

Prevalence of Head and Neck Cancers – An Institutional Based Study

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Abstract: Head and neck cancers are showing rising pattern in India due to increased use of tobacco in various forms in younger generations and are responsible for increased prevalence of various head and neck malignancies. Epidemiological studies also report a strong association with human papillomavirus (HPV) in a subset of HNSCC non-smoking cases.

Aim: To study prevalence of head and neck cancers in our region.

Objectives:

1. To study various age groups with head and neck malignancies
2. To study prevalence of malignancy in various head and neck subsites
3. To study prevalence of various histological variants.

Results: 6th decade is the commonest age group of head and neck malignancies. Oral cavity malignancies are common than various other subsites.

Conclusion: This study shows the prevalence of head and neck malignancies in and around Telangana region. Majority of the age group is in their 6th decade and interestingly high numbers are seen in 4th decade, predominantly in male population. Due to high risk factors like smoking, tobacco chewing and alcohol, as elsewhere in the country, oral cavity followed by laryngeal malignancy is common in our study group. Squamous cell carcinoma is common histological variant. As this is an institutional based study it has its clear limitations and results cannot be generalized.

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I. Introduction :

In India, head and neck cancers (HNCA) account for 30-40% cancers at all sites, out of which 9.4% being oral cancers. It is the sixth common cause of death in males and seventh in females. Many factors that are implicated for its causation are consumption of tobacco in its various forms, alcohol, smoking habits, lack of awareness, and lack of proper nutrition.¹ Despite advances in treatment methods for head and neck cancer, the survival rate has not been largely improved.² Smoking, tobacco, alcohol consumption are main risk factors for head and neck cancer.³ In South Asian countries, the risk of HNSCC is further aggravated by smoking of bidis,⁷ reverse smoking and chewing tobacco, betel quid and areca nut. Epidemiological studies also report a strong association with human papillomavirus (HPV) in a subset of HNSCC non-smoking cases.⁷

II. Materials and methods:

Study Design, Study Area, Study Duration and Sample Size :

A retrospective study on prevalence of cancers in various head and neck regions like oral cavity, pharynx, larynx and nasal cavity. The data was retrieved from Government ENT hospital, Koti, Hyderabad from 2016 January to 2018 September records. A total of 342 histopathologically confirmed head and neck malignant cases are included in the study.

Data Analysis

Data was analysed using MS Excel and represented in the form of percentage

III. Results and discussion:

Table :1

Age : shows the age distribution pattern of various head and neck malignancies

Sno	Age group	number	Percentage
1	< 20 years	6	1.75%

2	21-30 years	12	3.5%
3	31-40 years	33	9.64%
4	41-50 years	87	25.43%
5	51-60 years	78	22.8%
6	>60 years	126	36.84%

