



Original Research Article

Etiological and clinical profile of patients with lesions of oral cavity and oropharynx

Shruthi Gowthami M R^{1,*}, Mahanthachar Veerabasappa², Sharmila P Surhonne²¹Dept. of Pathology, Bangalore Medical College and Research Institute, Bangalore, Karnataka, India²Dept. of Pathology, Rajarajeswari Medical College and Hospital, Kambipura, Karnataka, India

ARTICLE INFO

Article history:

Received 29-04-2020

Accepted 30-04-2020

Available online 19-08-2020

Keywords:

Clinical
Etiology
Lesions
Oral cavity
Oropharynx

ABSTRACT

Background: Oral lesions contribute a major part in head neck diseases. In India, head and neck cancers (HNCA) account for 30-40% cancers at all sites, out of which 9.4% being oral cancers. Oral cavity and oropharynx lesions have a major impact on physical, social and economic condition of the patient.

Aims: To study the etiological and clinical profile of patients with lesions of oral cavity and oropharynx.

Settings and Design: Prospective study.

Materials and Methods: Total 100 samples of oral cavity and oropharynx lesions were studied. Data collected with pre tested questionnaire. Data included sociodemographic data, history, risk factors associated with disease, clinical examination and pathological report of the patient.

Statistical Analysis Used: Appropriate statistical tests.

Results and Conclusion: Present study includes 100 cases of oral cavity and oropharyngeal lesions out of which 19% were inflammatory lesions, 10% tumour like lesions, 4% benign lesions, 4% premalignant lesions and 63% malignant lesions. Male to female ratio of 1.7:1. Among malignant lesions in our study, 60.3% had history of tobacco consumption, 17.5% consumed both alcohol and tobacco, 9.5% were alcoholics and 12.7% patients did not have any habits.

© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC license (<https://creativecommons.org/licenses/by-nc/4.0/>)

1. Introduction

Oral cavity and oropharynx is vulnerable to a limitless number of environmental insults because of its exposure to the external world. Hence it is the site of numerous diseases, both congenital and acquired, affecting epithelial and connective tissue elements. The common etiological factors are consumption of tobacco in its various forms, alcohol, poor oral hygiene and viral infections like Human Papilloma Virus.

In Indian subcontinent, oropharyngeal cancer is the most common malignant tumor accounting for 40% of all cancers.¹ The incidence is greater in men than in women with a ratio of 3:1. It is predominantly a disease of elderly with maximum incidence in 60-69 years age group.²

In the western world oral/oropharyngeal cancer is rare, accounting for 2 to 4% of all malignant tumors, although there is evidence that the incidence is on the increase, particularly among young people. In Europe and North America the current trend of alcohol and tobacco abuse has been observed to correlate with the rising incidence of tongue cancer in younger people.¹

2. Aim & Objective

To study the etiological and clinical profile of patients with lesions of oral cavity and oropharynx.

3. Material and Methods

Present study is hospital based prospective study. The study was carried out in the Department of Pathology, Rajarajeswari Medical College and Hospital, Bengaluru.

* Corresponding author.

E-mail address: shruthigowthami.giselle@gmail.com (S. Gowthami M R).

3.1. Inclusion criteria

Patients with lesion in oral cavity and oropharynx, undergoing biopsy or surgical treatment at the institute.

3.2. Exclusion criteria

1. The patients who were not willing and not cooperative for biopsy.
2. All lesions involving teeth.

Sample size is calculated based on 3 years retrospective analysis in Rajarajeswari Medical College and Hospital, Bengaluru from June 2012 to May 2015. For 3 years a total of 150 specimens of oral cavity and oropharynx have been received in Department of Pathology, Rajarajeswari Medical College and Hospital, Bengaluru, making an average of 50 cases per year. Based on this data the sample size would be 100 as all biopsies and resected specimens of oral cavity and oropharynx received from June 2015 to May 2017 (2 years) were subjected for study.

Study was approved by ethical committee of the institute. A valid written consent was taken from patient after explaining study to them.

