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Study of Oral, Oropharyngeal and Laryngopharyngeal Squamous Cell Carcinoma and It's Correlation with Age, Gender and Habits

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ABSTRACT

Background: To analyze Oral, pharyngeal and Laryngopharyngeal squamous cell carcinoma's (SCC) and relationship with age, gender and habits.

Material and methods: The retrospective study was conducted at pathology department Rnt medical college ,Udaipur in from Jan 2017 to Jan 2018 for 53 patients .Biopsy and hemiglossectomy specimens were included.

Results: SCC was diagnosed in the entire patient. 85% males were affected whereas only 15% female was affected. Most common age groups was 6th to 7th decades of life. Although, squamous cell carcinoma is very rare in people who are less than 40, but we reported 8 cases whose age was less than 40. All the patients had history of tobacco consumption and alcohol intake.

Conclusions: Oral cavity SCC is the most common head and neck cancers. Oral cancer is predominant in men but we found good number of female patients too. Tobacco chewing is the common risk factor in both male and female along with smoking and alcohol consumption. However, female did not have history of alcohol intake.

Keywords: SCC, oral cavity ,pharyngeal, laryngopharyngeal

INTRODUCTION

Cancers are the most common cause of death in adults [1] .Oral cancer is among the top three types of cancers in India [2]. In India, 90 -95% of the oral cancers is squamous cell carcinoma [3].

Squamous cell carcinoma (SCC) in the oral cavity, oropharynx and laryngopharynx are seen to have similar causative association and gender predilection. They also frequently share the same age of presentation usually i.e. 4th to 5th decade which forms the basis for the collective study of them together .

It has been seen that severe alcoholism, use of tobacco like cigarettes, smokeless tobacco, betel nut chewing and human papilloma virus(HPV) are the most common risk factors for oral ,laryngeal and pharyngeal cancer .[4,5]

Oral cancer may also occur due to poor dental care and poor diet. The incidence of oral cancer is highest in India, south and Southeast Asian countries [6.]

The international agency for research on cancer has predicted that India's incidence of cancer will increase from 1 million in 2012 to more than 1.7 million in 2035[7]

Therefore, having a better understanding of the causative factors, common habits and gender predilection with these common cancers help in prevention, early diagnosis and thereby reduce the burden of diseases.

Ours is a retrospective study of one year of the patients who were diagnosed with SCC of oral cavity, oropharynx and laryngopharynx.

MATERIAL & METHOD –

We carried out a retrospective study in the department of Pathology R.N.T Medical College, Udaipur with a sample size of 53 cases. Time of study was one year, from January 2017 to January 2018.Sequential cases presenting in the ENT, Radio-oncology departments of R.N.T Medical college ,Udaipur with histologically proven SCC of the oral cavity, laryngeal and pharynx were recruited to the study. Non- SCC histology were excluded from the study as well as those without histological diagnosis.

After the H&E established diagnoses in the department of Pathology, cases were recruited to further ancillary techniques with IHC markers like HMWK and p16 for the SCC and for supporting HPV association in causing SCC respectively whenever possible.

Initial explanation on the nature of the study and Informed consent was then obtained from the subjects. A medical history was obtained to include onset of symptoms, severity, duration .History of smoking in form of active and passive smoking and alcohol intake was obtained to include age of onset of tobacco smoking, duration, type (filtered or non-filtered cigarettes, other forms of tobacco), and whether they were still smoking cigarettes or not. History of family members who smoked, especially in the house, was also be obtained. Dietary history was also assessed with concentration on intake of green vegetables, fruits and carotenoids like carrots, tomatoes, to be able to determine the role of nutrition deficiency in cancer development.

Patents' occupational history was also obtained to establish exposure to asbestos, formaldehyde, metal. Family history of cancer was also obtained to establish probable genetic role in development of disease in question.

Physical examination was done with emphasis on the ENT head and neck regions.

RESULTS –

Gender predilection

Table 1: In total of 53 cases males were clearly more affected.45 cases were males and only 08 cases were females which made the ratio of male :female as 5.265:1

Male	female
45	08
85%	15%

Microscopic findings:

Histologically we distinguished cases into various types like well differentiated type SCC , moderately differentiated SCC , moderate to well differentiated SCC , moderate to poorly differentiated SCC, poorly differentiated SCC, verrucous carcinoma, and adenocarcinoma. Mostly carcinomas were limited to mucosa with very few invading sub mucosa and beyond.