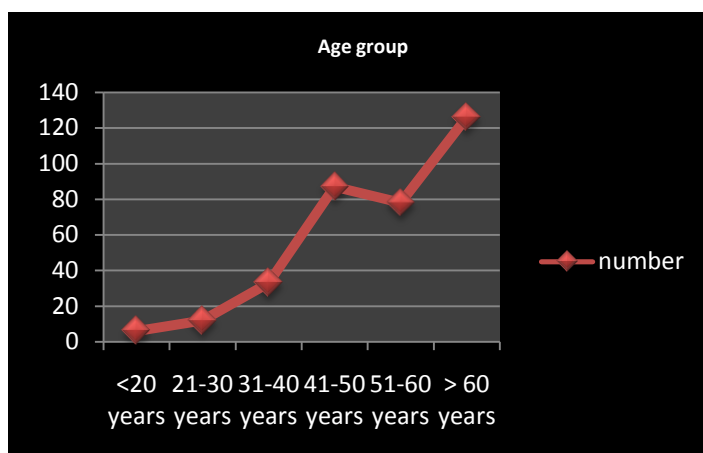


Table :2 shows sex distribution

sex	number	percentage
Male	258	75.43%
Female	84	24.56%

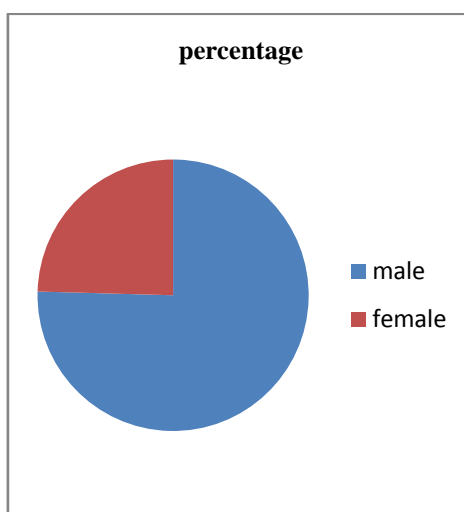


Table :3shows the prevalence of malignancies in various head and neck regions

Sno	Site	Number	Percentage
1	Ca Nasopharynx	8	2.33%
2	Ca nose and PNS	27	7.89%
3	Ca oral cavity	122	35.67%
4	Ca oropharynx	26	7.60%
5	Ca larynx	90	26.31%
6	Ca hypopharynx	20	5.84%
7	Ca thyroid	33	9.64%
8	Ca salivary glands	15	4.38%
9	Parapharyngealtumors	1	0.29%

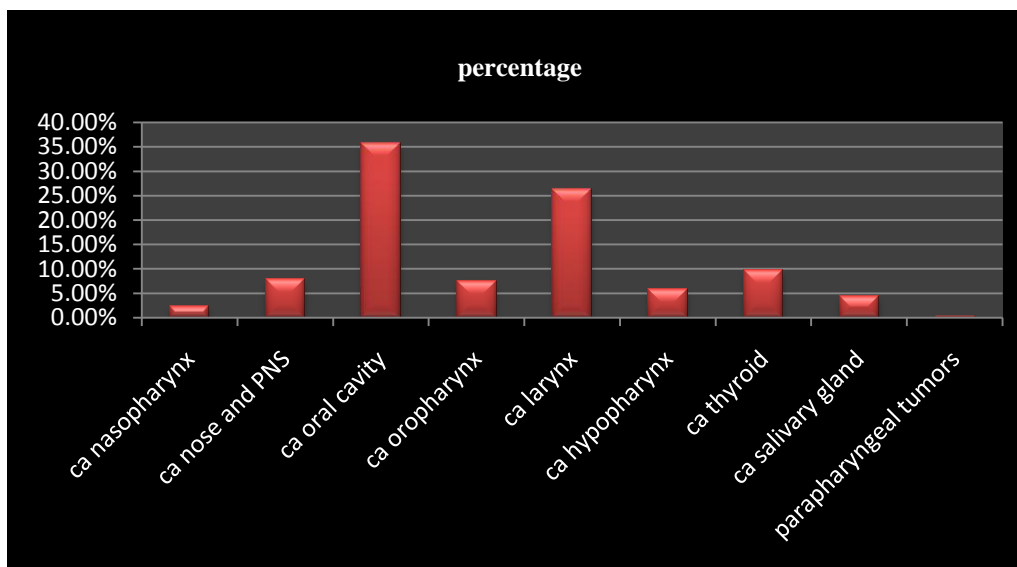


Table :4shows the prevalence of malignancies of various sub sites in head and neck regions

Sno	Subsite	Number	Percentage
1	Nose and pns	27	7.89%
	Nasal cavity	9	2.63%
	Maxillary sinus	15	4.38%
2	Oral cavity	122	35.67%
	Mucosal surface of lower lip	3	0.8%
	Buccal mucosa	29	8.47%
	gingiva	3	0.8%
	Tongue	72	21.05%
	Floor of mouth	6	1.75%
	Hard palate	3	0.8%
	RMT	6	1.75%
	3	Oropharynx	26
Tonsil		9	2.6%
Base tongue		12	3.5%
Soft palate		5	1.46%
4	larynx	90	26.31%
	Supraglottis	36	10.52%
	Glottis	46	13.45%
	subglottis	8	2.33%
5	hypopharynx	20	5.84%
	Piriform sinus	14	4.09%
	Post cricoid area	6	1.75%
6	Salivary glands	15	4.38%
	Parotid	11	3.2%
	submandibular	4	1.16%