Data collected with pre tested questionnaire. Data included sociodemographic data, clinical history, clinical examination and pathological report of biopsies and specimens. Biopsies and resected specimens were received in 10% formalin, gross findings were noted, and tissue processed and stained with routine Haematoxylin and Eosin. Histopathological diagnosis regarding the exact type of lesion was made. Data was analysed with appropriate statistical tests.

4. Results

We received a total of 12,366 histopathology specimens in our department during our study period. Of these 100 were biopsies and resected specimens of lesions of oral cavity and oropharynx which accounted for 0.81% of total specimens.

In our study, 63 cases (63%) were malignant lesions and formed the predominant group, 19 cases (19%) were inflammatory lesions, 10 cases (10%) - tumour like lesions, 4 cases (4%) - benign lesions, 4 cases (4%) - premalignant lesions (Table 1).

The patients' age in our study ranged from 6 to 80 years with a mean age of 45.6 years.

Inflammatory lesions were seen predominantly in the age group 11-20 years in 11 cases (11%) out of 19 cases (19%). Tumour like lesions were seen predominantly in the age group 21-30 years in 4 cases (4%) out of 10 cases (10%) with mean age being 25.2 years. Benign lesions – No age predilection could be made out and the age ranged from 11-60 years with mean age being 33.8 years. Premalignant lesions were seen predominantly in the age group 61-70 years in 2 cases (2%) out of 4 cases (4%) with mean age

being 56.3 years. Malignant lesions were seen in the age range 31-80 years, with predominant age group being 51-60 years in 22 cases (22%) out of 63 cases (63%) followed by 61-70 years in 19 cases (19%) (Table 2).

In our study of 100 cases, 52 were males (52%) and 48 were females (48%) showing a slight male preponderance. Inflammatory lesions were 19 (19%) out of which 5 were males (5%) and 14 were females (14%). Tumour like lesions were 10 (10%) out of which 6 were males (6%) and 4 were females (4%) with male preponderance. Benign lesions were seen in 4 cases (4%) and all were found to be females (4%). Premalignant lesions were seen in 4 (4%) cases of which 1 case (1%) was seen in male and 3 cases (3%) were seen in females with female preponderance. Malignant lesions were seen in 63 (63%) cases out of which 40 cases (40%) were seen in males and 23 cases (23%) were seen in females showing male preponderance with a male to female ratio of 1.7:1. (Table 3)

Out of 19 inflammatory lesions, 14 cases (14%) presented with recurrent pain in throat and all 14 cases were diagnosed later as chronic tonsillitis, 3 cases (3%) presented with swelling and 2 cases (2%) with difficulty in breathing. Out of 10 tumour like lesions, all 10 cases (10%) presented with swelling. Out of 4 benign lesions, 3 cases (3%) presented with swelling, 1 case (1%) had difficulty in swallowing as the clinical presentation.

Among the 4 cases of premalignant lesions, 2 cases (2%) presented as white patch, 1 case (1%) presented as an ulcer and 1 case (1%) as fibrotic growth.

Out of 63 malignant lesions, 37 cases (37%) presented as growth which was the predominant clinical presentation among malignant lesions in our study. 11 cases (11%) presented as ulcer which was the second commonest presentation. 10 cases (10%) with difficulty in swallowing, 3 cases (3%) with pain during swallowing and 2 cases (2%) with burning sensation in mouth (Figure 1).

Out of 63 cases with malignant lesions in our study, 38 cases (60.3%) had history of tobacco consumption either in the form of tobacco chewing (in 24 cases), smoking (in 9 cases) or both (in 5 cases). 11 cases (17.5%) gave history of both tobacco consumption and alcohol. 6 cases (9.5%) were consuming alcohol only. Rest 8 cases (12.7%) did not have any habits.