Table 2: Histology type

Well differentiated SCC	25(47.16%)
Moderately differentiated	10(18.86%)
Verrucous carcinoma	01(1.88%)
Poorly differentiated	04(7.545)

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Moderate to well differentiated carcinoma	03(5.66%)
Moderate to poorly differentiated SCC	01(1.88%)
Adenocarcinoma	01(1.88%)
Well differentiated invasive carcinoma	08(15.09%)

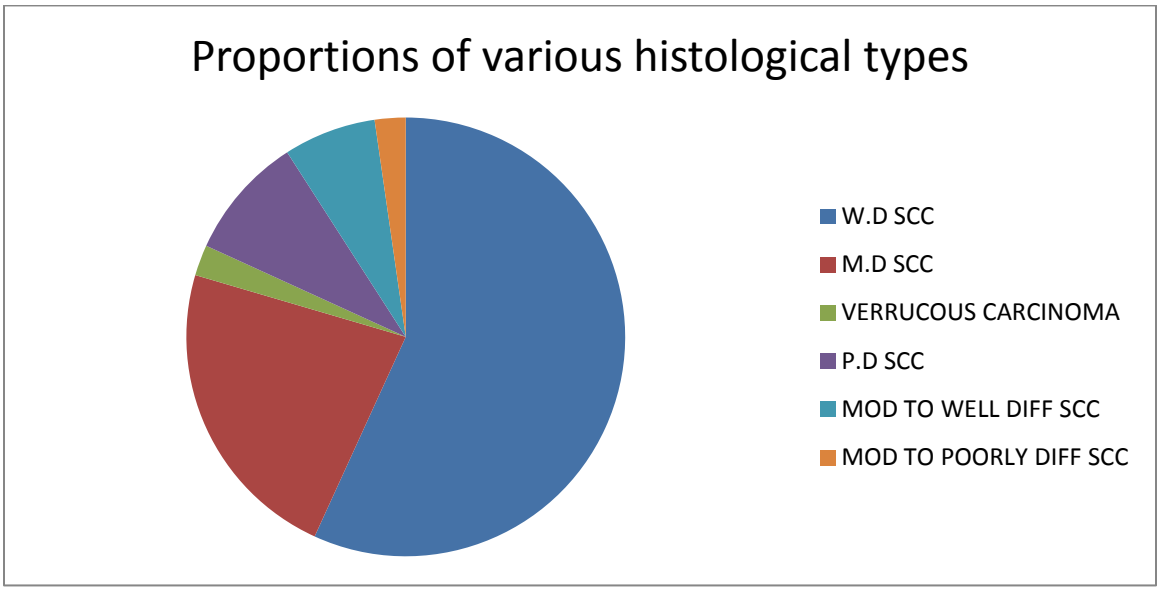

Figure 1: Proportion of various histological types

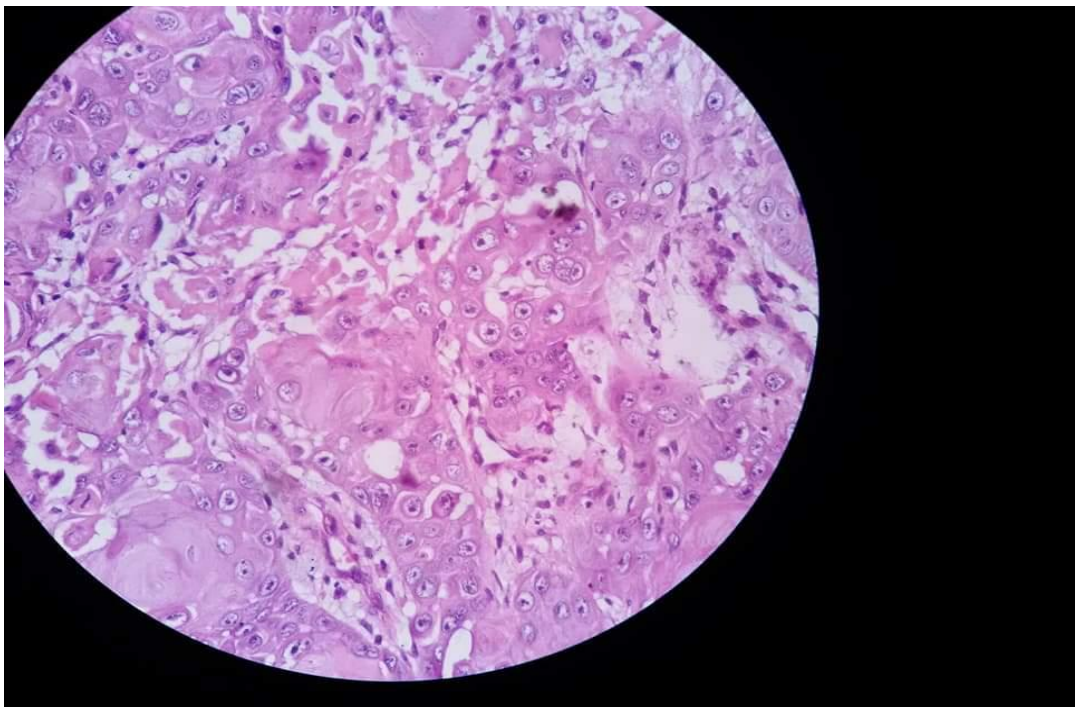

Figure 2: well formed keratin in well differentiated squamous cell carcinoma

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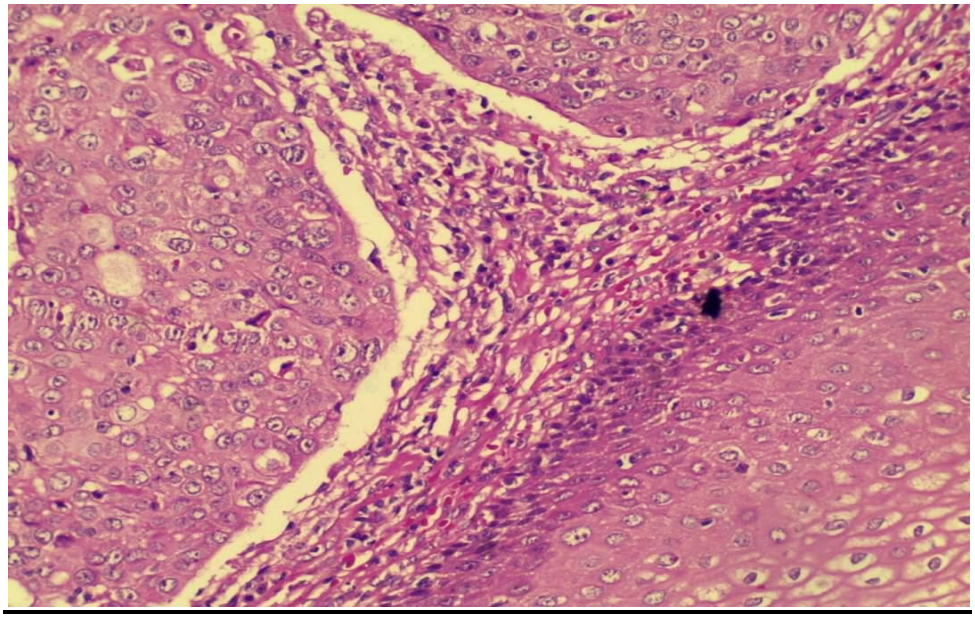

Figure 3: microscopic view of squamous cell carcinoma, with prominent koilocytic changes, later was found positive for p16

Table 3:

Age (yrs)in range	Number of cases
20-30	02
30-40	06
40-50	12
50-60	12
60-70	17
70-80	02
80-90	02

Table 4: History of active smoking

	Present	Absent
Male	39 (unfiltered)+ 04 (filtered)	01
female	00(filterd +unfiltered)	08

Table 5:History of passive smoking

	Present	absent
males	45	00
females	03	05

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Table 6 :History of heavy alcohol consumption

	Present	Absent
Males	44	01
Females	00	08

Table 7:History of tobacco/gutka chewing

	Present	Absent
Males	41	04
Females	06	02

Table 8: Lower socioeconomic status/poor nutrional status

	Present	Absent
Males	37	08
Females	04	04

Table 9:P16 positivity test

It was confined only to males who were negative for smoking and alcohol history .Whereas for females who were also negative for the history of smoking /alcohol out of total 08 cases only 06 were subjected to the test .