Table :5shows histological variants nasopharyngeal malignancies .

sno	Histological variant	number	percentage
1	Non keratinizing scc	6	1.75%
2	Non hodgkins lymphoma	2	0.58%

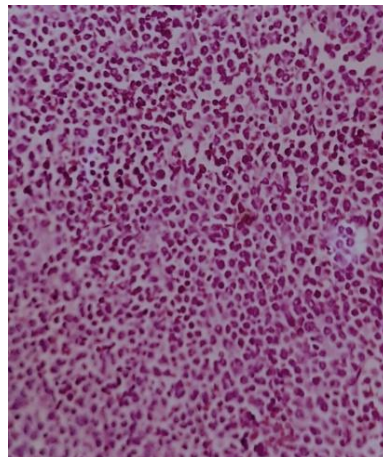
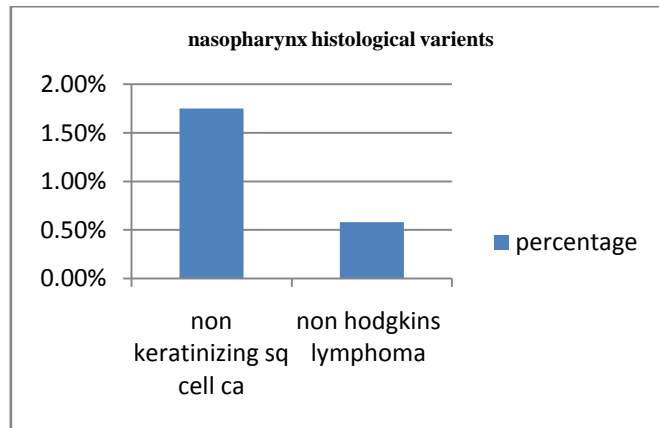
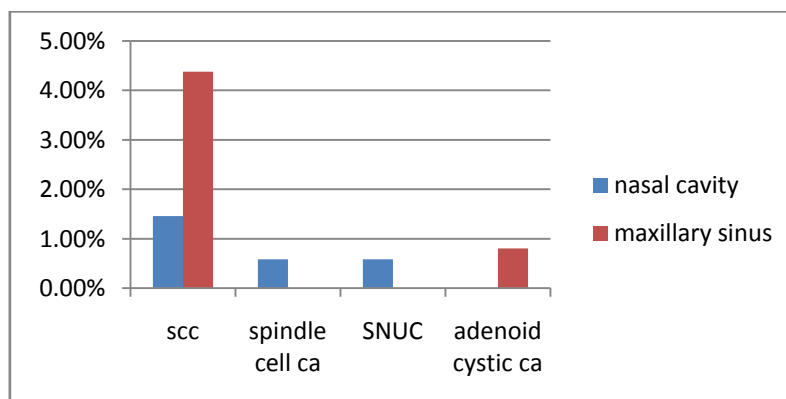


Fig 1: HPE showing Non Hodgkins lymphoma of nasopharynx

Table :6 shows histological variants in Nasal cavity and paranasal sinuses malignancy

Sno	Subsite and histology	number	percentage
1.	Nasal cavity	9	2.63%
	Scc	5	1.46%
	Spindle cell carcinoma	2	0.58%
	Sino nasal undifferentiated ca (SNUC)	2	0.58%
2.	Maxillary sinus	18	5.26%
	scc	15	4.38%
	Adenoid cystic carcinoma	3	0.8%



