A TWO YEAR RETROSPECTIVE ANALYSIS OF PRIMARY ORAL AND MAXILLOFACIAL MALIGNANCY PATIENT SEEN AT TIKUR ANBESA SPECIALIZED HOSPITAL,ADDIS ABABA, ETHIOPIA 2022

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SCHOOL OF POSTGRADUATE

This is to certify that the thesis prepared by **Chala Ararsa** entitled **Retrospective Analysis Of Primary Oral And Maxillofacial Malignancy Patient Seen At Tikur Anbesa Specialized Hospital** and submitted in partial fulfillment of the requirements for the **specialty in Oral and Maxillofacial Surgery** complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the examining committee

Advisors: Dr. Demerew Dejene signature _____ Date _____

Dr. Gelana Garoma signature _____ Date_____

Acknowledgement

First and foremost, I would like to thank my “God” for giving me energy, and “His” blessings

I would like to express my great full thanks to my advisor Dr Demerew Dejene (Assistant professors of maxillofacial surgery) for his guidance , scientific input and advice in this theses work.

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Abstract

Background; orofacial cancer is a malignant neoplastic proliferation of epithelial and ectomesenchymal tissue of oral and maxillofacial origin. The late presentation of patient, aggressive nature of orofacial malignancy and the anatomic site closure to vital organ make orofacial cancer management challenging but no sufficient pioneer data in Ethiopia

Objective: to assess the patters of primary orofacial malignancy patient visited Tikur Anbesa specialized hospital

Materials and Methods: consecutive cross sectional retrospective study was conducted on 175 patients diagnosed with primary oral and maxillofacial malignancy seen at, Tikur Anbesa specialized Hospital over a period of January 2020 to December 2021. Data were collected by chart review and entered to SPSS 25.0 for statistical analysis and results were presented with table, figures and charts. Percentage and frequency were employed for categorical data while mean was used for continuous variables.

Result: Of 175 primary orofacial case analyzed male were 57.1 %{ n=100} with male to female ratio 1.48: 1, mean age of (48.21 ± 16.93 years) and range (12–91 years). Squamous cell carcinoma was the commonest cancer (52.0%) followed by mucoepidermoid carcinoma. About 34.% of patient had known risk factor. Majority of the patient were diagnosed as stage IV, 65.7%. Distance metastases were identified in 8.6 % of the studied patient and 41.7% of patients were treated surgically.

Conclusion: The study showed as carcinoma was the most prevalent cause of orofacial cancer. Majority of patients were presented with advanced stage of disease and surgery was the main means of treatment modality.

Key word: primary orofacial cancer, squamous cell carcinoma, sarcoma, stage

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Abbreviation and Acronyms

AAU- Addis Ababa University

ACC- Adeno cystic carcinoma

AC- adeno carcinoma

AJCC- American Joint committee Cancer

Ca- carcinoma

MECA- muco epidermoid carcinoma

NHL- non Hodgkin's lymphoma

OMM – oral and maxillofacial malignancy

OC –Oral cancer

Scc- squamous cell carcinoma

Sa. Sarcoma

TNM- Tumor Node Metastasis

TASH- Tikur Anbesa specialized Hospital

1. INTRODUCTION

Background

Oral and maxillofacial cancer is a malignant neoplasia arising from structure confined in the oral and maxillofacial regions. Often it involves the oral mucosa and underlying structures in the area of oral cavity, lip, maxilla, mandible, facial skeleton, salivary gland, face and facial skin other than non melanotic skin cancer. It constitute varying proportions of the total incidence of malignancies in the human population

Orofacial cancer exhibits a multitude of growth and degree of aggressiveness which is primarily determined by histologic grade. It has various clinical presentations, including soft tissue and bony swellings with ulcerations as well‑ exhibiting geographic variations in prevalence due to cultural, social, occupational or climatic factors.

Orofacial cancer is sub-divided into different categories: epithelial tumors, salivary gland tumors, hematologic tumors, bone tumors, mesenchyme tumors, and odontogenic tumors based on histology. It is associated with significant cosmetic and functional limitations(1-3) In addition, both the presence of OMM and its treatment often result in significant deterioration in the patient's quality of life (4). Malignant lesion result from genetic mutations which causes complex changes in the tightly regulated molecular pathways that control cell proliferation and differentiation.

The etiology of oral and maxillofacial malignancy is multifactorial and the major known risk factors are tobacco smoking and alcohol consumption. Both of these factors account for nearly 90% of the cases and are associated with age, sex, and religion-ethnicity distribution (5). A number of other risk factor have been identified including human papilloma virus {HPPV 16 and 18}, ionization radiation, chronic irritation, nutritional deficiency, premalignant lesions and condition, poor oral hygiene, low socio economic status, immune suppression (6). Surgery remains the first line treatment option for facial cancer treatment and multimodality therapy is indicated for advanced one. Even though, Orofacial cancer incidence and distribution is well known in developed country the exact extent and incidence is not known in Africa as a general and Ethiopia as particular. So this paper is planned to give clue on the distribution of primary orofacial cancer seen at Tikur Anbesa Hospital.