40 patients (63.5%) were males out of 63 cases with malignant lesions. Among them, 20 patients (31.8%) gave history of tobacco consumption (either in the form of chewing tobacco or smoking or both), 11 patients (17.5%) gave history of consumption of both alcohol and tobacco, 6 patients (9.5%) consumed only alcohol and 3 patients (4.8%) did not have any habits. 23 Patients (36.5%) were females out of 63 cases with malignant lesions. Among them, 18 patients (28.6%) were chewing tobacco which was the only habit found in female patients in our study. 5 (7.9%) female patients were not having any habits (Table 4).

Table 1: Distribution of patients according to Lesions of oral cavity and oropharynx

Lesions	Number of cases	Percentage
Inflammatory	19	19
Tumour like lesions	10	10
Benign	4	4
Premalignant	4	4
Malignant	63	63
Total	100	100

Table 2: Age distribution of lesions of oral cavity and oropharynx

Age distribution of lesions of oral cavity & oropharynx	Inflammatory		Tumour like lesions		Benign		Premalignant		Malignant		Grand Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-10	3	3	2	2	0	0	0	0	0	0	5	5
11-20	11	11	2	2	1	1	0	0	0	0	14	14
21-30	2	2	4	4	1	1	0	0	0	0	7	7
31-40	1	1	0	0	1	1	1	1	7	7	10	10
41-50	0	0	0	0	0	0	1	1	12	12	13	13
51-60	0	0	2	2	1	1	0	0	22	22	25	25
61-70	1	1	0	0	0	0	2	2	19	19	22	22
71-80	1	1	0	0	0	0	0	0	3	3	4	4
Total	19	19	10	10	4	4	4	4	63	63	100	100

Mean age was 56.8 years.

Table 3: Sex distribution of lesions of oral cavity and oropharynx

Gender	Inflammatory		Tumour like lesions		Benign		Pre malignant		Malignant		Grand Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	5	5	6	6	0	0	1	1	40	40	52	52
Female	14	14	4	4	4	4	3	3	23	23	48	48
Total	19	19	10	10	4	4	4	4	63	63	100	100

Table 4: Risk factors for malignant lesions of oral cavity and oropharynx

Habits	Male		Female		Total	
	No.	%	No.	%	No.	%
Tobacco consumption	20	31.8	18	28.6	38	60.3
Alcohol + Tobacco	11	17.5	0	0.0	11	17.5
Alcohol	6	9.5	0	0.0	6	9.5
No habits	3	4.8	5	7.9	8	12.7
Total	40	63.5	23	36.5	63	100.0

Out of 19 inflammatory cases, 16 cases (16%) had tonsil as the site of lesion, 2 cases (2%) had lip as site of lesion and 1 case (1%) presented with tongue as site of lesion. So, tonsil was the most common site among inflammatory lesions in our study. Out of 10 tumour-like lesions, 5 cases (5%) were found in lip, 2 cases (2%) in floor of mouth, 2 cases (2%) in tongue and 1 case (1%) in tonsil. Hence lip was the most common site of tumour like lesions in our study. Among 4 cases of benign lesions, 2 cases (2%) were found in buccal mucosa, 1 case (1%) in tongue and 1 case (1%) in soft palate. So buccal mucosa was the most common site for benign lesions. Among 4 premalignant lesions, 3 cases (3%) were found in buccal mucosa and Remaining 1

case (1%) was found in tongue. So buccal mucosa was the most common site for premalignant lesions.

Out of 63 malignant lesions, 24 cases (24%) were found in buccal mucosa, 15 cases (15%) were seen in tongue, 7 cases (7%) were found in tonsil, 4 cases (4%) in retromolar trigone, 4 cases (4%) in commissure of oral cavity. The other sites encountered were hard palate (3 cases), vallecula (2 cases), floor of mouth (2 cases), lip (1 case) and cheek (1 case). Therefore, buccal mucosa was the most common site for malignant lesions in our study followed by tongue (Table 5)

Excisional biopsy was done in 42 cases (42%) in our study; that is in 19 cases (19%) of inflammatory lesions, 10