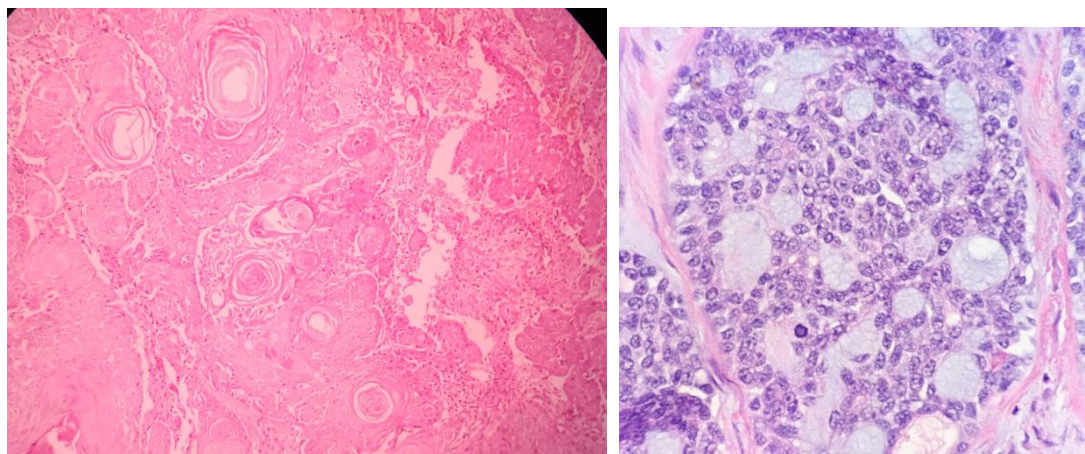


Fig 2: HPE showing SCC of nasal cavity

Fig 3: HPE showing adenoid cystic carcinoma in maxillary sinus

Table 7: Shows histological variants in various subsites of Oral cavity malignancy

sno	Subsite	histology	number	percentage
1	Mucosal surface of lower lip	scc	3	0.8%
2	Buccal mucosa	ScC –	29	8.47%
		ScC- well differentiated	18	5.26%
		ScC- intermediate differentiated	8	2.33%
		ScC- poorly differentiated	3	0.8%
3	gingiva	ScC- well differentiated	3	0.8%
4	Tongue		72	21.05%
		ScC- well differentiated	33	9.64%
		ScC- intermediate differentiated	13	3.8%
		ScC- poorly differentiated	17	4.97%
		Verrucous	9	2.63%
5	Floor of mouth	ScC- well differentiated	6	1.75%
6	RMT	ScC- well differentiated	6	1.75%
7	Hard palate	ScC- well differentiated	3	0.8%

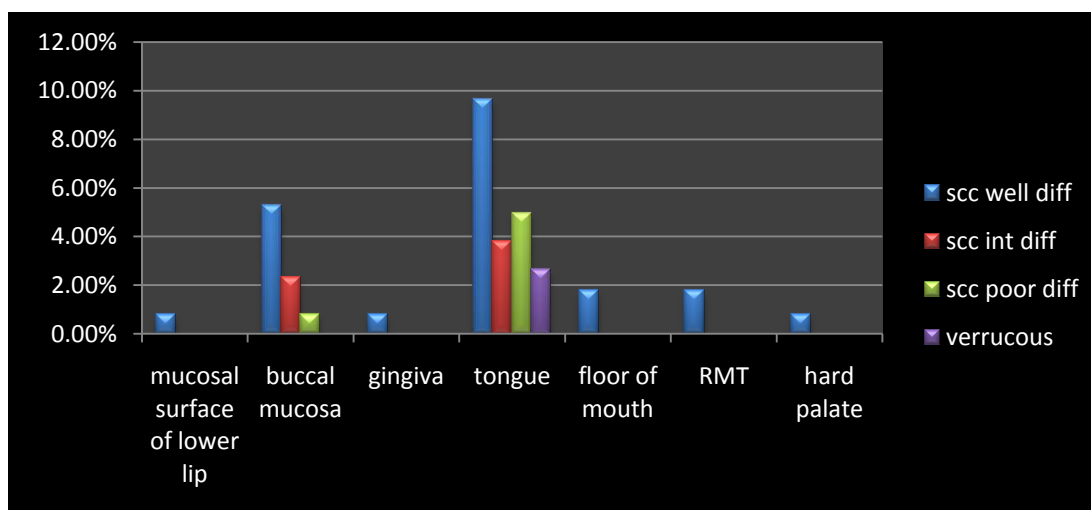


Table 8: Shows histological variants in various subsites of Oropharynx malignancy