1.2 Statement of the problem

Oral cancer (OC) is a relevant problem of global public health due to its growing tendency and impact on the young population in the last decades(7). Oral cancer affects around 14.1 million people, making it one of the most prevalent cancers in the world(8). Developing countries, especially those from the South Asian region, have a higher burden of oral cancer compared to developed countries(9). With an estimated increase of 13,000 new cases each year, oral cancer is the most common cancer among men and second only to breast cancer among women in Pakistan. It also has the second highest cancer related mortality rates in the country(10)

In 2012, OC and pharyngeal cancer were estimated to be responsible for 529,500 incident cases—3.8% of all cancer cases, and is predicted to rise 62% to 856,000 cases by 2035(11). Globally, deaths from OC increased by 2.6% between 2006 and 2016,while age-standardized death rates from OC showed a slight increase of 0.7% within the same period (12).

Oral cancer , which can be described as a malignant neoplasia originating in oral cavity and lip rank as the sixth most common cancer worldwide and as third in developing nations , with a high age standardized mortality rate of 6.8 per 100,000 person per year in black men as compared with their white or Hispanic counter parties(13, 14).

Malignancies in the head and neck region though relatively rare, compared to other regions of the body, contribute significantly to morbidity and mortality in affected patients (14).Oral cancer is the sixth most frequently occurring malignant tumor and is the major cause of morbidity and mortality with high metastatic and invasive tendency. The incidence of oral cancer differs widely in various parts of the world with a range of 2–10 per 100,000 populations per year, approximately 300,000 new cases(15). Incidence and mortality as a result of oral cancer are higher in developing countries when compared to developed countries with the occurrence of the peak age in later decades of life(16). Recent reports from Europe and America have reported an increase in incidence and mortality in young men(17). According to the latest World Health Organization (WHO) data recorded in 2010, the death rate due to oral cancer in the Middle East is reported to be approximately 2 in 100,000, which is much lower than that in India and in the United States(18).

Developing countries, especially those from the South Asian region, have a higher burden of oral cancer compared to developed countries(19). With an estimated increase of 13,000 new cases each year, oral cancer is the most common cancer among men and second only to

breast cancer among women in Pakistan. It also has the second highest cancer related mortality rates in the country(13).

In South America, 15,868 new cases of lip and oral cavity cancer occurred in 2012, and 6,046 deaths were registered in the same year(20)

In Africa Maxillofacial cancer, do not get the attention they deserve in papers dealing with the incidence and mortality of major cancers. Even when African websites and publications dealing with major cancers record head and neck cancer (on average 10%of all cancers), the incidence of cancers of the lip, oral cavity and tongue, pharynx and larynx is often aggregated 7^{th} . In this regard, the oral cavity plus the oropharynx was by far the most commonly reported site among head and neck squamous cell carcinomas (HNSCC) in sub-Saharan Africa(21). To reduce cancer burden, identifying the scope of the problem and mapping out implementation of solutions is best done in National Cancer Control Plans (NCCPs).

However, a recent review showed that only 29% of low-income countries had a NCCP, and even if NCCPs existed, cost, financing, monitoring, and expansion of information systems was often inadequate. However data of incidence and mortality are not of high quality, and evidence is limited in developing countries; hence, the exact nature and extent of the problem remain unknown(22).

2. Literature review

According to USA National cancer institute report cancer of or facial region account for 3-4% of all cancer with incidence of 10 per 100,000. Recent report shows an increasing oral cancer rate in some part of USA, especially in older white males. There was also a trend for African Americans to present with late disease stage compared with white Americans. Furthermore African American male have poorer 5 year survival rate compared with other races. The racial differences were attributed to health care access, public education, and socioeconomic, cultural and biological issue(23)

In 2004, there were 67,000 new cases registered in the countries of the European Union (EU). Overall in the EU, oral and pharyngeal cancer occupies the 7th position(24). Within the EU countries the highest male incidence rates are found in France and Hungary, and the lowest rates are found in Greece and Cyprus. In one report the rate for oral cancer in men in France was almost seven times greater than that for men in Greece. The lifetime risk of developing oral and pharyngeal cancer in Europeans is estimated at 1.85% for men and 0.37% for women. The incidence rates are higher in Western Europe compared with Northern or Southern Europe. Highest mortality rates, with highest incidence rates for oral cancer in the world ever, are reported from Eastern Europe(25).