Table 5: Site of lesion of oral cavity and oropharynx

Site of lesion	Inflammatory		Tumour like lesions		Benign		Premalignant		Malignant		Grand Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Buccal mucosa	0	0	0	0	2	2	3	3	24	24	29	29
Tongue	1	1	2	2	1	1	1	1	15	15	20	20
Cheek	0	0	0	0	0	0	0	0	1	1	1	1
Commissure of oral cavity	0	0	0	0	0	0	0	0	4	4	4	4
Floor of mouth	0	0	2	2	0	0	0	0	2	2	4	4
Hard palate	0	0	0	0	0	0	0	0	3	3	3	3
Lip	2	2	5	5	0	0	0	0	1	1	8	8
Retromolar trigone	0	0	0	0	0	0	0	0	4	4	4	4
Soft palate	0	0	0	0	1	1	0	0	0	0	1	1
Tonsil	16	16	1	1	0	0	0	0	7	7	24	24
Vallecula	0	0	0	0	0	0	0	0	2	2	2	2
Total	19	19	10	10	4	4	4	4	63	63	100	100

cases (10%) of tumour like lesions, 4 cases (4%) of benign lesions 3 cases (3%) of premalignant lesions and 6 cases (6%) of malignant lesions

Incisional biopsies were done in 42 cases (42%); in 1 case (1%) of premalignant lesion and 41 cases (41%) of malignant lesions.

Resections with or without modified neck dissection was carried out in 16 cases (16%) of malignant lesions. Out of 63 cases of malignant lesions in our study, 41 cases underwent incisional biopsy, 6 cases underwent excisional biopsy, 16 cases underwent resections with or without modified radical neck dissections. Out of these 16 cases, 2 cases underwent resection, 4 cases underwent resection with modified radical neck dissection, 7 cases underwent hemimandibulectomy with modified radical neck dissection and 3 cases underwent hemiglossectomy with modified radical neck dissection. Hence the most common type of biopsy done among malignant lesions in our study was incisional biopsy followed by resections with or without modified radical neck dissections (Table 6).

5. Discussion

Our study had 63% of malignant lesions which is in concordance with studies by Atram MA et al.³ and Parikh S et al.⁴ where malignant lesions constituted 69.97% and 61.83% respectively.

In our study malignant lesions were most common among the lesions of oral cavity and oropharynx which is in concordance with studies by Atram MA et al.³ and Parikh S et al.⁴ where malignant lesions formed the predominant group.

5.1. Age group distribution

5.1.1. Inflammatory lesions

In our study the most common age group for chronic tonsillitis is 11-20 years, with mean age being 14.25 years. Our study was in concordance with the study by Sarode DN et al.⁵ where the most common age of tonsillitis was found to be 11-21 years. In a study by Ugras S et al.⁶ the mean age of occurrence of chronic tonsillitis was 16 years.

5.1.2. Tumour like lesions

Present study is in concordance with studies by Masamatti SS et al.⁷ and Hassawi BA et al.⁸ where tumour like lesions were commonly seen in the age group of 21-30 years.

5.1.3. Benign lesions

In our study, for benign lesions no age predilection could be made out and the age ranged from 11-60 years. In a study by Atram MA et al.³ benign lesions were more common in the age group 11-20 years, whereas Hassawi BA et al.⁸ reported that benign lesions were more common in the age group 31-40 years.