Sno	Subsite	histology	Number	Percentage
1	tonsil		9	2.63%
		ScC- well differentiated	6	1.75%
		Adeno carcinoma	3	0.8%
2	Soft palate		5	1.46%

		Scc- well differentiated	2	
		Adenoid cystic carcinoma	3	0.8%
3	Base tongue		12	3.5%
		Scc- well differentiated	10	2.92%
		Verrucous carcinoma	2	0.58%

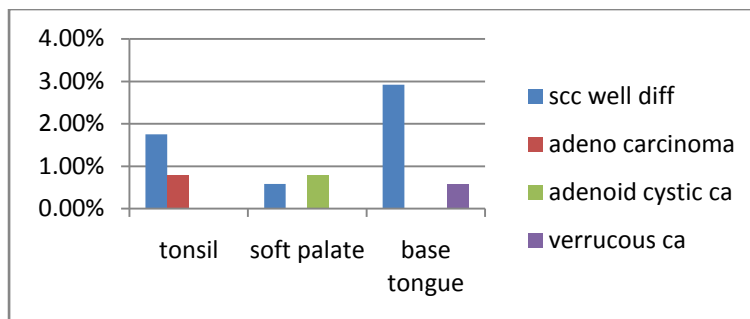
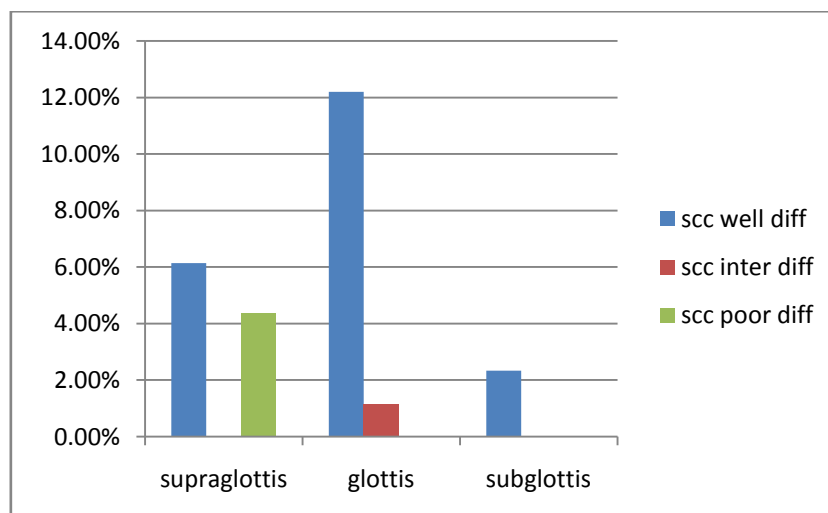


Table :9 Shows histological variants in various subsites ofLarynx malignancy

Sno	Subsite	Histology	Number	Percentage
1	Supraglottis		36	10.52%
		Scc- well differentiated	21	6.14%
		Scc- poorly differentiated	15	4.38%
2	Glottis		46	13.45%
		Scc- well differentiated	42	12.2%
		Scc- intermediate differentiated	4	1.16%
3	subglottis	Scc- well differentiated	8	2.33%