In South America and the Caribbean, cancers of mouth and pharynx rank fifth in men and sixth in women. The region comprising of Argentina, Southern Brazil and Uruguay has the highest incidence levels, though highest rates are observed in Brazil. Male population in Brazil has the highest risk in the world for cancer of mouth after those in France and India, It is the 7th most common cancer in the Brazilian population(26). Fomete et al. study on an epidemiological study of head and neck cancer reported ,35.5% were in the age of less than or equal to 40 years(13)

According to Azimi et al , orofacial cancer has male predilection in Nigeria with male to female ratio of 5:4 and the average age was 63 years(27).

A retrospective review by Adesina et.al in 2017 on 109 Cases of Primary Malignant Orofacial Lesions in Nigeria reported 71 (65.1%) were males and 38 (34.9%) females with male: female ratio of 1.87:1), mean age (48.7 ± 19.3 years) and range (4–94 years (28).

According to retrospective study of head and neck cancer by Amare Teshome, in Ethiopia, male were most affected with a male to female ratio of 2:1. The commonly affected age

group were the 5th and 6th decade comprising of 306 cases and followed by the 3rd and 4th decades (29)

Cause and Risk factor

Saman Warnakulasuriya et al, on the study of Global epidemiology of oral and or pharyngeal cancer, revealed risk of oral cancer due to both tobacco and alcohol is estimated to be more than 80%. Heavy drinkers and smokers have 38 times the risk than non-users(30).

FRIEDRICH et al in homburg German, reported as Smokers accounted about 66.7% a total of orofacial cancer patients and 83.4% of them consumed 20 to 40 cigarettes per day ;about 30% of cases were diagnosed with stage iv and 15% in stage iii (31).

Osman, et al, in Sudan reported (73.6% n=192/ 261) of SCC cases of orofacial cancer and overlapping lesions of the mouth were more prevalent among subjects with Toombak dipping history, smoking and alcohol drinking account about 49.8% and SCC was found to be more common in subjects with history of Toombak dipping (88%) and 94.5% of patients were diagnosed with stage 4 and 41.9% of patient were treated surgically (32).

According to research done by Amare Teshome, in Ethiopia, Black lion Hospital ; One-third of the patients (31.88%) had a history of exposure to a known predisposing factor to HNCs. Almost all(90.87%)of the cases with predisposing factor history were males. From 241 patients with risk exposure history, 137 (56.8%) were exposed to more than one predisposing factor. One hundred forty patients were (18.5%) cigarette smokers, 104 (13.8%) alcoholic drunker, 165 (21.8%) Chat chewers, and 16 (2.1%) live with HIV/AIDs(33).

Common site of formation

Tavares Cátia et al, reported tongue as the most common site of oral cancer formation in a population of northern Portugal for both genders, with a total of 453 cases(43.52% ± 3.01%). The least affected regions were the palate(C05) and the gum (C03), with 96 (9.22% ± 1.76%) and 69 cases(6.63% ± 1.51%) respectively(34).

Kittipong Dhanuthai 1, Somsri Rojanawatsirivej et al, study on A multicenter study Oral cancer reported tongue as the most commonly affected sites by oral cancer with frequency of (25.4%), followed by buccal mucosa (21.7%), gingiva (14.0%), palate (9.9%), and alveolar mucosa (7.9%), respectively(35)

Saman Warnakulasuriya et el , reported tongue as the most common site for intraoral cancer among European and the US populations, amounting to 40–50% of oral cancers. Buccal cancer is more common among Asian populations due to betel quid/tobacco chewing habits. In Sri Lanka, 40% of oral cavity cancers are found on buccal mucosa(36) . Azimi et al , reported lower lip as the common site affected by orofacial cancer with (22%), followed by tongue (15%) and parotid gland (13%)(37).

According to Solange N´uñez-Gonz´ alez, tongue represented 34% of deaths (n-349), parotid gland tumors 14.8% (n-152), and neoplasms of other and un specified major salivary glands 8.7% (n89). Ibikunle et al, study shows, in Nigeria, buccal mucosa and gingivae were the most common sites affected by intraoral epithelial malignancies(38). Reports of Gbotolorun et al(39) and Daramola et al (40) found the tongue as the most common sub site affected.

As Timothy .O. Aladelusi et al .in a Review of 109 cases of primary malignant orofacial lesions seen at a Nigerian Tertiary Hospital, the common site of tumor was mandible (n = 41, 37.6%) followed by maxilla and palate was the most common intraoral site (17, 15.6%) followed by the cheek(41)

Study by Timothy .O. Aladelusi, on Orofacial Cancers Pattern reported , jaw as most affected site (48.8%) followed by the palate and the tongue 13.1% and 7.5% respectively(42).