	Positive	Negative
Male(02)	02	00
Female(05)	05	00

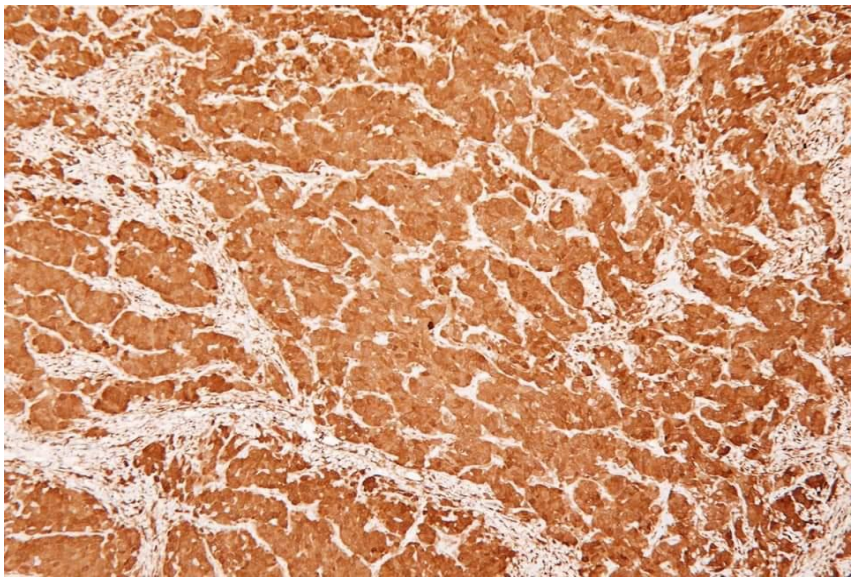

Figure 1 : p16 positivity

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Discussion–

In our study majority of the cases were male and the mean age was 51.28 years.

Majority of the subjects in the present study were in the range of 60-70 years of age. In the study carried by Ken Russel Coelhoe et[8] also most of the oral cancer cases occurred between the age of 50 to 70 years.

Clearly smoking tobacco or chewing tobacco along with alcohol consumption were the major factors in the causation of the cancers.

Females though had no history of alcohol consumption; almost all of them had positive history of tobacco chewing or gutka chewing. Sree Krishna Vidya Raol et[9] al found that women chewing tobacco 10 or more times a day have risk 9.2 times that of non-tobacco chewers irrespective of age of initiation of tobacco chewing. Passive smoking was also a major contributor in the female population in our study .

We also found that of the majority of the cases belonged to lower socio-economic status with poor nutrional status that could be thought of as another set of contributory factors in the causation of cancer especially in those subjects where habits of smoking or alcohol consumption was absent. Similar findings were submitted in the study of Sree Vidya Ktrishna Raol et al[9] and D.I Conway et al [10].

Also we found that HPV infection was strongly a factor for causing oropharyngeal carcinoma in those individuals who had no habits of smoking, chewing tobacco or alcohol consumption.

CONCLUSION

This study helps in reviewing the various factors that may play a significant role in the development of the oral , pharyngeal and laryngeopharyngeal cancer .

Males being exposed to the toxic effects of tar and nicotine from smoking tobacco and alcohol consumption make majority of the cases .It is seen that filtered or unfiltered smoking makes no major difference in the amount of risk that comes along with them. Users of filtered cigarettes use more number of cigarettes per day for deriving the same amount of nicotine as much is derived from the lesser number of unfiltered cigarettes .

In fact filtered cigarettes being costlier and less efficient in producing the effect of nicotine is less relied upon or bought as compared to unfiltered cigarettes .However for a occasional smoker filtered cigarette will be safer and therefore its use should be promoted.

As we see with females , tobacco/gutka chewing or passive smoking are the main causative factors. Therefore, advertisement and readymade availability of the gutka or tobacco should be banned and proper ventilation of the cooking rooms and special smoking zones should be built in the public domain to prevent dangers of passive smoking.

Although family history was insignificant in our study, yet it is a point to be reinforced that people with a positive family history should be more cautious , refrain from the habits of smoking or chewing tobacco and consumption of alcohol and should improve their nutrional status .

HPV virus as like other study was found positive in total of 08 cases in our study as well. All the HPV positive patients were also negative for any habit of smoking, alcohol consumption or chewing tobacco or gutka

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