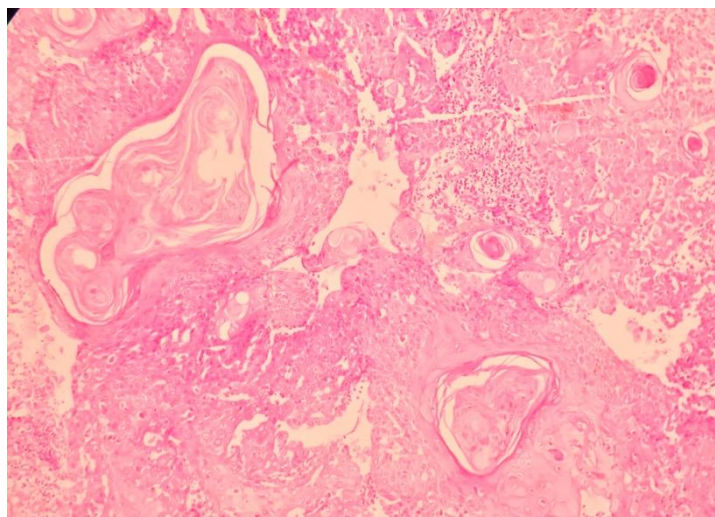


Fig 4: HPE showing SCC of glottis

Table :10 Shows histological variants in various subsites Hypopharynx malignancy

Sno	Subsite	Histology	Number	Percentage
1	Piriform sinus	Scs- well differentiated	12	3.50%
2	Post cricoids	Scs- well differentiated	6	1.75%
3	Posterior pharyngeal wall(ppw)	Scs- well differentiated	2	0.5%

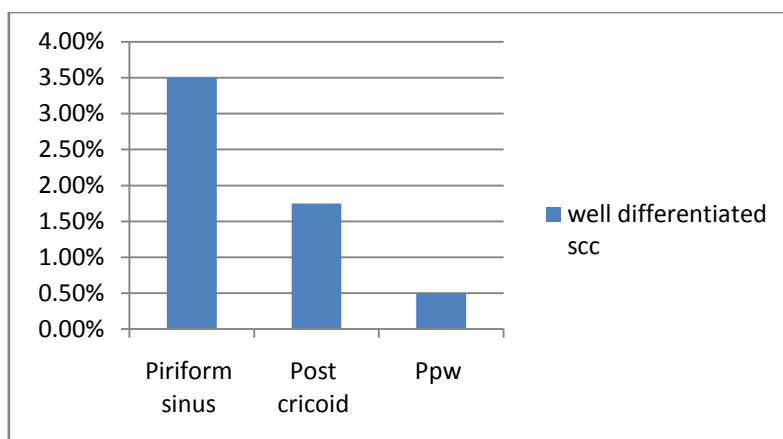


Table :11 Shows histological variants in various Salivary gland malignancy

Sno	Salivary gland	Histology	Number	Percentage
1	Parotid		11	
		Mucoepidermoid carcinoma	8	2.33%
		Adenoid cystic carcinoma	3	0.87%
2	Submandibular	Mucoepidermoid carcinoma	4	1.16%

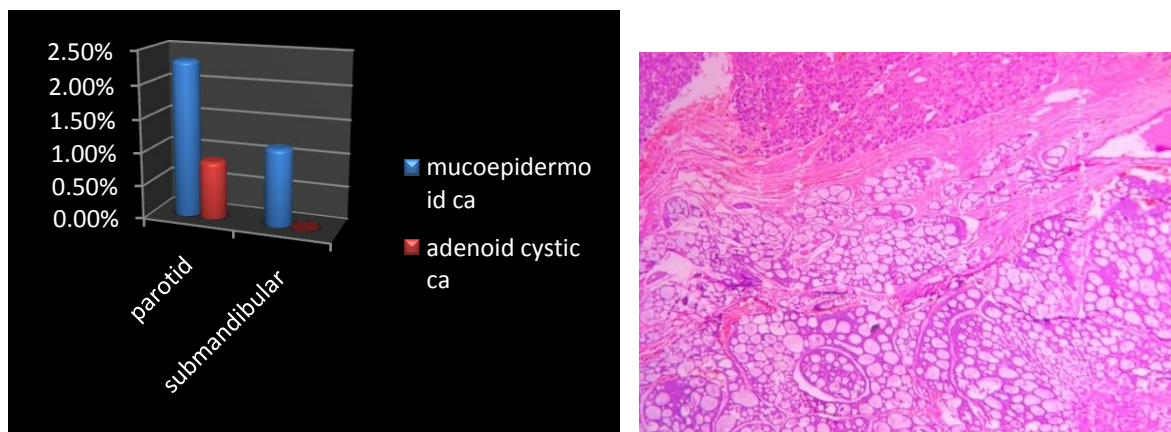


Fig 5: HPE showing adenoid cystic ca of parotid gland

Table :12 Shows histological variants in Thyroid malignancy

Sno	Histology	Number	Percentage
1	Papillary carcinoma	21	6.1%
2	Follicular carcinoma	12	3.5%