According to research done by Amare Teshome, in Ethiopia, Black lion Hospital Oral cavity and oropharynx (30%),and nasopharyngeal(27%)were the commonly affected sites by the primary head and neck carcinoma.

Histopathology types

According to Tavares Cátia ,SCC was the most prevalent histological type in every location of the oral cavity (C00–C06) in both genders, with 972 cases (93.37% ±10.90%) followed by Adenocarcinoma, lymphoma and mucoepidermoid carcinoma(43).

Ariyoshi et al, reported squamous cell carcinoma the most common (88.7%) , followed by adenoid cystic carcinoma (2.1%), and muco epidermoid carcinoma (1.7%)(44)

According to research Kittipong Dhanuthai 1, Somsri Rojanawatsirivej et el , Squamous cell carcinoma was the most common oral cancer in both Asian (80.23%) and non-Asian patients

(73.46%, The second most common oral cancer in Asian patients was verrucous carcinoma (3.37%) followed by lymphoma (3.33%), mucoepidermoid carcinoma (2.89%) and adenoid cystic carcinoma (1.85%), respectively, while the second most common oral cancer in non-Asian patients was lymphoma(6.90%) followed by mucoepidermoid carcinoma (3.76%), verrucous carcinoma (3.66%) and adenoid cystic carcinoma (2.19%), respectively(45).

A retrospective study of Azimi et al; revealed Squamous cell carcinoma the most common malignancy (55.8%) followed by mucoepidermoid carcinoma (9.4%)(46). According to Timothy .O. Aladelusi et al ,Carcinomas (71.8%) were the commonest orofacial cancer with SCC having the highest occurrence (3 8 . 0 %)followed by adenocarcinoma(13.1%) , which incidentally occurred more frequently in females, although this was not statistically significant. lymphoma is the second common malignancy followed by sarcoma. Among the sarcomas, osteo- sarcoma was the commonest histological type(46)

.Osman et al reported as Squamous cell carcinoma (SCC) in 192 (73.6%) of the study group and its prevalence among subjects more than 50 years old (85.9%) was significantly greater than that observed in younger people(47).

According to Ibikunle, et al, Squamous cell carcinoma (SCC) was the most common malignancy 27 (35.1%); Most of the patients diagnosed with SCC were in Stages III and IV, indicating late hospital presentation, mucoepidermoid carcinoma is the second most common 14 (18.2%)(48).

2.1 Significance of study

Considering the fact that regular observation of head and neck cancer incidence rates is required for global cancer control strategies, data of each specific region are important for understanding the burden of disease and evaluation of the extent of the problem. Moreover, these data are essential for the allocation of resources for prevention, diagnosis, treatment, and supporting services. However, data of incidence and mortality are not of high quality, and evidence is limited in developing countries; hence, the exact nature and extent of the problem remain unknown.

In developing country data on the incidence and pattern of head and neck cancer is somewhat good but oral and maxillofacial malignancy which is part of head and neck cancer is not this much studied so this paper is planned to improve this gap.

The aim of this study was to give data on the 2‑year incidence and patterns of oral and maxillofacial malignant tumors seen at Tikur Anbesa Specialized hospital.

3. Objective

3.1 General objective

- To assess the pattern and distribution of primary malignant lesion of oral and maxillofacial region among patient who visited AAU, Tikur Anbesa specialized hospital from January 1, 2020 to December 31, 2021

3.2 Specific objective

- To determine the etiology and risk factors of oral and maxillofacial malignancy in patient seen at TASH from January 1, 2020 to December 31, 2021
- To assess the site specific prevalence of oral and maxillofacial malignancy
- To assess the histopathology variants of orofacial malignancy patient seen at TASH from January 1, 2020 to December 31, 2021
- To identify the duration of lesion and treat modality given for orofacial cancer patient seen at TASH during January 1, 2020 to December 31, 2021

4. METHODS AND MATERIALS

4.1 Study area and period

The study was conducted in Tikur Anbesa Specialized Hospital, Oral and maxillofacial surgery and oncology department, Addis Ababa, Ethiopia. Tikur Anbesa specialized hospital is the government owned pioneer tertiary hospital equipped with 600 bed and serve as the only oncologic center of the country. It is a under Addis Ababa university college of health science which is a home to many specialty and sub specialty center. Oral and maxillofacial surgery is one of recently started postgraduate department in AAU CHS

The study was conducted from December 1/2020 to January30/ 2021

4.2 Study design

Retrospective cross sectional study was employed on chart of patient with orofacial malignant tumor who has visited TASH from January 1/ 2020 to December 30, 2021

4.3. Source population

All patients who have visited TASH, Maxillofacial surgery and oncology departments from jaunary1/ 2020 to December 30, 2021

4.4 Study population

All patients with primary oral and maxillofacial malignant tumors who has visited TASH, maxillofacial surgery and oncology department within a period of 2 year, from jaunary1/ 2020 to December 30, 2021

4.5 Inclusion criteria

All patients biopsied and diagnosed with oral and maxillofacial region malignancy during study period.

