM & 11.7 % to 28.3 % of HNCA [5,6,11]& male : female Ratio of 3.6 :1 to 5.8 :1 [6]. Here too SCC is the commonest histological type comprising of 100% cases. Maximum no.of cases were in age group 30 – 79 yrs, similar to that reported in other studies [5,17].

3.3.7 Thyroid carcinoma is the 7th commonest HNCA comprising of 0.89 % TBM & 2.16 % of HNCA with male : female (1:1) .According to studies , prevalence is 0.1% - 0.2% of TBM with m:f ratio 1:1.8 .Histologically commonest is papillary carcinoma followed by follicular &hurthle cell which is similar to reports of other studies. [18,19]

3.3.8 Salivary gland malignancies comprise of 0.89 % of TBM & 2.16 % HNCA male : female 1.15:1

3.3.9 Carcinoma of ear &nasopharynxwere the least effected comprising 0.41% TBM& 1.00%HNCA .

IV. Conclusion

This study shows that, prevalence of head & neck cancers is significantly high 41.11 % .Majority of HNCA are histologically squamous cell carcinomas affecting age group 40 – 69 yrs with male outnumbering females (1.99 :1). Therefore, HNCA constituted a major burden of total body cancers in our hospital with prevalence higher than that reported in any other studies. The highest no. of cases were of oral cavity cancers followed by laryngeal cancers , this finding is indicative of a pertinent fact that HNCA is a condition quite common in this part of country which requires prompt attention.

The increasing no. of HNCA cases is a cause of major concern as it is associated with high morbidity & mortality in a sizeable population, factors involved are poor socio-economic conditions, oral consmption of tobacco in its various forms, use of lime with betal -leaf &betalnuts,alcohol& smoking habits, over & above, lack of awareness about cancer & non-existent cancer prevention programmes have all made the scenario even worse.

This study helps to quantify & analyze the spectrum of HNCA & should help as a stable point for a much needed population based study in a rural area like Loni. A Comprehensive effort is needed to indentify the cause of such high prevalence, generate awareness & treatment options suited to meet this challenge.

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