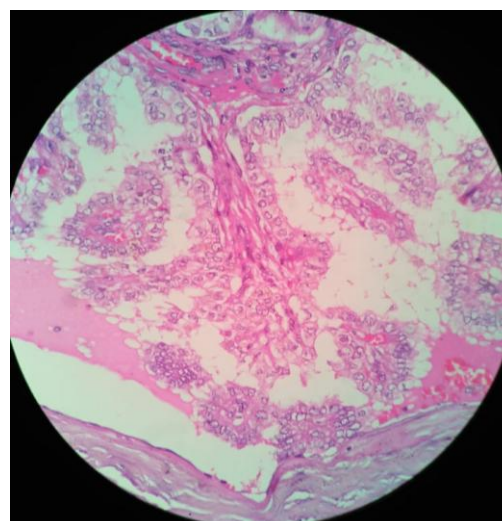
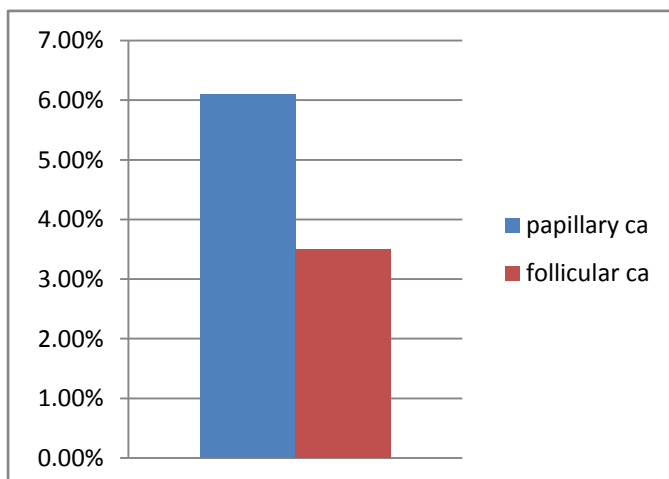


Fig 6:HPE showing papillary carcinoma of thyroid

Table :13 Shows Para pharyngeal space tumors

Sno	Histology	Number	Percentage
1	Non hodgkins lymphoma	1	0.29%

IV. Discussion :

In our study Commonest age group is 6th decade with 36.84% then followed by 4th decade with 25.43%, then in 5th decade with 22.8%. Youngest age in our study is 9 years with nasopharyngeal carcinoma, eldest being 78 years of age with ca of larynx. Males constitute the major group with 75.43% and female with 24.56% and ratio of 3:1, MdSalahuddin Siddiqui et al⁴ observed male:female ratio (3.1:1) was higher than that of a northeastern-india (2.9:1) (Abhinandan et al., 2006)¹ and lower than from northern-India (3.8:1) (Mehrotra et al., 2005)⁵.

Regarding the order of frequency of malignancies in various sites in our study are ca oral cavity(35.67%),ca larynx(26.31%),ca thyroid (9.64%), ca nose and PNS (7.89%),ca oropharynx(7.60%),ca hypopharynx with 5.84% and ca salivary glands being 4.38% tobacco chewing and smoking common in our region of the country in a study conducted by Shetty H et al⁶ in A total of 312 cases larynx and hypopharynx constituted the commonest sites in head and neck region, AbhinandanBhattacharjee et al¹ conducted a study in north east region in which oropharynx and esophagus was common sites of malignancy, but in our study less number of ca hypopharynx and esophagus were reported probably because dysphagia being the common complaint in those malignancies they are being seen by the gastroenterologists first. acc to rekha et al⁷ where the study population is south India, in their male study population prevalence of larynx (43.63%), hypopharynx