4.6 Exclusion criteria

Incomplete reports and charts, skin cancer, eye tumors, benign tumors non biopsied patient

4.7 Sample size and sampling technique

Convenient sampling technique [Consecutive sampling of patient charts seen at maxillofacial and oncologic departments during study period and diagnosed with primary orofacial malignancy was employed.

4.8 Dependent Variables

Orofacial malignancy

4.9 Independent variables

Age, sex, anatomic site of lesion, risk factor, duration of lesion , Histopathology features

4.10 Data collection

Data was collected by oriented resident and interns from Medical records which include relevant histopathology results of all cases of primary orofacial malignancy by using a well-structured check list and questionnaire's.

4.11 Data quality control

At the end of each day the collected data were checked for competency and correction was done

4.12 Data processing and analysis

Out of a total of 187 seen cases 12 cases were excluded due to incomplete data

Collected data were coded, entered, cleared and analyzed by IBM SPSS 25.0 version. Result were presented by table, figure and charts

4.13 Limitation

Improper documentation of patient information, Lack proper published research on oral and maxillofacial malignancy, Covid 19 and Secondary data used

4.14 Operational definition

Primary maxillofacial malignancy; includes all malignant tumor which is primarily originates from epithelial, mesenchyme, and hemato-lymphoids in orofacial region

AJCC is American joint committee cancer staging based on TNM which is tumor size, lymph node and distance metastasis respectively.

4.15 Ethical Issue

Permission of ethical issue and Ethical clearance was obtained from research and ethics committee of AAU health Science College, School of Dentistry before study. This research was conducted in full accordance with the World Medical Association Declaration of Helsinki. I confirmed that patients' information remained confidential and data will be anonym zed and de‑ identified to analysis. Patient name was not recorded and patient information kept confidential

4.16 Dissemination of result

The final result of this research will be submitted to AAU, CHS, and Department of maxillofacial surgery. Results also will be disseminated as workshops, seminars to responsible body like local and regional health bureau as aid to policy making to combat orofacial ca. Finally it will be sent for publication and peer reviewed by related field for publication in journal

5. RESULT

5.1 Socio demographic characteristic of study population

Out of 175 total patient with oral and maxillofacial cancer seen and analyzed; 100 were male (57.1 %) and 75 were female with male to female ratio of 1.48:1. Majority of the patients were in fifth decade age followed by fourth and seventh decade with mean age of 48.21 and std =16.930, range 12- 93 year.

Table 1 Age sex distribution of orofacial cancer patient seen at TASH during January 2020 to December 2021

Variable	Numbers (%)	
Sex		
Male	100(57.2%)	
Female	75(42.8%)	
Age groups (years)		
11-20 years	5(2.85)	
21-30 years	19(10.85)	
31-40 years	34(19.42)	
41-50 years	42(24%)	Mean=48.21
51-60 years	34(19.42)	std=16.93
61-70 years	21(12%)	Range12- 93 year
>70 years	20(11.42%)	

5.2. Histopathology Distribution

Squamous cell carcinoma was the common cause of orofacial patient visit with 49.1% n=86 followed by mucoepidermoid carcinoma (13.7% n =24), which was the commonest salivary gland cancer followed by adenocystic carcinoma {figure1}