5.1.4. Premalignant lesions

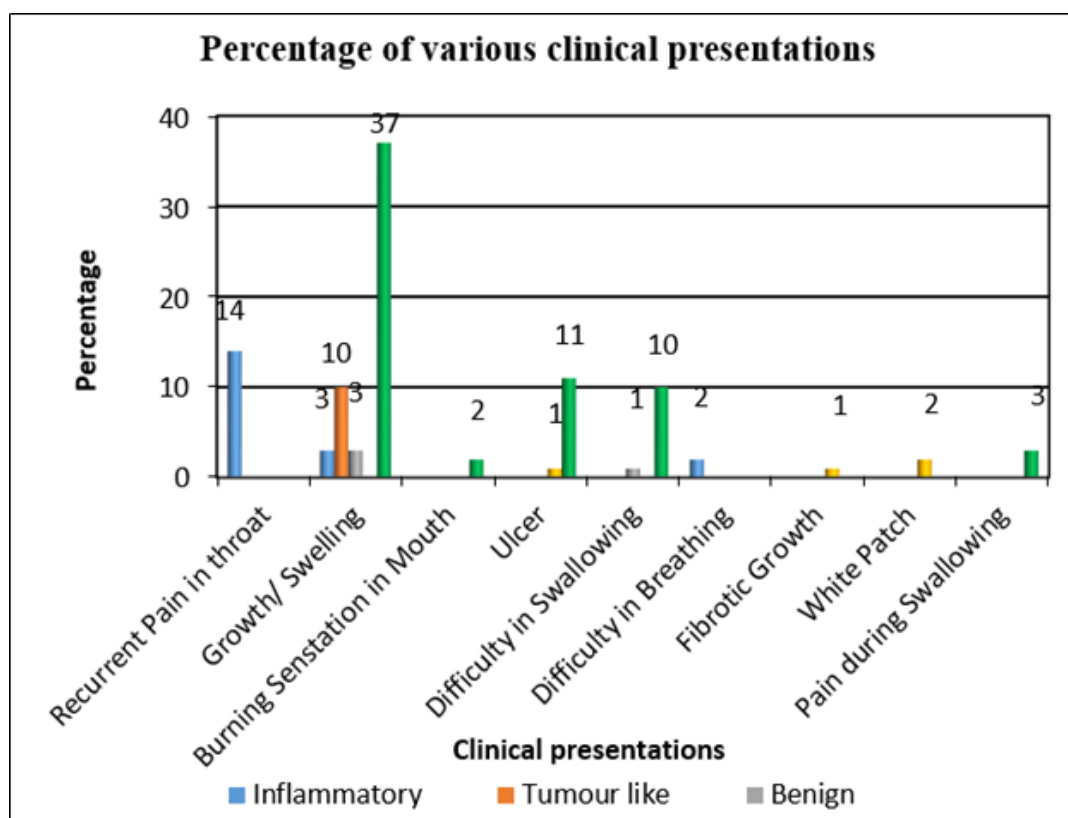
In our study the premalignant lesions were seen predominantly in the age group 61-70 years. Studies by Khan Y et al.⁹ and Atram MA et al.³ found the maximum incidence of premalignant lesions in the age group 40-60 years.

5.1.5. Malignant lesions

Present study is in concordance with studies by Misra V et al.,¹⁰ Khandekar SP et al.¹¹ and Gupta M et al.¹²

Table 6: Type of biopsy in lesions of oral cavity and oropharynx

Type of biopsy	Inflammatory		Tumour like lesions		Benign		Premalignant		Malignant		Grand Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Excisional Biopsy	19	19	10	10	4	4	3	3	6	6	42	42
Incisional Biopsy	0	0	0	0	0	0	1	1	41	41	42	42
Resection +/- Modified Radical Neck Dissection	0	0	0	0	0	0	0	0	16	16	16	16
Total	19	19	10	10	4	4	4	4	63	63	100	100

**Fig. 1:** Clinical presentations of lesions of oral cavity and oropharynx

where peak incidence of malignant lesions was seen in the age group 51-60 years. These studies found the maximum incidence of oral malignancies in people over 50 years of age in concordance with the present study. Hence, screening programs targeting men over 50 years, would help in early diagnosis of oral malignancy.

5.2. Sex distribution

5.2.1. Inflammatory lesions

Among chronic tonsillitis cases in our study 18.75% were males and 81.25% were females showing female preponderance which is in discordance with study by Ugras et al⁶ where there was male preponderance with 55% males and 45% females with chronic tonsillitis.