(19.9%), supraglottis (8.91%), tongue (4.93%), pyriform fossa (2.22%), nasopharynx (2.22%), tonsils (2.07%), ear (1.91%), glottis (1.75%), maxilla (1.59%), buccal mucosa (1.27%), thyroid (1.11%), and oral cavity (1.11%), and in female population larynx (19.81%), hypopharynx (16.8%), supraglottis (10.4%), post-cricoid (7.55%), pyriform fossa (5.23%), maxilla (4.65%), thyroid (3.48%), tongue (3.48%), buccal mucosa (2.9%), oesophagus (2.9%), (2.32%), ear (2.32%), oral cavity (2.32%), tonsils (1.74%). Globally, oral cavity is the most common site of orofacial malignancy^{9,10,11}. Oral cancer is most common in India, Bangladesh, Srilanka and Pakistan¹². The reason for this high incidence is the habit of tobacco, betel and nut chewing in these countries¹³.

In our study Incidence of malignancy in various subsites of head and neck region are maxillary sinus > nasal cavity in nose and PNS region ,tongue > buccal mucosa>floor of mouth,RMT> hard palate,gingiva,mucosal surface of lower lip is the order of frequency in oral cavity, carcinoma of base tongue >tonsil>soft palate is the order of frequency in oropharynx, glottis>supraglottis>subglottis is the order of frequency of various subsites malignancy in larynx, in hypopharyngeal region pyriform fossa ca >post cricoid region>posterior pharyngeal wall , parotid malignancy was common than submandibular gland in salivary gland malignancies, Nair et al. (188)¹⁴ in a review of oral cancer cases from Regional Cancer Center Trivandrum reported the highest prevalence of cancer of buccal mucosa (49.9%) outnumbering that of tongue (23.97%).tonsil was common subsite in oropharynx in Trivandrum.Acc to MdSalahuddin Siddiqui et al⁴supraglottic region being its most commonly affected sub-site in larynx.

In our study Histological variants, In Nose and PNS malignancies ,Scc is commonest among nasal cavity and maxillary sinus ,in nasal cavity spindle cell ca and sino nasal undifferentiated ca in 0.58% of cases and adenoid cystic ca in 0.8% of overall cases.

In oral cavity malignancies scc constituted the major histological variant but verrucous carcinoma of tongue constituted 2.63% of overall cases.

In oropharyngeal malignancies scc is the commonest histological variant, adenocarcinoma of tonsil (0.8%),adenoid cystic ca of soft palate (0.8%),verrucous ca of base tongue (0.58%) are other commonest histological variants.

Acc to Mohammad Hasan Larizadeh et al⁸ the most common type of salivary gland tumorsmucoepidermoid (35.1%) followed by adenoid cystic carcinoma (17.4%) are common histological variants.

In larynx and hypopharynx scc is the only histological type seen.In major salivary gland malignancy mucoepidermoid ca is the commonest followed by adenoid cystic ca (0.87%).

In thyroid malignancies papillary ca (6.1%) followed by follicular ca in 3.5% of overall cases. Iodine deficiency leading to goiter predispose to follicular type of thyroid cancer (Agarwal and Mishra, 1997)¹⁵. On the other hand iodine rich areas and iodine supplementation has been shown to increase papillary type of thyroid cancer (Rao 1999)¹⁶.1 case of Parapharyngealtumor which was non hodgkins lymphoma.

V. Conclusion :

This study shows the prevalence of head and neck malignancies in and around Telangana region. Majority of the age group is in their 6th decade and interestingly high numbers are seen in 4thdecade , predominantly in male population. due high risk factors like smoking ,tobacco chewing and alcohol ,as elsewhere in the country, oral cavity followed by laryngeal malignancy is common in our study group. Squamous cell carcinoma is common histological variant.As this is an institutional based study it has its clear limitations and results cannot be generalized.

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