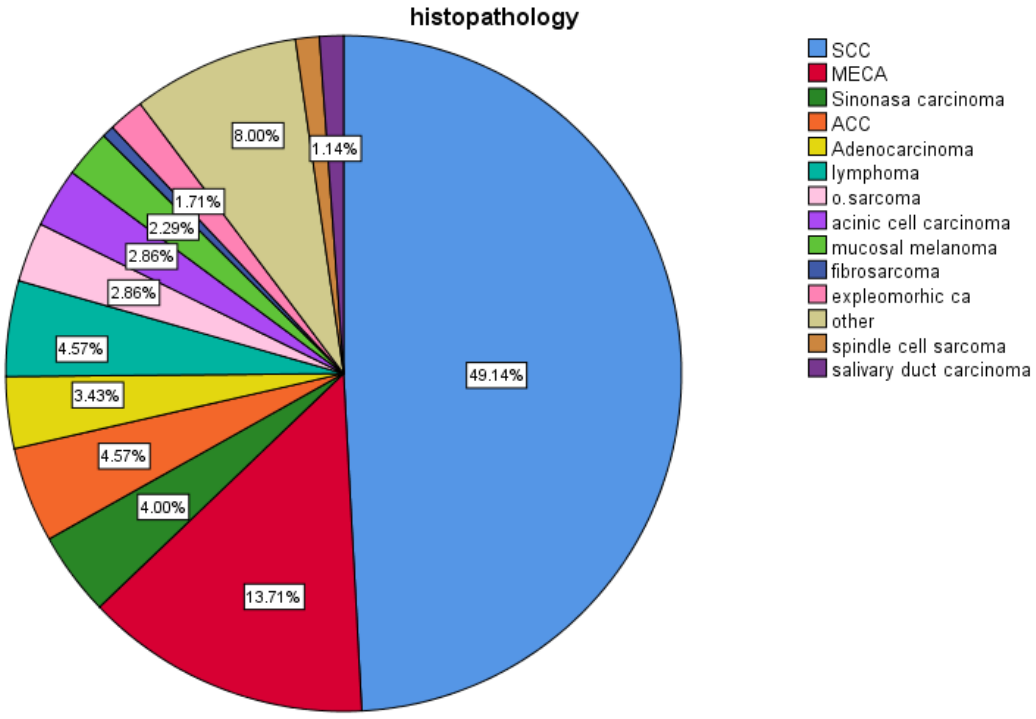

Figure 1. Histopathology distribution of orofacial cancer patient seen at Tikur Anbesa specialized Hospital during January 2020 – December 2021

5.3. Anatomic variation of maxillofacial cancer

Oral cavity were the most commonly affected anatomic site by orofacial cancer with 52.6% n= 92; followed by parotid 14.3% maxillary sinus 13.7%. Tongue was the commonly affected oral cavity sub-site with 20% n=35 followed by lip and palate.(table 3).

Table 2.Anatomic distribution of orofacial cancer patient seen at Tikur Anbesa Specialized Hospital during January 2020- December 2021

Variables	Numbers(&)
Anatomic site	
Tongue	35(20%)
Maxillary sinus	24 (13.7%)
Buccal mucosa	14(8%)
Lip	16(9.1%)
Parotid	25(14.3%)
Palate	15(8.6%)
Submandibular	5(2.9%)
Retro molar	3(1.7%)
Alveolar gingiva	6(3.4%)
Maxilla	12(6.9%)
Mandible	8 (4.6%)
Other	7 (4%)
Floor of mouth	3 (1.7%)
Cervical	2 (1.1%)
Oral cavity	**92 (52.57%)**

5.4. Stage of orofacial cancer

Majority of the patient were presented with advanced stage of disease with stage iv account about 65.7%, stage iii=11.7% and 50.3% of patient were with locally advanced tumor size of T4a (table3). Out of studied patient 29.7% had N2 lymph nodes metastasis while 53.7% were negative neck; 8.6% of the patient had distance metastasis mainly to lung

Table 3. TNM stage distribution of orofacial cancer patient seen at Tikur Anbesa Specialized Hospital during January 2020 – December 2021

Variables	Numbers (%)
Stage	
Stage I	7(4%)
Stage II	20(11.4%)
Stage III	30(11.7%)
Stage IV	115(65.7%)
Missing	3(1.7%)
Tumor size	
T1	4(2.3%)
T2	37(21.1%)
T3	33(18.9%)
T4a	86(49.1%)
T4b	8(4.6%)
Lymph node	
N	124(13.7%)
N2	52(29.7%)
N3	5(2.9%)
Negetive	94(53.7%)
Metastasis	
M0	160(91.4%)
M	15(8.6%)

5.5. Duration of lesion

Majority of patient were presented on a mean time of between 6 month and 1year of lesion onset (41.1%) followed by lesion greater than 2 year (24.0%),< 6month (17.71%) and > 1year -2 year (17.14%).

Table 4 : Duration of orofacial cancer patient seen at Tikur Anbesa Specialized Hospital during January 2020 – December 2021

Duration	numbers and percentiles
< 6 month	31 (17.71%)
6 month -1 year	72 (41.14%)
>1 year-2 year	30 (17.14%)
>2 years	42 (24.0%)
Total	175 (100%)

5.6 .Risk factor of orofacial cancer patient

Out of 175 case analyzed , 32% of patient had risk factor like smoking , immune compromising disease ,alcohol and chat chewing.(table5)

Table5. Risk factors and habits of orofacial cancer patient seen at TASH during January 2020 – December 2021

Variables	Numbers (%)
Smoking	18(10.3%)
Alcohol	3(1.7%)
Immuno comprising disease	24(13.7%)
Chat chewing	11(6.3%)
Unknown	119(68.0%)
Total	175 (100%)

5.7 .Treatment modality

Surgery was the main mode of treatment given 73(41.7%), followed by chemotherapy 43(19.4%) , surgery and chemo radiotherapy5(2.9%),Radiotherapy2(1.1%) , while 61 (34.86%) of patient were not treated yet.