5.2.2. Tumour like lesions

60% were males and 40% were females among tumour like lesions in our study with a male to female ratio of 1.5: 1. Our study was in concordance with the studies by Masamatti SS et al.⁷ and Khan Y et al.⁹ Males (57.89%) were more commonly affected than females in the study by Masamatti SS et al.⁷ Study by Khan Y et al.⁹ showed male predominance with male to female ratio of 1.8:1.

5.2.3. Benign lesions

Benign lesions were seen in 4 cases in our study and all were found to be females. In contrast to our study, a study by Gupta M et al.¹² showed male predominance of 74.1%.

5.2.4. Premalignant lesions

Among premalignant lesions in our study, 25% were males and 75% were females with female preponderance. In contrast to our study, a study by Gupta M et al.¹² showed male predominance with 75% males.

5.2.5. Malignant lesions

Malignant lesions in our study were seen in 63.5% males and 36.5% females showing male preponderance with a male to female ratio of 1.7:1. Our study was in concordance with studies by Gupta M et al.¹² and Khandekar SP et al.¹¹ where male preponderance was found with percentage of males being 68.5% and 61.3% respectively.

5.3. Habits

Present study had tobacco consumption as the most common habit in patients having malignant lesions of oral cavity and oropharynx; seen in 77.8% cases. Our study is in concordance with study by Gupta M et al.¹² where tobacco consumption was seen in 75.8% cases with malignant lesions. However in a study by Parikh S et al.⁴ much higher association was seen with 96.2% cases having tobacco consumption as their habit.

5.4. Clinical presentation

5.4.1. Inflammatory lesions

Most common clinical presentation in our study was recurrent throat pain seen in 14 cases out of 19 inflammatory lesion. All 14 lesions were chronic tonsillitis. This is comparable to the studies by Ugras DN et al.⁶ and Sarode DN et al.⁵

5.4.2. Tumour like lesions

All 10 cases of tumour like lesions in our study presented with swelling. This is comparable to the study by Masamatti SS et al.⁷ where all the tumour like lesions presented with swelling.

5.5. Benign lesions

All 4 benign lesions in our study presented with swelling. In a study by Gupta M et al.¹² the most common presentation of benign lesions was growth.

5.5.1. Premalignant lesions

In our study, 50% of premalignant lesions presented as white patch; 25% as an ulcer and 25% as fibrotic growth. Our study is in concordance with the study by Nayak P et al.¹³ where white patch (76%) was the most common presentation followed by ulcer (28%). In the study by Gupta M et al.¹² the most common presentation was growth (66.6%) followed by ulcer (33.4%)

5.5.2. Malignant lesions

Growth was the most common clinical presentation of malignant lesions in our study seen in 58.7% cases. Our study is in concordance with the study by Gupta M et al.¹² where growth was the most common presentation seen in 57.5% cases. But ulcer (64%) was the most common presentation followed by growth (36%) in the study done by Nayak P et al.¹³

5.6. Site of Lesion

5.6.1. Tumour like lesions

The most common site for tumour like lesions in our study was lip seen in 50% cases. According to a study by Masamatti SS et al.⁷ majority of tumour like lesions were located on gingiva (38.94%) followed by lower lip (28.42%). The most common site of occurrence was the gingivae making up 76.4% of cases in a study by Akinyamoju AO et al.¹⁴

5.6.2. Benign lesions

The most common site for benign lesions in our study was buccal mucosa seen in 50% cases which is comparable to studies by Atram A et al.³ and Gupta M et al.¹²

5.6.3. Premalignant lesions

The most common site for premalignant lesions was buccal mucosa in 75% cases which is comparable with the studies by Khan Y et al.⁹ and Nayak P et al.¹³

5.6.4. Malignant lesions

In our study most common site for malignant lesions was buccal mucosa in 38.1% cases. Our study is concordant with the study by Rai HC et al.¹⁵ and Richard M et al.¹⁶

6. Conclusion

The present study on 100 oral cavity and oropharyngeal lesions showed predominance of malignant lesions seen in 63% cases. The risk factors for malignant lesions in our

study were tobacco consumption in its various forms and also alcohol consumption, which are preventable causes. Prevention of consumption of tobacco products and alcohol through health education can help to reduce the occurrence of oral and oropharyngeal malignancies.