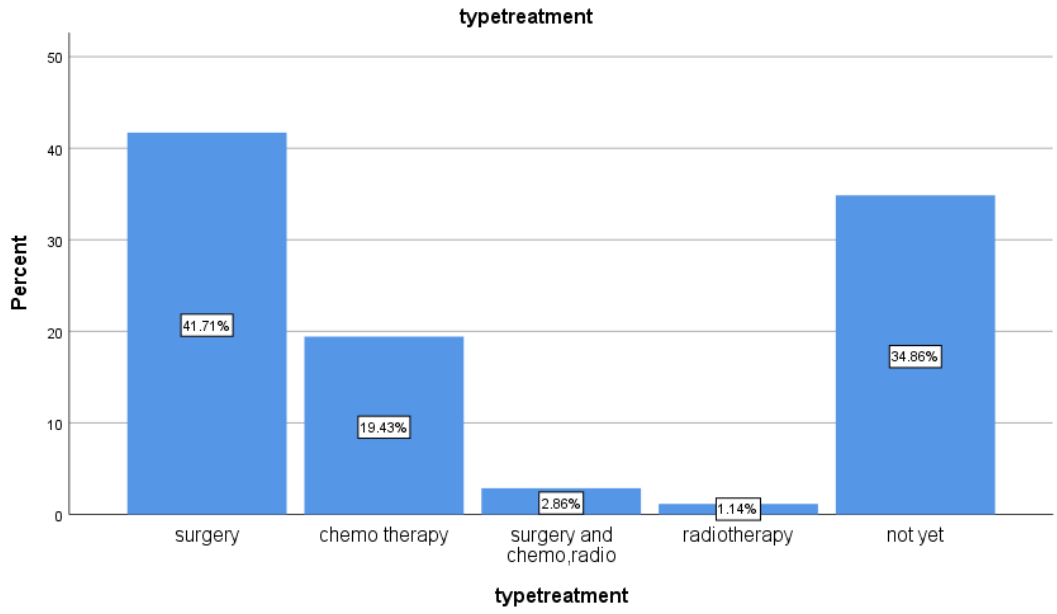

Figure 2. Treatment distribution of orofacial cancer patient seen at Tikur Anbesa Specialized Hospital during January 2020 – December 2021

6. Discussion

Out of total of 175 analyzed case the most common age group affected by oral and maxillofacial cancer were in fifth decade followed by fourth with mean age of 48.21±16.930 (range 12-93). The retrospective study done by Adesina et al reported 48.7 ± 19.3 as the mean age of orofacial cancer in Nigeria which almost similar with this report (28). Study done by Cátia et al reported 60 year as average age of diagnosis in Portugal which is higher than this finding(34) . Although the cut point for young is not universal this study revealed 33.2% of this patient was younger or equal to 40 year which is much higher than previous report in Portugal (34) and Nigeria (28).

In this study male were most affected, 57.1% (N=100) with male to female ration of (1.33:1) which slight smaller than previous study done in this county () .The study done by Adesina at el show male was the predominant sex affected with or facial cancer with a 1.81:1 M:F ratio(28). Cátia et al reported that male was commonly affected with the male to female ratio as 3:1 (34). Currently the incidence of female affected by orofacial cancer is increasing which may be due to increasing habit and outdoor activity which needs further study.

As this finding SCC was the common maxillofacial malignant 49.1% followed by MECA. Azimi et al;(47) reported as Squamous cell carcinoma was the most common malignancy (55.8%) followed by mucoepidermoid carcinoma (9.4%)() which is supportive to this finding. Ibikunle, et al, reported Squamous cell carcinoma (SCC) was the most common malignancy 27 (35.1%) which is far lower than this finding(49). Osman et al was reported Squamous cell carcinoma the most common cancer with (SCC) 73.6%.(32)

Oral cavity was the most common anatomic region affected by maxillofacial cancer,52.6% (n=92) . Tongue was the commonest intra oral sub site affected followed by lip and buccal mucosa. Gbotolorun et al(39)and Daramola et al (40) both reported the tongue as the most prevalent site Azimi et al , revealed lip as the most intra oral cancer (22%), followed by tongue (15%)(47). Adesina et al reported as mandible was the commonly affected site by ca which is not similar with this finding

About 66.9% of patients were in stage iv presented and 17.3% stage iii which is less than that reported from Sudan (32). Ibikunle, et al reported majority of stage iii and iv presentations which is consistent with this report(38). Cátia et al in Portugal(34) reported stage IV as the commonest. Aladelusi et al reported (65.4%) patient were diagnosed with stage IV and (34.6

%) in stage III which is similar to this study(42). Ariyoshi et al reported the highest stage ii in Japan which is non-supportive to this report(45). Friedrich et al reported 30% off stage iv case which is lower than this (31). Scott et al. compared the incidence of early-stage and advanced-stage cancer in a United States population, and reported that advanced-stage cancer was more frequent in the nonwhite population

The etiology of orofacial is multifactorial in this study, 32% of patient had risk factor like smoking , immune compromising disease ,alcohol and chat chewing wich is consistent with epidimological study done in this country. Osman et al reported 49.8% tomback dipping and smoking in sudan which is in line with this study(32). Saman Warnakulasuriya et al, on the study of Global epidemiology of oral and or pharyngeal cancer, reported smoking and alcohol has 80% of association with cancer (30). Freidrich et al (German) reported 66.9% of orofacial cancer case were smoker(31).