7. Source of Funding

None.

8. Conflict of Interest

None.

References

1. Smith WP. Oropharyngeal Cancer. In: Williams NS, Bulstrode CJK, O'Connell PR, editors. Bailey and Love's Short Practice of Surgery. London: Edward Arnold; 2008. p. 734.
2. Bhat SP, Bhat V, Permi H, Shetty JK, Aroor R, Bhandary SKB. Oral and oropharyngeal malignancy: A clinicopathological study. *Internet J Pathol Lab Med*. 2015;1(1):1–7.
3. Atram MA, Bhalavi V, Dantkale S. A Clinicopathological study of tumors and tumor like lesions of oral cavity. *Indian J Basic Appl Med Res*. 2016;5(3):146–53.
4. Parikh S, Prajapati H, Parikh B, Shah C, Shah NR. Histopathological Study of Oral Cavity Lesions. *Int J Sci Res*. 2013;2(11):430–2.
5. Sarode DN, Bhole AV. Prevalence of chronic tonsillitis at ENT inpatient department: a hospital based study. *Int Med J*. 2015;2(11):786–8.
6. Uğraş S, Kutluhan A. Chronic tonsillitis can be diagnosed with histopathologic findings. *Eur J Gen Med*. 2008;5(2):95–103.
7. Masamatti SS, Gosavi AV, Sulhyan KR. Tumour-like lesions of oral cavity: A clinicopathological study of 95 cases. *Ann Appl Bio-Sci*. 2017;4(2):A83–8.
8. Hassawi BA, Subhe AE, N. Tumors and Tumor like lesions of the Oral Cavity: A Study of 303 Cases. *Tikrit Med J*. 2010;16(1):177–83.
9. Khan Y, Birare SD. Study of Histopathology of the Tumour like Lesions and Tumours of the Oral Cavity. *Int J Sci Res*. 2016;5(4):915–20.
10. Misra V, Singh P, Lal N, Agarwal P, Singh M. Changing pattern of oral cavity lesions and personal habits over a decade: Hospital based record analysis from Allahabad. *Indian J Community Med*. 2009;34(4):321–5.
11. Khandekar SP, Bagdey PS, Tiwari RR. Oral cancer and some epidemiological factors: A hospital based study. *Indian J Community Med*. 2006;31(3):157–9.
12. Gupta M, Choudhary H, Gupta N, Gupta A. Histopathological study of neoplastic lesions of oral cavity and oropharynx. *Int J Res Med Sci*. 2016;4:1506–10.
13. Nayak P, Behera SK. Clinicopathological Study of Premalignant And Malignant Lesions of Oral Cavity. IOSR. *J Dent Med Sci*. 2017;16(8):20–3.
14. Akinyamoju AO, Adeyemi BF, Kolude B. Localized Reactive Lesions Of The Oral Cavity: A Review Of 246 Cases In Ibadan. *Internet J Dent Sci*. 2013;12(1).
15. Rai HC, Ahmed J. Clinicopathological Correlation Study of Oral Squamous Cell Carcinoma in a Local Indian Population. *Asian Pac J Cancer Prev*. 2016;17(3):1251–4.
16. Muwonge R, Ramadas K, Sankila R, Thara S, Thomas G, Vinoda J, et al. Role of tobacco smoking, chewing and alcohol drinking in the risk of oral cancer in Trivandrum, India: A nested case-control design using incident cancer cases. *Oral Oncol*. 2008;44(5):446–54.

Author biography

Shruthi Gowthami M R Senior Resident

Mahanthachar Veerabasappa Professor

Sharmila P Surhonne Professor and HOD

Cite this article: Gowthami M R S, Veerabasappa M, Surhonne SP. Etiological and clinical profile of patients with lesions of oral cavity and oropharynx. *Indian J Pathol Oncol* 2020;7(3):428-434.