Surgery was a main means of treatment modality 41.7% ,followed by chemotherapy 19.4% , while 34.9% not treated yet which is similar to study in Sudan(32). Timoty et al reported 39.4 % had no treatment while 21.9 % treated surgically which is supportive to this report(42).

In this study only 14(8%) patient had distant metastasis mainly to lung. Ariyoshi et al (45) demonstrated distant metastasis in 1% which is fewer than this finding. Calhoun et al. reported (11.4%) of distant metastasis during their clinical course. Aladelusi et al reported seven cases of distant metastasis , five to lung and two to spine (n=7 /213) in Nigeria (42) .

Strength

Strength

All data collection was performed under strict continuous follow up and incomplete data was excluded, data was cleared before analysis

7. Conclusion

According to this study majority of orofacial cancer was carcinoma. Majority of the cases were diagnosed with advanced stage of disease. Even though the cause of orofacial cancer is multifactorial, smoking, immune compromising disease, chat chewing and alcohol were some of the identified risk factor in this study. Surgery was the main means of treatment modality given to orofacial cancer patients. Majority of the studied patient were in stage IV AJCC with N2 where the highest lymph node metastasis. Few patient had distance metastasis to mainly lung while there was reported liver, intra-cranial and cervical vertebral metastasis.

8. Recommendation

Orofacial cancer is a deadly but forgotten disease in Ethiopia, the main way to address delayed presentation is through awareness creation and giving attention to this cancer. since early surgery is the most effective and main treatment modality for orofacial cancer I recommend as responsible body should work in collaboration with treating physician and community leaders to increase awareness on burden of orofacial cancer.

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ANNEX/CHECK LIST

Addis Ababa University

College Of Health Science

School Of Medicine department of maxillofacial surgery

This questionaries' is designed to assess the retrospective distribution and patterns of primary maxillofacial malignant tumor of patient who visited TASH ,Maxillofacial surgery and oncology department during period of December 1/2020- January 30 /2022

Read each part of the check list carefully and write/tick" X" for appropriate response in the box provided accordingly

Date of registry; date / month/year ……..

Data collector ……supervisor ……..

Card number …… code number……..

Part I socio-demography

1.1 age in years……
1.2 sex male ……. Female…….
1.2 Date of visit/admission……/……/…….. 1.3 Duration of lesion…< 6 month ……6 month – 1 year……>1 year – 2 year……> 2 year……

Part II Habit and predisposing factors

1. Do the patient have any habit and risk factors?

A. Yes B .No

2.IF there is reported habit and risk factor what type of risk factor is it?

Tobacco smoking
Alcohol
History of exposure to radiation
HPV
HIV

Part III .what are anatomic site of maxillofacial region affected by primary orofacial cancer ?

Affected areas ……..
a, Oral tongue……..
b,Buccal mucosa……..
c, Floor of mouth……..
d, Alveolar ridge……..
e, Mandible- anterior……. Posterior
f, Maxilla- anterior…….. posterior
g, salivary gland ……
parotid……..
submandibular……..
sublingual……..
minor……..
h, Lip ……..
I, Palate…….
J, Sino-nasal…….
K, Other…….

Part IV Histo- pathologic variant of orofacial malignancy which is proved by histopathologic variant.

2. specific histopathologic variant	
A, SCC	…….
B, ACC	……
C, MECA	……..
D, Lymphoma	…….
E, Acinic cell carcinoma	…….
f. Osteo sarcoma	……..
g, Rhabdomyosarcoma	……
h, Melanoma	……
I, Clear cell carcinoma	……..
J, Fibrosarcoma	…….
K, Other	

Part V

I.TNM Stage of or facial cancer patient seen TASH

Stage	Lymph node	
Stage 1		
Stage 2		
Stage 3		
Stage 4		
Metastasis	Mo	M1

II. If there is a distant metastasis where is the anatomic site?

…….

Part VI. i. Is there treatment given? A. yes B. No

II. If yes what type of treatment modality has been given?

A. Surgery C. chemotherapy
B. Radiotherapy Surgery and chemo radiotherapy